Energy Tidbits

Will Russia’s Attempt to Backdoor Some US Ukraine Sanctions Delay a Return To JCPOA?

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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	3,377	2,975	208	2,767	5	-74	722	4	3,424
February	3,057	2,705	189	2,516	5	-97	580	16	3,019
March	3,383	3,009	210	2,798	5	-121	253	-8	2,928
April	3,315	2,926	205	2,721	5	-132	-389	7	2,212
May	3,424	3,046	213	2,833	5	-161	-480	-63	2,134
June	3,300	2,956	207	2,750	5	-159	-439	-37	2,119
July	3,396	3,072	215	2,857	5	-163	-260	-45	2,394
August	3,448	3,146	220	2,926	5	-165	-292	-40	2,434
September	3,397	3,057	214	2,843	5	-186	-427	-28	2,206
October	3,552	3,186	223	2,963	5	-215	-353	-94	2,307
November	3,509	3,134	219	2,915	5	-218	156	-74	2,784
December	3,623	3,235	226	3,009	5	-226	428	-45	3,171
Total	**40,780**	**36,447**	**2,548**	**33,899**	**61**	**-1,916**	**-503**	**-408**	**31,132**
2020									
January	3,597	3,194	240	2,954	6	-248	581	8	3,300
February	3,363	2,985	224	2,761	5	-216	545	-53	3,041
March	3,582	3,196	240	2,956	6	-284	53	-24	2,707
April	3,374	3,012	226	2,786	5	-231	-311	-8	2,241
May	3,285	2,927	220	2,707	5	-209	-454	18	2,067
June	3,217	2,873	216	2,657	5	-151	-363	-18	2,131
July	3,374	3,021	227	2,795	5	-139	-165	-7	2,489
August	3,350	3,012	226	2,786	5	-148	-232	-9	2,401
September	3,265	2,918	219	2,699	5	-221	-329	18	2,172
October	3,364	2,992	225	2,767	5	-282	-96	-74	2,320
November	3,352	2,985	224	2,761	5	-316	-6	-8	2,435
December	3,490	3,089	232	2,857	5	-287	597	-5	3,168
Total	**40,614**	**36,202**	**2,717**	**33,485**	**63**	**-2,732**	**-180**	**-164**	**30,472**
2021									
January	[E]3,506	[E]3,110	233	[E]2,877	5	-279	707	[R]-18	[R]3,292
February	[E]2,924	[E]2,586	172	[E]2,415	[R]5	-152	781	[R]-7	3,042
March	[E]3,482	[E]3,092	231	[E]2,861	5	-357	59	[R]47	[R]2,616
April	[E]3,409	[E]3,036	239	[E]2,797	5	-356	-174	[R]-33	2,238
May	[E]3,510	[E]3,130	247	[E]2,883	[R]5	-373	-416	-5	[R]2,094
June	[E]3,391	[E]3,036	239	[E]2,797	[R]4	-331	-248	[R]-6	[R]2,215
July	[E]3,491	[E]3,151	247	[E]2,904	5	-338	-170	[R]-13	[R]2,388
August	[E]3,531	[E]3,173	251	[E]2,922	[R]5	-343	-159	-15	2,410
September	[E]3,413	[E]3,050	241	[E]2,809	4	-315	-391	[R]4	2,110
October	[RE]3,595	[RE]3,220	257	[RE]2,963	5	-317	-361	-52	2,238
November	[RE]3,551	[RE]3,161	251	[RE]2,909	[R]6	-315	132	[R]-72	2,661
December	[E]3,683	[E]3,270	258	[E]3,012	5	-368	323	8	2,980
Total	**[E]41,487**	**[E]37,015**	**2,866**	**[E]34,149**	**59**	**-3,845**	**83**	**-162**	**30,284**

[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 2020 include underground storage and liquefied natural gas storage. Data for January 2021 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): -24 for 2020; -8 for 2019; -12 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 2019 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: 2016-2020: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2020*. January 2021 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; Form EIA-191, *Monthly Underground Gas Storage Report*; EIA computations and estimates; and Office of Fossil Energy and Carbon Management, *Natural Gas Imports and Exports*. 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. U.S. natural gas exports, 2019-2021

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

							2021
	Total	December	November	October	September	August	July	June
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	937,124	108,568	85,136	62,464	72,023	71,586	68,264	69,528
Mexico	2,155,205	167,057	165,546	184,539	178,823	193,788	197,702	198,329
Total Pipeline Exports	**3,092,329**	**275,625**	**250,683**	**247,003**	**250,846**	**265,374**	**265,966**	**267,857**
LNG								
Exports								
By Vessel								
Antigua and Barbuda	8	3	2	0	3	0	0	0
Argentina	83,449	2,077	0	0	1,950	14,363	22,798	19,312
Bahamas	486	36	34	36	43	56	46	48
Bangladesh	37,734	0	0	0	3,276	7,085	0	3,493
Barbados	297	34	27	25	33	27	31	22
Belgium	5,584	0	0	0	0	0	0	0
Brazil	307,714	24,246	10,715	40,769	38,282	34,204	39,637	32,293
Chile	121,881	2,938	2,956	6,364	7,929	16,262	19,913	0
China	449,667	17,050	50,228	42,202	48,584	51,662	42,222	42,319
Colombia	2,247	0	0	0	436	919	0	0
Croatia	36,133	3,117	9,416	0	0	2,980	3,299	2,923
Dominican Republic	53,095	5,969	2,780	5,619	0	5,901	1,806	4,670
Egypt	0	0	0	0	0	0	0	0
France	170,780	33,892	10,021	9,333	6,578	7,111	0	3,683
Greece	39,708	5,305	4	7,629	1,515	799	3,607	6,651	0
Haiti	137	4	8	17	10	24	8	18
India	196,218	3,203	14,807	10,548	23,941	20,592	13,090	16,503
Indonesia	3,269	1,218	456	477	1,118	0	0	0
Israel	8,906	0	0	0	2,855	0	0	0
Italy	34,210	0	0	0	0	3,401	6,826	3,425
Jamaica	25,276	113	715	1,858	2,931	2,907	0	2,927
Japan	354,948	24,297	33,947	37,666	10,290	19,979	24,895	39,783
Jordan	0	0	0	0	0	0	0	0
Kuwait	34,476	0	0	6,193	10,333	3,298	0	7,126
Lithuania	30,919	0	0	0	3,282	1,677	6,469	3,285
Malaysia	0	0	0	0	0	0	0	0
Malta	5,427	0	0	0	2,498	0	0	0
Mexico	15,200	0	0	1,088	0	0	758	0
Netherlands	174,339	23,354	8,829	17,157	10,424	7,347	10,597	3,030
Nicaragua	1	0	0	0	0	0	1	0
Pakistan	45,818	0	2,490	3,138	9,642	3,319	13,428	3,376
Panama	8,436	0	0	911	0	1,390	0	0
Poland	56,320	7,159	7,068	3,270	0	0	6,619	10,635
Portugal	65,865	9,630	5,380	10,459	3,696	6,382	3,296	5,538
Singapore	24,555	0	3,728	0	0	0	3,449	0
South Korea	453,483	38,201	30,787	33,836	31,375	50,101	39,314	55,918
Spain	215,062	32,579	22,821	35,638	31,274	23,068	8,630	7,833
Taiwan	99,350	12,034	3,404	7,123	5,789	6,728	20,653	3,097
Thailand	14,548	0	0	0	0	3,707	0	0
Turkey	188,849	38,420	47,330	19,385	24,176	0	5,591	0
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	195,046	60,315	30,648	3,302	3,099	0	0	0
By Truck								
Canada	128	20	8	8	19	18	16	7
Mexico	1,250	148	160	182	150	147	97	105
Re-Exports								
By Vessel								
Argentina	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0	0
South Korea	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG Exports	**3,560,818**	**345,363**	**306,397**	**298,119**	**284,813**	**298,262**	**300,143**	**271,368**
CNG								
Canada	211	0	0	0	0	14	16	27
Total CNG Exports	**211**	**0**	**0**	**0**	**0**	**14**	**16**	**27**
Total Exports	**6,653,357**	**620,988**	**557,080**	**545,121**	**535,660**	**563,650**	**566,125**	**539,252**

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

	2021					2020		
	May	April	March	February	January	Total	December	November
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	70,561	74,567	91,301	78,198	84,927	902,449	84,307	81,358
Mexico	192,625	183,004	183,051	137,381	173,360	1,990,809	164,577	166,135
Total Pipeline Exports	**263,186**	**257,571**	**274,352**	**215,579**	**258,287**	**2,893,258**	**248,884**	**247,493**
LNG								
Exports								
By Vessel								
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	16,226	4,485	2,238	0	0	15,068	0	0
Bahamas	45	46	39	29	28	257	36	31
Bangladesh	6,948	10,219	3,566	0	3,148	10,660	0	0
Barbados	19	30	14	19	17	241	25	15
Belgium	2,100	0	3,484	0	0	31,946	0	3,633
Brazil	19,726	11,615	21,977	13,118	21,132	111,826	29,927	30,191
Chile	17,598	10,293	21,320	6,524	9,784	80,615	9,793	3,252
China	37,731	46,837	28,476	3,415	38,940	214,401	45,525	45,083
Colombia	0	892	0	0	0	4,626	0	0
Croatia	3,364	3,666	7,367	0	0	3,275	3,275	0
Dominican Republic	5,283	2,905	5,577	5,689	6,895	26,050	5,000	5,106
Egypt	0	0	0	0	0	0	0	0
France	11,926	36,120	33,678	14,851	3,587	90,237	3,752	3,390
Greece	6,796	0	6,805	0	600	48,403	3,382	3,543
Haiti	12	3	10	11	12	118	17	11
India	28,259	13,752	17,381	13,776	20,367	124,402	10,241	10,299
Indonesia	0	0	0	0	0	0	0	0
Israel	0	3,225	2,826	0	0	15,834	0	0
Italy	2,923	6,896	10,739	0	0	68,453	0	3,083
Jamaica	2,925	2,370	2,458	2,365	3,708	17,052	2,374	0
Japan	25,058	28,756	27,673	18,271	64,331	287,672	54,004	32,967
Jordan	0	0	0	0	0	6,872	0	0
Kuwait	0	3,705	3,821	0	0	17,293	0	0
Lithuania	3,049	3,078	3,228	6,851	0	28,879	6,291	3,621
Malaysia	0	0	0	0	0	0	0	0
Malta	0	2,928	0	0	0	2,648	0	0
Mexico	0	0	0	13,354	0	34,408	0	3,056
Netherlands	26,611	17,060	24,204	22,777	2,949	85,573	3,316	6,684
Nicaragua	0	0	0	0	0	0	0	0
Pakistan	0	3,323	3,421	0	3,682	36,934	0	3,436
Panama	2,341	0	3,279	0	516	12,764	271	1,448
Poland	3,581	7,382	3,507	7,099	0	36,900	7,033	0
Portugal	10,765	7,358	0	3,360	0	36,922	3,711	5,830
Singapore	3,089	7,297	3,303	0	3,688	28,341	0	7,658
South Korea	46,033	21,683	32,203	18,094	55,936	316,227	39,617	49,103
Spain	5,234	22,974	13,900	3,733	7,377	199,966	13,583	9,907
Taiwan	10,157	6,594	13,450	0	10,319	64,363	12,470	6,216
Thailand	3,453	7,388	0	0	0	32,622	0	3,705
Turkey	3,017	0	3,619	20,652	26,659	123,957	20,188	12,817
United Arab Emirates	0	0	0	0	0	10,110	0	0
United Kingdom	10,586	13,877	17,440	34,343	21,436	160,199	30,378	26,544
By Truck								
Canada	18	15	0	0	0	10	8	0
Mexico	48	48	19	63	83	822	46	52
Re-Exports								
By Vessel								
Argentina	0	0	0	0	0	2,164	0	0
Brazil	0	0	0	0	0	82	0	0
Japan	0	0	0	0	0	387	0	0
South Korea	0	0	0	0	0	387	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG Exports	**314,922**	**306,818**	**321,023**	**208,394**	**305,196**	**2,389,963**	**304,263**	**280,682**
CNG								
Canada	25	29	36	32	32	386	29	35
Total CNG Exports	**25**	**29**	**36**	**32**	**32**	**386**	**29**	**35**
Total Exports	**578,132**	**564,418**	**595,411**	**424,004**	**563,515**	**5,283,607**	**553,176**	**528,210**

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
	October	September	August	July	June	May	April	March
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	72,833	62,211	60,810	71,778	66,516	67,752	71,722	86,579
Mexico	185,799	182,068	185,867	181,152	162,927	145,242	138,544	166,550
Total Pipeline Exports	**258,632**	**244,279**	**246,677**	**252,930**	**229,442**	**212,994**	**210,266**	**253,130**
LNG								
Exports								
By Vessel								
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	0	0	2,249	2,218	2,229	8,372	0	0
Bahamas	25	20	21	15	18	20	23	20
Bangladesh	0	0	0	3,614	0	3,406	0	0
Barbados	17	14	14	15	20	20	15	28
Belgium	3,285	0	0	0	0	1,348	3,324	3,724
Brazil	22,427	0	3,520	0	0	0	0	6,891
Chile	6,836	3,277	7,428	1,515	3,313	11,068	14,098	3,216
China	35,115	11,245	13,699	10,358	0	14,535	21,140	17,699
Colombia	0	2,548	550	0	0	0	0	0
Croatia	0	0	0	0	0	0	0	0
Dominican Republic	5,909	0	2,772	0	0	2,554	1,838	2,872
Egypt	0	0	0	0	0	0	0	0
France	6,639	0	0	0	0	9,546	16,336	23,491
Greece	0	7,027	0	6,544	1,076	3,430	3,233	8,892
Haiti	9	8	11	8	7	10	8	9
India	17,762	10,514	10,319	7,404	10,100	10,534	16,674	17,245
Indonesia	0	0	0	0	0	0	0	0
Israel	0	3,041	3,001	3,317	3,277	0	0	3,197
Italy	0	0	6,734	3,232	12,998	6,452	3,135	9,895
Jamaica	2,514	2,610	0	0	0	0	5,770	1
Japan	31,554	6,855	22,541	10,618	21,836	13,729	18,387	21,845
Jordan	0	3,578	0	0	0	3,294	0	0
Kuwait	3,603	3,508	6,886	0	0	0	3,297	0
Lithuania	6,191	3,308	0	0	3,049	3,473	2,945	0
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0
Mexico	7,398	3,285	3,701	0	0	0	0	7,037
Netherlands	3,603	6,671	0	6,746	6,870	6,826	10,305	13,772
Nicaragua	0	0	0	0	0	0	0	0
Pakistan	10,009	9,853	3,412	0	0	0	3,334	0
Panama	433	3,228	0	0	0	3,070	0	906
Poland	3,157	0	0	0	3,385	6,258	3,523	3,583
Portugal	3,564	6,853	0	0	0	0	10,777	0
Singapore	3,416	0	2,967	3,690	0	0	0	10,610
South Korea	14,239	32,126	13,814	10,492	28,171	20,921	24,258	28,095
Spain	14,118	15,206	3,222	13,679	9,640	29,360	22,943	23,657
Taiwan	3,636	9,007	0	0	2,953	6,662	0	6,987
Thailand	0	0	0	3,254	0	7,397	11,049	3,783
Turkey	0	3,611	0	3,222	0	6,661	14,030	6,489
United Arab Emirates	0	0	3,359	3,277	0	3,474	0	0
United Kingdom	17,191	3,664	0	2,908	0	0	0	20,202
By Truck								
Canada	0	0	0	0	0	0	0	0
Mexico	68	73	78	72	61	18	23	123
Re-Exports								
By Vessel								
Argentina	0	0	2,164	0	0	0	0	0
Brazil	82	0	0	0	0	0	0	0
Japan	82	0	0	0	0	0	0	0
South Korea	82	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG Exports	**222,963**	**151,128**	**112,462**	**96,200**	**109,002**	**182,438**	**210,466**	**244,269**
CNG								
Canada	26	17	20	37	43	39	35	38
Total CNG Exports	**26**	**17**	**20**	**37**	**43**	**39**	**35**	**38**
Total Exports	**481,621**	**395,424**	**359,159**	**349,167**	**338,486**	**395,472**	**420,767**	**497,437**

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		2019					
	February	**January**	**Total**	**December**	**November**	**October**	**September**	**August**
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	77,354	99,231	972,519	109,779	92,671	76,246	71,573	78,302
Mexico	151,071	160,875	1,865,329	151,308	158,633	171,535	162,649	168,089
Total Pipeline Exports	**228,425**	**260,106**	**2,837,848**	**261,086**	**251,305**	**247,781**	**234,222**	**246,391**
LNG								
Exports								
By Vessel								
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	0	0	39,293	0	0	0	0	0
Bahamas	13	15	156	11	14	8	2	20
Bangladesh	0	3,640	3,419	3,419	0	0	0	0
Barbados	26	33	211	20	20	25	17	17
Belgium	9,872	6,761	23,897	10,407	3,293	3,402	3,404	0
Brazil	10,433	8,438	54,298	0	3,279	3,345	6,117	12,868
Chile	10,731	6,087	90,357	7,207	3,484	6,608	9,811	6,297
China	0	0	6,851	0	0	0	0	0
Colombia	1,003	525	6,518	0	0	0	0	649
Croatia	0	0	0	0	0	0	0	0
Dominican Republic	0	0	10,334	501	0	2,927	2,857	0
Egypt	0	0	0	0	0	0	0	0
France	20,520	6,563	117,791	14,758	26,946	14,228	6,740	3,249
Greece	0	11,276	14,643	7,752	0	0	0	0
Haiti	11	7	42	12	8	4	9	3
India	0	3,309	91,481	7,090	6,933	6,961	14,355	7,294
Indonesia	0	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0	0
Italy	16,616	6,308	68,655	12,764	6,345	0	3,230	6,082
Jamaica	2,914	869	13,892	2,435	2,464	0	0	2,946
Japan	21,360	31,975	200,864	21,226	17,603	24,504	28,084	17,506
Jordan	0	0	32,332	0	0	0	3,616	3,277
Kuwait	0	0	10,308	0	0	0	0	3,401
Lithuania	0	0	3,455	3,455	0	0	0	0
Malaysia	0	0	3,698	0	3,698	0	0	0
Malta	48	2,600	413	0	0	0	0	0
Mexico	3,167	6,764	143,371	9,696	3,273	6,437	10,442	13,681
Netherlands	14,099	6,681	81,361	13,405	10,099	3,456	3,431	6,688
Nicaragua	0	0	0	0	0	0	0	0
Pakistan	3,567	3,323	26,935	3,400	3,247	3,472	6,512	0
Panama	3,408	0	10,221	0	478	0	0	0
Poland	6,677	3,282	38,042	7,013	3,432	3,489	0	3,537
Portugal	6,187	0	53,342	6,345	0	6,621	2,924	6,051
Singapore	0	0	31,440	3,375	0	3,463	0	0
South Korea	11,071	44,320	270,025	38,139	24,962	42,233	10,818	16,995
Spain	20,240	24,412	166,684	13,874	19,985	13,704	37,938	15,861
Taiwan	7,115	9,317	27,397	3,658	3,736	3,138	0	7,207
Thailand	3,435	0	6,635	0	0	0	3,234	0
Turkey	24,303	32,637	30,611	536	7,266	3,528	0	0
United Arab Emirates	0	0	20,561	0	0	0	3,325	3,502
United Kingdom	28,884	30,428	118,357	29,749	39,957	26,260	3,303	1,335
By Truck								
Canada	0	2	25	0	1	14	9	0
Mexico	87	122	1,105	93	86	139	95	113
Re-Exports								
By Vessel								
Argentina	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Japan	0	305	221	0	0	0	0	0
South Korea	0	305	0	0	0	0	0	0
United Kingdom	0	0	305	305	0	0	0	0
Total LNG Exports	**225,786**	**250,305**	**1,819,547**	**220,646**	**190,610**	**177,966**	**160,274**	**138,578**
CNG								
Canada	34	33	263	25	30	28	15	15
Total CNG Exports	**34**	**33**	**263**	**25**	**30**	**28**	**15**	**15**
Total Exports	**454,245**	**510,444**	**4,657,657**	**481,757**	**441,944**	**425,775**	**394,511**	**384,983**

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						
	July	June	May	April	March	February	January
Exports							
Volume (million cubic feet)							
Pipeline							
Canada	68,613	61,809	70,182	71,333	93,182	91,561	87,269
Mexico	167,902	156,440	153,452	139,750	149,514	135,514	150,544
Total Pipeline Exports	**236,515**	**218,249**	**223,633**	**211,083**	**242,696**	**227,074**	**237,813**
LNG							
Exports							
By Vessel							
Antigua and Barbuda	0	0	0	0	0	0	0
Argentina	13,066	13,120	8,737	4,369	0	0	0
Bahamas	11	25	14	14	11	14	11
Bangladesh	0	0	0	0	0	0	0
Barbados	17	13	21	17	14	14	17
Belgium	0	0	0	0	3,390	0	0
Brazil	6,949	9,116	4,905	1,201	3,283	3,234	0
Chile	9,382	19,012	6,188	9,429	10,005	2,933	0
China	0	0	0	0	0	3,464	3,387
Colombia	0	0	0	0	2,935	0	2,934
Croatia	0	0	0	0	0	0	0
Dominican Republic	0	1,108	0	0	0	2,942	0
Egypt	0	0	0	0	0	0	0
France	0	0	6,621	17,092	20,853	0	7,303
Greece	0	0	3,497	0	0	3,394	0
Haiti	2	3	0	2	0	0	0
India	3,485	3,215	13,942	6,742	7,446	6,989	7,030
Indonesia	0	0	0	0	0	0	0
Israel	0	0	0	0	0	0	0
Italy	9,963	3,072	6,560	0	6,684	3,454	10,502
Jamaica	837	0	2,890	0	2,320	0	0
Japan	21,242	14,582	7,149	14,010	7,143	10,320	17,495
Jordan	3,449	7,342	7,332	3,622	0	3,695	0
Kuwait	3,405	0	3,502	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0
Malta	0	0	0	413	0	0	0
Mexico	24,209	16,955	20,244	10,406	7,038	6,681	14,310
Netherlands	3,386	3,310	10,734	13,010	10,452	3,390	0
Nicaragua	0	0	0	0	0	0	0
Pakistan	3,656	0	0	0	3,282	3,365	0
Panama	0	3,282	0	0	3,191	3,269	0
Poland	3,694	0	0	3,414	3,701	0	9,762
Portugal	6,994	6,908	0	3,489	0	3,720	10,289
Singapore	3,570	3,435	3,397	320	6,631	7,249	0
South Korea	32,663	20,402	18,069	13,000	18,013	17,750	16,981
Spain	3,297	13,506	14,325	10,139	10,678	6,748	6,631
Taiwan	0	0	3,309	6,349	0	0	0
Thailand	0	0	3,401	0	0	0	0
Turkey	0	0	0	2,969	0	6,483	9,829
United Arab Emirates	3,487	3,459	0	6,787	0	0	0
United Kingdom	0	0	0	0	3,669	3,711	10,373
By Truck							
Canada	0	0	0	0	0	1	0
Mexico	101	92	75	87	73	48	104
Re-Exports							
By Vessel							
Argentina	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0
Japan	0	0	0	221	0	0	0
South Korea	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0
Total LNG Exports	**156,865**	**141,956**	**144,913**	**127,102**	**130,814**	**102,866**	**126,957**
CNG							
Canada	20	20	22	28	29	15	16
Total CNG Exports	**20**	**20**	**22**	**28**	**29**	**15**	**16**
Total Exports	**393,400**	**360,226**	**368,568**	**338,213**	**373,539**	**329,954**	**364,787**

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)

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	47,443	16,800	165,594	16,055	259,311	3,773	137,940	67,591	213,280
February	26,728	42,219	15,513	148,543	14,237	242,076	3,095	128,351	58,573	192,640
March	29,346	46,211	16,922	164,062	15,820	266,649	3,508	144,805	68,542	213,280
April	28,816	44,455	16,548	161,046	15,613	259,749	3,552	142,454	67,985	207,990
May	29,028	44,906	16,754	166,110	14,898	270,060	3,817	147,013	70,266	214,923
June	26,889	42,702	16,254	162,072	15,559	265,302	3,757	142,093	65,406	207,990
July	25,348	43,852	16,890	165,821	15,695	277,490	3,783	149,002	70,039	235,476
August	22,876	43,505	16,969	166,581	15,637	276,362	3,739	153,633	75,266	235,476
September	24,494	41,798	16,262	161,977	15,039	266,639	3,675	151,917	72,439	227,880
October	27,409	43,093	16,228	174,304	15,151	275,520	3,617	157,544	78,027	236,778
November	28,256	41,738	15,659	172,088	14,439	270,668	3,559	154,545	77,473	229,140
December	29,669	42,834	16,024	178,720	14,945	282,493	3,660	159,790	79,218	236,778
Total	**329,361**	**524,757**	**196,823**	**1,986,916**	**183,087**	**3,212,318**	**43,534**	**1,769,086**	**850,826**	**2,651,631**
2020										
January	30,018	42,187	15,908	178,066	14,623	274,755	3,527	162,016	78,798	203,701
February	28,537	39,093	14,649	166,620	13,636	255,885	3,340	155,323	77,940	190,559
March	29,219	43,677	15,376	175,202	14,486	276,544	3,527	169,244	83,892	203,701
April	27,513	39,748	14,906	168,438	13,595	264,869	3,148	156,722	72,059	193,050
May	27,076	40,463	15,172	163,768	14,012	281,636	2,692	147,782	52,874	199,485
June	25,545	38,742	14,837	159,601	13,321	264,072	2,667	153,276	52,626	193,050
July	26,779	39,855	15,061	167,105	13,674	264,875	3,322	165,335	64,860	201,686
August	26,846	40,295	13,344	165,091	13,504	260,226	3,248	168,311	74,940	201,686
September	26,978	38,734	12,857	162,531	13,030	255,690	3,009	165,008	78,195	195,180
October	29,080	40,172	13,059	164,462	13,461	263,120	3,204	171,376	82,649	201,097
November	29,575	38,565	12,934	159,409	12,917	267,312	3,143	167,213	80,112	194,610
December	31,161	39,452	12,475	160,168	13,097	277,178	3,135	166,561	83,498	201,097
Total	**338,329**	**480,982**	**170,579**	**1,990,462**	**163,356**	**3,206,163**	**37,963**	**1,948,168**	**882,443**	**2,378,902**
2021										
January	31,632	[E]39,964	[E]12,033	[E]159,820	[E]12,578	[E]271,751	[E]3,214	[E]179,574	[E]77,021	[E]206,660
February	28,365	[E]30,061	[E]10,749	[E]143,416	[E]9,965	[E]221,051	[E]2,790	[E]151,970	[E]65,685	[E]170,668
March	31,481	[E]39,947	[E]12,028	[E]156,534	[E]12,340	[E]281,406	[E]3,144	[E]187,274	[E]77,032	[E]189,405
April	29,514	[E]37,926	[E]11,685	[E]156,009	[E]12,316	[E]276,931	[E]3,096	[E]184,890	[E]76,209	[E]183,444
May	29,005	[E]38,775	[E]12,215	[E]162,200	[E]12,648	[E]284,347	[E]3,226	[E]196,174	[E]80,479	[E]187,668
June	27,715	[E]37,125	[E]11,787	[E]154,405	[E]12,276	[E]272,759	[E]2,932	[E]190,003	[E]78,111	[E]183,602
July	26,280	[E]38,273	[E]12,014	[E]160,065	[E]12,780	[E]284,504	[E]3,151	[E]201,572	[E]79,150	[E]189,223
August	27,864	[E]38,000	[E]11,930	[E]158,380	[E]12,793	[E]288,489	[E]3,168	[E]206,178	[E]81,659	[E]188,396
September	28,534	[E]36,706	[E]11,499	[E]153,067	[E]12,371	[E]285,313	[E]3,127	[E]203,500	[E]80,634	[E]180,630
October	30,458	[RE]37,791	[RE]11,565	[RE]160,130	[RE]12,775	[RE]302,250	[RE]3,249	[RE]212,065	[RE]83,166	[RE]192,556
November	30,735	[RE]36,273	[RE]11,179	[RE]154,210	[RE]12,426	[RE]300,774	[RE]3,101	[RE]209,281	[RE]82,335	[RE]194,200
December	33,038	[E]38,255	[E]11,310	[E]155,262	[E]12,718	[E]311,988	[E]2,993	[E]209,960	[E]83,818	[E]200,174
Total	**354,623**	**[E]449,098**	**[E]139,994**	**[E]1,873,499**	**[E]147,986**	**[E]3,381,565**	**[E]37,192**	**[E]2,332,442**	**[E]945,298**	**[E]2,266,627**

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	255,006	576,440	737,375	23,148	169,050	125,391	39,987	90,143	2,974,830
February	229,666	519,802	678,066	21,007	154,910	117,653	35,427	76,743	2,705,249
March	250,919	578,820	758,646	23,266	171,516	125,044	39,436	92,017	3,008,808
April	250,314	560,062	727,527	22,751	167,816	123,615	38,348	87,201	2,925,844
May	266,014	571,803	781,002	23,531	171,305	128,320	38,958	87,738	3,046,445
June	243,339	556,708	766,761	22,780	174,784	124,341	37,968	81,599	2,956,304
July	254,709	583,186	804,899	22,987	180,524	116,782	38,381	66,834	3,071,698
August	257,498	585,405	837,459	23,261	181,927	120,984	38,570	91,237	3,146,384
September	256,073	568,646	798,191	22,080	181,334	126,696	37,301	84,094	3,056,535
October	261,454	589,800	828,390	22,559	201,814	130,259	37,566	86,636	3,186,150
November	251,153	597,779	815,089	21,869	196,055	123,894	36,861	83,661	3,133,926
December	259,905	608,342	845,084	22,570	204,178	125,876	37,220	87,441	3,234,746
Total	**3,036,052**	**6,896,792**	**9,378,489**	**271,808**	**2,155,214**	**1,488,854**	**456,024**	**1,015,343**	**36,446,918**
2020									
January	263,734	603,836	843,432	21,944	209,896	124,274	37,391	86,071	3,194,177
February	243,139	569,721	783,094	20,373	198,090	108,722	34,782	81,114	2,984,616
March	257,387	607,689	841,347	21,765	210,559	117,977	36,689	87,955	3,196,236
April	235,642	586,955	783,283	20,379	204,826	111,744	34,389	80,574	3,011,842
May	217,154	592,126	734,176	20,326	212,646	107,288	33,986	64,374	2,927,037
June	222,324	560,390	741,401	19,244	212,831	103,890	32,957	62,227	2,873,001
July	226,843	604,716	775,851	20,312	220,032	108,679	34,568	67,778	3,021,331
August	226,344	607,221	782,436	19,814	223,208	107,320	33,757	43,988	3,011,580
September	222,010	567,029	755,253	19,283	218,893	104,520	30,468	48,900	2,917,569
October	219,403	595,653	773,720	20,042	226,064	104,787	31,775	38,702	2,991,827
November	224,327	605,244	751,562	19,200	223,428	103,236	31,246	60,496	2,984,528
December	228,057	647,714	770,555	19,307	231,845	103,933	32,383	67,085	3,088,701
Total	**2,786,366**	**7,148,295**	**9,336,110**	**241,989**	**2,592,319**	**1,306,368**	**404,391**	**789,262**	**36,202,446**
2021									
January	[E]221,544	[E]657,704	[E]774,497	[E]19,235	[E]234,432	[E]106,649	[E]33,651	[E]68,393	[E]3,110,352
February	[E]163,094	[E]585,221	[E]588,035	[E]17,815	[E]208,571	[E]96,543	[E]30,083	[E]62,325	[E]2,586,408
March	[E]220,130	[E]647,681	[E]771,346	[E]20,356	[E]227,218	[E]107,236	[E]34,338	[E]72,867	[E]3,091,762
April	[E]214,334	[E]618,509	[E]775,796	[E]19,861	[E]229,075	[E]103,470	[E]33,044	[E]69,696	[E]3,035,804
May	[E]223,372	[E]640,431	[E]798,311	[E]20,312	[E]234,118	[E]105,441	[E]33,844	[E]67,642	[E]3,130,208
June	[E]213,314	[E]621,905	[E]781,294	[E]19,587	[E]227,987	[E]100,983	[E]32,490	[E]67,779	[E]3,036,055
July	[E]221,002	[E]642,894	[E]821,587	[E]20,363	[E]229,376	[E]104,558	[E]33,626	[E]70,488	[E]3,150,909
August	[E]222,329	[E]655,525	[E]820,135	[E]20,335	[E]241,373	[E]102,121	[E]33,126	[E]61,046	[E]3,172,847
September	[E]216,455	[E]633,963	[E]798,167	[E]19,841	[E]216,452	[E]102,262	[E]31,895	[E]35,503	[E]3,049,920
October	[RE]223,093	[RE]657,651	[RE]833,481	[RE]20,509	[RE]240,446	[RE]104,250	[RE]33,056	[RE]61,121	[RE]3,219,612
November	[RE]214,850	[RE]651,354	[RE]811,044	[RE]20,073	[E]229,812	[RE]101,419	[RE]32,083	[RE]65,638	[RE]3,160,788
December	[E]220,353	[E]680,699	[E]843,308	[E]20,636	[E]242,327	[E]102,770	[E]32,692	[E]68,082	[E]3,270,384
Total	**[E]2,573,871**	**[E]7,693,536**	**[E]9,417,000**	**[E]238,923**	**[E]2,761,187**	**[E]1,237,701**	**[E]393,928**	**[E]770,580**	**[E]37,015,049**

[E] Estimated data.

[RE] Revised estimated data.

Notes: For 2021 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 2021, 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: 2016-2020: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2020*, Bureau of Safety and Environmental Enforcement (BSEE), IHS Markit, Enverus DrillingInfo, and BENTEK Energy. January 2021 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; and EIA computations.

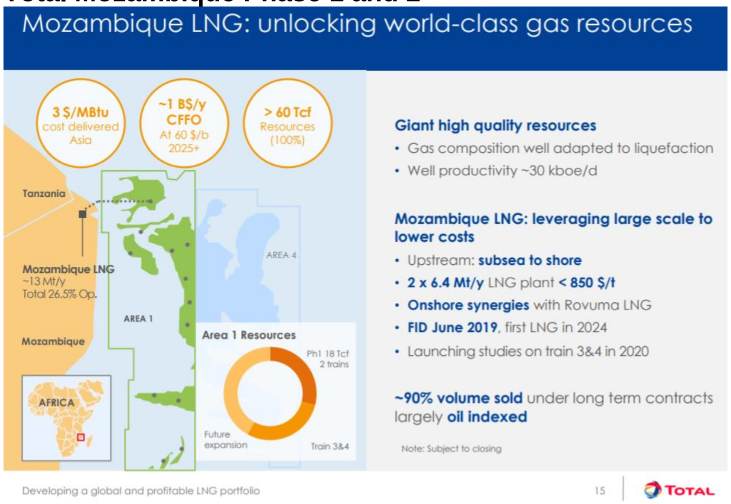
Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?

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

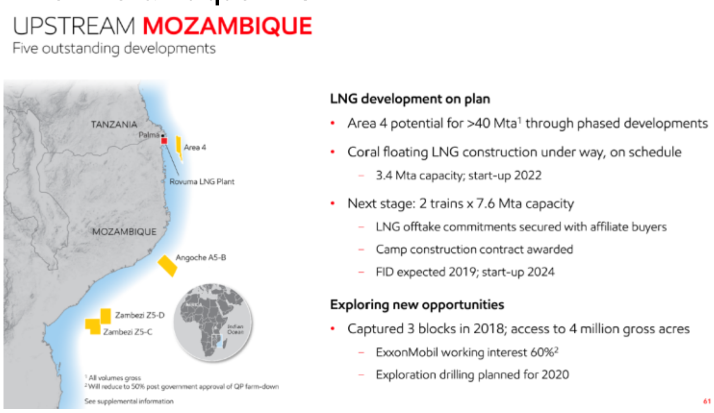
<u>Total's Mozambique force majeure is no surprise, especially the need to the restoration of security and stability "in a sustained manner"</u>. Yesterday, Total announced [LINK] "*Considering the evolution of the security".* No one should be surprised by the force majeure or the sustained manner caveat. 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".

<u>Does anyone really think Total will risk another quick 2-3 month restart or even in 2021?</u> 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.

<u>Mozambique's security issues pushes back 5.0 bcf/d of new LNG supply at least a couple years.</u> 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

<u>Won't LNG and natural gas get hit by Biden's push for carbon free electricity?</u> 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

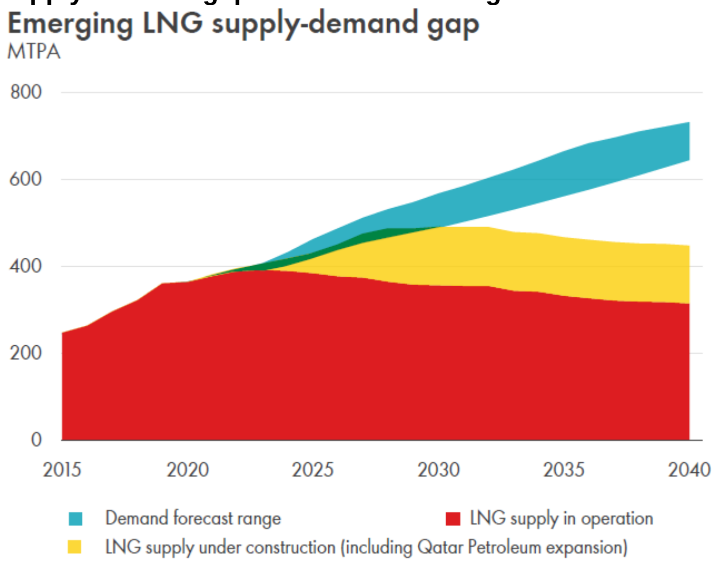
🟢 On Track 🟡 More Efforts Needed 🔴 Not on Track

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.

<u>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?</u> 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

<u>A LNG Canada Phase 2 would be a big plus to Cdn natural gas.</u> 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.

https://clubofmozambique.com/news/mozambique-president-positions-the-right-pieces-to-face-government-challenges-lusa-210874/

Mozambique: President positions the “right pieces” to face government challenges – Lusa

1:27 CAT | 04 Mar 2022

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Photo: O País

President Filipe Nyusi said today that the latest reshuffle of government ministers will serve to place the “right pieces” to address the “challenges” facing the country.

Nyusi was speaking at the inauguration ceremony of the new Prime Minister, Adriano Maleiane, and six other government officials, in what he calls “a delicate moment of governance, in which the country faces numerous challenges”.

“On the one hand, there is the drama of terrorism in Cabo Delgado and the bad weather throughout the country. On the other hand, we are faced with the difficult political situation that the world is going through, with repercussions internally,” – an allusion to the conflict between Russia and Ukraine, which is driving up the price of various raw materials.

The situation “demands from the government energetic and coordinated actions, aiming to protect the living conditions of Mozambicans”, he said.

“It is in this context that we found ourselves in the contingency of strengthening our team, placing the right pieces to face the challenges” in a “more dynamic, proactive and results-oriented” way, the presider explained.

The head of state also compared the change to a football game, repeating what he told a young man who asked him on Thursday about the shake-up in the Frelimo government.

“We were defending well enough to manage the result, but I want to win the game, so I will increase the offensive flow,” he said.

In a presidential regime such as that of Mozambique, Nyusi asked new prime minister Adriano Maleiane – he had been minister of Economy and Finance since 2015 – to “coordinate government action” so that each ministry “fulfils its competences”.

“In my absence, you are the visible face of my government,” Nyusi said, adding that he believed that Maleiane would be “up to” the challenges, as well as “facilitating communication within the government and with partners”.

The head of state asked the new Minister of Economy and Finance, Max Tonela (who was until now Minister of Mineral Resources and Energy), to increase exports across all sectors, stressing that Mozambique has “a lot” to offer besides gas, in an allusion to the country’s production potential and the need to diversify the economy.

Referring to Tonela’s curriculum vitae, Nyusi highlighted what he called successful experiences in the management of Mozambique Electricity (EDM) and Cahora Bassa Hydroelectric (HCB), while also calling for the promotion of the local content law and of a more competitive business environment.

Despite the fact that the exploration of natural gas, which starts this year in the Rovuma basin (off Cabo Delgado) is the most publicised attraction on the economic and financial horizon, the Mozambican president highlighted other goals.

Addressing Carlos Zacarias, the new Minister of Mineral Resources and Energy (previously president of the National Petroleum Institute), Nyusi devoted much of the message to the need to achieve universal access to electricity.

Also in this area, and at a time when the sale of coal mines in Tete, in the interior of the country, from Brazil’s Vale to India’s Vulcan, is underway, Nyusi said that the changes taking place there must not harm Mozambicans.

Addressing the new Minister of Public Works, Carlos Mesquita, the head of state highlighted the need to refurbish the country’s main road, the EN1, which crosses Mozambique from north to south.

Also sworn in were Silvino Moreno as Minister of Industry and Commerce, Lídia Cardoso as the new Minister of the Sea, Inland Waters and Fisheries and Amílcar Tivane as Deputy Minister of Economy and Finance.

Source: Lusa

MOZAMBIQUE

Cabo Delgado, Nampula & Niassa Humanitarian Snapshot

January 2022

OVERVIEW

1.1M	734K	470K	478K	>139K
SEVERELY FOOD-INSECURE PEOPLE[1]	INTERNALLY DISPLACED PEOPLE[2]	CHILDREN WITH ACUTE MALNUTRITION[3]	PEOPLE LIVING WITH HIV[4]	MALARIA CASES[5] (SINCE JANUARY 2022)

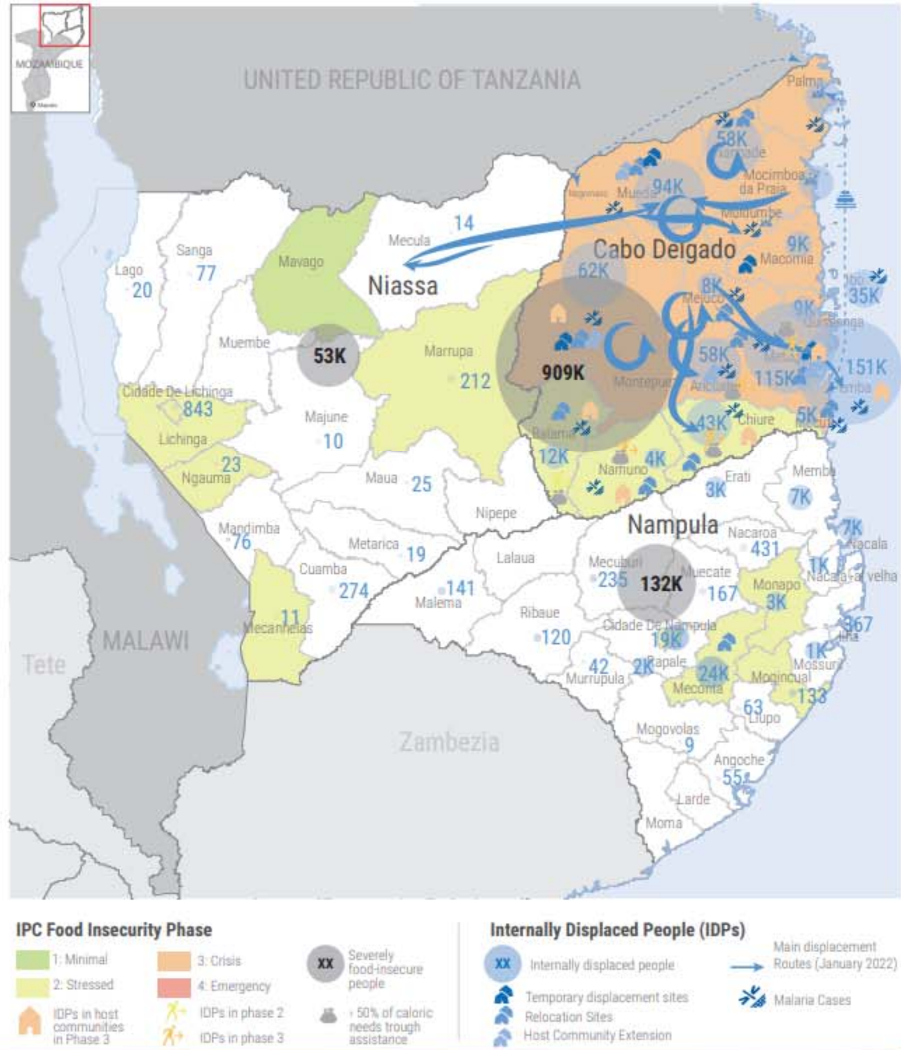
In January, the security situation in Cabo Delgado province remained highly unstable, particularly in the districts of Macomia, Nangade, and Meluco, resulting in the displacement of 12,876 people. Out of these, 54 per cent were children, 24 per cent were women, and 5 per cent were people with vulnerabilities, including unaccompanied or separated children, pregnant women, people with disabilities, and elderly, according to IOM. Most of those interviewed indicated the conflict and fear of attacks as the main reason for movement while food, shelter, and non-food items (NFIs) were considered the most urgent needs.

The humanitarian situation across northern Mozambique continued to be dire with needs deepening in the food security and education sectors. According to FEWSNET, heavy rains seriously affected food security in January, reaching stressed outcomes (IPC2) in several central and northern districts. In addition, ongoing armed attacks hindered the active participation of the local population in the ongoing 2021/22 agricultural season in northern Mozambique. FEWSNET warned that districts heavily impacted by the conflict and by climatic shocks will likely be facing crisis level of food security (IPC3) in the upcoming months. In January, WFP reportedly resumed the distribution of full humanitarian food assistance to displaced people and host communities in Cabo Delgado, Nampula, and Niassa provinces. Distributions of full rations are expected to last until March, which will cover the most critical months of the year during the first quarter, resulting from the overlapping of the cyclonic season and the peak of the lean season. Following this period, WFP expects a potential pipeline break in April due to a lack of funds. On education, violent armed attacks in Cabo Delgado have reportedly affected about 123,000 primary and secondary school pupils during 2021, according to the Ministry of Education. In January, 166 schools were non-operative across Cabo Delgado, which represented about a fifth of the education institutes in the province, and remains the area with the highest illiteracy rate in the country (more than 50 per cent of the population). In Nampula, the Provincial Director of Education expressed serious concern over the growing number of children abandoning school to work on small-scale mining and cattle shepherding.

In addition to the ongoing conflict, the humanitarian situation in northern Mozambique was further aggravated in January by Tropical Storm Ana, which made landfall in Nampula province on 24 January. With windspeeds up to 130 km/h and over 100 millimeters of rainfall in 24 hours, the storm resulted in widespread flooding in the provinces of Nampula, Zambezia, and Tete, and to a lesser extent in Niassa, Manica and Sofala. By the end of the month, preliminary assessments indicated over 126,000 people affected, along with the destruction of more than 5,700 homes, 543 classrooms, 30 health facilities, 45 roads, and the flooding of over 37,900 hectares of cropland. In January, due to the impact of Tropical Storm Ana, over 10,800 people received humanitarian assistance in 20 accommodation centers across the most affected provinces.

DISPLACEMENT TREND (Feb 2019 - January 2022)

FOOD INSECURITY/ DISPLACEMENT



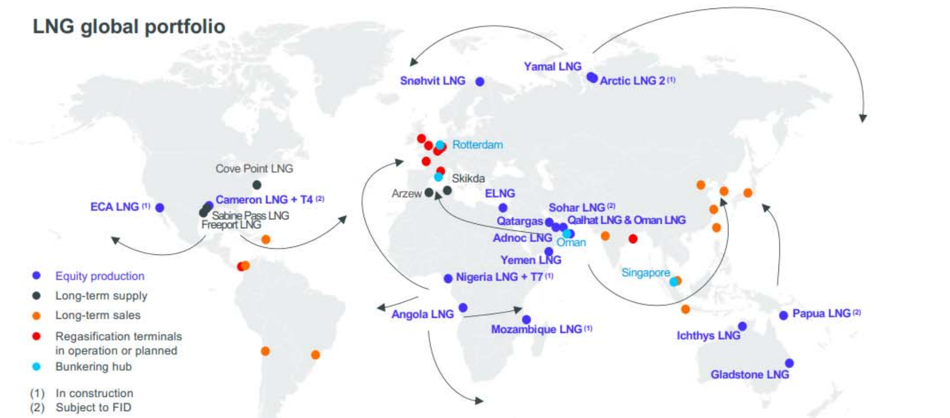
The administrative boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Prepared on: 24 February 2022 **Sources:** 1- IPC, 2 - International Organization for Migration, December 2021, Displacement Tracking Matrix, This figure reflects only people displaced inside of Cabo Delgado, Nampula and Niassa provinces. The overall number of people due to the conflict in Cabo Delgado, including in Inhambane, Sofala and Zambezia, is about 735,334 per the DTM Round 14 Report. , 3 - UNICEF - This total includes all children under age 5 facing moderate acute malnutrition (331,077 children) and severe acute malnutrition (139,373 children), 4 - UNAIDS, 5 - WHO, DPS **Feedback:** dandreagiovannif@un.org www.reliefweb.int

TotalEnergies Sept 2021 investor strategy and outlook

World-class LNG player integrated along the value chain

TotalEnergies



50 Mt/y

LNG sales by 2025

+ 30%

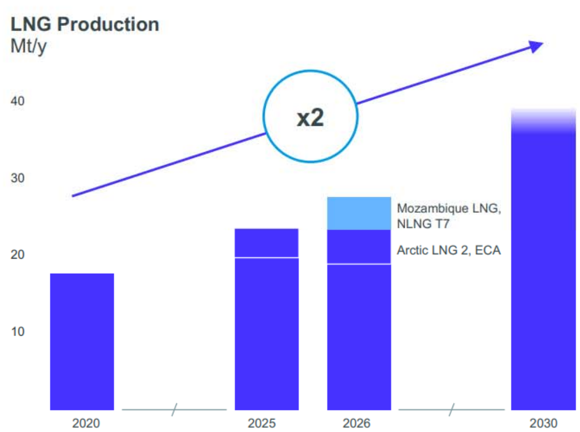
LNG production growth 2025 vs. 2020

Equity production > Trading and shipping > Regasification and supply of gas > Development of new markets

Maximizing value through global scale and integration

Rich portfolio to feed low cost LNG growth strategy

TotalEnergies



Russia giant Arctic resources	Mozambique giant Area-1 resources
US Brownfield trains (Cameron, ECA)	Papua LNG

Total Sept 2020 Strategy and Outlook

Flagship LNG projects fueling 2025 growth

< 3.5 $/Mbtu cost delivered to Asia

Russia - Arctic LNG2
Total 21.6%* - First LNG end-2023

Leveraging Yamal LNG success

Low upstream costs, > 7 Bboe(100%)

19.8 Mt/y LNG plant

30% lower cost vs. Yamal LNG due to efficient GBS** design and synergies with Yamal LNG

38% progress*** despite Covid-19

* Direct + Indirect
** Gravity-based structure
*** End August 2020

Nigeria LNG Train 7
Total 15% - First LNG 2023

Low cost expansion

Large, low cost gas resources

Leveraging Nigeria LNG to add **7.6 Mt/y** to existing 22 Mt/y

Capex ~700 $/t

EPC contracts awarded in May 20

Mozambique LNG
Total 26.5% - First LNG 2024

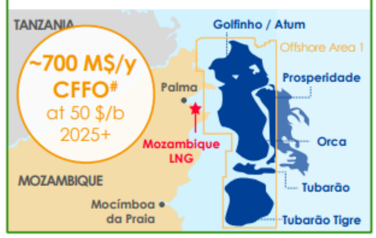
World-class gas resource

Giant high-quality upstream resources, > 60 Tcf 100%

12.9 Mt/y capacity

Leveraging scale to lower costs LNG plant < 850 $/t

Project financing in place

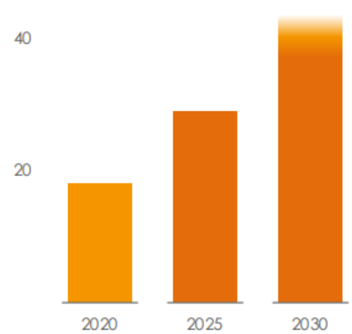


\# CFFO project view in Group share

A rich portfolio to feed low cost LNG growth post-2025

Russia giant Arctic resources	Mozambique giant Area 1 resources
US brownfield trains (Cameron, ECA)	Papua LNG

LNG production
Mt/y



Large resource base providing options to deliver production growth by 2030

https://www.shell.com/media/news-and-media-releases/2022/shell-intends-to-exit-equity-partnerships-held-with-gazprom-entities.html

Shell intends to exit equity partnerships held with Gazprom entities

Feb 28, 2022

The Board of Shell plc ("Shell") today announced its intention to exit its joint ventures with Gazprom and related entities, including its 27.5 percent stake in the Sakhalin-II liquefied natural gas facility, its 50 percent stake in the Salym Petroleum Development and the Gydan energy venture. Shell also intends to end its involvement in the Nord Stream 2 pipeline project.

"We are shocked by the loss of life in Ukraine, which we deplore, resulting from a senseless act of military aggression which threatens European security," said Shell's chief executive officer, Ben van Beurden.

Shell's staff in Ukraine and other countries has been working together to manage the company's response to the crisis locally. Shell will also work with aid partners and humanitarian agencies to help in the relief effort.

"Our decision to exit is one we take with conviction," said van Beurden. "We cannot – and we will not – stand by. Our immediate focus is the safety of our people in Ukraine and supporting our people in Russia. In discussion with governments around the world, we will also work through the detailed business implications, including the importance of secure energy supplies to Europe and other markets, in compliance with relevant sanctions."

At the end of 2021, Shell had around $3 billion in non-current assets in these ventures in Russia. We expect that the decision to start the process of exiting joint ventures with Gazprom and related entities will impact the book value of Shell's Russia assets and lead to impairments.

Shell's Powering Progress strategy and financial framework remain unchanged. We reiterate our progressive dividend policy and intent to distribute 20-30 percent of CFFO to shareholders in the form of dividends and share buybacks while targeting a strong balance sheet with long-term AA credit metrics. We stepped up our distributions by announcing an $8.5 billion share buyback programme for the first half of 2022, and we expect to increase our dividend per share by 4 percent for the first quarter of 2022.

Notes to Editors

In 2021, Shell share Adjusted Earnings from Sakhalin Energy JV and Salym JV were $0.7 billion.

Sakhalin-2

Shell has a 27.5 percent interest in Sakhalin-2, the joint venture with Gazprom, an integrated oil and gas project located on Sakhalin island. Other ownership interests are Gazprom 50%, Mitsui 12.5%, Mitsubishi 10%.

Salym

Shell has a 50 percent interest in Salym Petroleum Development N.V., a joint venture with Gazprom Neft that is developing the Salym fields in the Khanty Mansiysk Autonomous District of western Siberia.

Nord Stream 2

Shell is one of five energy companies which have each committed to provide financing and guarantees for up to 10% of the estimated €9.5 billion total cost of the project.

Gydan

A joint venture With Gazprom Neft (Shell interest 50%) to explore and develop blocks in the Gydan peninsula, in north-western Siberia. The project is in the exploration phase, with no production.

S**hell Integrated Business Deep Dive Feb 21, 2022   Wael Sawan.**

Items in "i*talics*" are SAF Group created transcript

Approx 9:18am MT. Analyst asks if the future equity percentage you have for the natural gas supply be less than the offtake percentage you have for the LNG? Wael, *".. typically, what I would say, as much as possible, having access across the entire value chain in as close of a percentage as you can, helps ensure that wherever value might rate at any point in time, you are capturing that value. So in general. Take our LNG Canada investment that you just referenced in the second question, we would look to be able to at least assure ourselves that we are not caught up by vagaries of one part of the market. let's say the gas supply, but we would want to have enough on the gas supply equity side to be able to make sure if gas prices go up there, we benefit from them while maybe disadvantaging the midstream or vice versa depending on where prices go. So we are not in the game of necessarily taking undue risk. we are in the game of creating integrated value chains that we can leverage as part of the broader portfolio*. "

Scotiabank asks on the media report of the infrastructure issue on LNG Canada? Wael " *on the issues around LNG Canada, a few things to say. Firstly, we're just, what is it 3 years, 3, 4 months since we have taken FID on that project. Just last oct we crossed the 50% completion on the site in Kitmat. Good progress and this was despite some real challenges with Covid. A lot of the modules coming from various yards in Asia being challenged. Credit to the team, I think some heroic efforts to be able to by and large continue to be on track. I think the challenge that you are referencing is more related to the pipeline – the Coastal GasLink pipeline. Multiple reasons for that which I won't get into in detail. This is a question better addressed to CGL themselves directly. But suffice it to say that we do have some concerns around the cost of the pipeline, we are having deep discussions with TCE, who oversee the pipeline and therefore tying to see how we can mitigate some of these cost increases. But so far, we see TCE getting back on the ball and making sure they are able to move at the pace that ensures that we have pipe before we have the plant. The last comment I will make on that pipeline. Some of you may have picked up the press the incredibly sad events of a couple days ago where we strongly, strongly condemn some of the violence that was shown. Thankfully, no one got hurt in Houston, British Columbia when a specific part of the pipeline around the Maurice River. 20 or so people attacked those who were earning a living at night and thankfully, they all came out well and safe. These events are unfortunate and I'm sure TCE and RCMP will be able to address the issue sufficiently*"

Sl 6. 8:36am MT. Sawan "*That brings me to the future. Our current integrated gas business is doing what we said we would do and is on the right trajectory. But we are not yet where we want to be. We have opportunities that we are pursuing to do even better, with our existing assets, but also to position our growth portfolio to one with even stronger returns with lower carbon emissions. Let me expand on that a bit more. For our capital spend, we need to be even more focused with a continued emphasis on value over volume. We have a capital budget of $4 to $5 billion a year in the short to medium term. We are making good progress on our two LNG capacity expansion projects under construction. In Canada, Canada LNG surpassed recently the 50% completion mark last October, after three years of construction. The project remains dedicated to have the first cargo by the middle of this decade*." He then speaks of Nigeria and that construction there is now firmly underway, and then says "*both these projects are competitively positioned for LNG growth markets in Asia. The same goes for most of our long term project funnel. We have several attractive expansion and backfill projects. A limited number of greenfield LNG projects and several promising low carbon new gaseous projects in early stages of development. For the pre-FID projects, we have an expected average internal rate of return of between 14% and 18%, and a unit technical cost below $5/mmbtu. With most of these projects clearly having lower costs than the average in the industry. These are good numbers, but you will understand that we strive to push the IRR to the higher end and to push the unit costs down even further. But the long term role of gas depends on efforts to abate emissions and develop cleaner pathways for gas. This is why we continually try to reduce the carbon intensity of our new projects. Take LNG Canada currently under construction. It will run on hydropower and is set to deliver the lowest carbon intensity in the entire industry."*

https://www.spiegel.de/wirtschaft/unternehmen/russland-sanktionen-robert-habeck-kuendigt-hilfskredite-fuer-unternehmen-an-a-694acf5f-051a-4c6a-9d07-4232526d75e3

Habeck announces aid loans for companies and relief for citizens

The federal government wants to support companies that are in trouble as a result of the war in Ukraine. Economics Minister Habeck strictly rejects demands for a ban on imports of Russian energy.

3/3/2022, 4:31 p.m

Federal Economics Minister Robert Habeck (Greens) wants to use a loan program from the KfW development bank to support companies that are in trouble as a result of the Russian attack on Ukraine . This is to ensure their liquidity. The program should be designed in a similar way to KfW aid in the corona pandemic, said Habeck after a meeting with business representatives. In addition, further relief for the economy and citizens are planned because of the high energy prices. The Economics Minister also spoke out strictly against an import ban on oil, gas or coal from Russia .

However, Habeck left it open how extensive the loan program should be equipped and what specific relief is planned. In his estimation, however, Germany could shoulder the burden. "For the German economy, the consequences of the sanctions and the war are clearly foreseeable and can already be felt in parts," said the Green politician, referring to the Russian invasion of Ukraine.

So far, the hope has been that after the corona crisis there will be a stronger upswing in Germany from the second quarter, according to Habeck. But now the effects of the war would come as a burden. However, all companies would fully support the sanctions against Russia. There will only be a recession in Germany if production comes to a standstill.

According to Habeck, 7.4 billion euros of the 20 billion euros invested by German companies in Russia are protected by guarantees: "It's a kind of insurance benefit." The rest, however, are not protected. There are also Hermes guarantees for export transactions with a volume of eleven billion euros in connection with Russia, for which the state is responsible.

At the same time, the Economics Minister made it clear that Germany does not support calls from other countries for a ban on the import of oil, gas or coal from Russia. "I would even speak out against it because we are endangering social peace in the republic," said Habeck. Germany is initially dependent on deliveries of oil, gas or coal.

The dependency on Russia for energy that has built up in recent years cannot be ended in a few months, said the Green politician. "That's why we need and will keep open the possibility of energy supplies from Russia." This is needed to create price stability and energy security. However, work is being done to reduce dependency, for example by building up coal and gas reserves. In addition, efforts to save energy would have to be intensified, demanded Habeck.

Coal-fired power plants that went offline would be held in reserve; The problem, however, is that they also need fuel. Energy prices are unlikely to remain as high as they are now, but: »It is very, very likely that we will have to expect higher prices.«

The Greens had already called for a speed limit on motorways and reduced maximum speeds on federal roads and in towns. This could save more than nine billion liters of petrol and diesel annually, said the Greens chairwoman in the transport committee, Susanne Menge.

https://www.rechargenews.com/energy-transition/uniper-resumes-plans-for-hydrogen-ready-german-lng-terminal-fortum-ceo/2-1-1179191

Uniper resumes plans for 'hydrogen-ready' German LNG terminal: Fortum CEO

Fortum also applies for lifetime extension at Finnish nuclear plant to wean Europe off Russian energy imports

4 March 2022 9:53 GMT *UPDATED 4 March 2022 9:56 GMT*
By **Bernd Radowitz**

To make Europe's energy independent from Russian supplies, German utility Uniper has decided to resume planning for a 'hydrogen-ready' terminal for liquefied natural gas (LNG) in Germany, while parent Fortum will apply for an extension to the operating lifetime of a nuclear power plant in Finland, Fortum chief executive Markus Rauramo said.

The decision came after German Chancellor Olaf Scholz on Sunday announced Germany would rapidly build two LNG terminals, one of them possibly at the North Sea port of Wilhelmshaven, to become less dependent of Russian gas, which currently accounts for more than half of the country's consumption.

Uniper only last year had mothballed plans for an LNG terminal at Wilhelmshaven on cost grounds, and said it would instead **turn the port into a hub for climate-friendly hydrogen**, including an import terminal for green ammonia and a 410MW electrolyser for the production of green hydrogen.

But the company and Fortum seem to have changed its mind again in the wake of the invasion of Ukraine and the linked Russian threat to energy security.

"Amongst all the uncertainty, one thing is absolutely clear: Europe's urgent need for an energy transition," Fortum CEO Rauramo said in a statement Thursday.

"The current developments have also added a new variable to the equation of sustainability, affordability and security of supply, which is independence."

Fortum is actively supporting this through investments into clean power, gas and flexibility, he added.

"This morning's [Thursday's] announcement on our decision to apply for an extension to the lifetime of our Loviisa nuclear power plant in Finland, Uniper's recently increased LNG imports and decision to resume planning of a hydrogen-ready LNG-terminal in Wilhelmshaven, Germany, are examples of our commitment."

Fortum is in continuous discussions with the Finnish and German governments on how it can support security of supply in a decarbonising Europe, he added.

It is not entirely clear yet, how Uniper may reconcile the concepts of an LNG terminal with that of a green ammonia terminal. Theoretically, the company could build both at the same site, or build an LNG terminal that will later be repurposed for green ammonia imports.

"We are verifying that, and continue to develop both projects," a Uniper spokesman told *Recharge*.

"How we will bring this together, is being evaluated."

Uniper's plans for Wilhelmshaven are independent of a project by **Belgium's Tree Energy Solutions (TES)** to to import renewable hydrogen into Germany in the form of green methane at the same port.

German economics and climate minister Robert Habeck had said his ministry is considering financial support for the LNG terminals, but they must also be ready to import green hydrogen.

Habeck’s ministry earlier this week had also sent draft proposals to other ministries to change the country’s renewables legislation in order to **source almost all its power from green sources by 2035**, which would mean a dramatic increase in wind and solar additions per year.

The new German government had already planned the faster energy decision previously, but now next to the climate also argues with security of supply and the need to lessen its dependence from Russian fossil energies as reasons to speed up the energy transition.

Fortum at the same time said it has stopped all new investment projects in Russia until further notice and will reduce its thermal exposure in the country. Danish wind turbine manufacturer Vestas this week had already said it will stop any new commercial activity in Russia, but still fulfil contractual obligations with Fortum and its Russian partners for a gigawatt-scale Russian pipeline of wind power projects.

Together with Uniper, Fortum has also 12 fossil power plants in Russia with a combined generation capacity of 15.5GW, and heat production capacity of 10.2GW. Its Russian generating assets and the exposure (via Uniper) to the now idled Nord Stream 2 gas pipeline project under the Baltic Sea from Russia to Germany carry a book value of about €5.5bn ($6.1bn).

Due to its massive exposure to Russia and Nord Stream 2, Uniper shares plunged by 12.66% to €17.91 per share in early morning trading at the Frankfurt stock exchange, and have almost halved in value this week. Fortum shares fell by 3.52% to €15.44 in Helsinki in early morning trading today.

SAF Group created transcript of excerpts from Bloomberg TV (Kailey Leinz, Guy Johnson) with Devon CEO Rick Muncrief on Feb 28, 2022 https://www.bloomberg.com/news/videos/2022-02-28/biden-should-wait-on-spr-release-devon-ceo-says-video

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

At 0:40 min mark, Johnson asks "*even if you wanted to pump more oil, how restricted are you in terms of labor, in terms of all the other stuff that goes into producing a barrel of oil. how easy is to come by, how production restricted are you right now?* " Muncrief " *I can tell you that labor is tight ….. the Permian Basis is probably where you are going to see most of the sustained growth. that's not to say the other basins couldn't have some growth. sustained growth is going to be the Permian…. the market is tight, let's be patient, let's be disciplined …. things are tight. We've seen tightness in things like steel, things like sand and other things*."

At 3:00 min mark, Muncrief "*at what point could you see additional barrels put into the market. quite honestly if you were to add a rig today, you would be 9 to 12 months before you really started seeing the impact. Most of the development that we are doing here in the US today is on multi-well pads so you are drilling 4 to 6 wells on a pad. So you have to drill 4 wells. You have to complete those, set facilities. So if you could drop a flag today, you say roughly 12 months out. And that's where you start thinking about the impact of inflation with the additional activity, labor issues, things like that."*

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

Excerpt https://abcnews.go.com/Politics/week-transcript-27-22-white-house-press-secretary/story?id=83130361

'This Week' Transcript 2-27-22: White House Press Secretary Jen Psaki, Sen. Tom Cotton & Amb. Oksana Markarova

This is a rush transcript of "This Week" airing Sunday, February 27.

By **ABC News**

27 February 2022, 08:03 • 46 min read

STEPHANOPOULOS: Senator Tom Cotton is coming up on the program next. He says the United States should be doing more to crack down on the Russian energy sector.
Here's what he had to say.

(BEGIN VIDEO CLIP)

SEN. TOM COTTON,(R) ARKANSAS: How about we impose those sanctions, but we lift all those restrictions on the production of American oil and gas, so we can start drilling on federal lands again and putting out new leases, so we can re-open the Keystone Pipeline, which would bring more oil into America every day from Canada than we import every day from Russia.

(END VIDEO CLIP)

STEPHANOPOULOS: Is the president open to those proposals?

PSAKI: Well, first, George, I think, on the energy sector, the way that the president -- President Biden has approached sanctions is we want to take every step to maximize the impact and the consequences on President Putin, while minimizing the impact on the American people and the global community.

And so energy sanctions are certainly on the table. We have not taken those off. But we also want to do that and make sure we're minimizing the impact on the global marketplace, and do it in a united way.

I would say that the congressman's recommendations there, the Keystone Pipeline, was not processing oil through the system. That does not solve any problems. That's a misdiagnosis, or maybe a -- a misdiagnosis of what needs to happen.

I would also note that, on oil leases, what this actually justifies, in President Biden's view, is the fact that we need to reduce our dependence on foreign oil, on oil in general, and need to -- and we need to look at other ways of having energy in our country and others.

One of the interesting things, George, we've seen over the last week or so is that a number of European countries are recognizing they need to reduce their own reliance on Russian oil. So I'm not sure we agree with that assessment of what needs to happen. But energy sanctions remain on the table.

Excerpt from https://www.whitehouse.gov/briefing-room/press-briefings/2022/03/03/press-briefing-by-press-secretary-jen-psaki-march-3rd-2022/

Press Briefing by Press Secretary Jen Psaki, March 3rd, 2022

MARCH 03, 2022•PRESS BRIEFINGS

James S. Brady Press Briefing Room

1:19 P.M. EST

Q All right. So, I wanted to ask about oil prices.

MS. PSAKI: Sure.

Q They're already above 111, or so, dollars a barrel. Pelosi has come out also in support of banning Russian oil. So why keep the carveout, you know, especially when oil — with the argument that Putin is bene- — is going to not benefit from oil? You know what I'm trying to say.

MS. PSAKI: Yes, I think I do know what you're trying to say.

Well, our objective and the President's objective has been to maximize impact on President Putin and Russia, while minimizing impact to us and our allies and partners.

And I know you've heard me say this a few times before, but we don't have a strategic interest in reducing the global supply of energy. And that would raise prices at the gas pump for the American people, around the world, because it would reduce the supply available. And it's as simple as: Less supply raises prices. And that is certainly a big factor for the President in this — at this moment.

It could also — it also has the potential to pad the pockets of President Putin, which is exactly what we are not trying to do.

So, as the President has said, we carved out payments for energy, trade, and transport from our financial sectors — sanctions with that in mind.

I would also note that we are also take — we have been taking steps to degrade Russia's status as a leading energy supplier over time. That includes, of course, shutting down Nord Stream 2 or preventing Nord Stream 2 from operating. That's why we're surging LNG to Europe to help accelerate its diversification from Russian gas. And I think you've also seen European leaders talk about the need to reduce their reliance and to diversify.

And we are continuing to look at other options we could take right now to cut U.S. consumption of Russian energy. I mean, for us, if you look at publicly available data, it's only about 10 percent of our imports. But again, reducing the supply out there would have an impact on prices and on prices at the gas pump.

Q I guess the question is: If oil is already so expensive, isn't he already benefiting from a very — from the — from an already costly, you know, price of oil? How does he stand to benefit if you continue to allow that?

MS. PSAKI: If it reduces further, it makes it more expensive. So I think we look at it through that prism.

Go ahead.

Q On the cost of this, I mean, the President has sort of braced American people for this, right? He said that defending democracy and liberty is never without a cost. So is it just that banning all Russian oil and gas imports — that's just a cost that he thinks is too much for the American people to bear?

MS. PSAKI: Well, I think there's two different pieces here: banning royal — royal? — banning Russian imports — right? — or what he has done is carved out payments for energy, trade, and transport from our financial sanctions. They're slightly two different things.

And the President — the volatility in the oil markets, as the President has been predicting and as you referenced he talked about in the speech he gave last week, is a direct result of the fact that President Putin invaded Ukraine, and that has created volatility.

One of the — the big reason, of course, that the President announced the release of the strategic — of 30 million barrels from the Strategic Petroleum Reserve and the coordinated release is to address that and ensure we are doing what we can to put more in the marketplace.

But again, our — his prism he looks at this through is how can we maximize impact on President Putin while minimizing it on the American people.

Q   Just to follow up, is the administration moving closer to banning Russian oil imports?

MS. PSAKI: I don't have any assessment of that for you. I just wanted to note the difference between them, or that there are several different components of options.

Q   I guess the question is: What's the calculus in waiting if it's ultimately the step that the United States is going to take?

MS. PSAKI: Well, there's an — there's a policy process that is undergone for any decision that is made. Sometimes those move rapidly. And often there are a range of factors that are discussed as those decisions are made.

Q   We also know, you know, the President, as recently as yesterday, talked about increasing domestic manufacturing to bring down prices on inflated items like goods. So why not apply the same logic to energy and increase domestic production here?

MS. PSAKI: Well, there are 9,000 approved oil leases that the oil companies are not tapping into currently. So I would ask them that question.

Q   Is there nothing that the administration can do to get those providers back to pre-pandemic levels?

MS. PSAKI: Do you think the oil companies don't have enough money to drill on the places that have been pre-approved?

Q   Just asking.

MS. PSAKI: I would — I would point that question to them. And we can talk about it more tomorrow when you learn more.

Q   Do you think that opening the Keystone Pipeline and having more energy-friendly policies might do that?

MS. PSAKI: The Keystone Pipeline has never been operational. It would take years for that to have any impact. I know a number of members of Congress have suggested that, but that is a proposed solution that has no relationship or would have no impact on what the problem is we, here, all agree is an issue.

Q So during that — those years where it would, you know, take to bring down prices, as you're saying, we should just continue to buy Russian oil?

MS. PSAKI: Well, again, Jacqui, I think you're familiar with a number of steps we've taken: a historic release from the Strategic Petroleum Reserve.

Q But that didn't bring down prices — last time or this time.

MS. PSAKI: Well, we can — well, let me finish. What we can do over time and what this is a rema- — reminder of, in the President's view, is our need to reduce our reliance on oil.

The Europeans need to do that; we need to do that. If we do more to invest in clean energy, more to invest in other sources of energy, that's exactly what we can do to prevent this from happening in the future.

We welcome any Republicans from joining us in that effort.

Go ahead.

Q As long as we're buying Russian oil, though, aren't we financing the war?

MS. PSAKI: Well, Jacqui, again, it's only about 10 percent of what we're importing. I've not made any announcement about any decision on that front, but our objective here and our focus is making sure that any step we take maximizes the impact on President Putin and minimizes it on the American people.

And anyone who's calling for an end to the carveout should be clear that that would rise — raise prices.

Go ahead.

Q It feels like — because you now have Republicans and Democrats calling on the administration to ban oil from Russia. As you've laid out, there are a range of different options under consideration. What would the administration need to see in order to make a final decision?

MS. PSAKI: Need to see how? Tell me more.

Q Happening on the ground. What would need to happen in order to prompt a final decision on an oil ban?

MS. PSAKI: I don't know that we look at it exactly through that prism. Obviously, we have not held back in taking significant historic steps that are crippling the Russian economy right now. I think there's no question about that. And the President has led the world in doing exactly that.

But what factor we're looking at here is the impact on the gas pump for Americans and reduction of supply in the marketplace. A reduction of global supply would have an impact on raising prices. So that's the prism we look at it through.

Q There is — there are some interim steps that could be taken instead of a full outright ban that would potentially mitigate the costs on gas prices. Is there a sense that this is at a tipping point and that some of those interim options (inaudible)?

MS. PSAKI: We are continuing, Kristen, to look at other options we could take right now to cut U.S. consumption of Russian energy, but in the context of maintaining a steady global supply of energy.

So, that's what we're trying to balance.

Q Thank you, Jen. President Putin spoke today with Saudi Crown Prince Mohammed bin Salman about the sanctions Russia is facing and specifically about global energy supply. Given the volatility of oil prices, does President Biden have any plans to talk to the Saudi Crown Prince?

MS. PSAKI: Well, I — a couple of weeks ago, I would note, Brett McGurk and Amos Hochstein made a trip to Saudi Arabia to talk about a range of issues, including global market — global energy markets, as well as Yemen. And we will continue to have a range of ways we engage with the Saudis.

Q But the President has no plans to talk to the Saudi Crown Prince?

MS. PSAKI: I don't have anything to predict for you at this point in time.

Q Thank you. I know people have asked a lot about, you know, the price of oil, but I want to come at it in a little bit of a different way. The fact is that the price of oil is high, it is very unlikely to go down anytime soon, and more than likely will go up. What is the White House looking at? I know that there was the strategic release of oil, but are there other things that the White House is looking at to help consumers at the pump — maybe to, you know, direct subsidies, maybe more biofuels, maybe easing the Jones Act?

Like what is the plan for Americans who are going to have to be living with these high oil prices?

MS. PSAKI: Well, I would say, first, on the release of the Strategic Petroleum Reserve, it first goes to an auction, and it's a process that will proceed. And a lot of that will happen over the course of the coming week. So we haven't seen, obviously, all of the direct impact of the announcement that was just made two days ago. But a range of options remain on the table. I can't get into all the details of those.

But the President is quite focused on making sure that we are taking steps to reduce the impact, to ensure there is supply necessary out there. Obviously, tapping the Strategic Petroleum Reserve is part of that; engaging with global partners around the world who may be big global suppliers about putting more oil in the system — that is part of the discussion; ensure there are a range of domestic options.

But there have been ongoing discussions and consideration, some of that you've saw with the announcement of the Strategic Petroleum Reserve released just two nights ago.

Q And what does the White House say to American consumers? Like should American consumers right now be thinking, "Okay, I'm going to have to pay a lot more at the pump going forward"? Should they be taking that into consideration when they're buying cars? Or, you know, should they try to buy more fuel-efficient cars or saving their money? Like what should they be doing practically at this moment, considering the price of gas is going to affect them?

MS. PSAKI: Of course it is, as I've been saying. And that's why we've been focused on it for weeks, if not months, to ensure we are taking every step, the President is taking every step to reduce that impact.
The release of the — his Strategic Petroleum Reserve — 30 million barrels that he announced just the other night — again, that process is just starting. It's a bit of a process to get that going. And that will hopefully have an impact in getting more supply out there.

We — but we would say directly to consumers: The President is going to do everything we can to reduce the impact, to make sure that we are working with our partners around the world to address the volatility in the global oil markets, to consider a range of options that he can continue to take to reduce the impact that they're feeling at the pump. And this has been front and center on his mind since the beginning of this conflict.

https://www.transmountain.com/news/2022/update-march-2022-capacity-announcement-for-the-trans-mountain-pipeline-system?utm_source=Trans+Mountain+Updates&utm_campaign=31cde102b4-EMAIL_CAMPAIGN_12_2_2021_15_6_COPY_01&utm_medium=email&utm_term=0_f287e4f791-31cde102b4-30713878

Update: March 2022 Capacity Announcement for the Trans Mountain Pipeline System

Tags Operations

Mar. 2, 2022

Total system nominations for the Trans Mountain Pipeline system are apportioned by eight per cent for March 2022.

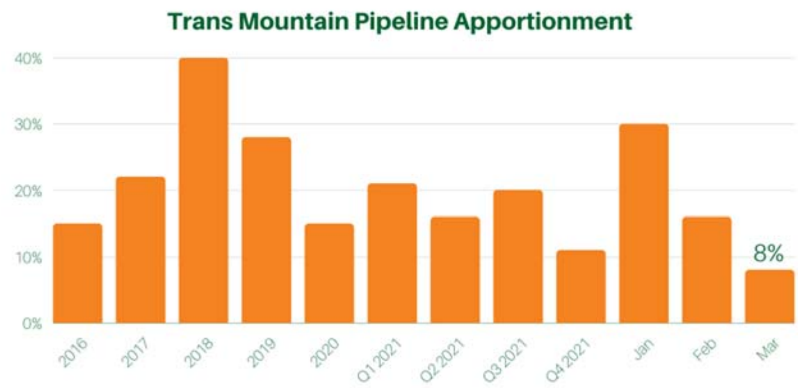
What is pipeline 'apportionment' and why is it important?

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

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

Trans Mountain Pipeline apportionment by the numbers

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



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

Business case for expansion is strong

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

March 2, 20228:45 AM MSTLast Updated 3 days ago

Venezuela's February oil exports boosted by heavy crude, fuel oil sales -data

By Marianna Parraga
and Mircely Guanipa

March 2 (Reuters) - Venezuela's exports of oil and refined products last month recovered to mid-2021 levels, boosted by sales of its flagship crude grade and fuel oil bound for Asia, according to tracking data and documents from state-run oil company PDVSA.

Higher exports come as Russia's invasion of Ukraine and resulting shipping bans and financial sanctions could spur demand for Venezuela's crude and residual products, traders said. Oil importers this week have rejected Russian vessels, sending buyers searching for new crude and fuel supplies. read more

Venezuela's state-run PDVSA and its joint ventures shipped a total of 22 cargoes in February, carrying some 730,930 barrels per day (bpd), the highest since July 2021 and a 76%-increase over January, according to the data and company documents.

Most cargoes departed bound to China through trans-shipping hubs like Malaysia.

The intermittent operation of PDVSA's oil upgraders forced the company to produce and export more Merey 16, its most popular grade, leaving 9.4 million barrels of its competitor oil, diluted crude (DCO), in storage, the documents showed.

PDVSA did not reply to a request for comment.

The switch, which also led to less domestic refining for motor fuel production, allowed PDVSA to overcome four outages at its upgraders last month. At the month's end, only the Petrosinovesa blending station and the Petropiar crude upgrader were operational.

PDVSA also exported almost 66,000 bpd of crude and fuel to its political ally Cuba.

Reporting by Marianna Parraga in Houston and Mircely Guanipa in Maracay, Venezuela Editing by Marguerita Choy

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https://www.nytimes.com/2022/03/05/world/americas/venezuela-russia-usa.html

U.S. Officials Travel to Venezuela, a Russia Ally, as the West Isolates Putin

The trip is the highest-level visit by American officials to Caracas in years, driven by a desire to separate Russia from its remaining Latin American allies.

By Anatoly Kurmanaev, Natalie Kitroeff and Kenneth P. Vogel
March 5, 2022
Sign up for the Russia-Ukraine War Briefing. Every evening, we'll send you a summary of the day's biggest news. Get it sent to your inbox.

Senior U.S. officials are traveling to Venezuela on Saturday to meet with the government of President Nicolás Maduro, according to people familiar with the matter, as the Biden administration steps up efforts to separate Russia from its remaining international allies amid a widening standoff over Ukraine.

The trip is the highest-level visit by Washington officials to Caracas, Venezuela's capital, in years. The United States broke off diplomatic relations with Mr. Maduro and closed its embassy in Caracas in 2019, after accusing the authoritarian leader of electoral fraud. The Trump administration then tried to topple Mr. Maduro's government by sanctioning Venezuelan oil exports and the country's senior officials, and by recognizing the opposition leader, Juan Guaidó, as Venezuela's lawful president.

Mr. Maduro responded to the sanctions by seeking economic and diplomatic help from Russia, as well as from Iran and China. Russian energy companies and banks have been instrumental in allowing Venezuela to continue exporting oil, the country's biggest source of foreign currency, despite the sanctions, according to U.S. officials, Venezuelan officials and businessmen.

Russia's invasion of Ukraine has prompted the United States to pay closer attention to President Vladimir V. Putin's allies in Latin America, which Washington believes could become security threats if the standoff with Russia deepens, according to current and former U.S. officials who spoke on the condition of anonymity to discuss sensitive policy matters.

As Russia's economy craters, the U.S. is seizing on an opportunity to advance its agenda among Latin American autocracies that might start seeing Mr. Putin as an increasingly weak ally.

When the U.S. and its allies began considering sanctions on Russian oil and gas exports this month to punish the country for devastation wrought in Ukraine, prominent voices affiliated with both major American political parties pointed to Venezuela as a potential substitute.

Well-connected Republicans have been involved in talks about restarting the oil trade, including Scott Taylor, a former Republican congressman from Virginia who is working with Robert Stryk, a Washington lobbyist who briefly registered to represent Mr. Maduro's regime in 2020 and remains in contact with people around it.

Mr. Taylor said he spoke on Friday night to a Venezuelan businessman who signaled that Mr. Maduro's team was eager to re-engage with the United States.

“We should take this opportunity to achieve a diplomatic win and a wedge between Russia and Venezuela,” he said in a statement.

Trish Regan, a former Fox Business host and conservative media personality, called for an alliance with Venezuela to displace Russian oil from the U.S. market.

“Venezuela has THE largest source of oil reserves yet, we’re handing that to the Chinese and Russians?” she wrote on Twitter on Friday.

Shortly before the Russian invasion of Ukraine, Yuri Borisov, Russia’s deputy prime minister, traveled to Caracas to meet with Mr. Maduro’s officials. Mr. Maduro has spoken to Mr. Putin by telephone at least twice in the past month, according to statements from both governments.

It is unclear how long the U.S. delegation, which includes senior officials from the State Department and the White House, will remain in Caracas or with whom the group will meet. Spokespeople for Mr. Maduro and for the State Department and the National Security Council in Washington did not respond to requests for comment.

Before the U.S. imposed sanctions, Venezuela sent most of its oil to the U.S. Gulf Coast, whose refineries were built specifically to process Venezuela’s heavy grades of crude.

If the United States curtails the imports of Russian oil, Venezuela would be able to replace some of the lost supplies, said Francisco Monaldi, an expert on Venezuelan energy at Rice University in Houston.

Mr. Maduro appeared open to discussing oil deals with the United States.

“Here lies the oil of Venezuela, which is available for whomever wants to produce and buy it, be it an investor from Asia, Europe or the United States,” he said in a public speech on Thursday.

Mr. Maduro and other Russian allies in Latin America have begun to distance themselves from the war in Ukraine. Venezuela, Nicaragua and Cuba abstained or did not vote on the two resolutions proposed at the United Nations this week to condemn Russian aggression, and the leaders of Venezuela and Cuba have called for a diplomatic solution to the crisis.

Sheyla Urdaneta contributed reporting from Maracaibo, Venezuela.
Correction:
March 5, 2022

A previous version of this article referred incorrectly to Trish Regan. She is a former Fox Business host, not a former Fox News host.

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Ken Vogel covers the confluence of money, politics and influence from Washington. He is also the author of “Big Money: 2.5 Billion Dollars, One Suspicious Vehicle, and a Pimp — on the Trail of the Ultra-Rich Hijacking American Politics.” @kenvogel • Facebook https://www.minenergia.gov.co/web/10180/historico-de-noticias?idNoticia=24336776

Producción de petróleo y gas de Colombia bajó en enero del 2022

- La producción de petróleo en el primer mes del año fue de 739.848 barriles promedio día, bajó 0,75% en comparación con enero de 2021
- La disminución en la producción se dio principalmente por bloqueos viales en Santander y Bolívar que afectaron 64 pozos
- Por su parte, la producción de gas bajó 6,22% durante enero de 2022

MinEnergía. Bogotá, 1 de marzo de 2022. La producción fiscalizada de petróleo de Colombia fue de 739.848 barriles promedio día (BOPD) durante enero de 2022, lo que representó una leve disminución de 0,75 % en comparación con el mismo mes del 2021.

La disminución en la producción de crudo se explicó por los bloqueos viales en el campo Yariguí-Cantagallo, en los departamentos de Santander y Bolívar, lo que dejó como consecuencia la suspensión de operaciones de 64 pozos que representaban el 54% de la producción total del campo.

Según información presentada por la Agencia Nacional de Hidrocarburos (ANH), la producción de petróleo en enero de este año bajó 0,73% en comparación con diciembre del 2021 cuando fue de 745.373 BOPD.

Los campos en los que se evidenció la mayor reducción en la producción de petróleo fueron Yariguí-Cantagallo (Cantagallo-Bolívar), Andina (Tame-Arauca), Tigana (Tauramena-Casanare), Rubiales (Puerto Gaitán-Meta) y Quifa (Puerto Gaitán-Meta).

La producción de gas comercializado también se vio afectada

En enero de 2022 la producción mensual de gas comercializado de Colombia fue de 1.022,86 millones de pies cúbicos por día (mpcd), lo que representó una disminución del 6,22% en comparación con el mismo mes del 2021 cuando fue de 1.090,66 mpcd.

Ahora bien, en comparación con diciembre del 2021 (1.128,74 mpcd), la disminución en la producción de gas durante el primer mes del año fue de 9,38%.

La caída en la producción de gas comercializado en Colombia se dio principalmente en los campos Cupiagua (Aguazul-Casanare), Cupiagua Sur (Aguazul-Casanare), Nelson (Pueblo Nuevo-Córdoba), Chuchupa (Manaure-Guajira) y Cupiagua Liria (Aguazul-Casanare), debido al comportamiento de la demanda de gas durante el mes y al mantenimiento preventivo en la planta Cupiagua, la cual representa el 15% de la producción nacional.

Para finalizar, en enero de 2022 se perforaron 68 pozos, de los cuales 62 eran pozos en desarrollo y 6 eran pozos exploratorios. Esta cifra es el doble de pozos perforados en enero del 201 cuando solo fueron 34.

https://www.energyintel.com/0000017f-4c35-d78a-af7f-efb5753e0000

Russian Oil Exports Fall by One-Third

Published:

Wed, Mar 2, 2022

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Energy Intelligence estimates that Russian oil export flows have fallen by at least one-third — or some 2.5 million barrels per day — this week as a result of financial and shipping sanctions, combined with a general reluctance among buyers to risk taking Russian cargoes.

Roughly 1.5 million b/d of crude and 1 million b/d of refined products are not making it to market, according to this early assessment of shipping data and conversations with traders.

Russia normally exports 4.7 million b/d of crude and 2.8 million b/d of products, according to government data.

Of the crude exports, the 1.8 million b/d transported by key pipelines has not been impacted so far. That comprises 1 million b/d to Europe and 800,000 b/d to China.

But the rest — crude shipped mostly through ports in the Baltic Sea, the Black Sea and the port of Kozmino in Russia's Far East — has been struggling to find buyers.

Traders have been steering clear of Russian oil to ensure they can lift a cargo and pay for it without violating sanctions — or for reputational reasons amid widespread condemnation of Russia's invasion of Ukraine.

Buyer Beware

"You take something today, the rules change tomorrow, and then you're stuck with a cargo that can't move anywhere. And with a high oil price, the values of those cargoes are enormous," one trader said.

Brent crude broke above $110 per barrel on Wednesday as Russian troops intensified their attacks on major cities in Ukraine.

Premiums for spot crude hit historic highs of $18/bbl over crude for delivery in six months.

Crude oil exports from the Baltic ports, which typically end up in Western Europe, are holding up best and are running around 1 million b/d, tanker data shows.

Early March cargoes are ending up in the Netherlands, Sweden and Lithuania.

In European product markets, a trickle of diesel has been loading in the Baltic and some fuel oil in the Black Sea.

Espo crude has been struggling to find buyers in Asia. No crude has moved from Russia's Black Sea port of Novorossiysk, which typically supplies Romania, Bulgaria, Turkey, Greece and Italy.

Urals Tender Falls Flat

Russia's Urals crude is usually popular in Europe because of the short sailing time to European refineries, which are often designed to run this relatively heavy and sour grade.

Without immediate availability of Urals, however, traders are bidding up anything that is available.

The current state of the market is illustrated by the problems that Surgutneftegaz has been having with its sell tenders.

The Russian company usually offers large volumes of Urals via these tenders, which typically set the tone for spot Urals prices for the trading month ahead.

On Wednesday, however, for the third time in a row, Surgut's tender failed to attract any buyers for the 880,000 tons (6.4 million bbl) of March-loading Urals on offer.

In another example, independent trading house Trafigura offered a March-loading cargo of Urals on Tuesday at a steep discount of $18.60/bbl to dated Brent, but it found no takers.

Refiners May Shun Urals

Market talk indicates that refiners in Europe don't want to touch Urals. Traders said Finland's Neste and Sweden's Preem — usually two large buyers of the Russian blend — could potentially skip their purchases this month.

Portugal's Galp said on Wednesday it would eliminate "direct or indirect exposure to petroleum products either sourced in Russia or from Russian companies." Just prior to its statement, it had picked up a cargo of fuel oil from St. Petersburg.

"I think this is all self-sanctioning," a European trader said. "But this self-sanctioning will be here to stay for some time."

Other European refiners also have a considerable appetite for Urals under normal circumstances, data from analytics firm Kpler shows.

These include the Petromidia refinery in Constanta, Romania; Total's Normandy refinery in Le Havre; Socar's Star and Tupras' Izmit refineries in Turkey; and Eni/Kuwait Petroleum's Milazzo refinery in Sicily (see chart).

Risk-Reward Calculations

Early rounds of US and European sanctions have been designed to keep Russia's oil and gas flowing to try to stop prices from soaring even higher.

But they have had a similar, if more muted, effect to direct sanctions on energy exports, as they have made buyers reluctant to commit to purchases of Russian oil, in particular.

Oil companies "can be seen as the good guys for once," one source quipped.

Others suggested that traders are more concerned about losing money than damaging their reputation, and want to avoid getting stuck with an unsellable cargo.

Sources think that most Russian oil will now be lifted by the big trading houses, which have sufficient scale and leverage to ensure they can get the vessels and financing they need.

Unless direct sanctions are slapped on Russian oil, these trading houses should continue to move Russian oil to market.

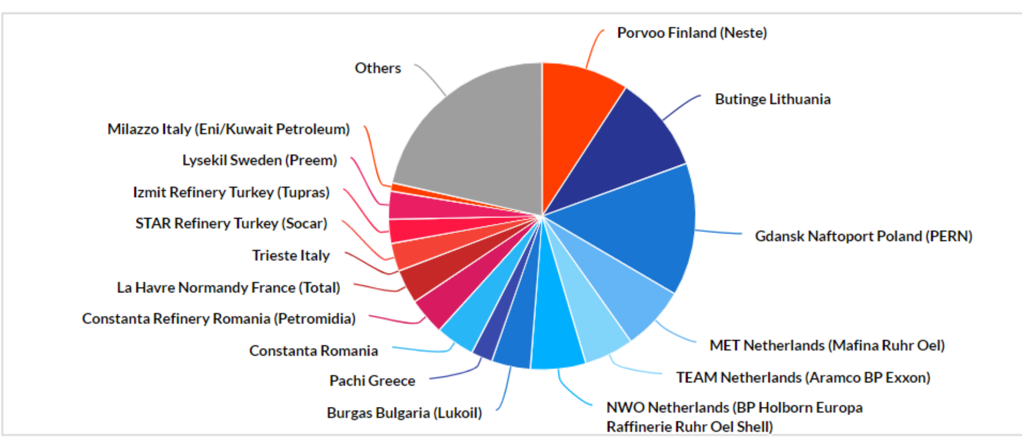
"Vitol and Trafigura will not stop lifting," a source said. "Some of them may even have long-term pre-payments or financing arrangements linked to the offtake."

Traders Gunvor and Glencore and Russian state-controlled oil giant Rosneft have been actively trading cargoes loading in the first few days of March.

It's likely to take some time before Russian export flows recover to pre-crisis levels, as traders are worried that they could be hit with stiff penalties if they put a foot wrong in the current environment.

There was speculation before Russia sent its forces into Ukraine that it might cut off oil and gas flows to European countries if they tried to slow its advance. So far, Moscow has not shown any intention of doing this.

LARGEST IMPORTERS OF URALS CRUDE IN EUROPE, JAN-FEB 2022
('000 b/d)



Terminals shaded in blue, refineries in red. Source: Kpler https://www.opec.org/opec_web/en/press_room/6830.htm

26th OPEC and non-OPEC Ministerial Meeting concludes

No 06/2022 Vienna, Austria 02 Mar 2022

Following the conclusion of the 26th OPEC and non-OPEC Ministerial Meeting, held via videoconference on 2 March 2022, and based on internal consultation held exclusively by the OPEC and participating non-OPEC oil-producing countries in the Declaration of Cooperation of (DoC), it was noted that current oil market fundamentals and the consensus on its outlook pointed to a well-balanced market, and that current volatility is not caused by changes in market fundamentals but by current geopolitical developments.

The OPEC and participating non-OPEC oil-producing countries decided to:

- Reaffirm the decision of the 10th Ministerial Meeting on 12 April 2020 and further endorsed in subsequent meetings including the 19th Ministerial Meeting on 18 July 2021.
- Reconfirm the production adjustment plan and the monthly production adjustment mechanism approved at the 19th Ministerial Meeting and the decision to adjust upward the monthly overall production by 0.4 mb/d for the month of April 2022, as per the attached schedule.
- Reiterate the critical importance of adhering to full conformity and to the compensation mechanism taking advantage of the extension of the compensation period until the end of June 2022. Compensation plans should be submitted in accordance with the statement of the 15th Ministerial Meeting.
- Hold the 27th OPEC and non-OPEC Ministerial Meeting on 31 March 2022.

	April 2022 Required Production
Algeria	1002
Angola	1450
Congo	309
Eq.Guinea	121
Gabon	177
Iraq	4414
Kuwait	2665
Nigeria	1735
Saudi Arabia	10436
UAE	3006
Azerbaijan	681
Bahrain	195
Brunei	97
Kazakhstan	1621
Malaysia	565
Mexico	1753
Oman	838
Russia	10436
Sudan	71
South Sudan	123
OPEC 10	25315
Non-OPEC	16379
OPEC+	41694

https://www.theatlantic.com/magazine/archive/2022/04/mohammed-bin-salman-saudi-arabia-palace-interview/622822/

GLOBAL

ABSOLUTE POWER

Asked about the murder of Jamal Khashoggi, Mohammed bin Salman said, “If that’s the way we did things, Khashoggi would not even be among the top 1,000 people on the list.”
By Graeme Wood
Photographs by Lynsey Addario

A woman walks past a poster showing Crown Prince Mohammed bin Salman (*left*) with his father (*right*) and grandfather (*top*), at the old market in Taif, Saudi Arabia. (Lynsey Addario for The Atlantic)

MARCH 3, 2022, 6 AM ET

SHARE

MOHAMMED BIN SALMAN, the crown prince of Saudi Arabia, is 36 years old and has led his country for almost five years. His father, the 86-year-old King Salman, has rarely been seen in public since 2019, and even MBS—as he is universally known—has faced the world only a few times since the pandemic began. Once, he was ubiquitous, on a never-ending publicity tour to promote his plan to modernize his father’s kingdom. But soon after the murder of the *Washington Post* columnist Jamal Khashoggi in 2018, MBS curtailed his travel. His last interview with non-Saudi press was more than two years ago. The CIA concluded that he had ordered Khashoggi’s murder, and Saudi Arabia’s own prosecutors found that it had been conducted by some of the crown prince’s closest aides. They are thought to have dismembered Khashoggi and disintegrated his corpse.

MBS had already developed a reputation for ruthlessness. In 2017, he rounded up hundreds of members of his own family and other wealthy Saudis and imprisoned them in Riyadh’s Ritz-Carlton hotel on informal charges of corruption. The Khashoggi murder fixed a view of the crown prince as brutish, thin-skinned, and psychopathic. Among those who share a dark appraisal of MBS is President Joe Biden, who has so far refused to speak with him. Many in Washington and other Western capitals hope his rise to the throne might still be averted.

But within the kingdom, MBS's succession is understood as inevitable. "Ask any Saudi, anyone at all, whether MBS will be king," a senior Saudi diplomat told me. "If there are people in Washington who think he will not be, then I cannot help them. I am not a psychiatrist."

His father's eventual death will leave him as the absolute monarch of the birthplace of Islam and the owner of the world's largest accessible oil reserves. He will also be the leader of one of America's closest allies and the source of many of its headaches.

I've been traveling to Saudi Arabia over the past three years, trying to understand if the crown prince is a killer, a reformer, or both—and if both, whether he can be one without the other.

Even MBS's critics concede that he has roused the country from an economic and social slumber. In 2016, he unveiled a plan, known as Vision 2030, to convert Saudi Arabia from—allow me to be blunt—one of the world's weirdest countries into a place that could plausibly be called normal. It is now open to visitors and investment, and lets its citizens partake in ordinary acts of recreation and even certain vices. The crown prince has legalized cinemas and concerts, and invited notably raw hip-hop artists to perform. He has allowed women to drive and to dress as freely as they can in dens of sin like Dubai and Bahrain. He has curtailed the role of reactionary clergy and all but abolished the religious police. He has explored relations with Israel.

He has also created a climate of fear unprecedented in Saudi history. Saudi Arabia has never been a free country. But even the most oppressive of MBS's predecessors, his uncle King Faisal, never presided over an atmosphere like that of the present day, when it is widely believed that you place yourself in danger if you criticize the ruler or pay even a mild compliment to his enemies. MBS's critics—not regicidal zealots or al-Qaeda sympathizers, just ordinary people with independent thoughts about his reforms—have gone into exile. Some fear that if he keeps getting his way, the modernized Saudi Arabia will oppress in ways the old Saudi Arabia never imagined. Khalid al-Jabri, the exiled son of one of MBS's most prominent critics, warned me that worse was yet to come: "When he's King Mohammed, Crown Prince MBS is going to be remembered as an angel."

For about two years, MBS hid from public view, as if hoping the Khashoggi murder would be forgotten. It hasn't been. But the crown prince still wants to convince the world that he is saving his country, not holding it hostage—which is why he met twice in recent months with me and the editor in chief of this magazine, Jeffrey Goldberg.

In our meetings, the crown prince was charming, warm, informal, and intelligent. But even at its most affable, absolute monarchy cannot escape weirdness. For our first meeting, MBS summoned us to a remote palace by the Red Sea, his family's COVID bunker. The protocols were multilayered: a succession of PCR tests by nurses from the Royal Clinics; a Gulfstream jet in the middle of the night from Riyadh; a convoy from a deserted airstrip; a surrender of electronic devices; a stopover at a mysterious guesthouse visible in satellite photos but unmarked on Google Maps. He invited us to his palace at about 1:30 a.m., and we spoke for nearly two hours.

For the second meeting, in his palace in Riyadh, we were told to be ready by 10 a.m. It also began after midnight. The halls were astir. The crown prince had just returned after nearly two years of remote work, and aides and ministers padded red carpets seeking meetings, their first in months, with the boss. Neglected packages and documents had piled up on the desks and tables in his office, which was large but hardly opulent. The most obvious concession to high taste was an old-fashioned telescope on a tripod, its altitude set shallow enough that it appeared to be pointed not at the heavens but at Riyadh, the sprawling and unsightly desert metropolis from which the Saud family has ruled for most of the past three centuries.

At the outset of both conversations, MBS said he was saddened that the pandemic precluded giving us hugs. He apologized that we all had to wear masks. (Each meeting was attended by multiple, mainly silent princes wearing identical white robes and masks, leaving us unsure, to this day, who exactly was present.) The crown prince left his tunic unbuttoned at the collar, in a casual style now favored by young Saudi men, and he gave relaxed, nonpsychopathic answers to questions about his personal habits. He tries to limit his Twitter use. He eats breakfast every day with his kids. For fun, he watches TV, avoiding shows, like *House of Cards*, that remind him of work. Instead, he said without apparent irony, he prefers to watch series that help him escape the reality of his job, such as *Game of Thrones*.

Before the meetings, I asked one of MBS's advisers if there were any questions I could ask his boss that he himself could not. "None," he answered, without pausing—"and that is what makes him different from every crown prince who has come before him." I was told he derives energy from being challenged.

MBS said it was "obvious" he had not ordered the killing of Khashoggi. "It hurt me a lot," he said. "It hurt me and it hurt Saudi Arabia, from a feelings perspective."

During our Riyadh encounter, Jeff asked MBS if he was capable of handling criticism. "Thank you very much for this question," the prince said. "If I couldn't, I would not be sitting with you today listening to that question."

"I'd be in the Ritz-Carlton," Jeff suggested.

"Well," he said, "at least it's a five-star hotel."

Difficult questions caused the crown prince to move about jumpily, his voice vibrating at a higher frequency. Every minute or two he performed a complex motor tic: a quick backward tilt of the head, followed by a gulp, like a pelican downing a fish. He complained that he had endured injustice, and he evinced a level of victimhood and grandiosity unusual even by the standards of Middle Eastern rulers.

When we asked if he had ordered the killing of Khashoggi, he said it was "obvious" that he had not. "It hurt me a lot," he said. "It hurt me and it hurt Saudi Arabia, from a feelings perspective."

"From a feelings perspective?"

"I understand the anger, especially among journalists. I respect their feelings. But we also have feelings here, pain here."

The crown prince has told two people close to him that "the Khashoggi incident was the worst thing ever to happen to me, because it could have ruined all of my plans" to reform the country.

In our Riyadh interview, the crown prince said that his *own* rights had been violated in the Khashoggi affair. "I feel that human-rights law wasn't applied to me," he said. "Article XI of the Universal Declaration of Human Rights states that any person is innocent until proven guilty." Saudi Arabia had punished those responsible for the murder, he said—yet comparable atrocities, such as bombings of wedding parties in Afghanistan and the torture of prisoners in Guantánamo Bay, have gone unpunished.

The CIA concluded that Mohammed bin Salman ordered the murder of the *Washington Post* columnist Jamal Khashoggi. Saudi Arabia's own prosecutors found that it had been conducted by some of the crown prince's closest aides. (Moises Saman / Magnum)

The crown prince defended himself in part by asserting that Khashoggi was not important enough to kill. "I never read a Khashoggi article in my life," he said. To our astonishment, he added that if he *were* to send a kill squad, he'd choose a more valuable target, and more competent assassins. "If that's the way we did things"—murdering authors of critical op-eds—"Khashoggi would not even be among the top 1,000 people on the list. If you're going to go for another operation like that, for another person, it's got to be professional and it's got to be one of the top 1,000." Apparently, he had a hypothetical hit list, ready to go. Nevertheless, he maintained that the Khashoggi killing was a "huge mistake."

"Hopefully," he said, no more hit squads would be found. "I'm trying to do my best."

If his best is not good enough for Joe Biden, MBS said, then the consequences of running a moralistic foreign policy would be the president's to discover. "We have a long, historical relationship with America," he said. "Our aim is to keep it and strengthen it." Biden and Vice President Kamala Harris have called for "accountability" for Khashoggi's murder, as well as the humanitarian disaster in Yemen, due to war between Saudi Arabia and Iranian-backed Houthi rebels. The Americans also refuse to treat him as Biden's counterpart—Biden's peer is the king, they insist—even though the crown prince rules the country with his father's blessing. This stings. MBS has lines open to the Chinese. "Where is the potential in the world today?" he said. "It's in Saudi Arabia. And if you want to miss it, I believe other people in the East are going to be super happy."

We asked whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it."

Also risible to the crown prince was the notion that his citizens fear speaking out against him. We need dissent, he said, "if it's objective writing, without any ideological agenda." In practice, I noted, dissent seemed to be nonexistent. In September 2017, MBS ordered a boycott of Qatar, citing the country's support for the Iranian government, the Muslim Brotherhood, al-Qaeda, and other Islamist organizations in the region. His tiny neighbor suddenly transformed from official friend into official villain, and those expressing a kind word toward it disappeared into prison.

These sentiments, apparently, did not count as objective or nonideological. Qatar, MBS said, was comparable to Nazi Germany. "What do you think [would have happened] if someone was praising and trying to push for Hitler in World War II?" he asked. "How would America take that?" Of course Saudis would react strongly to Nazi sympathizers in their midst. Three years later, however, the countries reconciled, and the Saudi government tweeted out a photo of MBS and Hitler—that is, Qatari Emir Tamim Al Thani—wearing board shorts and smiling at MBS's Red Sea palace. "Sheikh Tamim's an amazing person," MBS said. The fight between them had been no big deal, "a fight between brothers." The relationship is now "better than ever in history." The dissenters remain in prison, however, and I do not mean the Ritz-Carlton.

As for the actual Ritz-Carlton prisoners: They had it coming, the crown prince said. Overnight he'd rounded up hundreds of the most prominent Saudis, delivered them to Riyadh's most lavish hotel, and refused to let them go until they confessed and paid up. I said that sounded like he was eliminating rivals. MBS looked incredulous. "How can you eliminate people who don't have any power to begin with?" If they had power, he would not have been able to force them into the Ritz.

Does Joe Biden misunderstand something about him? “Simply, I do not care,” MBS replied. “It’s up to him to think about the interests of America.” He gave a shrug. “Go for it.”

The Ritz operation, MBS said, was a blitzkrieg against corruption, and wildly successful and popular because it started at the top and did not stop there. “Some people thought Saudi Arabia was, you know, just trying to get the big whales,” MBS said. They assumed that after the government extracted settlements from the likes of Alwaleed bin Talal, the kingdom’s richest man, corruption at lower levels would resume. MBS noted, proudly, that even the minnows had been hooked. By 2019, everyone “understood that even if you steal $100, you’re going to pay for it.” In just a few months, he claims to have recovered $100 billion directly, and says that he will recover much more indirectly, as dividends of deterrence.

MBS acknowledged that to outsiders the Ritz operation may have looked thuggish. But to him it was an elegant, and by the way nonviolent, solution to the problem of vampires feasting on the kingdom’s annual budget. (An adviser to MBS told me that one alternative his aides had suggested was executing a few prominent corrupt officials.) During the months that the Ritz served as a prison, the kingdom’s financial regulator was essentially made king pro tempore, to devote the full power of the government to bleeding the vampires dry. But the Ritz guests had not, MBS said, been placed under arrest. That would imply that they had entered the court system and faced charges. Instead, he said, they had been invited to “negotiate”—and to his pleasure, 95 percent did so. “That was a strong signal,” he said. I’m sure it was.

THE SAUDI THRONE does not, like the British throne once did, just pass to the next male heir. The king chooses his successor, and ever since the founding king of the modern Saudi state, Abdulaziz, chose his son Saud as crown prince in 1933, each king has chosen another son of Abdulaziz. (He had 36 sons—with multiple wives and concubines—who survived to adulthood.) All were old enough to remember the camels-and-tents days, before extreme wealth, and they ruled conservatively, as if to lock in their gains. Even the shrewdest and most ambitious kings accomplished little. Abdullah, who took power in 2005, began as a reformer, but much of the momentum of the first half of his reign was lost as he doddered in the second, and the royal treasury was looted. (One notorious alleged thief in the Ritz, a major figure in the Royal Court, was said to have stolen tens of billions of dollars during His Majesty’s decline.)

Salman, the current king and at 86 one of the youngest of Abdulaziz’s brood, saw the perils of unchecked gerontocracy and anointed a successor from the next generation. His choice of Mohammed was not obvious. King Salman’s sons include Faisal, 51, who has a doctorate in international relations from Oxford; and Sultan, 65, a former Royal Saudi Air Force pilot who in 1985 spent a week on the space shuttle Discovery as a payload specialist. Either of these competent and educated men, citizens of the world, might have been a natural successor. But Salman had an inkling that the next king would need a certain grit and fluency with power that cannot be acquired in a seminar or a flight simulator. The new generation, born into luxury, tended to be soft, and the next king would need to be a modern version of a desert warlord like his grandfather.

Outside the immediate family, Salman considered his nephew Mohammad bin Nayef, who is known as MBN, appointing him crown prince in 2015, when he was 55. As a spymaster and security official in the 2000s, MBN had led the country’s domestic war against al-Qaeda, and in the process had become well connected with counterparts in Washington and London. In 2009, MBN was injured when an al-Qaeda bomber packed his underpants with explosives and approached him at an event.

Foreign governments considered MBN a safe pick: old enough but not too old, a proven fighter, respected overseas. But for Salman he was merely a throne-warmer for his son. (MBS had held no high office prior to his father’s coronation and needed a couple of years as defense minister to burnish his CV.) In 2017, Salman fired MBN. When you fire a prince, you fire all those who staked their fortunes on his rise; among the opponents of MBS are foreign governments who had planned for the reign of King MBN, and Saudis whose wealth and influence flowed from him. MBN’s chief adviser, Saad al-Jabri, fled to Canada. He alleges that MBS sent a team there to kill him. MBS's government alleges that al-Jabri stole a massive fortune and is bankrolling efforts to defame the crown prince. (Both parties deny the claims.) "MBN survived al-Qaeda," al-Jabri's son Khalid told me. "But he couldn't survive his own cousin."

Others have suggested Salman's younger brother Ahmed, a well-liked former deputy interior minister, as a throne-worthy alternative to MBS. Ahmed reportedly opposed MBS's appointment as crown prince. In 2020, he was arrested on suspicion of treason.

HAVING CONSOLIDATED POWER, MBS focused on Vision 2030. He is exasperated by the rest of the world's failure to acknowledge how well it has gone. "Saudi Arabia is a G20 country," he said. "You can see our position five years ago: It was almost 20. Today, we are almost 17." He noted strong non-oil GDP growth, and reeled off statistics about foreign direct investment, Saudi overseas investment, and the share of world trade that passes through Saudi waters. The economic success, the concerts, the social reform—these are all done deals, he said. "If we were having this interview in 2016, you would say I'm making assumptions," he said. "But we did it. You can see it now with your eyes."

He was not lying. Between my first visit to Saudi Arabia, in 2019, and this conversation two years later, I had gone to the movies in Riyadh and sat next to a Saudi woman I had never met. She wore jeans and canvas sneakers, and she bounced her bare ankle while we watched *Zombieland: Double Tap*. When I first visited, I ate at restaurants that had cinder-block walls dividing single men on one side from women and families on the other. These were sledgehammered down—a little Berlin 1989 in every restaurant—and now men and women can eat together without eliciting so much as a sideways glance from fellow diners.

Many of the crown prince's most persistent critics approve of these changes, and wish only that they had come sooner. (Khashoggi was such a critic. When I met him in London for brunch, shortly before his death, I asked him to list MBS's failings. He said "90 percent" of the reforms were prudent and overdue.) The most famous Saudi women's-rights activist, Loujain al-Hathloul, campaigned for women's right to drive, and against the Saudi "guardianship law," which prevented women from traveling or going out in public without a male relative. Al-Hathloul was thrown in prison on terrorism charges in 2018—*after* MBS and his father had announced the imminent end of both policies. In prison, her family says, she was electrocuted, beaten, and—this was just a few months before Khashoggi's murder—threatened with being chopped up and thrown in a sewer, never to be found. (The Saudi government has previously denied allegations of torturing prisoners.)

Left: Saudi Crown Prince Mohammed bin Salman is greeted by Qatar's Emir Sheikh Tamim Al Thani in Doha, Qatar, in 2021. *Center:* The Saudi activist Loujain al-Hathloul in 2021. *Right:* MBS and his father, King Salman, in 2017. (Saudi Press Agency / Reuters; Ahmed Yosri / Reuters; Saudi Press Agency / AP)

Al-Hathloul and other activists had demanded rights, and the ruler had granted them. Their error was in thinking those rights were theirs to take, rather than coming from the monarch, who deserved credit for having bestowed them. Al-Hathloul was released in February 2021, but her family says she is forbidden from traveling abroad or speaking publicly.

Another dissident, Salman al-Awda, is a preacher with a massive following. His original crime, too, was to utter publicly a thought that would later be shared by the crown prince himself. When MBS began squabbling with his counterpart in Qatar, al-Awda tweeted, “May God harmonize between their hearts, for the good of their people.” He was imprisoned, and actual harmony between the two leaders has not freed him. His son Abdullah, now in the United States, claims that his father, who is 65, is being held in solitary confinement and has been tortured.

The crown prince, one of his admirers told me, “put the Wahhabis in a cage, then he reached in with gardening shears and he cut their balls off.”

Saudi authorities say al-Awda is a terrorist and a member of the Muslim Brotherhood, which is supported by Qatar and intent on overthrowing the monarchy and replacing it with a theocracy. (The Muslim Brotherhood plays a bogeyman role in the Saudi imagination similar to the role of Communists in America during the Red Scare. Also like Communists, the Muslim Brotherhood really has worked covertly to undermine state rule, just not to the extent imagined.) Al-Awda’s defenders say he is being punished for daring to speak with a moral voice independent of the monarchy’s. He faces death by beheading.

Would MBS consider pardoning those who’d spoken out in favor of women driving and normalization with Qatar—both now the policy of the country? “That’s not my power. That’s His Majesty’s power,” MBS said. But, he added, “no king has ever used” the pardon power, and his father does not intend to be the first.

The issue, he said, is not a lack of mercy. It is a problem of balance. Yes, there are liberals and kumbaya types who have run afoul of state security—and perhaps some could be candidates for a royal pardon. But some of the others in his jails are bad hombres indeed, and pardons cannot be meted out selectively. “You have, let’s say, extreme left and extreme right,” he said. “If you give forgiveness in one area, you have to give it to some very bad people. And that will take everything backward in Saudi Arabia.”

Left: Saudi women attend a live music performance in Riyadh in January. The crown prince has legalized cinemas and concerts and permitted women to dress as freely as they can in places like Dubai and Bahrain. *Bottom:* A tenth-grade girls’ basketball team in Jeddah. Until recently, a man would have been forbidden to coach a girls’ team. (Lynsey Addario for *The Atlantic*)

On one side are liberals, tugging on the sympathies of Westerners; on the other, Islamists who are also opposed to the monarchy. Letting this latter group out would not just mean the end of rock concerts and coed dining. They would not stop until they brought down the House of Saud, seized the country’s estimated 268 billion barrels of oil and the holy cities of Mecca and Medina, and established a terrorist state. In private conversations with others, MBS has likened Saudi Arabia before the Saud family’s conquest in the 18th century to the anarchic wasteland of the *Mad Max* films. His family unified the peninsula and slowly developed a system of law and order. Without them, it would be *Mad Max* all over again—or Afghanistan.

Still, the crown prince's argument—that if he extended forgiveness to good people who deserved it, he would have to extend it equally to bad people who did not—struck me as bizarre. Why would one require the other? Then I realized that MBS was not saying that the failure of his plan to remake the kingdom *might* lead to catastrophe. He was saying that he'd guarantee it would. Many secular Arab leaders before him have made the same dark implication: Support everything I do, or I will let slip the dogs of jihad. This was not an argument. It was a threat.

ALI SHIHABI, A Saudi financier and pro-MBS commentator, told me that the changes in Saudi Arabia could be compared to those in revolutionary France. An old order had been overturned, a priestly class crushed; a new order was struggling to be born.

The priestly class in particular interested me. The brand of conservative Islam practiced in Saudi Arabia—called Wahhabism, after the sect's 18th-century founder, Muhammad ibn Abd al-Wahhab—once wielded great power and enjoys at least some popular support. I asked Shihabi if MBS really had diminished the Wahhabis' role. "Diminished their role?" Shihabi asked me. "He put the Wahhabis in a cage, then he reached in with gardening shears"—here he made the universal *snip snip* gesture with his fingers—"and he cut their balls off."

My flight into Riyadh was packed with foreigners attending Stan Lee's Super Con. Ahead of me in the passport line I saw Lou Ferrigno, the Incredible Hulk.

In France, revolution worked out just as badly for the House of Bourbon as it did for the clergy. (Diderot famously wrote that the entrails of the priests would be woven into ropes to strangle kings.) The House of Saud wanted the anticlerical revolution while conveniently omitting the antiroyalist one. I wanted to see how that alliance between monarch and sansculottes was working.

Vision 2030 made modernization easier to observe now than it would have been just a few years ago. Until October 2019, tourist visas to Saudi Arabia did not exist. Then the Saudis realized that to attract crowds to the concerts they had legalized, they'd need to let in visitors. Overnight, a visa to Saudi Arabia went from one of the hardest in the world to get to one of the easiest. In minutes I had one valid for a whole year. My flight into Riyadh was packed with foreigners attending Stan Lee's Super Con. Ahead of me in the passport line I saw Lou Ferrigno, the Incredible Hulk, on his way to an autograph signing.

The new system arrived so fast that the first visitors were like an invasive species, an unnatural fit in the rigid social order of the kingdom. For years, almost every non-Saudi in the country had needed a document called an *iqama*. It was a sort of license to exist: Your *iqama* identified your Saudi patron, the local national whom you were visiting or working for, and who controlled your fate. Every Saudi patron had his own patron, too—sometimes a tribal leader, sometimes a regional one. Even those bigwigs paid obeisance to someone and, eventually, by the transitive property of Saudi deference, to the king himself. Saudi Arabia, MBS explained, "is not one monarchy. You have beneath it more than 1,000 monarchies—town monarchies, tribal monarchies, semitribal monarchies." The *iqama* guaranteed that every sentient creature fit into this scheme of Saudi society.

MBS batted away my suggestion that this system is antiquated and might be replaced with a constitutional monarchy—one where citizens have freestanding rights not granted by a monarch or a demi-monarch. "No," he said. "Saudi Arabia is based on pure monarchy," and he, as crown prince, would preserve the system. To remove himself from it would amount to a betrayal of all the monarchies and Saudis beneath him. "I can't stage a coup d'état against 14 million citizens."

But he has already forced that system to adapt. Nearly every day someone asked for my *iqama*, and I had to explain that I had none. They reacted as if I'd told them that I had no name. Renting a car, buying a train ticket, checking into a hotel—all of these interactions left some poor clerk baffled. But in the new Saudi Arabia I was free to wander, to listen, to overhear.

Left: Men talk over coffee in Riyadh. *Right:* Young women at a Formula E racing event. (Lynsey Addario for *The Atlantic*)

In Riyadh I found, effortlessly, young people thrilled by the reforms. Like the other major Saudi cities, Dammam and Jeddah, Riyadh has specialty coffee shops in abundance—little outposts of air-conditioning and caffeine, in an environment otherwise characterized by heat and boredom. Many of the Saudis I met professed a deep love for America. "I spent seven years at Cal State Northridge," one told me, before rattling off a list of cities he had visited. He was one of several hundred thousand Saudi students who'd attended U.S. universities on government scholarships in the 2000s. "I studied finance," he said. "But I never graduated. I had a wonderful time." He listed his American friends, who had names like Mike and Emilio. "I drank and did too much meth, and my grades weren't good."

"Is it possible to do just the right amount of meth?" I asked.

"When I came back, I stopped." He looked out the window of the coffee shop at the parched cityscape. "This country is the best rehab center on the planet."

Now he was studying again, at a Saudi university, and planning to open his own business. He had already attended concerts, and he said his fondest wish was to listen to music in the open air and smoke a joint—just one, he promised. He asked if I thought that would happen. I said I did not think that was explicitly part of Vision 2030, but he'd probably get his wish. Later, with him in mind, I asked the crown prince whether alcohol would soon be sold in the kingdom. It was the only policy question that he refused to answer.

In another café, in the northern city of Ha'il, a man pointed to a mural, freshly painted, of the Lebanese singer Fairouz, her hair flowing beautifully over her shoulders. Next to her were her lyrics (in Arabic): "Bring me the flute and sing, for song is the secret to eternity."

"One year ago," he said, "that would not be possible." By "that," he meant pretty much everything: a woman's hair; a celebration of song; a celebration of a song about singing; and, on top of all this, the music playing in the café as we spoke. Before the rise of MBS, every component of this scene would have violated long-standing canons of Saudi morality enforcement. The religious police, known in Arabic as the *hay'a* or *mutawwi'in*, would have busted the joint. They used to show up in ankle-length white *thobes*, their beards curly and unkempt. They yelled at people for dressing immodestly, or thwacked at them with sticks to goad them to the mosque for one of the five daily prayers. For the flagrancy of the Fairouz sins, the café's managers would have been detained, questioned, and punished. "Screw those guys," the man said, in a succinct expression of the most common sentiment I heard about the religious police.

Encounters with the *hay'a* have provided many an appalling story for foreign visitors. When Maureen Dowd of *The New York Times* went to Riyadh in 2002, the *hay'a* spotted her in a shopping mall and objected to being able to see the outline of her body. Her host, the future foreign minister Adel al-Jubeir, pleaded with them, but they were unimpressed by his status as a prominent diplomat, and she fled to her hotel room. "I fretted that I was in one of those movies where an American makes one mistake in a repressive country and ends up rotting in a dungeon," Dowd wrote.

"Saudi Arabia is based on pure monarchy," MBS said. To remove himself from that system would amount to a betrayal of all the Saudis beneath him. "I can't stage a coup d'état against 14 million citizens."

I told one of MBS's advisers that the religious police had been an international PR problem. "May I be impolite?" he asked me. "I don't give a fuck about the *foreigners*. They terrorized *us*." He likened the religious police to J. Edgar Hoover's FBI, operating with unchecked authority. (The religious police's official Arabic name dates back hundreds of years, but still sounds Orwellian in English: the Committee for the Prevention of Vice and Promotion of Virtue.) Anyone who wished to drag down a professional or political rival could scrutinize him for sins, then call the religious police to set up a sting. Or the *hay'a* could flex its authority on its own, either for political reasons—toppling a prince they disliked—or for recreation.

"The religious police were the losers in school," Ali Shihabi told me. "Then they got these jobs and were empowered to go and stop the cute girls, break into the parties no one wanted them at, and shut them down. It attracted a very nasty group of people." The Saudi diplomat told me that he did not miss them, and that Saudi Arabia had needed someone with the crown prince's mettle to get rid of them. "When someone hits you because he does not like what you are wearing," he said, "that is not just a form of harassment. It is abuse."


Left: Golf at the Boulevard in Riyadh. *Right:* A couple, newly engaged, dine at a restaurant in Jeddah in January. In the recent past, many restaurants had cinder-block walls dividing single men on one side from women and families on the other. (Lynsey Addario for *The Atlantic*)

MBS ordered the religious police to stand down, and one of the enduring mysteries of contemporary Saudi Arabia is what these thwackers do, now that they are invisible on the streets. Fuad al-Amri, who runs the *hay'a* in Mecca province, confessed to me that since the reforms, one of his main activities has been vetting his own employees, to ensure that they aren't fanatics loyal to the Muslim Brotherhood.

MBS'S GRANDFATHER KING Abdulaziz founded the modern Saudi state with the support of the clergy. But he also cracked down on them, hard, when they outlived their usefulness. MBS has recounted a famous anecdote about his grandfather. In 1921, Abdulaziz attended the funeral of the most senior religious scholar in the kingdom. The king told the assembled clerics that they were dear to his heart—in the Arabic idiom, "on my *iqal*," the black cord that holds a Najd headdress in place. But then he warned them: "I can always shake my *iqal*," he said, "and you will fall."

For the past 50 years, Abdulaziz's successors have taken a softer line with the Wahhabis. The Saudi clerical class's power grew, and their imprimatur mattered. In 1964, they sealed the fate of the inept King Saud when his brothers Faisal and Mohammed sought and received religious approval for ousting him. To oppose the religious conservatives was risky. Peter Theroux, a former National Security Council director who worked on the Saudi portfolio during the 2000s, recalls being aghast at the vicious sermons still being preached by government-paid imams years after September 11. Theroux told me he confronted a senior Saudi official about the sermons. "You know," the official apologized, "the big beards are kind of our constituency." The rulers of Saudi Arabia put almost no limits on the speech or behavior of conservative clerics, and in return those clerics exempted the rulers from criticism. "That was the drug deal that the Saudi state was based upon for many years," Theroux told me. "Until Mohammed bin Salman."

Who could resist cheering on MBS as he renegotiated this relationship? One of MBS's most persistent critics in Washington, Senator Chris Murphy, a Democrat from Connecticut, told me the concerts and Comic-Cons in Riyadh have not yet translated into defunding Wahhabi intolerance overseas. "When I'm traveling the world, I still hear story after story of Gulf money and Saudi money fueling very conservative, intolerant Wahhabist mosques," he said. A hallmark of traditional Wahhabism is hatred for non-Wahhabi Muslims, whom the Wahhabis view as even worse than unbelievers for perverting the faith. With little modification, Wahhabi teachings can lead to Osama bin Laden–style jihadism. Murphy said he thinks that isn't over. "The money that flows from Saudi Arabia into conservative Islam isn't as transparent as it was 10 years ago—much of it has been driven underground—but it still exists."

Yet after spending hours in MBS's company, and in the company of his allies and enemies, I was convinced that neutering the clergy was not just symbolic. He was fighting them avidly, and personally. "The kings have historically stayed away from religion," Bernard Haykel, a scholar of Islamic law at Princeton and an acquaintance of MBS's, told me. Outsourcing theology and religious law to the big beards was both an expedient and a necessity, because no ruler had any training in religious law, or indeed a beard of any significant size.

By contrast, MBS has a law degree from King Saud University and flaunts his knowledge and dominance over the clerics. "He's probably the only leader in the Arab world who knows anything about Islamic epistemology and jurisprudence," Haykel told me.

“In Islamic law, the head of the Islamic establishment is *wali al-amr*, the ruler,” MBS explained. He was right: As the ruler, he is in charge of implementing Islam. Typically, Saudi rulers have sought opinions from clerics, occasionally leaning on them to justify a policy the king has selected in advance. MBS does not subcontract his religion out at all.

He explained that Islamic law is based on two textual sources: the Quran and the Sunna, or the example of the Prophet Muhammad, gathered in many tens of thousands of fragments from the Prophet’s life and sayings. Certain rules—not many—come from the unambiguous legislative content of the Quran, he said, and he cannot do anything about them even if he wants to. But those sayings of the Prophet (called Hadith), he explained, do not all have equal value as sources of law, and he said he is bound by only a very small number whose reliability, 1,400 years later, is unimpeachable. Every other source of Islamic law, he said, is open to interpretation—and he is therefore entitled to interpret them as he sees fit.

The effect of this maneuver is to chuck about 95 percent of Islamic law into the sandpit of Saudi history and leave MBS free to do whatever he wants. “He’s short-circuiting the tradition,” Haykel said. “But he’s doing it in an Islamic way. He’s saying that there are very few things that are fixed beyond dispute in Islam. That leaves him to determine what is in the interest of the Muslim community. If that means opening movie theaters, allowing tourists, or women on the beaches on the Red Sea, then so be it.”

MBS rebuked me when I called this attitude “moderate Islam,” though his own government champions the concept on its websites. “That term would make terrorists and extremists happy.” It suggests that “we in Saudi Arabia and other Muslim countries are changing Islam into something new, which is not true,” he said. “We are going back to the core, back to pure Islam” as practiced by Muhammad and his four successors. “These teachings of the Prophet and the four caliphs—they were amazing. They were perfect.”

Even the Islamic law that he is bound to implement will be implemented sparingly. MBS told me a story, reported in Hadith, about a woman who commits fornication, confesses her crime to the Prophet, and begs to be executed. The Prophet repeatedly tells her to go away—implying, the crown prince said, that the Prophet preferred to give sinners every chance at lenience. (MBS did not relate the end of the tale: The woman returns with indisputable evidence of her sin—a bastard son—and the Prophet acquiesces. She is buried to her chest and stoned to death.)

Instead of hunting for sin and punishing it as a matter of course, MBS has curtailed the investigative function of the religious police, and encourages sinners to keep their transgressions between themselves and God. “We should not try to seek out people and prove charges against them,” he said. “You have to do it the way that the Prophet taught us how to do it.” The law will be enforced only against those so flagrant that they are practically demanding to take their lumps.

He also stressed that none of these laws applies to non-Muslims in the kingdom. “If you are a foreign person who’s living or traveling in Saudi Arabia, you have all the right to do whatever you want, based on your beliefs,” he said. “That’s what happened in the Prophet’s time.”

It is hard to exaggerate how drastically this sidelining of Islamic law will change Saudi Arabia. Before MBS, influential clerics issued fatwas exhibiting what might charitably be called a pre-industrial view of the world. They declared that the sun orbited the Earth. They forbade women from riding bikes (“the devil’s horses”) and from watching TV without veiling, just in case the presenters could see them through the screen. Salih al-Fawzan, the most senior cleric in the kingdom today, once issued a chillingly anti-American fatwa forbidding all-you-can-eat buffets, because paying for a meal without knowing what you’ll be eating is akin to gambling.

Some of the clerics may have given in because they were convinced by the crown prince's legal interpretations. Others appear to have succumbed to good old-fashioned intimidation. Formerly conservative clerics will look you in the eye and without hesitation or scruple speak in Stepfordlike coordination with the government's program. The minister of Islamic affairs and guidance, normally an unsmiling type, now cheerily defended the opening of cinemas and mass layoffs of Wahhabi imams. I liked him immediately. His name, Abdullatif Al Asheikh, indicates that he is descended from a long line of stern moralists going back to Muhammad ibn Abd al-Wahhab himself. I told him I had seen the *Zombieland* sequel in his country, and if Woody Harrelson reprised his role in *Zombieland 3*, I would return to Riyadh so we could go to a theater and watch it together. "Why not?" he replied.

Mohammad al-Arefe, a preacher known for his good looks and conservative views, mysteriously began promoting Vision 2030 after a meeting with MBS in 2016. Previously, he had preached that Mada'in Saleh, a spectacular pre-Islamic archaeological site in northwest Saudi Arabia, was forbidden to Muslim tourists. God had struck down the civilization that once lived there, and the place was forever to remain a reminder of his wrath. The conventional view held that Muslims should follow the Prophet's warning to stay away from Mada'in Saleh, but if they absolutely must pass through, they should cast their gaze downward and maintain a fearful demeanor toward the Almighty. Then, in 2019, al-Arefe appeared in what seemed, to me, like some sort of hostage video, filmed by the Saudi tourism authority, lecturing about the site's history and inviting all to enjoy it. If he was displaying a fearful demeanor, it was not toward the Almighty.

IN THE SMALLER CITIES it isn't clear how quickly modernization is catching on. I visited Buraydah, the capital of Qassim, the most conservative part of the country. In two days, every woman I saw wore a black, flowing abaya. I attended the opening of a new shopping mall and showed up early to watch the crowds arrive. The sexes separated themselves without discussion: women in the front, all in black, near the stage where children recited poems and sang; men, in white *thobes*, in the back of the audience and on the sides. The process was unconscious and organic, but to an outsider remarkable, as if salt and pepper were shaken out onto a plate, and the grains slowly and perfectly segregated themselves. Cultural practices decades or centuries old do not yield suddenly.

Taif, a city an hour outside Mecca, was once the summer residence of the king and his family. The Prophet is thought to have visited there, and many Muslims supplement their pilgrimages to Mecca with side trips to other sites from the Prophet's life. The Wahhabis have, historically, treated these visits as un-Islamic and reprehensible. Whenever pilgrimage sites have fallen into Wahhabi hands, they have methodically and remorselessly destroyed them by leveling monuments, grave markers, and other structures sacred to Muslims in other traditions.

One morning I took a long walk to a mosque where the Prophet is said to have prayed. On arrival I found a building in disrepair, fenced off by rusty wire, with parts of it reduced to rubble. A sign at this site, posted by the Ministry of Islamic Affairs, noted in Arabic, Urdu, Indonesian, and English that the historical evidence for the Prophet's visit was uncertain. It suggested, further, that "to feel an adoring reverence or regard toward these places is a kind of heresy and fabrication in religion," an innovation not sanctioned by God that "leads to polytheism."

Later, I met Mohammad al-Issa, formerly the minister of justice under King Abdullah and now, as secretary-general of the Muslim World League, an all-purpose interfaith emissary for his country. In the past, Saudi clerics inveighed against infidels of all types. Now al-Issa spends his time meeting Buddhists, Christians, and Jews, and trying to stay ahead of the occasional surfacing of comments he made in less conciliatory times. I asked him about the site, and whether Saudi Arabia's new tolerance—which he emphasizes so energetically overseas, with non-Muslims—would apply domestically. He assured me that it already did. "If in the past there were some mistakes, now there is correction," al-Issa said. "Everyone has the right to visit the historic places, and there is a lot of care given to them."

"But the signs are still up," I said.

"Maybe they are there to remind people to be respectful," he suggested. "You see signs like that at sites all over the world: 'Don't touch or take the stones.'"

But these signs are not meant to preserve the ruins. They are there to remind you that you are wicked for visiting at all.


A mosque in Taif where the Prophet Muhammad is said to have prayed. A sign posted by the Ministry of Islamic Affairs notes that the historical evidence for the Prophet's visit is uncertain, and warns that "to feel an adoring reverence or regard toward these places is a kind of heresy." (Lynsey Addario for *The Atlantic*)

The day after my trip to the mosque, I stopped by a Starbucks in Taif. It was early afternoon. When I pulled the door handle, it clunked—the shop was closed for prayer, just as it would have been if the religious police had been enforcing prayer times.

As I waited outside alone, a small police truck pulled up behind me. The police officer salaamed me, and I responded in Arabic. Only after a short interrogation ("What are you doing here? Why are you here?") did he discover that I was American—not, as I think he suspected, Filipino—and apologize awkwardly and leave. It took me a minute to realize what had happened: The religious police have stood down, and the ordinary police have stood up in their place. The conservatism in society has not gone away. In some places, it has just undergone a costume change.

THESE LINGERING MANIFESTATIONS of intolerance illustrate what MBS's critics say is his ultimate error: Even a crown prince can't change a culture by fiat.

Belated realization of this error might be behind the grandest and most improbable of his projects. If existing cities resist your orders, just build a new one programmed to do your bidding from the start. In October 2017, MBS decreed a city in a mostly uninhabited area on the Gulf of Aqaba, adjacent to Egypt's Sinai Peninsula, the southwestern edge of Jordan, and the Israeli resort town Eilat. The city is called Neom, from a violent collision between the Greek word *neos* ("new") and the Arabic *mustaqbal* ("future").

At present, little exists but an encampment for the employees of the Neom project, a small area of tract housing. Regular buses take them to shop in the nearest city, Tabuk, which is itself a city only by the standards of the vacant, rock-strewn desert nearby. (If you recall the early scenes of *Lawrence of Arabia*, when a lonely camel-borne Peter O'Toole sings "The Man Who Broke the Bank at Monte Carlo" to the echoes of a sandstone canyon, then you know the spot.) The ambitions for this settlement are vast. Neom's administrators say they expect it to attract billions of dollars in investment and millions of residents, both Saudi and foreign, within 10 to 20 years. Dubai grew at a similar pace in the 1990s and 2000s. MBS said Neom is "not a copy of anything elsewhere," not a xerox of Dubai. But it has more in common with the great globalized mainstream than with anything in the history of a country that, until recently, was remarkably successful at walling off its traditional culture from the blandishments of modernity.

For a few hours, the Neom team showed me around and made grandiose promises about the future. Neom would lure its investors, I gathered, by creating the ideal regulatory environment, stitched together from best practices elsewhere. The city would profit from central planning. When New York or Delhi want to grow, they choke on their own traffic and decrepit infrastructure. Neom has no inherited infrastructure at all. The centerpiece of the project will be "The Line"—a 106-mile-long, very skinny urban strip connected by a single bullet train that will travel from end to end in 20 minutes. (No train capable of this speed currently exists.) The Line is intended to be walkable—the train will run underground—and a short hike perpendicular to its main axis will take you into pristine desert. Water will be desalinated; energy, renewable.

So far, Neom is less a city than an urbanist cargo cult. The practicalities can come later, or not at all. (The projected cost is in the hundreds of billions of dollars, a huge sum even for Saudi Arabia.) But many good ideas look crazy at first. What struck me was that Neom's vision is really an anti-vision. It is the opposite of the old Saudi Arabia. In the old Saudi Arabia, and even to an extent today, corruption and bureaucracy layered on each other to make an entrepreneur's nightmare. Riyadh has almost no public transportation. No matter where you are, you cannot walk anywhere, except perhaps to your local mosque. No one in Neom mentioned religion at all. Even Neom's location is suggestive. It is far from where Saudis actually live. Instead it is huddled in a mostly empty corner, as if seeking sustenance and inspiration from Jordan and Israel.

Seen this way, Neom is MBS's declaration of intellectual and cultural bankruptcy on behalf of his country. Few nations have as many carried costs as Saudi Arabia, and Neom zeroes them out and starts afresh with a plan unburdened by the past. To any parts of the kingdom that cling to their old ways, it promises that the future is everything they are not. And the future will wait only so long.

DURING THE 1990S AND 2000S, Saudi Arabia was a net exporter of vision, but it was a jihadist vision. The standard narrative, now accepted by the Saudi state itself, is that the kingdom was seduced by conservative Islam, and eventually the jihadists it sent overseas (most famously Osama bin Laden) redirected their efforts toward the Saudi monarchy and its allies. Fifteen of the 19 hijackers on 9/11 were Saudi citizens.

"A series of things happened that made the Saudis realize they couldn't keep playing the game they had been playing," Philip Zelikow, a State Department official under George W. Bush and the executive director of the 9/11 Commission, told me. The years of violence that followed 9/11 shocked the Saudis into realizing that they had a reckoning coming, though only after jihadists began attacking in the kingdom itself did the government move to crush them. What the Saudis did not have was a plan to redirect the jihadists' energy. "They needed to have some story of what kind of country they were going to be when they grew up," Zelikow said. Jihadism would not be that story. But there was no immediate alternative, either for society or for the individuals attracted to jihadism. Saudi Arabia was left to do what most other countries, including the United States, have done, which is to imprison terrorists until they grow too old to fight.


Left: The aftermath of an al-Qaeda bombing in Riyadh in 2003. Only after jihadists began attacking in the kingdom did the government move to crush them. *Right:* Saudi Special Security Forces at the Counterterrorism Training School in Riyadh in 2013. (Lynsey Addario)

Last year, Saudi officials informed me that the crown prince had a new plan to deprogram jihadists. One morning they sent a convoy of state-security SUVs to my hotel, and with lights flashing, we left behind the glassy skyscrapers of the capital and continued along one of the straight, hypnotic roads radiating from Riyadh to nowhere. An hour later, we turned off at an area called al-Ha'ir and went through a security checkpoint.

Ha'ir is a state-security prison, run by the Saudi secret police, which means that its prisoners are not car thieves and check forgers but offenders against the state. They include jihadists from al-Qaeda and the Islamic State—I met at least a dozen of each—as well as softer Islamists, like Salman al-Awda, the cleric.

We drove past the checkpoint and through the gates, into a windswept compound coated in a film of light-brown dust, like tiramisu. We were met by the director of state-security prisons, Muhammad bin Salman al-Sarrah, and what appeared to be a television crew of at least half a dozen men, each bearing a microphone or a camera. I worried about what would happen next. Newsworthy events inside the walls of terrorist prisons tend not to be good. Lurking in the background were several bearded men in identical gray business suits.

During the 1990s and 2000s, Saudi Arabia was a net exporter of vision, but it was a jihadist vision. Fifteen of the 19 hijackers on 9/11 were Saudi citizens.

Al-Sarrah, it turned out, was a real jihadism nerd, and over tea we reminisced about various luminaries in the history of Saudi terror. After this small talk, he invited me to join him in an auditorium that could have been a lecture hall on a small college campus. Shutters clicked as the cameramen followed.

In the auditorium, the men in suits took the stage. Their leader, a man named Abdullah al-Qahtani, explained that he and most of the others in the room were prisoners, and that they had a PowerPoint presentation they wished to show me about the enterprise they were running in the prison. The camera crew was made up of prisoners too, and they were documenting my visit for imprisoned members of jihadist sects.

What followed was the most surreal slide deck I have ever seen: a corporate org chart and plans for a set of businesses run from within the prison by jihadists and other enemies of the state. Al-Qahtani spoke in Arabic, translated by an excitable counterpart nearby.

The org chart showed CEO al-Qahtani at the top, with direct reports from seven offices beneath him, among them financial, business development, and "programs' affairs." Under the last of these was another sub-office, "social responsibility."

Al-Qahtani explained that 89 percent of the prison population had taken part in the program so far. In a way, it was like any other prison-industry program; in the United States, prisoners staff call centers, raise tilapia, or just push brooms in the prison corridor for a dollar an hour. But the Ha'ir group, doing business as a company called, simply, Power, was aggressively corporate and entrepreneurial.

Al-Qahtani and the interpreter took me to a small garden, where prisoners cultivated peppers under plastic sheeting and raised bees and harvested their honey to sell at the prison shop, in little jars with the Power logo. They operated a laundromat and presented me with a price list. The prison will clean your clothes for free, they said, but staff and inmates alike could bring clothes here for special services, such as tailoring, for a fee. I could see shirts, freshly laundered and pressed, with prisoner numbers inked into the collars. Each number started with the year of entry on the Islamic calendar. I saw one that started in 1431, about 12 years ago.

Almost all the men wore thick beards, and many had a *zabiba* (literally "raisin"), the discolored, wrinkly spot one gets from pressing the head to the ground in prayer. Some of their products were artisanal and religious-themed. They led me into a tiny room, a factory for the production of perfumes for sale outside the prison, and to another room where they made prayer beads from olive pits.

"Here, smell this," a former member of al-Qaeda commanded me, sticking under my nose a paper strip blotted with a chemical I could not identify. I think the scent was lavender. Another prisoner, at the Power-run prison canteen, offered me free frozen yogurt. As I walked around the prison, the yogurt began to melt, and my interpreter held it so I could take notes.

Strangest of all, I found, was Power's corporate nerve center—a warren of drab, cubicle-filled offices. The employees wore uniforms: suits for the C-suite executives and blue Power-branded polo shirts for the mid-levels puttering on their computers. They had a conference room with a whiteboard (at the top, "In the name of God, the most gracious, most merciful" was written in Arabic, and partially erased; the rest was the remains of a sales brainstorming session), a reception desk, and portraits of the king and the crown prince overseeing it all.

Nothing is stranger than normalcy where one least expects it. These jihadists—people who recently would have sacrificed their life to take mine—had apparently been converted into office drones. Fifteen years ago, Saudi Arabia tried to deprogram them by sending them to debate clerics loyal to the government, who told the prisoners that they had misinterpreted Islam and needed to repent. But if this scene was to be believed, it turned out that terrorists didn't need a learned debate about the will of God. They needed their spirits broken by corporate drudgery. They needed Dunder Mifflin.

My hyperactive interpreter, who had been gesticulating and yapping throughout the tour, was no ordinary jihadist. He was an American-born Saudi member of al-Qaeda named Yaser Esam Hamdi. Hamdi, now 41, emerged from a pile of rubble in northern Afghanistan in December 2001. His dear friend, pulled from the same rubble, was John Walker Lindh, the so-called American Taliban. Hamdi spent months in Guantánamo Bay before being transferred to the U.S.; he was released after his father, a prominent Saudi petrochemical executive, helped take Hamdi's case to the Supreme Court, and won (*Hamdi v. Rumsfeld*). Hamdi was sent back to Saudi Arabia on the condition that he renounce his U.S. citizenship (he was born in Louisiana and left as a small child), but the Saudis decided he needed more time in prison and locked him up for eight years in a facility in Dammam, and for another seven in Ha'ir. He is due for release this year.

Hamdi guided me like a kid showing his parents around his sleepaway camp. He explained that Power is part of a larger entity at the prison, known as the "Management of Time" (*Idarat al-Waqt*)—a comprehensive but amorphous program meant to beguile the inmates out of bad ideas and replace them with good ones. It involves corporate training, but also gathering the inmates together for song and music, for poetry readings, for the publishing of newspapers (I snagged a copy of the *Management of Time News*), and for the production of TV shows. I watched a room full of men sing a song they had written, “O My Country!,” and show videos in which they extolled the government and the crown prince. Al-Qaeda and ISIS forbid most music and revile the monarchy. Like so many other Saudis, these men seemed to have swapped their religious fanaticism for nationalist fanaticism. One wondered what they really believed.

Al-Sarrah followed close behind us, and I shot him a look when I heard the name of the program. One of the most famous jihadist texts, a playbook for ISIS, is “The Management of Savagery” (*Idarat al-Tawahhush*). It is a deranged manual for destroying the world and replacing it with a new one. That was what this program was doing in reverse: replacing the jihadists’ savage appetite for an imagined future with an appetite for the real, the now, and the ordinary.

A bookish man who had been with Osama bin Laden at Tora Bora looked me steadily in the eye, like he was trying to convince me and not himself. “Vision 2030 is real,” he said.

I told Hamdi that I had corresponded with his friend Lindh, who served 17 years in federal prison in the United States before his release in 2019. Our correspondence had led me to believe that he was just as radical as ever, and that his stay in prison—spent in solitary study of Islamic texts—had confirmed his violent streak and converted him from an al-Qaeda supporter to an ISIS supporter.

Graeme Wood: I wrote to John Walker Lindh. He wrote back.

“Really?” Hamdi asked, before venturing a guess as to why. “The United States doesn’t know how to deal with Muslims. When I was in Afghanistan, I had extreme thinking.” Going to a Saudi prison helped. “The difference is that in jail [here] we have a program. You want to explode the thinking we have in our brain. For 17 years he was alone.” The Saudis filled Hamdi’s time. They managed it. “We didn’t have time to read the Islamic books … We didn’t have time to do anything but work to improve ourselves.” He was a specialist in Power’s media department, and could now produce videos of passable quality.

“I didn’t know what a montage was,” he said. “I didn’t know what a design was.” We were driving to another part of the prison with al-Sarrah in the front seat and Hamdi and me in the back. “Now I am professional!” he said. “I am a complete montage expert!” He pointed at al-Sarrah, who smiled but did not speak or even look back. “All thanks to this man! The government opened this for us! Now I am in a car! Talking to you! Normally! Peacefully! No kind of problems!” Upon release, he said, he might work for his father’s company, or even (this was his dream) go into film and television production. I wondered what it might be like to have a co-worker like Hamdi, with, shall we say, an unconventional work history, and a penchant for extremism and Osama bin Laden that he swore up and down had been thoroughly replaced with a love for film and video production and the crown prince of Saudi Arabia. I was pretty sure Hamdi would be a better colleague than John Walker Lindh.


Top left: A camel market about an hour outside Riyadh, in January. *Top right:* A sign on the highway from Jeddah to Taif marking the turnoff for Mecca. *Bottom:* Women in Asir province. Outside Saudi Arabia's major cities, it isn't clear how quickly modernization is catching on. (Lynsey Addario for *The Atlantic*)

At the prison I asked many inmates how they could trade jihadism for these worldly things, which surely amounted to frippery compared with the chance to die in the path of God. They laughed, nervously, as if to ask what I was trying to do—get them to leave the prison and kill again? They were mostly still young, and they yearned for freedom. That they no longer wanted something thrilling and extraordinary was exactly the point. It is possible to have too much vision, or the wrong kind—some of them had gone to Syria, barely survived, and had had enough vision, thank you very much. "We don't want anything but a normal life," one told me. "I would be happy just to go outside, to walk on the Boulevard in Riyadh, to go to McDonald's."

"I went to Syria because I was offered to take part in a dream, the dream of a caliphate," said another. Ali al-Faqasi al-Ghamdi, a bookish man who had been with bin Laden at Tora Bora, told me he now recognized such dreams as counterfeit. What, he asked, is the point of a big, exciting dream when it is a false one? A small ambition that can actually be fulfilled is preferable to a big one that cannot. He looked me steadily in the eye, like he was trying to convince me and not himself. "Vision 2030 is real."

AMERICA MUST NOW decide whether that vision is worth encouraging. Twenty years ago, if you had told me that in 2022 the future king of Saudi Arabia would be pursuing a relationship with Israel; treating women as full members of society; punishing corruption, even in his own family; stanching the flow of jihadists; diversifying and liberalizing his economy and society; and encouraging the world to see his country and his country to see the world—Wahhabism be damned—I would have told you that your time machine was malfunctioning and you had visited 2052 at the earliest. Now that MBS is in power, all of these things are happening. But the effect is not as pleasing as I had hoped.

In 1804, another modernizing autocrat, Napoleon Bonaparte, arrested Louis Antoine, the duke of Enghien, on suspicion of sedition. The duke was young and foolish, and no great threat to Napoleon. But the future emperor executed him. Around Europe, monarchs were shocked: If this was how Napoleon treated a harmless naif like the duke, what could they expect from him as his power grew, and his domestic opposition dissolved in fear? The execution of Enghien alerted the most perceptive among them that Napoleon could not be managed or appeased. It took a decade of carnage to figure out how to stop him.

Enghien's schemes wouldn't have stopped Napoleon, and Khashoggi's columns wouldn't have stopped MBS. But his murder was a warning about the personality of the man who will be running Saudi Arabia for the next half century, and it is reasonable to worry about that man even when most of what he does is good and long overdue.

For now, MBS's main request to the outside world, and especially the United States, is the usual request of misbehaving autocrats—namely, to stay out of his internal affairs. "We don't have the right to lecture you in America," he said. "The same goes the other way." Saudi affairs are for Saudis. "You don't have the right to interfere in our interior issues."

But he acknowledges that the fates of the two countries remain linked. In Washington, many see MBS's rise as abetted, perhaps even made inevitable, by American support. "There was a moment in time where the international community could have made it clear that the Khashoggi murder was the straw that broke the camel's back, and that we weren't willing to deal with MBS," Senator Murphy told me. The Trump administration's support, when MBS was at his most vulnerable, saved him. "If MBS ultimately becomes king," Murphy said, "he owes no one bigger than Jared Kushner," Trump's personal envoy to the crown prince. ("You Americans think there is something strange about a ruler who sends his unqualified son-in-law to conduct international relations," one Saudi analyst told me. "For us this is completely normal.")

Some still hope that MBS will not accede to the throne. "Only one of the last five crown princes has eventually become king," Khalid al-Jabri noted to me, optimistically. But everything I see suggests that his ascent is certain, and that the search for alternatives is forlorn. Two of those four also-ran crown princes were sidelined or replaced by MBS himself. The other two died of old age.

The United States needs its partners in isolating Iran, and MBS is a stalwart there. And even domestically, he remains in some ways the right man for the job. He is at least, as Philip Zelikow reminded me, not a ruler in denial. "We wanted Saudi leadership who would face their problems, and embark on an ambitious and incredibly challenging generational struggle to remake Saudi society for the modern world," he told me. Now we have such a leader, and he is presenting a binary choice: support me, or prepare for the jihadist deluge.

"We don't have the right to lecture you in America," MBS said. "The same goes the other way."

MBS is correct when he suggests that the Biden administration's posture toward him is basically recriminatory. *Stop bombing civilians in Yemen. Stop jailing and dismembering dissidents.* The U.S. might, on the margins, be able to persuade MBS to use a softer touch—but only by first persuading him that he will be rewarded for his good behavior. And no persuasion will be possible at all without acknowledging that the game of thrones has concluded and he has won.

Many of the exiles I spoke with said their best hope now is that the crown prince will mellow, and that elder Saudi wise men will keep him from destroying the country with rash decisions, like the fight with Qatar, or the murder of Khashoggi. MBS does have a sense that being capricious and impulsive can be costly. "If we run the country randomly," he told me, "then the whole economy is going to collapse." Others had tried that strategy: "That's the Qaddafi way."

King Salman has instituted measures ostensibly intended to force his son to govern more inclusively after Salman's death. He changed the law of succession to prevent the next king from naming his own children, or indeed anyone from his own branch of the family, as his crown prince. I asked MBS if he understood that to be the rule, and he said yes. I asked if he had anyone in mind for the job. "This is one of the forbidden subjects," he said. "You will be the last to know."

WHEN HE IS KING, however, the rules will belong to him, and to ask him to abide by them against his wishes will be about as easy as negotiating from your suite at the Ritz-Carlton.

A crown prince with a subtler mind and a gentler soul might have implemented MBS's reforms without resorting to his brutal methods. But it is pointless to consider policy in a state of childlike fantasy, as if it were possible to conjure some new Saudi monarch by closing your eyes and wishing him into existence. Open your eyes, and MBS will still be there. If he is not, then the man ruling in his place will not be an Arab Dalai Lama. He will be, at best, a member of the unsustainable Saudi old guard, and at worst one of the big beards of jihadism, now richer than Croesus and ready to fight. As MBS told me, to justify the Ritz operation, "It's sometimes a decision between bad and worse."

Since reality has handed us MBS, the question for America is how to influence him. This question is practical rather than moral: If your moralism drives him into a partnership with China, what good will it have been? A fundamental principle of Chinese foreign relations is butting out of other countries' internal affairs and expecting the same from them. Certainly Beijing will not reprimand him for his treatment of dissidents.

In effect, both the Saudis and the Americans are now in the Ritz-Carlton, forced to bargain with a jailer who promises us prosperity if we submit to his demands, and *Mad Max* if we do not. The predicament is familiar, because it is the same barrel over which every secular Arab autocrat has positioned America since the 1950s. Egypt, Iraq, and Syria all traded semitribal societies for modern ones, and they all became squalid dictatorships that justified themselves as bulwarks against chaos.

Twenty years ago, Syria watchers praised Bashar al-Assad for his modernizing tendencies—his openness to Western influence as well as his Western tastes. He liked Phil Collins; how evil could he be? By now most everyone outside Damascus, Tehran, and Moscow recognizes him as Saddam Hussein's only rival in the dubious competition for most evil Arab leader.

MBS has completed about three-quarters of the transition from tribal king with theocratic characteristics to plain old secular-nationalist autocrat. The rest of that transition need not be as ruthless as the beginning, but MBS shows no sign of letting up. The United States can, and should, make the case that Saudi Arabia's security and development will demand different tools going forward. It might even suggest what those tools should be. But it probably cannot make MBS use them.

A more pragmatic approach is to make sure that the reforms he has instituted stick, and that the changes in Saudi culture become irreversible. The opening of the country and the forcible sidelining of a crooked royal class—these are hard changes to undo, and they bind even the absolute monarch who decreed them. Granting women driver’s licenses was ultimately a smooth process. Taking them back would disrupt millions of lives and sow protest across the kingdom. American influence can acknowledge and encourage such changes.

Sometimes this is how absolute power relaxes its grip: slowly, without anyone noticing. In England, the transition from absolute monarchy to a fully constitutional one took 200 years, not all of them superintended by the most stable kings. MBS is still young and hoarding power, and everyone who has predicted that he would ease up on dissent has so far been proved optimistic. But 50 years is a long reign. The madness of King Mohammed could give way to something else: a slow and graceful renunciation of power—or, as with Assad, an ever more violent exercise of it.

This article appears in the April 2022 print edition with the headline “Absolute Power.”

Graeme Wood is a staff writer at *The Atlantic* and the author of *The Way of the Strangers: Encounters With the Islamic State*.

https://www.iaea.org/newscenter/pressreleases/joint-statement-by-he-mr-mohammad-eslami-vice-president-and-president-of-the-atomic-energy-organization-of-iran-and-he-mr-rafael-grossi-director-general-of-the-international-atomic-energy-agency

Joint Statement by HE Mr Mohammad Eslami, Vice-President and President of the Atomic Energy Organization of Iran, and HE Mr Rafael Grossi, Director General of the International Atomic Energy Agency

MAR 5 2022

22/2022

Tehran, Islamic Republic of Iran

The Vice-President of the Islamic Republic of Iran and President of the Atomic Energy Organization of Iran (AEOI) and the Director General of the International Atomic Energy Agency (IAEA) agreed on the following Joint Statement for the clarification of the issues mentioned in GOV/2021/52 of 17 November 2021.

The AEOI and the IAEA agreed, in continuation of their cooperation as stated in the Joint Statement of 26 August 2020, to accelerate and strengthen their cooperation and dialogue aimed at the resolution of the issues.

In this context, the AEOI and the IAEA agreed on the following:

1. The AEOI will provide to the IAEA no later than 20 March 2022 written explanations including related supporting documents to the questions raised by the IAEA which have not been addressed by Iran on the issues related to three locations.
2. Within two weeks after receiving the AEOI's written explanations and related supporting documents, the IAEA will review this information and will submit to the AEOI any questions on received information.
3. Within one week after the IAEA has submitted to the AEOI any questions on such information, the IAEA and AEOI will meet in Tehran to address the questions. Separate meetings will be held for each location.
4. Upon completion of the activities set out in paragraphs 1 to 3 above and following the corresponding evaluation by the Agency, the Director General will aim to report his conclusion by the June 2022 Board of Governors.

https://tass.com/world/1417379

5 MAR, 06:07

Russia demands US guarantees sanctions will not harm Moscow-Tehran ties — Lavrov

Moscow needs guarantees these sanctions will in no way affect the trading, economic and investment relations contained in the Joint Comprehensive Plan of Action for the Iranian nuclear program, the Russian Foreign Minister pointed out

MOSCOW, March 5. /TASS/. Moscow has demanded written guarantees from Washington at least at the secretary of state level the sanctions situation will not harm its cooperation with Tehran, Russian Foreign Minister Sergey Lavrov told a news conference following talks with Kyrgyzstan's Foreign Minister Ruslan Kazakbayev on Saturday.

He explained that against the backdrop of the latest western sanctions Russia wants to have a "very clear answer" from the United States in the context of bilateral Moscow-Tehran relations and the Iranian nuclear deal.

"We need guarantees these sanctions will in no way affect the trading, economic and investment relations contained in the Joint Comprehensive Plan of Action for the Iranian nuclear program. We have asked the American counterparts, who rule the roost here, to provide us with guarantees at least at the level of the secretary of state the current process launched by the United States will by no means affect our right to free and full-fledged trading, economic, investment, military and technical cooperation with Iran," Lavrov said.

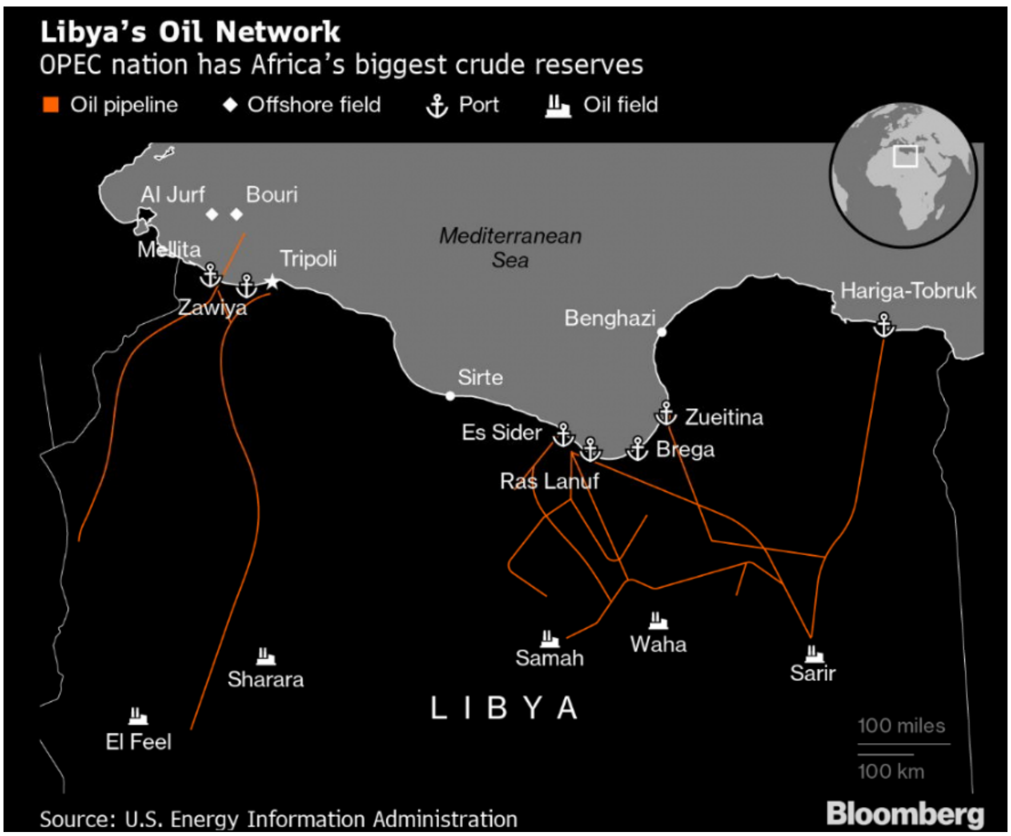
Lavrov recalled that the negotiators in Vienna on the JCPOA's resumption had done the lion's share of their job.

"All arithmetic issues are agreed by and large, although there remain some issues the Iranian counterparts still would like to be cleared up," he concluded. "We believe their expectations are quite fair."

The 8th round of negotiations on the restoration of the Joint Comprehensive Plan of Action and the United States' return to the fold of that multilateral agreement is nearing completion. This work is in progress within the framework of consultations by a joint commission of Iran and the international quintet (Russia, Britain, Germany, China and France), separate consultations without Iran's involvement and in three working groups. The negotiators are working on a draft final document. Hopefully the eighth round may become the last one. The negotiators are determined to be through with their mission in the near future.

Libya Oil Output Drops as OPEC Member's Political Crisis Deepens
2022-03-06 08:17:22.204 GMT

By Hatem Mohareb and Salma El Wardany
(Bloomberg) -- Libya's oil production has fallen below 1 million barrels a day, according to the energy minister, as the OPEC member plunges deeper into political crisis just as prices surge following Russia's invasion of Ukraine.
Output is down to 920,000 barrels a day, Oil Minister Mohammed Oun said in a response to a query from Bloomberg. It stood at roughly 1.2 million barrels on Wednesday.
The drop marks another supply problem for OPEC. Major importers, including the U.S. and Japan, have called on the group to raise output quickly to help bring down fuel prices. Crude has surged to more than $115 a barrel in the wake of Russia's attack.



Sharara, Libya's biggest field, and El Feel were both shut in the past few days after unknown groups closed their main valves, according to people familiar with the situation.
Read more: Libya's Biggest Oil Field Stops Producing as Crisis Deepens
Six ports that ship Libyan oil to international markets were also closed on Thursday, though four have now been reopened.
The outages come as the North African nation, which has been mired in conflict since the 2011 ouster of Moammar Al Qaddafi, once again faces a standoff between rival politicians.

Parliament on Thursday swore in a new government to replace Prime Minister Abdul Hamid Dbeibah's administration. He's resisting any attempt to remove him from power, which analysts say could reignite fighting.

The eastern oil terminals of Ras Lanuf, Brega, Zuetina and Es Sider had resumed operations by Sunday, according to other people familiar with the matter. It was unclear if Mellitah and Zawiya -- western ports served by Sharara and El Feel -- were still shut.

State-run National Oil Corp. on Thursday said the ports were closed due to bad weather. Oun, the energy minister, who has been at odds with the NOC, later said the move was unwarranted and a "violation of national security."

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SAF Group created transcript of excerpts of comments made by Mike Muller (Head, Vitol Asia) to Sean Evers (Founder & Managing Partner, Gulf Intelligence) on their "PODCAST: Daily Energy Markets – March 6th"
https://soundcloud.com/user-846530307/podcast-daily-energy-markets-march-6th-1

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

6:45min mark. Evers, on substantial disruptions to oil supply chain even without sanctions on oil, the big discount of Russian oil to Brent, Shell's buying the Russian oil cargo and "*your thoughts on where the market dynamics go as long as Russian oil and gas lifting it is legal?*" Muller "*yes, I wouldn't quite put it the way that it was an irresistible opportunity or anything like that. it is not illegal to purchase Russian oil yet. However, the means to do so are being tightened, where not by government's imposition, then certainly by voluntary moral imposition of restraints be that shipowners, be that insurance companies, be that the people that help maritime things move. And in this case, of course the economic incentives compared to historical norms to Euros, which would have traded for the last 8 to 10 years between minus 10 and plus 1 dollar per barrel vs dated Brent is indeed abnormally large. On a standard sized cargo from the Baltic to Rotterdam where this cargo is probably going, you're talking about an incentive of 15 to 20 million dollars just to be conservative. However, I am pretty much convinced that that's not what Shell is after. Shell came out after and said the proceeds from this uplift in revenue would go to humanitarian aid, which I think is a smart way of putting a postscript to it. But yes, their line was very simply we had to consult with politicians. Presumably in Germany or Netherlands where Urals is such a large part of the supply chain that stock-outs will be a consequence and therefore, I imagine that Shell would have put a question to government do you prefer that we run out of oil in part of the Rhineland or are you okay with us making this purchase*." Evers "…is that a credible argument, *is the market that tight that if you don't lift this Russian Urals. Some reporting is saying it's already disrupted by about 4 million barrels a day, if you don't lift it, your example in the Rhineland could be or whatever geography, could actually be without oil or without that requisite energy?"* Muller "*Absolutely. and I don't need to be accused of sticking out for my former company here but the market was already extremely tight on oil. Last time, you had me on this panel was early February. We had no idea nothing was going to go on in the Ukraine, and I was telling people watch out, we are just one headline away from this market spiking because of low inventories. and we had backwardation back then, which was disincentivizing storage. And we had already had SPR releases. What a headline, I guess. It is without a doubt, a fact, that in places like Germany where some refineries run 100% Urals and others have it as the largest grade in their diet, it is awfully hard to come by other crude when you have a delay or obstruction in the supply of any other crude streams. And just look at what's happening in Libya just as one of many examples of disruptions. A lot of headlines that would normally be front page have been drowned in the back pages as we are all consumed by this Ukraine tragedy. Yes, I do believe it would have resulted in stock-outs. There are some headlines that they are saying they would probably have been stock-outs. I am convinced there would have definitely been a stock-out. then it's a question do you want to start inconveniencing western consumers. This is the point, inconveniencing in the light of the tragedy we are seeing on television in the Ukraine. you are beginning to see headlines that about the fact that maybe we should start to begin inconveniencing ourselves. But a couple of observations, because in the global picture, you still have some places that are buying Russian oil. you asked about the bigger picture, China came out with a statement last week saying it's business as usual, they will not sanction and therefore continue to import Russian oil. Of course, China consumes most of the ESPO, the Pacific Russian crude that comes out just on their doorstep. The consensus you know is they might have to be the backstop home for lots of the Baltic Urals and even the Black Sea Urals to the extent that it's loading that will have to find it's way east if the west rejects it's whole sale. And in that scheme of things, yes, at $118 Brent prices, is $28 the right number? I think you will probably find that other companies engage with governments and get the okay to buy as well. But that's just oil. Let's look at other commodities. Oil has actually not made its all time high unless you express oil in Euro terms in which case it has. We remind ourselves the high in 2008 was $147 so another $20 to go. If you look at other energy markets of more importance to Europe especially as it's still the end of winter. Coal, natural gas, these are all time high prices. Natural gas went and triple peaked at a price in excess of 200 euros per MWH and API 2 coal is trading at $430, $440 the last time I looked. So you can again say that the oil supply chain is a little bit more resilience to it and has more depth to it and hasn't yet hasn't panicked n the way those utilities markets already have."*

At 19:45 min mark, Evers asks if it will make any difference if US etc sanction oil as it's already disrupting itself and hence already built into the oil prices? Muller "*It will. And yes you're right to say it looks like much of the western hemisphere Russian export program other than that down the pipelines is still up in the air. And as is the case with the normal stock markets cycle not yet placed from April onwards. But there is a huge question mark over it as you're talking about close to 3 million barrels a day. I think the flow into both the Druzhba pipeline and into Europe 700,000, 800,000 barrels a day. and then of course very large flows out of the Baltic and to a lesser extent out of the Black Sea. The world does not have enough spare capacity. I don't know if I misheard Christof there, but the world does not have enough crude either. Never mind the little wobble in Libya recently. Unless we get Iranian oil back, the supply demand balance is, with full Russian oil in the picture, we're not enough. And we were concerned about where the oil is going to come from. whether the Permian Basin could catch up quickly enough. And We were talking about the possible need for SPR releases just to address high oil price with nonsense like the mid term elections in mind to appease the electorate in North America. Now with millions of barrels a day of Russian oil probably likely to be backed in. some of it perhaps making the long way around thru [??]around the bottom end of Africa to eastern Asian markets. The impact is going to be very profound. If you have to build a artificially long maritime pipeline to transport the oil to the other hemisphere, that does away with a month's worth of demand as that oil is in transit. It's like line fill on a pipeline. And even if all goes there, there's still going to be a shortage of sweet barrels for the western hemisphere refining system. so the market is telling you that because it's showing you a $5, $6 per barrel backwardation, which we have not seen since the very first Gulf War in 1991 just before Desert Storm. This is unprecedented stuff. And the market is just telling you there's not enough oil in prompt end. The law of high prices is going to have to weed out the weaker demand and destroy it.*"

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

SAF Group created transcript of excerpts from Gulf Intelligence podcast "Daily Energy Markets – Feb 6th" [LINK]. Sean Evers, Managing Partner Gulf Intelligence, Mike Muller, Head Vitol Asia, Christof Ruhl, Senior Research Scholar Center on Global Energy Policy Columbia University

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

At 0:50 min mark, Evers re all bullish oil items like Aramco raising OSP, *"you told us last time, more or less pointed in this direction firmly, do you think this keeps moving from here?"* Muller "*well, it's come $2.50 last week and about $2.50 the previous week as well so it's not an unrestrained rally but, Yes, markets have very high implied volatility at these levels. And we have moved from a market that at the end of the year seemed a little bit to be in a risk off mode to people now seem to take great interest in the energy complex. But the bit I like to come to straight away here is fundamentals because there are a lot of people saying that, and I have heard some of your podcast last week for example suggesting, there are fundamental signs that are mixed. And my view is that it's a very resolute positive. There are reasons why the market is backward at the front and so backward, so much so that the market is telling you be careful, don't be short because we are one disruption, one refinery wobble away from markets getting even stronger. Whether it's the backwardation in the distillates market, whether it's jet fuel is trading at or above gas/oil, whether it's the backwardation in crude, these are all the manifestation of tightness up at the front where there is scarcity or a perceived scarcity of supply, which is not being helped by a combination of many refinery closures in recent years for reasons we know. Plus unscheduled refinery issues. Plus certainly in Europe the need to factor in higher gas prices and carbon prices into refinery margins. so refining margins are telling you refineries should be running flat out because product cracks are at levels we haven't seen for many, many months. As a consequence, that should be pulling very hard on crude markets. And inventories continue to sit at levels that are worrisome. and then we'll start talking about where the spare capacity is and the pace and rate of investments in the US is not quite what it was before, we're still nowhere near the peak that we saw pre-pandemic in terms pf US production capacity. And the spare capacity in OPEC+ is really down to two and a half or three members now and month after the month the 400,000 barrels per day that is being put on the market is actually, in effect, a much much smaller number than that. which leads us to a point in time that we can debate whether it's the 2nd half of this year or sometime next year, OPEC spare capacity reaches levels that are considered alarming. So much so that the debate has now swung to how soon we need Iranian supply to help alleviate the situation. Or whether there is even a need for more SPR because the way the SPR releases that Joe Biden's administration initiated over a month back were, with hindsight, just a small event."*

At 7:15 min mark, Evers asks about "*Mike, what are your thoughts coming from many that this is a year of two halves. The first half will be tight, the second half will ease off. We've had the US CEO of ConocoPhillips over the weekend warning that people are underestimating how much US oil production could come back this year as much as nearly a million barrels as part of that easing in the second half, your thoughts?"* Muller "*I didn't read the ConocoPhillips CEO comments as a warning, I read it as a factual statement. and I think it was another 800,000 to 900,000 barrels a day of US shale production that people at the very least would have expected. If you put me in a time capsule and sent me back a year and said if the oil price were at $75 a barrel, how much extra production would we see in the US? I would have given you his number. we're at 90 something so I think with WTI thru 90, I think those numbers are reasonably modest and they are a reflection of conservatism. And the prioritization among oil majors, even the listed US majors to not put all their eggs in the shale and oil basket in this time of energy transition. so, Yes, I don't subscribe to the view that you have two halves, the second half being weak. Except, everybody is building into their balances for the second half, the return of Iranian crude. And it's really a question of when. Administratively, even if there were to be a reconciliation and an agreement to drop sanctions, the return of Iranian crude is not foreseeable in Q2, even under an express outcome. So one has to assume this is a second half event. And then it's a question of what sort of rate of ramp up and I think most observers will be aware that there is a floating inventory of unsold oil on ships that have been commonly referred to as the floating flotilla of South Pars condensate largely. That would obviously all get released into the market somewhat* *quicker and then the rate of ramp up will also be reasonably quick. But the fact that this is in people's balances already and has been. Without exception, every investment bank, every advisory consultant, every oil major, they all have a view that Iranian oil will be out later this year tells you the world needs this oil*."

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

https://www.iea.org/news/iea-confirms-individual-contributions-to-collective-action-to-release-oil-stocks-in-response-to-russia-s-invasion-of-ukraine

IEA confirms individual contributions to collective action to release oil stocks in response to Russia's invasion of Ukraine

4 March 2022
IEA Member Countries unanimously agreed on 1 March to an initial emergency response plan to alleviate the increasing tightness in oil markets resulting from Russia's invasion of Ukraine. IEA Member Countries agreed to make 60 million barrels of their emergency oil stocks available to the market. In the last few days since the decision, each IEA Member Country has been considering how much it could contribute to the announced response plan, given its domestic circumstances. The commitments submitted by Members actually surpassed 60 million barrels, demonstrating great solidarity.

"The decision taken to release emergency stocks – for only the 4th time in the IEA's history – has sent a strong message that IEA Members are unified in support of Ukraine and will do all they can to provide stability to the market during these difficult days," said IEA Executive Director Fatih Birol. "Events in Ukraine remain deeply distressing and the impacts on energy markets are becoming more pronounced. We continue to monitor the situation closely. If necessary, we are ready to recommend additional steps to build on this initial release."

IEA Member Countries hold 1.5 billion barrels in public reserves and about 575 million barrels under obligations with industry. Therefore, this initial response of 61.7 million barrels represents just 3% of total emergency reserves.

Emergency oil stocks in IEA member countries are either in the form of public stocks (government-owned or by specialised agencies), or stocks held by industry under an obligation of the government. In the case of public stocks, these can be released via tenders or loans to the market, which will be launched and released over the coming weeks depending on the specific stockholding system in each country. In the case of obligated industry stocks, obligations will be lowered, via legislative decrees or administrative mandates, to make the volumes available for consumption. This can take a matter of days.

The following table shows the breakdown of the oil to be made available by each of the participating countries. More details will be made available in due course on the breakdown of the pledged barrels in crude and products, and public and obligated industry stocks.

Following the announcement of an emergency release of oil stocks by IEA Member Countries on Tuesday, the IEA Governing Board confirmed today that the total amount committed to date stands at 61.7 million barrels, making it the largest stock release in IEA history

Contribution to IEA collective stock draw

	kb
Australia	1 692
Austria	387
Belgium	258
Estonia	36
Finland	377
France	1 500
Germany	3 215
Greece	303
Hungary	266
Ireland	222
Italy	2 041
Japan	7 500
Korea	4 420
Lithuania	115
Luxembourg	109
Netherlands	823
New Zealand	384
Norway	409
Poland	1 052
Spain	2 000
Sweden	551
Switzerland	350
Turkey	1 500
United Kingdom	2 200
United States	30 000
Total IEA	**61 710**

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Oil price outlook – Snapshot: February 28, 2022

Disclaimer: Please note that BNEF does not offer investment advice. Clients must decide for themselves whether current market prices fully reflect the issues discussed in this note.

Category	Indicator	Signal	Comment
Fundamentals	**Refinery margins**	↔	• Refinery margins were mixed over the past week as surging natural gas prices weighed down on margins in Northwest Europe and Singapore.
	Crude stocks	↔	• In the week ending February 18, land crude-oil storage levels in BloombergNEF's tracked regions (U.S., ARA, Japan) rose by 1.6% to 525.7 million barrels (m bbl). The stockpile **deficit** against its five-year average (2015-19) **narrowed from 74.2m bbl to 63.0m bbl**. • Including global floating crude stockpiles from the same week, total crude oil inventories decreased by 0.9% to 617.0m bbl, with the stockpile **deficit widening from 37.0m bbl to 37.1m bbl.**
	Product stocks	↔	• In the week ending February 18, gasoline and light distillate stockpiles in BNEF's tracked regions (U.S., ARA, Singapore, Japan and Fujairah) were up 0.3% week-on-week to 288.2m bbl, with the stockpile **deficit** against its three-year average (2017-19) **narrowing from 11.5m bbl to 10.0m bbl**. Gasoil and middle distillate stockpiles in BNEF's tracked regions rose by 0.1% to 149.6m bbl, with the stockpile **deficit** against its three-year average **narrowing from 43.0m bbl to 41.5m bbl**. • Total oil product stockpiles in tracked regions decreased by 0.8% to 895.9m bbl, with the stockpile **deficit** against its three-year seasonal average **widening from 72.4m bbl to 75.0m bbl**. Altogether, crude and product stockpiles dropped by 0.8% to 1,512.8m bbl, with the stockpile **deficit widening from 109.4m bbl to 112.1m bbl.**
	Demand indicators	↔	• In the week to February 22, global jet fuel demand from commercial passenger flights rose for the third consecutive week, by 89,000 barrels per day (or 2.1%) week-on-week to 4.38 million barrels per day. Jet fuel consumption by international passenger departures was up by 52,000 barrels per day (or 2.5%) week-on-week, while consumption by domestic passenger departures rose by 37,000 barrels per day (or 1.7%). • Global mobility indices were mixed over the past week, putting an end to four straight weeks of gains. Apple's global driving activity index increased by 2.0% in the week to February 24. Google's global mobility index was down 0.8% in the week to February 24, reflecting declines in Asia Pacific ex-China (-0.2%), Europe (-1.3%) and the Americas (-1.2%). Road congestion in China increased by 8.7 percentage points to 106.9% of January 2021 levels in the week to February 23, according to BNEF's calculation based on Baidu's data. • Daily average Covid-19 cases dropped 16% to 1.6 million in the week to February 26, the fourth straight week of decline. Europe was down 22% to 640,000 daily cases and the Americas were down 28% to 239,000 daily cases, but Asia Pacific was up 21% to 449,000 daily cases. All numbers shown are the daily averages for the week ending February 26. • Weather forecasts showed that temperatures in key European and Asian cities are becoming warmer.
	Macro indicators	↔	• The dollar index averaged at 96.4 over the past week and was 0.4% higher than the week before. Flash manufacturing PMI for the U.S. climbed to 57.5 in February, from 55.5 in January, but fell in the eurozone to 58.4 from 58.7 in the same period.
Financial	**Hedge fund positioning**	↔	• In the week to February 22, Managed Money net positioning in the oil complex decreased by 14.5m bbl (or 2.0%) week-on-week to 714.4m bbl and remained in the 44th percentile (vs. the 46th last week) of the past five years. Next week's data could show a spike in net length, however.
	Options chains and volatility	↔	• There was a significant liquidation of Brent Jun-22 $95/bbl calls in the week to February 24. Brent and WTI 1M volatility skews rallied.
Outlook	**Weekly call**	↔	• BNEF is neutral on oil prices for the week ahead, with Brent May-22 trading at $98.27/bbl and WTI Apr-22 trading at $95.61/bbl at the time of writing. The U.S. and Western allies announced imposing sanctions against Russia, including blocking some Russian banks from SWIFT. To avoid further pushing up energy prices, the U.S. has indicated intentions to exclude certain energy transactions from sanctions enforcement while European allies are still considering exemptions as they finalize the details of the SWIFT sanctions. In the meantime, Russian oil flows could still face some disruptions, which would keep oil prices elevated. In the week ahead, oil prices will be highly sensitive to the rigor of the SWIFT sanctions on Russia. OPEC+ is set to meet on March 2 to decide on April output levels.

Past outlooks

Disclaimer: Please note that BNEF does not offer investment advice. Clients must decide for themselves whether current market prices fully reflect the issues discussed in this note

Date of report	Refinery margins	Crude stocks	Product stocks	Demand indicators	Commitment of traders	Options chain and volatility	BNEF week ahead call	Brent/WTI price at time of writing ($/bbl)	Web Link
February 28	↔	↔	↔	↔	↔	↔	↔	Brent-May: 98.27 WTI-Apr: 95.61	
February 21	↔	↔	↑	↑	↔	↔	↑	Brent-May: 91.50 WTI-Apr: 90.17	
February 14	↑	↔	↑	↑	↓	↔	↑	Brent-Apr: 93.75 WTI-Mar: 92.46	
February 7	↑	↑	↔	↑	↔	↔	↔	Brent-Apr: 92.83 WTI-Mar: 91.43	
January 31	↑	↔	↔	↑	↓	↔	↑	Brent-Apr: 89.17 WTI-Mar: 87.55	
January 24	↔	↑	↔	↔	↑	↓	↑	Brent-Mar: 87.19 WTI-Mar: 85.25	
January 17	↑	↑	↔	↔	↑	↑	↔	Brent-Mar: 85.78 WTI-Mar: 83.22	
January 10	↑	↓	↔	↓	↑	↑	↔	Brent-Mar: 81.71 WTI-Feb: 78.82	
January 3	↔	↔	↑	↓	↔	↔	↑	Brent-Mar: 78.84 WTI-Feb: 76.14	
December 13	↑	↑	↔	↑	↓	↔	↑	Brent-Feb: 75.25 WTI-Jan: 71.62	
December 6	↑	↔	↔	↔	↓	↑	↔	Brent-Feb: 71.63 WTI-Jan: 68.05	
November 29	↓	↔	↑	↔	↓	↓	↔	Brent-Feb: 74.47 WTI-Jan: 71.14	
November 22	↓	↑	↔	↔	↓	↓	↓	Brent-Jan: 79.00 WTI-Jan: 76.06	
November 15	↓	↔	↓	↔	↔	↓	↓	Brent-Jan: 81.27 WTI-Jan: 78.97	

To view past reports on terminal, go to NI BNEFOIL, search for the report and click on the icon to the far right:

BloombergNEF

Fundamentals | Financial

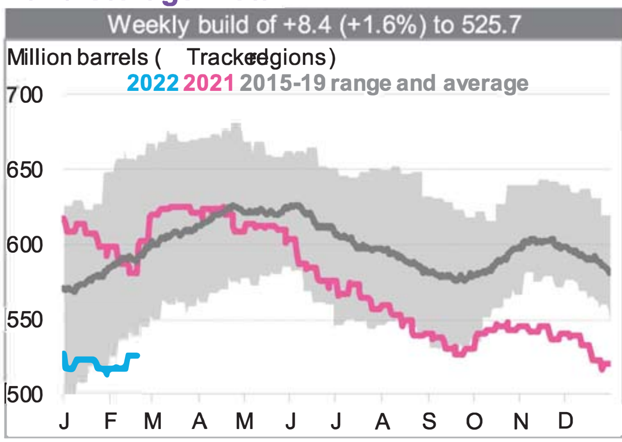
Crude stocks: Land

Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

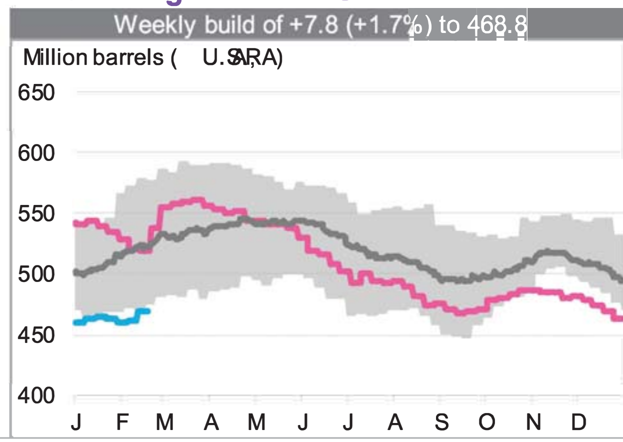
Bearish: Deficit narrowed from 74.2m bbl to 63m bbl against seasonal average

- Crude inventory rises when supply outstrips demand (meaning more physical oil is available than is needed). High or rising inventories are therefore a bearish factor for oil prices. Every year, storage levels fluctuate due to seasonal demand trends. The intra-year directional movement of stockpile levels is somewhat predictable, yet the magnitude of movement can differ significantly from expectations.
- A useful way to gauge if the intra-year storage levels differ from the norm is to measure the difference between the current and seasonal average inventory levels.

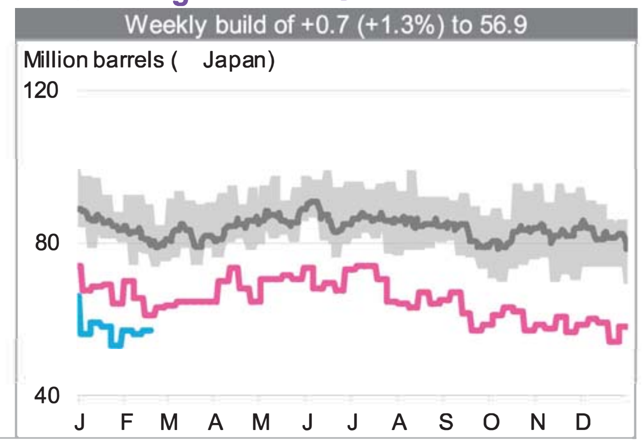
Land storage: Total



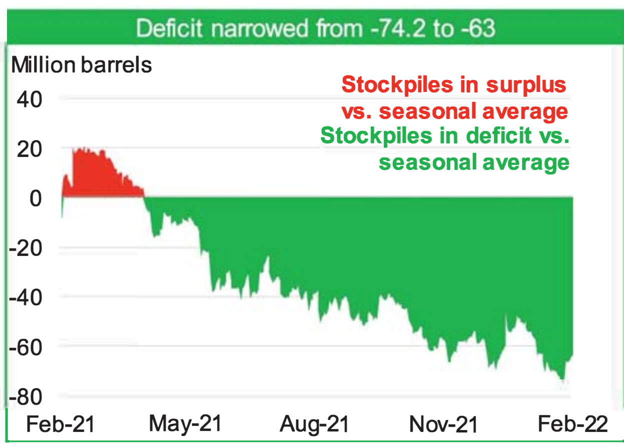
Land storage: West of Suez

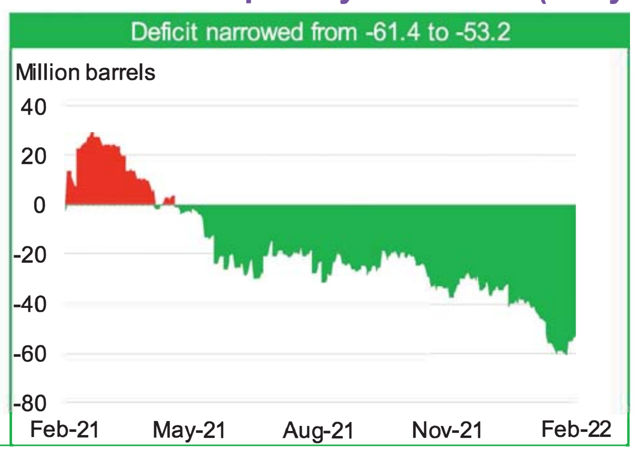


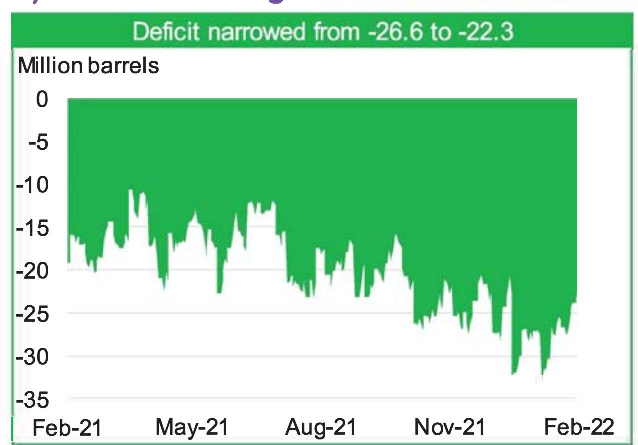
Land storage: East of Suez



Charts below subtract current stockpiles by the 2015-19 (five-year) seasonal average







Source: BloombergNEF, U.S. EIA, Genscape, PAJ, SCIG. Note: As of the ***week ending Feb. 18.***

BloombergNEF

Fundamentals Financial

Crude stocks: Floating

Neutral: Surplus narrowed over the recent week

- Floating storage is only profitable if the strength of contango (future vs. prompt price) is greater than the tanker costs. Therefore, tankers become floating storage when the profit from a storage play exceeds the cost of the forward freight agreement (FFA).
- The floating storage data used in the "Oil Price Outlook" slide is for the previous week (i.e. the week before the latest data shown below). That data are available in the table to the right.

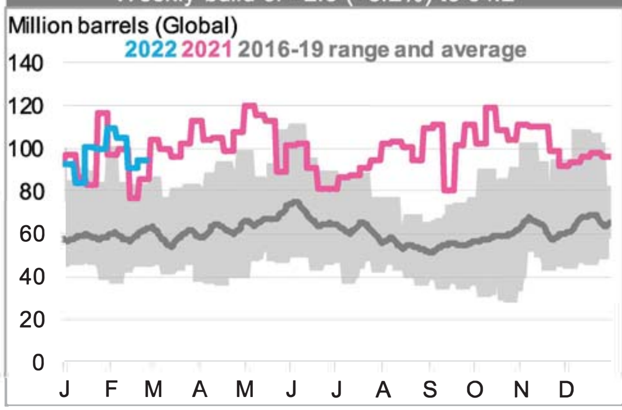
Vortexa's revision to global floating crude inventories

Million barrels	Previous report	Current report	Vortexa's revision
Inventories in week of Feb. 18	90.8	**91.3***	+0.5
Inventories in week of Feb. 11	106.6	105.4	-1.2

*Note: *Figure used to aggregate total oil inventories.*

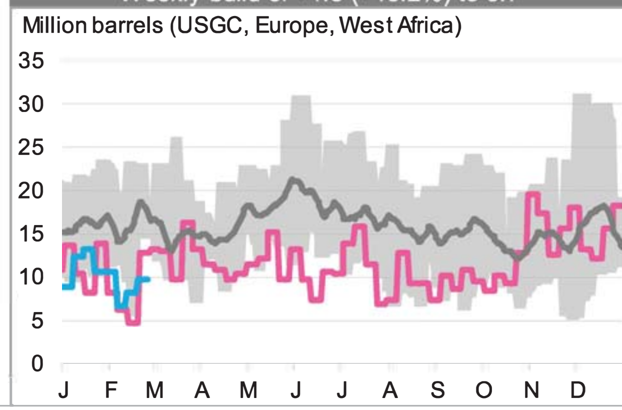
Floating storage: Total

Weekly build of +2.9 (+3.2%) to 94.2



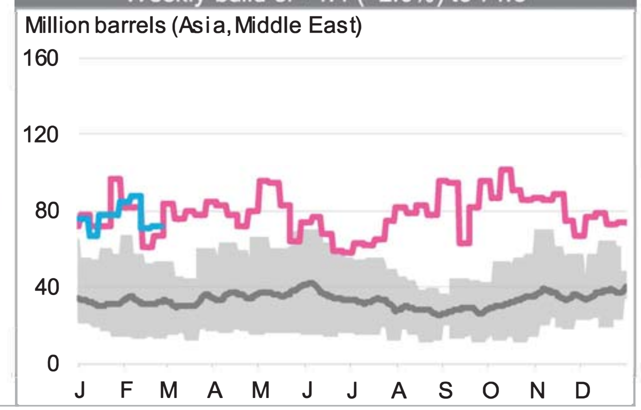
Floating storage: West of Suez

Weekly build of +1.5 (+18.2%) to 9.7



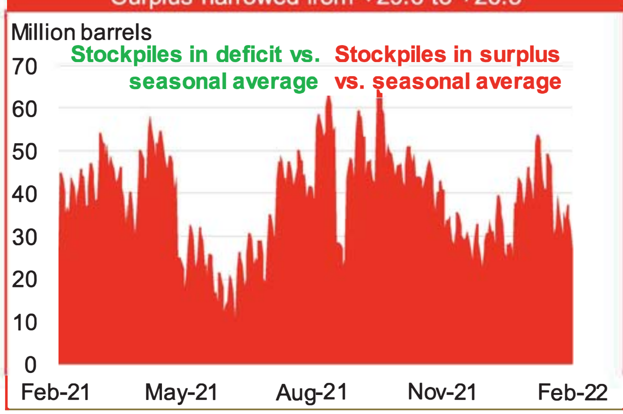
Floating storage: East of Suez

Weekly build of +1.4 (+2.0%) to 71.8

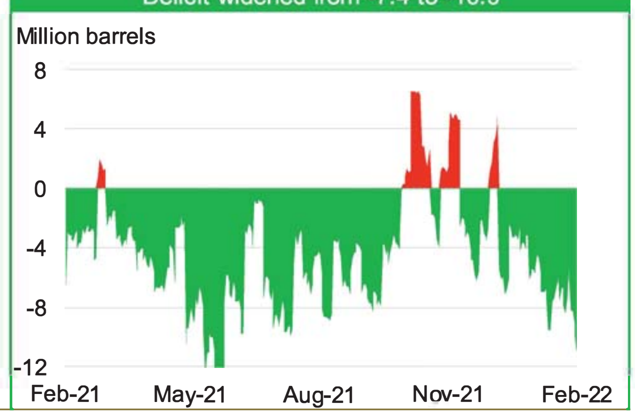


Charts below subtract current stockpiles by the 2016-19 (four-year) seasonal average

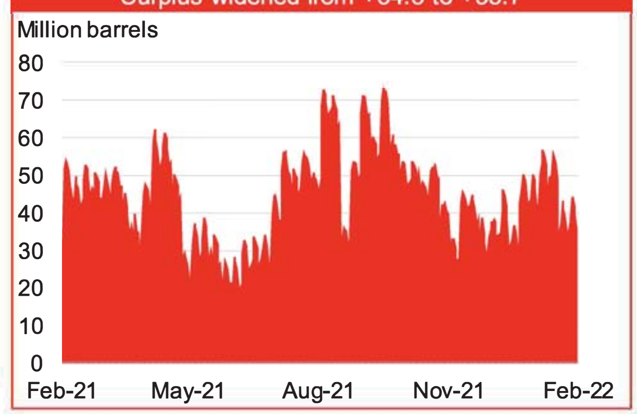
Surplus narrowed from +29.6 to +26.5



Deficit widened from -7.4 to -10.9



Surplus widened from +34.8 to +35.7



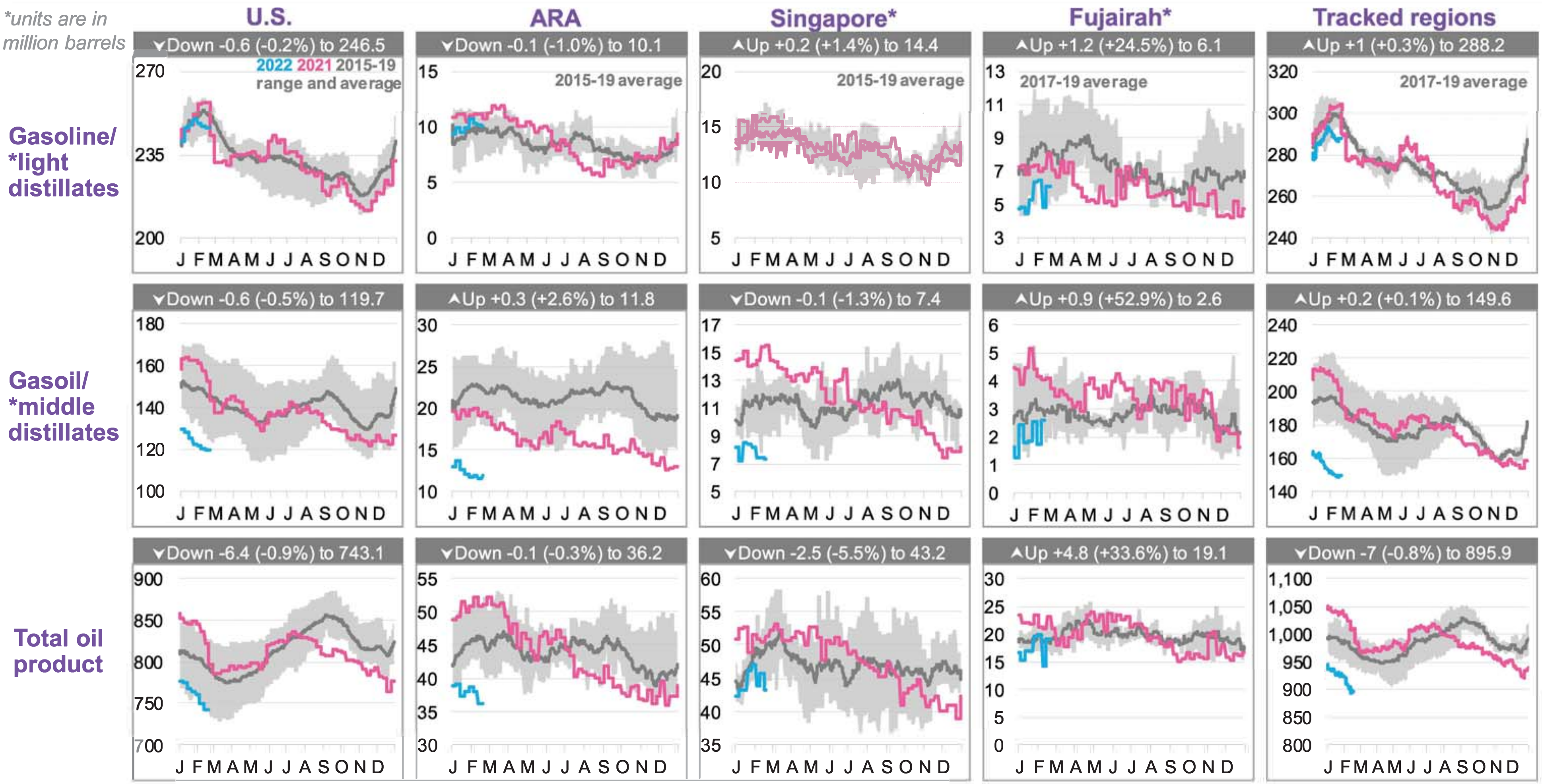
*Source: BloombergNEF, Vortexa. Note: As of the **week ending February 25**. ***Raw data from Vortexa is revised frequently, so the data in this report might change week-to-week.***

Fundamentals Financial

Product stocks: Current vs. seasonal average

Neutral: Oil product stockpiles in tracked regions fell by 0.8% week-on-week

- Chart legend are as follows: 2021, 2020 and the 2015-19 range and average. For Fujairah and tracked regions, the **2017-19 (three-year) seasonal range** is shown. Tracked regions include U.S., ARA, Singapore, Japan and Fujairah



Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the ***week ending Feb. 18.***

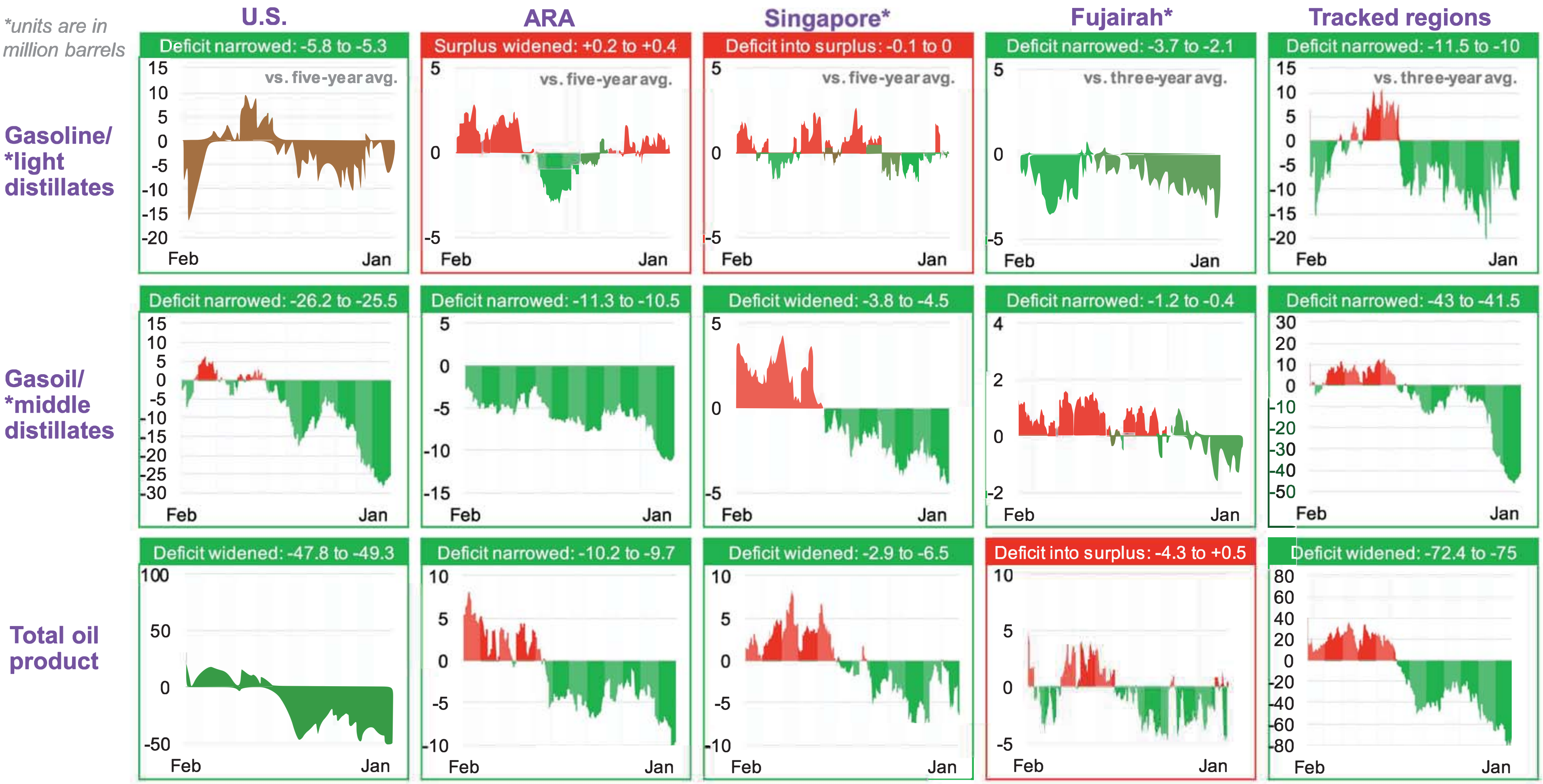
BloombergNEF

Fundamentals Financial

Product stocks: Current vs. seasonal average

Neutral: Oil product stockpile deficit against the seasonal average narrowed from 72.4m bbl to 75m bbl

- The charts below compare each respective regional product stockpile level against the seasonal average defined in the previous slide.
- **Red** signifies that the current stockpile levels are higher (in surplus) than the seasonal average, while **green** signals that the current stockpiles are lower (in deficit).



*Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the **week ending Feb. 18.***

Aggregated oil stockpiles

Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

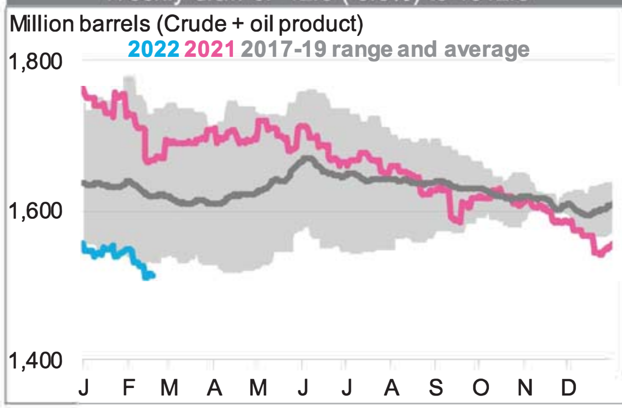
Neutral: Stockpiles deficit widened from 109.4m bbl to 112.1m bbl

- Charts below use the **2017-19** (three-year) seasonal stockpiles. All calculations are recalibrated to measure against their respective three-year seasonal averages, so the values below might differ from the previous slides.
- Land crude inventories include the U.S., ARA, Japan and Shandong Teapots. Floating storage data are global. Oil product storage includes the U.S., ARA, Japan, Singapore, Shandong Teapots and Fujairah. Floating crude inventories may have been adjusted since the previous report – see slide 8 for more info.

Total oil and product stocks = Total crude stocks (land + floating) + Total oil product stockpiles

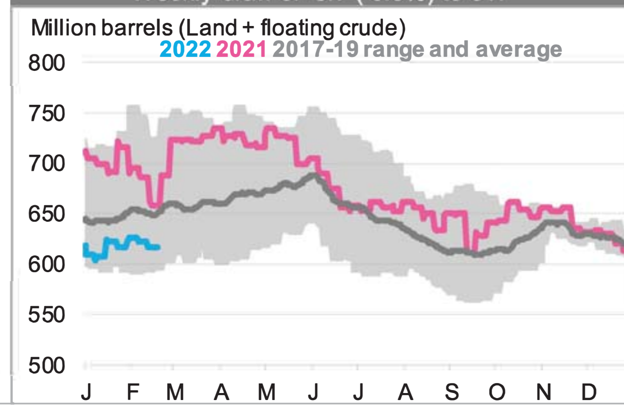
Total oil and product stocks

Weekly draw of -12.8 (-0.8%) to 1512.8



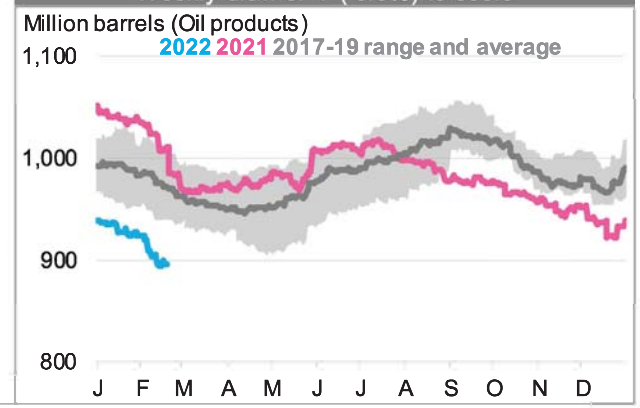
Total crude stocks (land + floating)

Weekly draw of -5.7 (-0.9%) to 617



Total oil product stockpiles

Weekly draw of -7 ~~(-0.8%) to 895.8~~

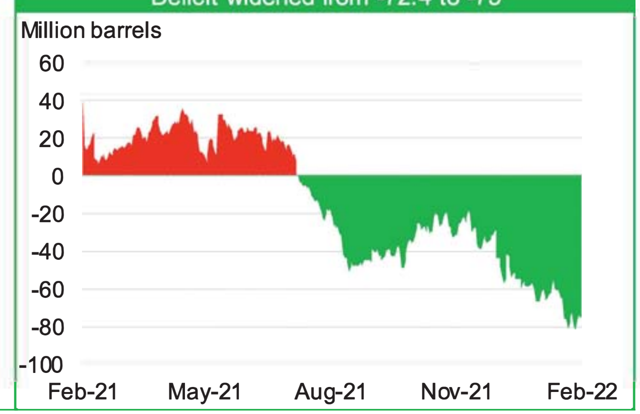


Charts below subtract current stockpiles by the 2017-19 (three-year) seasonal average

Deficit widened from -109.4 to -112.1

Deficit widened from -37 to -37.1

Deficit widened from -72.4 to -75



*Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape, SCIG. As of the **week ending Feb. 18.***

Mar 03, 2022 09: 17: 10

OIL DEMAND MONITOR: High Prices Cloud Outlook for Gasoline Use

- Commercial flight numbers worldwide still rising slowly
- London congestion exceeded 2019 levels Monday; New York near

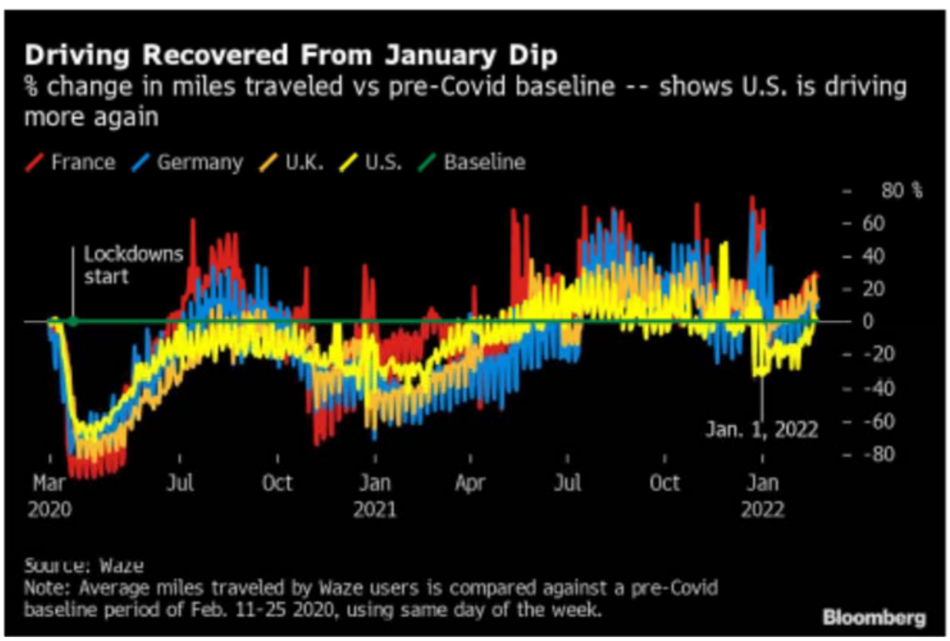
By Stephen Voss

(Bloomberg) -- High prices look set to cloud the outlook for gasoline demand, which hasn't yet convincingly exceeded pre-pandemic levels in all parts of the world.

Demand for gasoline in the U.S., the world's biggest consumer, was comfortably near the five-year average last week but still 2.7% below the equivalent period of 2019, and service-station sales of the same fuel in the U.K. in the week ended Feb. 20 trailed pre-pandemic levels by 13%, government statistics show.

Gasoline sales in India, however, rebounded strongly in February amid a steady decline in coronavirus cases, and were about 7% above February 2020, before the pandemic hit the country, according to refinery officials with direct knowledge of the matter.

Consumers around the world are facing extreme retail prices, with regular gasoline above $3.60 a gallon in the U.S. for the first time since 2014. With Russia's invasion of Ukraine and the ensuing sanctions causing additional strain on the security of oil supply, demand destruction is probably the only thing that can prevent oil prices marching even higher, Goldman Sachs Group Inc. analysts wrote in a note dated Feb. 27.



A broad measure of road use is provided by satellite navigation information company Waze, a subsidiary of Google. The average number of miles driven per day by Waze users across the U.S. has recovered from an early 2022 dip and is now slightly above a pre-Covid February 2020 baseline. Germany has made a similar recovery, joining the U.K. and France, which also show the increase in car use. Driving habits are resuming around the world as the infection wave caused by the omicron variant of the coronavirus continues to recede.

Out of 13 world cities regularly examined in this monitor, only London showed more congestion on Monday morning than typical levels for that time of week in 2019, according to data collected from in-car navigation devices by TomTom NV. New York was very close, lagging the pre-pandemic benchmark by only 2%. Driving picked up on Tuesday in Taipei after a national Taiwanese holiday sapped commuting on Monday.

The latest weekly snapshots of vehicle mobility from the U.S. and U.K. transport ministries, using roadside sensors, show little change from previous weeks. The number of vehicle miles driven on U.S. interstate highways was 0.6% below 2019 levels, after being 0.5% above the prior week. In the U.K., the use of all vehicles was 5% below a pre-pandemic benchmark. Car use has generally stayed below the pre-Covid era while heavy goods vehicles and vans are being driven more.

U.S. refinery activity has been broadly steady for the last several months. The latest data shows a large year-over-year change, though that's because unusual freezing temperatures hobbled oil field operations in Texas this time last year, reducing the amount of crude delivered to refineries. Gulf Coast refineries operated at 87.5% capacity last week, compared with only 40.9% a year earlier.

Airline Activity

Air traffic data continues to show Europe and parts of Asia lagging behind a recovery in activity in North and South America, even though flight numbers are higher than they were in January.

The daily number of worldwide commercial flights tracked by FlightRadar24, excluding various categories such as military travel and helicopters, shows the latest figures still stuck between the depressed levels of this time a year ago and the pre-pandemic situation in 2019 and 2020, but nevertheless on a slowly rising trend.

The Bloomberg weekly oil-demand monitor uses a range of high-frequency data to help identify emerging trends.

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

Demand Measure	Location	% y/y	% vs 2020	% vs 2019	% m/m	Freq	Latest Date	Latest Value	Source
Gasoline	U.S.	+7.3	-4.8	-2.7	+6.3	w	Feb. 25	8.74m b/d	EIA
Distillates	U.S.	+17	+14	+9.2	-4.7	w	Feb. 25	4.45m b/d	EIA
Jet fuel	U.S.	+14	-14	-24	+0.3	w	Feb. 25	1.47m b/d	EIA
Total oil products	U.S.	+11	-2	-3.1	-2.7	w	Feb. 25	20.8m b/d	EIA
All vehicles miles traveled	U.S.			-0.6		w	Feb. 27	14.1b miles	DoT
Passenger car VMT	U.S.			-3.2		w	Feb. 27	n/a	DoT
Truck VMT	U.S.			+9		w	Feb. 27	n/a	DoT
All motor vehicle use index	U.K.	+30		-5	+3.3	w	Feb. 28	95	DfT
Car use	U.K.	+36		-10	+3.4	w	Feb. 28	90	DfT
Heavy goods vehicle use	U.K.	+1.9		+6	+1	w	Feb. 28	106	DfT
Gasoline (petrol) avg sales per filling station	U.K.	+47		-13	-0.4	w	Feb. 20	6,369 liters/d	BEIS
Diesel avg sales per station	U.K.	+19		-12	+0.8	w	Feb. 20	9,177 liters/d	BEIS
Total road fuels sales per station	U.K.	+29		-12	+0.3	w	Feb. 20	15,546 liters/d	BEIS
Gasoline	India	+3.3	+7.1		+24	2/m	Feb. 1-28	2.29m tons	Bberg
Diesel	India	-0.9	-4.8		+21	2/m	Feb. 1-28	5.77m tons	Bberg
LPG	India	+7.7	+18		+3.6	2/m	Feb. 1-28	2.44m tons	Bberg
Jet fuel	India	-3	-38		+4.4	2/m	Feb. 1-28	395k tons	Bberg
Total Products	India	-0.2	-6	-4.9	-3.7	m	January	17.6m tons	PPAC
Toll roads volume	France	+16		-2.9		m	January	n/a	Atlantia
Toll roads volume	Italy	+43		-12		m	January	n/a	Atlantia
Toll roads volume	Spain	+53		-10		m	January	n/a	Atlantia
Toll roads volume	Brazil	+1.1		-3.4		m	January	n/a	Atlantia
Toll roads volume	Chile	+40		+12		m	January	n/a	Atlantia
Toll roads volume	Mexico	+15		+12		m	January	n/a	Atlantia
Gasoline	Spain	+36			-17	m	January	398k m3	Exolum

Diesel (and heating oil)	Spain	+5.6			-11	m	January	2197k m3	Exolum
Jet fuel	Spain	+149			-12	m	January	330k m3	Exolum
Road fuel sales	France	+7.1	-9.5		-15	m	January	3.63m m3	UFIP
Jet fuel	France	+53	-35		-14	m	January	437k m3	UFIP
Gasoline	France	+18	-3.8			m	January	n/a	UFIP
Road diesel	France	+3.9	-11			m	January	n/a	UFIP
All petroleum products	France	+6.1	-12		-12	m	January	4.23m tons	UFIP
Total fuel sales	Italy	+6.9	-12		-18	m	January	3.68m tons	Ministry
Gasoline	Italy	+27	-14		-22	m	January	502k tons	Ministry
Diesel /gasoil	Italy	+11	-13		-23	m	January	1.84m tons	Ministry
Jet fuel	Italy	+139	-40		-9.7	m	January	196k tons	Ministry
All vehicles traffic	Italy	+30			-12	m	January	n/a	Anas
Heavy vehicle traffic	Italy	unch			-11	m	January	n/a	Anas

Notes: Click here for a PDF with more information on sources, methods. The frequency column shows w for data updated weekly, 2/m for twice a month and m for monthly. The column showing "vs 2020" is used for some data, such as comparing Indian fuel demand for Feb. 2022 vs Feb. 2020.

In Dfr U.K. daily data, which is updated once a week, 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. daily data, which is updated once a week, 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.

Atlantia is publishing toll road data on a monthly basis, rather than the weekly format seen in 2021.

City congestion:

Measure	Location	% chg vs avg 2019	% chg m/m	Feb. 28	Feb. 21	Feb. 14	Feb. 7	Jan. 31	Jan. 24	Jan. 17	Jan. 10	Jan. 3
		(Feb. 28)		Congestion minutes added to 1 hr trip at 8am* local time								
Congestion	Tokyo	-8	+21	34	35	25	31	28	32	35	5	1
Congestion	Taipei	-92	+67	3	44	47	23	2	32	33	32	32
Congestion	Jakarta	-100	-100	zero	12	11	19	14	31	37	32	26
Congestion	Mumbai	-63	+36	18	19	17	8	13	9	7	7	10
Congestion	New York	-2	-15	31	5	28	33	36	26	4	19	11
Congestion	Los Angeles	-10	+23	32	6	29	32	26	26	8	13	10
Congestion	London	+14	unch	43	47	21	45	43	41	41	37	1
Congestion	Rome	-27	+40	35	35	34	35	25	25	22	28	7
Congestion	Madrid	-76	-39	8	24	25	18	14	16	12	12	2
Congestion	Paris	-46	-32	24	29	46	43	35	34	35	36	19
Congestion	Berlin	-18	+77	28	29	26	25	16	25	29	29	20
Congestion	Mexico City	-29	+57	35	32	29	zero	22	18	15	20	13
Congestion	Sao Paulo	-76	-66	10	29	28	33	28	14	16	19	10

Source: TomTom. Click here for a PDF with more information on sources, methods.

* Mumbai and Sao Paulo use 9am statistics rather than 8am.

NOTE: m/m comparisons are Feb. 28 vs Jan. 31. TomTom has been unable to provide Chinese data since April 2021. Taipei and Jakarta were added to the table in December 2021.
NOTE: Public holidays curbed traffic in Taipei, Jakarta and Sao Paulo on Feb. 28 and in U.S. cities on Feb. 21.

Air Travel:

Measure	Location	y/y	vs 2 yrs ago	vs 2019	m/m	w/w	Freq.	Latest Date	Latest Value	Source
		changes shown as %								
Airline passenger throughput	U.S.	+120	-5.8	-12	+36	-8.2	d	March 1	1.64m	TSA
Commercial flights	Worldwide	+37	-8.3	-13	+11	+5.7	d	March 1	94,405	FlightRadar24
Air traffic (flights)	Europe	+113		-27	+20	+5.8	d	March 1	19,006	Eurocontrol
Seat capacity	Worldwide	+44	-16	-23	+11	+1.1	w	Feb28-Mar6	82.1m	OAG
Seat capacity	North America			-14		-0.3	w	Feb28-Mar6	n/a	OAG
Seat capacity	North East Asia			-22		-3.3	w	Feb28-Mar6	n/a	OAG
Seat capacity	South East Asia			-47		+2.7	w	Feb28-Mar6	n/a	OAG
Seat capacity	South Asia			-5.8		+6.7	w	Feb28-Mar6	n/a	OAG
Seat capacity	Western Europe			-29		+6.1	w	Feb28-Mar6	n/a	OAG

NOIE: Comparisons versus 2019 or versus the early weeks of 2020 are a better measure of a return to normal for most nations, rather than y/y comparisons.
FlightRadar24 data shown above, and comparisons thereof, all use 7-day moving averages, except for w/w which uses single day data.

Refineries:

Measure	Location/area	y/y	chg vs 2019	m/m chg	Latest as of Date	Latest Value	Source
		Changes are in ppt unless noted					
Crude intake	U.S.	+55%	-3.1%	+1%	Feb. 25	15.4m b/d	EIA
Apparent Oil Demand	China	+2.5%		-3.8%	December 2021	13.65m b/d	NBS
Utilization	U.S.	+32	+0.6	+1	Feb. 25	87.7 %	EIA
Utilization	U.S. Gulf	+47	-1.6	+1.5	Feb. 25	87.5 %	EIA
Utilization	U.S. East	+15	+26	-1.6	Feb. 25	85.8 %	EIA
Utilization	U.S. Midwest	+23	+6.8	+2.1	Feb. 25	94.0 %	EIA

NOTE: All of the refinery data is weekly, except NBS apparent demand, which is usually monthly. Changes are shown in percentages for the rows on crude intake and Chinese apparent oil demand, while refinery utilization changes are shown in percentage points. SCI99 data on Chinese refinery run rates was discontinued in late 2021.

PMI

Caixin China General Manufacturing PMI Press Release

2022.02

财新 Caixin

Caixin China General Manufacturing PMI™

Business conditions improve slightly in February

Latest PMI data signalled a slight improvement in business conditions across China's manufacturing sector in February. Firms recorded a slight increase in output amid the fastest increase in total sales since last June. However, the pandemic continued to weigh on external demand, with new export orders falling again. Firms meanwhile registered a further drop in employment, which contributed to a fresh increase in unfinished business. Inflationary pressures meanwhile picked up, with both input prices and output charges rising at quicker rates. The outlook brightened, however, with optimism regarding future output improving to an eight-month high in February.

The headline seasonally adjusted *Purchasing Managers' Index™ (PMI™)* – a composite indicator designed to provide a single-figure snapshot of operating conditions in the manufacturing economy – rose from 49.1 at the start of 2022 to 50.4 in February, to signal a renewed improvement in overall business conditions. The rate of improvement was only slight, however, and softer than the long-run series average (51.0).

Supporting the higher headline index reading was a renewed increase in total new business placed with Chinese goods producers. Though modest, the rate of new order growth was the quickest seen for eight months, with a number of firms commenting on a relative improvement in market conditions and firmer customer demand. The increase in total sales was despite a further drop in new export business, which was often linked to the pandemic and difficulties in shipping items to clients.

The improvement in overall demand conditions helped to drive a fresh increase in output in February. Production has now risen in three of the past four months, though the latest expansion was only slight.

Firms maintained a relatively cautious approach with regards to staffing levels, which fell for the seventh month running in February. The pace of job shedding was only modest, however, having eased since January. Nonetheless, there were signs of renewed capacity pressures, as firms registered a fresh increase in backlogs of work.

After a slight reduction in January, purchasing activity increased during February amid reports of higher production requirements. The rate of increase was marginal, however, and softer than the series average. Inventories of both pre- and post- production items meanwhile fell again in February, and at quicker rates than at the start of the year. A number of firms mentioned increased usage of current stocks for production and the fulfilment of orders, partly due to higher purchasing costs.

Suppliers' delivery times lengthened again in February amid reports of shipping delays and material and staff shortages. That said, delays were not as marked as those seen in January and only modest.

Prices data showed a sharp and accelerated rise in average input costs. Notably, the rate of inflation hit a four-month high, with firms citing greater costs for raw materials, staff and transport. Selling prices likewise increased at the steepest rate since last October.

Confidence regarding the 12-month outlook for output improved further in February to reach its highest since last June. Companies anticipate that a post-pandemic recovery and stronger demand conditions globally will help to support growth over the coming year.

China General Manufacturing PMI

sa, >50 = improvement since previous month

Sources: Caixin, IHS Markit

Key findings:

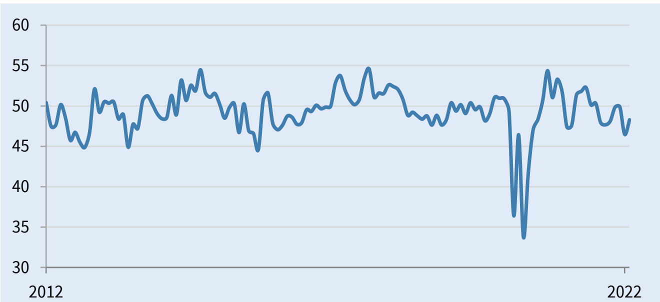
Output returns to growth amid quickest rise in new work for eight months

Pandemic continues to weigh on export sales

Business confidence picks up to highest since last June

New Export Orders Index

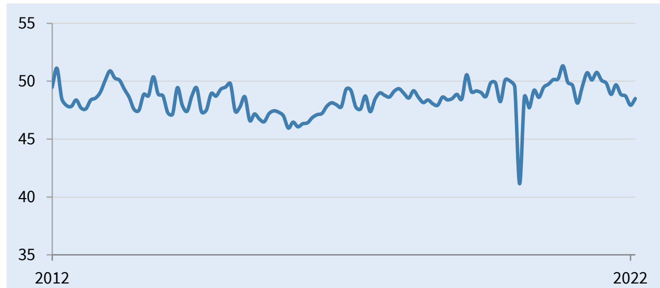
sa, >50 = growth since previous month



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 50.4 in February, up from 49.1 the previous month, showing manufacturing activity bounced back into expansionary territory. Overall, the Chinese manufacturing sector stayed on the track for recovery.

"Supply in the manufacturing sector improved. Overall demand was strong, though external demand remained subdued. The gauges for both output and total new orders returned to expansionary territory. The gauge for total new orders hit its highest level in eight months in February. Amid the worsening effects of the pandemic, which disrupted transportation, external demand remained weak. The gauge for new export orders in February remained in contractionary territory for the seventh straight month.

"The job market remained under pressure. Although supply and demand in the manufacturing sector improved, goods producers remained cautious about hiring new staff. The measure for employment remained in contractionary territory for the seventh consecutive month, but the rate of contraction was milder than the previous month.

"The quantity of purchases increased slightly in February as raw material prices remained high. Stocks of purchased items fell. Logistics delivery times got longer due to pandemic disruption. Stocks of finished goods fell. Due to rising new orders and a shortage of employees, backlogs of work increased.

"Inflationary pressure grew. The gauges for input and output prices rose in February, with both hitting their highest levels since October. The price increases were mainly a result of rising transportation costs and raw material prices that remained elevated.

"Business owners held a positive outlook. The measure of future output expectations rose to the highest in eight months. Surveyed companies said they were confident that market demand would further improve and domestic outbreaks of Covid-19 would be controlled.

"Overall, manufacturing activity expanded in February. Supply recovered, while demand more clearly improved. The level of optimism about the future business outlook increased further. However, the job market remained under high pressure. And we still need to keep an eye on inflationary pressure.

"From January to February, several regions across China, including Jiangsu province and the Guangxi Zhuang and Inner Mongolia autonomous regions, suffered flare-ups of Covid-19. Epidemic control measures were strengthened, which restricted transportation and sales of manufactured goods. Under the "triple pressure" of demand contraction, supply shocks and weakening expectations, the manufacturing sector recovery is still not robust. Stabilizing economic growth remains an important focus of the government.

"Policymakers should enhance support policies to encourage employment, strengthen structural support for small and midsize enterprises and effectively reduce tax burdens and fundraising costs for companies. Meanwhile, they should maintain a stable market environment, continue to stabilize commodity supply and prices, and lighten the cost burden on businesses in the middle and lower reaches of supply chains."

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 10-18 February 2022.

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.

Read more: https://www.caixinglobal.com/index/

For more information, please visit

www.caixin.com

www.caixinglobal.com

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.

Disclaimer

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Option Fueling Model Myths vs. Facts

Myth

This change in the law will force me to pump my own gas.

Fact

The proposed bill will require all larger gas stations (more than 4 dispensers) to continue to offer full-service no matter what, guaranteeing that it will continue to be readily available. Many smaller stations will choose to offer full-serve as well based on customer demand and employee availability. New Jersey will still have the strongest full-serve mandate in the nation.

Myth

Station owners will charge for self-service what they do now and just raise the price for full-service.

Fact

Basic economics shows this will not be the case. There is no more competitive product than gasoline, it is the only business left where even a penny difference in price can make a huge difference. Every station is selling basically the same product, and they all have a huge sign in front of their business advertising their price. When people don't like the price, they keep on driving; many consumers will go out of their way just to save a few pennies per gallon. Any retailer who tries to pocket all the savings will see their customers disappear to the competitor who passes the savings on, and they will be worse off than if they lowered their price. Selling gas is eternally a race to the bottom and when all expenses are considered, many retailers lose money selling gas—they do it to attract customers to their convenience store or auto repair shop. You are already paying a premium price for full-serve gas, whether you want to or not.

Myth

The current system isn't broken, we shouldn't change it.

Fact

For station owners and many motorists, it is broken. For years it has been extremely difficult to find people who want to work as gas attendants. Stations pay well above the minimum wage and still can't hire or keep employees. The recent labor shortage has turned it into a crisis, and most locations are reducing their hours. Under current New Jersey law, it is illegal to sell gasoline unless there is an attendant to pump it. There is also a significant number of motorists who would rather pump their own gas and already attempt to do so. This forces the attendant to either get in confrontation with a stranger or put the station at risk of a fine. There would be no harm in simply making it legal for people to pump their own gas if they choose to.

Myth

The only way New Jersey drivers should receive fuel is from an attendant.

Fact

New Jersey is the only state in the country where the government prohibits all drivers from pumping their own gas. People who want to pump their own gas should have the freedom to do so and residents of other states are satisfied that they have been given the choice to pump their own gas. It is also perfectly legal to pump your own diesel fuel. And imagine how ridiculous it would be if someone proposed a law requiring an attendant to come to your house and plug in your electric vehicle for you. Only gasoline is required by law to be pumped by an attendant.

Myth

No one will help me learn how to pump my own gas and I will be stranded at the pump.

Fact

As anyone who has fueled up out of state knows, it's designed to be extremely simple, which is why the rest of the country does it with no issue. People who wish to have an attendant pump their gas will have that option.

Myth

We don't want to risk the jobs of gas attendants who would be out of work without full-service stations.

Fact

There are many job functions at a service station and gas station/convenience store. Station owners can't find workers for their attached businesses either and can easily reassign existing attendants there. Their biggest problem is not being able to find and keep attendants, even at wages well over the minimum. Almost every time you see orange cones blocking off a pump, it's because there aren't enough attendants to operate that pump. Allowing self-serve would just allow consumers to use those pumps if they want to.

Myth

In the time of COVID-19, full-service gas is the safest option for residents.

Fact

We know that the best way to avoid any virus is to avoid face-to-face contact with other people. Self-service options allow for no personal contact with other people and residents can take further precautions to make pumping their own gas the safest option right now. Many modern pumps even allow customers to pay for their purchase through apps on their phone.

Myth

There is no benefit to residents who will now have to perform a task that was always done for them.

Fact

For many consumers it is easier and more convenient not to waste their time waiting to interact with another person instead of just quickly pumping it themselves. People who want to pump their own gas will be able to save money with discounted self-service prices. Retailers expect that by implementing a self-serve option, drivers would save 15¢ or more per gallon.

Myth

Changing the law will take full-serve away from motorists with a disability.

Fact

New Jersey will still have the strongest full-serve mandate in the country, with the law guaranteeing that many stations will still offer full-serve. Anyone with a persons with a disability placard will be able to have their gas pumped for them at the lower self-serve price. Remember, 48 states have had almost exclusively self-service gas for decades without any issue, and with no one advocating they adopt the NJ model.

Myth

It will be so inconvenient for me to have to get out of my car and pump my own gas. It is easier to wait for the attendant to come ask me what I would like.

Fact

By having the option to pump your own gas, you will control the amount of time between pulling up to a pump and when you leave the pump. You no longer will need to wait for an attendant who is busy with other customers or someone who does not see you sitting at the pump waiting for them to come to you. With how busy our lives are, time and convenience are extremely important to most people. And if you'd rather wait, that option will be readily available.

For more information about the self-serve fueling option and the Fuel Your Way NJ coalition please visit www.fuelyourwaynj.com

Poland Seeks Suspension of EU Carbon Market and Green Plan Talks
2022-02-28 14:52:10.145 GMT

By Ewa Krukowska
(Bloomberg) -- Poland said the proposals put forward so far to toughen EU climate policies should be revised following the energy crisis, aggravated by the invasion of Ukraine by Russia.
* The EU should aim for a low-carbon shift but it's "equally or even more important" to ensure energy independence, Climate Minister Anna Moskwa told reporters before an emergency meeting of the bloc's energy ministers.
* "In the moment of crisis we expect the EU Emissions Trading System to be suspended until normal prices are restored in the European markets and member states," she said.
* "Also, there's no time now for talks about the Fit for 55 package," she said, referring to a set of draft laws to align the EU to a more ambitious climate goal for 2030.
** "This is not a valid project anymore. Today we have to talk about independence, sovereignty and we will suggest a return to LNG projects and financial support for such projects."
* Poland will also seek "an end" rather that a freeze to the Nord Stream 2 project and stopping the existing Nord Stream 1 pipeline carrying Russian gas to Europe

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https://media.electrifyamerica.com/en-us/fivetips-charging-electric-vehicles-cold-weather

Five tips for charging electric vehicles in cold weather

(BPT) - If you drive an electric vehicle (EV) or are considering switching to one, you may have wondered how cold weather can affect the charging and mileage range of the vehicle. Living in an area where you can expect colder-than-usual temperatures for at least a few months doesn't mean you can't feel confident about driving an electric vehicle during the winter.

The **U.S. Department of Energy's** cold weather testing shows a reduction in fuel economy for gas, hybrid and electric vehicles with gas vehicles reduced by 15-24% and EVs by roughly 39%. And according to **University of Michigan Energy Institute**, driving and charging an electric vehicle in colder weather has its nuances because temperatures below 40 degrees Fahrenheit can reduce charging power. With a bit of preparation and planning, your electric vehicle will get you where you need to go throughout the year.
Here are a few tips to help keep an EV running smoothly during the winter.

1. Charging may take longer
The vehicle controls the charging rate, not the charger. When temperatures are low, the electric vehicle's software reduces its charging power, and for a good reason: **to help avoid stressing the battery**. The **Idaho National Laboratory** study found that at 32 degrees Fahrenheit, an EV battery took in 36% less energy than when the battery was charged for the same amount of time at 77 degrees Fahrenheit – this means the colder the weather, the more time the battery needed to charge. So when temperatures are colder, it's important to plan ahead for longer charge times, whether the trip is part of your daily commute or a longer road trip. It's also important to note that the charging rate will always decrease as the battery reaches full capacity (state of charge, or SOC), to maintain battery life and durability.

2. Pay attention to overnight changes in your EV's range
Check the forecast to be aware of overnight low temperatures during winter months - as cold temps overnight can lower an EV's driving range **by an average of 20%, according to the Norwegian Automobile Federation.** Be mindful of that potential range reduction and pay attention to the vehicle's console display, as some EVs can predict these range reductions during extreme temperatures.

3. Plan your charges
Plan for stops at public charging stations to avoid finding yourself with a limited range and a lot more driving to do. Thanks to the **Electrify America** mobile app supported by Apple CarPlay and Android Auto, drivers can easily navigate to nearby ultra-fast charging stations and see which chargers are currently available, making it even more seamless to plan charges before and during a trip.
Visit **Electrify America.com** to learn more and find a charging station near you.

4. Park indoors when you can
Parking an EV in a garage with higher indoor temperatures, when possible, can help the battery charge more quickly and hold that charge longer.

5. Understand your EV's cold weather features
Some EVs have a pre-conditioning feature that allows drivers to program or manually warm up the battery to more optimal temperatures. While this pre-conditioning process **does use some battery power to provide a warming effect**, it can make the battery more efficient while maximizing driving range.
By understanding your EV and its charging needs, especially during colder weather, you'll be better prepared to rely on an electric car no matter when and where you're driving.

https://www.rystadenergy.com/newsevents/news/press-releases/powering-up-global-battery-demand-to-surge-by-2030-supply-headaches-on-the-horizon/

Powering up: Global battery demand to surge by 2030, supply headaches on the horizon

March 3, 2022

As the energy transition quickens and countries and consumers strive to decarbonize, global battery demand could surge exponentially and approach nine terawatt-hours (TWh) annually by 2030, 15 times the levels seen in 2021.

Rystad Energy research shows that although global battery demand in 2021 stood at 580 gigawatt-hours (GWh), more than double 2020's total, global supply was still able to keep up. However, that is set to change in the coming years as the appetite for battery technologies in passenger vehicles and stationary storage grows significantly, straining the supply chain.

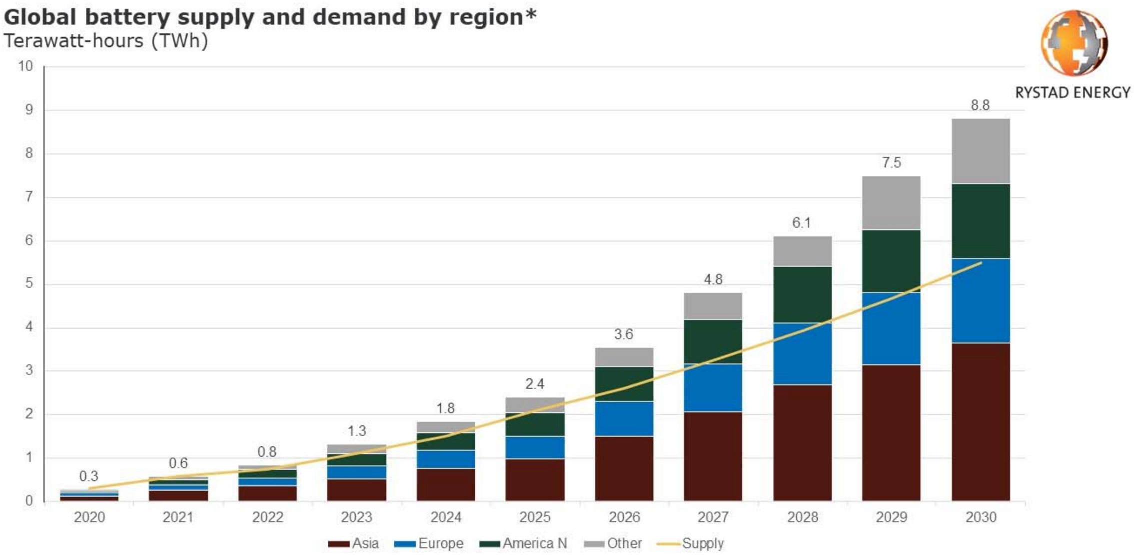
This demand projection is in line with a 1.6-degree global warming scenario and the changes required to energy systems. It is also unconstrained by any potential supply issues. In terms of components, lithium-ion batteries will dominate the market this decade, although sodium-ion battery demand will materialize by 2030.

Passenger electric vehicles (EV) will be the most significant contributor to future battery growth, accounting for about 55% of total demand by the end of the decade. Demand for these batteries is expected to hit 4.9 TWh by 2030, more than 13 times higher than 2021's comparatively tiny total of 373 GWh.

Stationary storage will be the next-most significant contributor, with a projected demand of more than 2.5 TWh in 2030, 29% of the total market. The need for storage is set to soar from 139 GWh in 2021 because of the more prominent role that volatile renewable energy sources will play as the world shifts away from fossil fuels. This will increase the need for electricity to be stored when renewable power output is high to periods when output falls, such as times when wind speeds are low wind as happened in Europe last year. Repurposed EV batteries are a viable option for stationary storage, but they will only start to play a significant role from 2040 onwards with enough depleted EV batteries only available by then.

Light to medium-heavy commercial vehicles will mainly be electrified in the future, contributing about 1 TWh of demand by 2030. Electrified aviation and shipping will also have battery needs, but the total demand from these sectors will not significantly impact the global picture.

"Battery demand growth is inevitable as the energy transition quickens, but global supply will fall short without substantial investment or improvements in battery technology in the immediate future. Based on announced targets, battery supply will hit 5.5 TWh by 2030, meeting only about 60% of the expected demand. Gigafactories are being built quickly worldwide, and this supply outlook will likely change. Still, the importance of these continued investments cannot be understated," says Marius Foss, head of global energy systems at Rystad Energy.



*Includes demand from transportation and energy sectors.
Source: Rystad Energy BatteryCube, Rystad Energy research and analysis

Learn more with Rystad Energy's BatteryCube.

Asia, specifically China, will dominate the regional battery demand breakdown by 2030. Under the 1.6-degree scenario, Asian demand will account for 41% of the global battery market, reaching 3.6 TWh. To meet domestic and international demand, China is targeting 50% of global cell production by 2030, accelerated by the ambitious expansion plans of domestic producers such as CATL, Gotion High-Tech and SVOLT. The pressing demand of its domestic market and offtake agreements with several top-tier automakers globally are driving the steep cell-making capacity expansion planned in the region.

European and North American battery demand will also steadily increase by the end of the decade, reaching 1.9 TWh and 1.7 TWh respectively. The Middle East and South American markets will increase significantly too but will not come close to the three largest regions. Africa's demand is projected to increase gradually over the next few years, after which it will surge more than 350% from 50 GWh in 2027 to 227 GWh just three years later.

Several regions are accelerating efforts to develop a domestic supply chain to avoid over-reliance on battery imports from Asia. North America saw 10 major plant announcements in 2021, seven of which are part of joint ventures between cell makers and automakers. Joint ventures comprised about 77% of the newly announced projects in the region last year. In Europe, battery supply expansion seems motivated by reducing Asian dependence to support automakers' plans. More than half of the planned projects are intended to localize production capacities, with European cell makers accounting for about a third of total capacity expansions announced last year.

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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Dan Tsubouchi @Energy_Tidbits · 54m

1/2. Bullish & topical for #Oil markets tomorrow will be @vitolnews @michaelwmuller comments on @sean_evers podcast. Many great oil insights ie. shipping RUS oil around south of Africa adds 1 mth to supply chain #OOTT must listen to podcast.

soundcloud.com
PODCAST: Daily Energy Markets - March 6th
Mike Muller, Head, Vitol Asia, Dr Li-Chen Sim, Assistant Professor, Khalifa University, UAE, ...

1 3

Dan Tsubouchi @Energy_Tidbits · 54m

2/2. @michaelwmuller closer "And the market is just telling you there's not enough oil in prompt end. The law of high prices is going to have to weed out the weaker demand and destroy it" Much more in the ppodcast. thx @sean_evers. #OOTT Bulish for #Oil

SAF Group created transcript of excerpts of comments made by Mike Muller (Head, Vitol Asia) to Sean Evers (Founder & Managing Partner, Gulf Intelligence) on their "PODCAST: Daily Energy Markets – March 6th"
https://soundcloud.com/user-846530307/podcast-daily-energy-markets-march-6th-1

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

At 19:45 min mark, Evers asks if it will make any difference if US etc sanction oil as it's already disrupting itself and hence already built into the oil prices? Muller "*It will. And yes you're right to say it looks like much of the western hemisphere Russian export program other than that down the pipelines is still up in the air. And as is the case with the normal stock markets cycle not yet placed from April onwards. But there is a huge question mark over it as you're talking about close to 3 million barrels a day. I think the flow into both the Druzhba pipeline and into Europe 700,000, 800,000 barrels a day. and then of course very large flows out of the Baltic and to a lesser extent out of the Black Sea. The world does not have enough spare capacity. I don't know if I misheard Christof there, but the world does not have enough crude either. Never mind the little wobble in Libya recently. Unless we get Iranian oil back, the supply demand balance is, with full Russian oil in the picture, we're not enough. And we were concerned about where the oil is going to come from. whether the Permian Basin could catch up quickly enough. And We were talking about the possible need for SPR releases just to address high oil price with nonsense like the mid term elections in mind to appease the electorate in North America. Now with millions of barrels a day of Russian oil probably likely to be backed in. some of it perhaps making the long way around thru (??)around the bottom end of Africa to eastern Asian markets. The impact is going to be very profound. If you have to build a artificially long maritime pipeline to transport the oil to the other hemisphere, that does away with a month's worth of demand as that oil is in transit. It's like line fill on a pipeline. And even if all goes there, there's still going to be a shortage of sweet barrels for the western hemisphere refining system. so the market is telling you that because it's showing you a $5, $6 per barrel backwardation, which we have not seen since the very first Gulf War in 1991 just before Desert Storm. This is unprecedented stuff. And the market is just telling you there's not enough oil in prompt end. The law of high prices is going to have to weed out the weaker demand and destroy it.*"

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

1 3

Dan Tsubouchi @Energy_Tidbits · 2h

"never let a good crisis go to waste". US to meet #Maduro govt, potential to find path for more VEN #Oil to markets. If US wants more heavy/medium to Gulf Coast & world, faster to send US officials to meet with @jkenney to work to restart #KeystoneXL #OOTT

nytimes.com

U.S. Officials Travel to Venezuela, a Russia Ally, as the West Isolates ...

The trip is the highest-level visit by American officials to Caracas in years, driven by a desire to separate Russia from its remaining Latin ...

2 3 15

Dan Tsubouchi @Energy_Tidbits · 3h

Another must listen to comments from @michaelwmuller on @sean_evers podcast. just like Feb 6, his comments will be #Oil market attention grabbing for markets. i will include some in Energy Tidbits memo shortly. webcast at soundcloud.com/user-846530307… #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Feb 6
>
> 1/3. what an opening statement from @michaelwmuller to @sean_evers "market is telling you be careful, don't be short because we are one disruption, one refinery wobble away from markets getting even stronger. #OOTT twitter.com/gulf_intel/sta…
>
> Show this thread
>
> SAF Group created transcript of excerpts from Gulf Intelligence podcast "Daily Energy Markets – Feb 6th" [LINK]. Sean Evers, Managing Partner Gulf Intelligence, Mike Muller, Head Vitol Asia, Christof Ruhl, Senior Research Scholar Center on Global Energy Policy Columbia University
>
> Items in "italics" are SAF Group created transcript
>
> At 0:50 min mark, Evers re all bullish oil items like Aramco raising OSP, *"you told us last time, more or less pointed in this direction firmly, do you think this keeps moving from here?"* Muller *"well, it's come $2.50 last week and about $2.50 the previous week as well so it's not an unrestrained rally but, Yes, markets have very high implied volatility at these levels. And we have moved from a market that at the end of the year seemed a little bit to be in a risk off mode to people now seem to take great interest in the energy complex. But the bit I like to come to straight away here is fundamentals because there are a lot of people saying that, and I have heard some of your podcast last week for example suggesting, there are fundamental signs that are mixed. And my view is that it's a very resolute positive. There are reasons why the market is backward at the front and so backward, so much so that the market is telling you be careful, don't be short because we are one disruption, one refinery wobble away from markets getting even stronger. Whether it's the backwardation in the distillates market, whether it's jet fuel is trading at or above gas/oil, whether it's the backwardation in crude, these are all the manifestation of tightness up at the front where there is scarcity or a perceived scarcity of supply, which is not being helped by a combination of many refinery closures in recent years for reasons we know. Plus unscheduled refinery issues. Plus certainly in Europe the need to factor in higher gas prices and carbon prices into refinery margins. so refining margins are telling you refineries should be running flat out because product cracks are at levels we haven't seen for many, many months. As a consequence, that should be pulling very hard on crude markets. And inventories continue to sit at levels that are worrisome. and then we'll start talking about where the spare capacity is and the pace and rate of investments in the US is not quite what it was before, we're still nowhere near the peak that we saw pre-pandemic in terms pf US production capacity. And the spare capacity in OPEC+ is really down to two and a half or three members now and month after the month the 400,000 barrels per day that is being put on the market is actually, in effect, a much much smaller number than that. which leads us to a point in time that we can debate whether it's the 2nd half of this year or sometime next year, OPEC spare capacity reaches levels that are considered alarming. So much so that the debate has now swung to how soon we need Iranian supply to help alleviate the situation. Or whether there is even a need for more SPR because the way the SPR releases that Joe Biden's administration initiated over a month back were, with hindsight, just a small event."*
>
> Prepared by SAF Group https://safgroup.ca/news-insights/

1

Dan Tsubouchi @Energy_Tidbits · 3h

there must be something in the water! had to go out back as never seen this many Canada geese on the Elbow River by us in Calgary.

2 3

Dan Tsubouchi @Energy_Tidbits · 3h

Will #JCPOA be delayed? RUS #Lavrov looks to be trying to backdoor US sanctions re Ukraine. Wants US gurantee that "current process launched" won't impact "free and full-fledged trading, economic, investment, military and technical cooperation with Iran". # OOTT

https://tass.com/world/1417379

5 MAR, 08:07

Russia demands US guarantees sanctions will not harm Moscow-Tehran ties — Lavrov

Moscow needs guarantees these sanctions will in no way affect the trading, economic and investment relations contained in the Joint Comprehensive Plan of Action for the Iranian nuclear program, the Russian Foreign Minister pointed out

MOSCOW, March 5. /TASS/. Moscow has demanded written guarantees from Washington at least at the secretary of state level the sanctions situation will not harm its cooperation with Tehran, Russian Foreign Minister Sergey Lavrov told a news conference following talks with Kyrgyzstan's Foreign Minister Ruslan Kazakbayev on Saturday.

He explained that against the backdrop of the latest western sanctions Russia wants to have a "very clear answer" from the United States in the context of bilateral Moscow-Tehran relations and the Iranian nuclear deal.

"We need guarantees these sanctions will in no way affect the trading, economic and investment relations contained in the Joint Comprehensive Plan of Action for the Iranian nuclear program. We have asked the American counterparts, who rule the roost here, to provide us with guarantees at least at the level of the secretary of state the current process launched by the United States will by no means affect our right to free and full-fledged trading, economic, investment, military and technical cooperation with Iran," Lavrov said.

Lavrov recalled that the negotiators in Vienna on the JCPOA's resumption had done the lion's share of their job.

"All arithmetic issues are agreed by and large, although there remain some issues the Iranian counterparts still would like to be cleared up," he concluded. "We believe their expectations are quite fair."

The 8th round of negotiations on the restoration of the Joint Comprehensive Plan of Action and the United States' return to the fold of that multilateral agreement is nearing completion. This work is in progress within the framework of consultations by a joint commission of Iran and the international quintet (Russia, Britain, Germany, China and France), separate consultations without Iran's involvement and in three working groups. The negotiators are working on a draft final document. Hopefully the eighth round may become the last one. The negotiators are determined to be through with their mission in the near future.

1 1 2

Dan Tsubouchi @Energy_Tidbits · 5h

Looks like more #Libya #Oil risk near term. Production down to 920,000 b/d from 1.2 mmb/d on Wed says Oil Minister Oun reports @S_Elwardany hmohareb@bloomberg.net. Fields being shut down by groups, parallel govts being set up. #OOTT

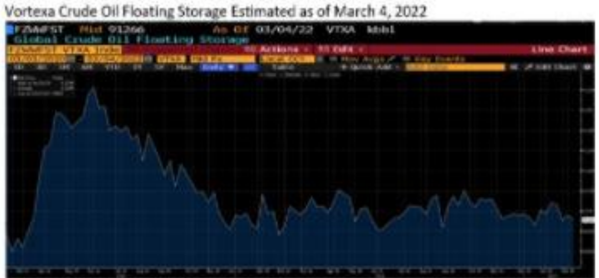
blinks.bloomberg.com/news/stories/R...

2 3

Dan Tsubouchi @Energy_Tidbits · 18h

#Vortexa crude #Oil floating storage for 03/04 est 91.27 mmb, -4.32 mmb WoW vs revised up 95.59. Been holding ~100 mmb for past few months despite high prices, OPEC+ mthly increases, normal seasonal softness & reducing Covid impacts. Thx @Vortexa @TheTerminal #OOTT

Vortexa Crude Oil Floating Storage Estimated as of March 4, 2022



Source: Bloomberg, Vortexa

Est as of Mar 5, 3pm MT

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03/03/2020 - 03/04/2022

Date	FZWWFST VT... Mid Px
Fr 03/04/2022	91266
Fr 02/25/2022	95594
Fr 02/18/2022	90582
Fr 02/11/2022	105.596k
Fr 02/04/2022	108.301k
Fr 01/28/2022	97268
Fr 01/21/2022	100.968k
Fr 01/14/2022	85494
Fr 01/07/2022	93164
Fr 12/31/2021	96699
Fr 12/24/2021	95972

Est as of Feb 28, 4am MT

FZWWFST VTXA Inde
02/25/2021 - 02/25/2022

Date	FZWWFST V... Mid Px
Fr 02/25/2022	94196
Fr 02/18/2022	91273
Fr 02/11/2022	105.439k
Fr 02/04/2022	109.303k
Fr 01/28/2022	100.26k
Fr 01/21/2022	100.67k
Fr 01/14/2022	84345
Fr 01/07/2022	92945
Fr 12/31/2021	95983
Fr 12/24/2021	97736
Fr 12/17/2021	96391

Est as of Feb 19, 3pm MT

FZWWFST VTXA Inde
02/17/2020 - 02/18/2022

Date	FZWWFST V... Mid Px
Fr 02/18/2022	87358
Fr 02/11/2022	105.508k
Fr 02/04/2022	108.86k
Fr 01/28/2022	100.734k
Fr 01/21/2022	103.197k
Fr 01/14/2022	88542
Fr 01/07/2022	97261
Fr 12/31/2021	100.096k
Fr 12/24/2021	101.285k
Fr 12/17/2021	99643
Fr 12/10/2021	94172

Source: Bloomberg, Vortexa

4

Dan Tsubouchi @Energy_Tidbits · 22h

#Shell, now a UK company, better hope they don't need this #Oil in the UK. ICYMI, @unitetheunion @UniteSharon refusing to deal with a German flagged tanker carrying Russian oil trying to unload in UK. #OOTT twitter.com/UniteSharon/st...

This Tweet was deleted by the Tweet author. Learn more

2

SAF

Dan Tsubouchi @Energy_Tidbits · Mar 5

"no more competitive product than #Gasoline, it is the only business left where even a penny difference in price can make a huge difference" "many consumers will go out of their way just to save a few pennies per gallon" reminds @NJGCA_. If you have to drive, you drive. #OOTT

FUEL YOUR WAY NJ

Option Fueling Model Myths vs. Facts

Myth

This change in the law will force me to pump my own gas.

Fact

The proposed bill will require all larger gas stations (more than 4 dispensers) to continue to offer full-service no matter what, guaranteeing that it will continue to be readily available. Many smaller stations will choose to offer full-serve as well based on customer demand and employee availability. New Jersey will still have the strongest full-serve mandate in the nation.

Myth

Station owners will charge for self-service what they do now and just raise the price for full-service.

Fact

Basic economics shows this will not be the case. There is no more competitive product than gasoline, it is the only business left where even a penny difference in price can make a huge difference. Every station is selling basically the same product, and they all have a huge sign in front of their business advertising their price. When people don't like the price, they keep on driving; many consumers will go out of their way just to save a few pennies per gallon. Any retailer who tries to pocket all the savings will see their customers disappear to the competitor who passes the savings on, and they will be worse off than if they lowered their price. Selling gas is eternally a race to the bottom and when all expenses are considered, many retailers lose money selling gas—they do it to attract customers to their convenience store or auto repair shop. You are already paying a premium price for full-serve gas, whether you want to or not.

1

SAF

Dan Tsubouchi @Energy_Tidbits · Mar 5

#JCPOA deal possibly on Tues/Wed? It was needed for Iran to at least agree to let @iaeaorg probe be done. @iaeaorg board scheduled quarterly Iran probe meeting is Mon. @SecBlinken is in Europe scheduled thru Tues. Thx @virtualnomad @RcShahla #OOTT

JONATHAN TIRONE @virtualnomad · Mar 5

A lot can still go wrong between now and May 21, but that's when @IAEAorg and #Iran aim to conclude #nuclear probe, paving way for #JCPOA implementation and sanctions waivers #OOTT via @bpolitics @BloombergNRG @business bloomberg.com/news/articles/...

1 2 5

Dan Tsubouchi @Energy_Tidbits · Mar 4

Changes to the S&P/TSX Composite Index & S&P/TSX 60 Index effective March 21 include Headwater Exploration $HWX (Neil Rozell) and Nuvista Energy $NVA being added to TSX Composite. #OOTT

newswire.ca/news-releases/...

S&P/TSX 60 INDEX – March 21, 2022			
	COMPANY	GICS SECTOR	GICS SUB-INDUSTRY
ADDED	Intact Financial Corporation (TSX:IFC)	Financials	Property & Casualty Insurance
DELETED	Canopy Growth Corporation (TSX:WEED)	Health Care	Pharmaceuticals

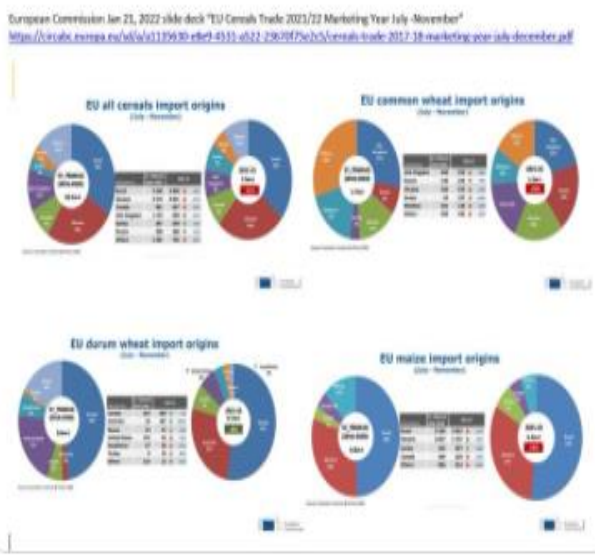
S&P/TSX COMPOSITE INDEX – March 21, 2022			
	COMPANY	GICS SECTOR	GICS SUB-INDUSTRY
ADDED	Headwater Exploration Inc (TSX:HWX)	Energy	Oil & Gas Exploration & Production
ADDED	Nuvista Energy Ltd (TSX:NVA)	Energy	Oil & Gas Exploration & Production
DELETED	Silvercorp Metals Inc (TSX:SVM)	Materials	Silver

3

Dan Tsubouchi @Energy_Tidbits · Mar 4

Ukraine impact on #Wheat #Cereals continues to be topical.

> **Dan Tsubouchi** @Energy_Tidbits · Feb 24
>
> Just now @TheDomino on @SquawkCNBC noted #Wheat up strong with RUS invasion. Good EU 01/21/22 data. Ukraine is #2 source (Brazil #1) of EU #Cereals imports. One of my SAF Group partners (safgroup.ca) has been reminding the impact is broader than #Oil #NatGas #LNG



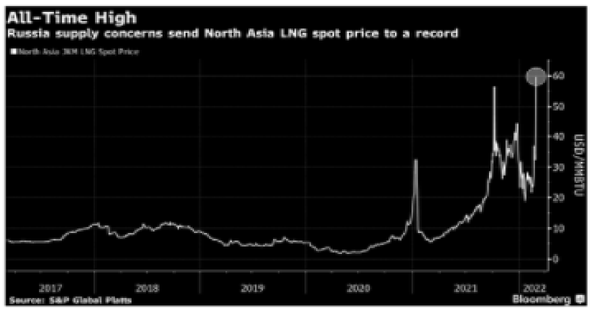
1 3

Dan Tsubouchi @Energy_Tidbits · Mar 4

Huge relief for Asia that cold winter temps are effectively over. Hard to see Asian countries stepping up for spot LNG cargos with JKM spot prices "jumped 23% to $59.672 per mmbtu on Thursday, according to S&P Global Platts" reports @SStapczynski @MessageAnnKoh. #OOTT

Asia LNG Price Surges to Record as War Spurs 'Panic' Over Supply
2022-03-04 09:55:49.493 GMT

By Stephen Stapczynski and Ann Koh
(Bloomberg) -- Spot prices for North Asia's liquefied natural gas surged to a record as Russian supply concerns intensified competition with Europe for available supply of the super-chilled fuel.
The Japan-Korea Marker, the spot Asian LNG benchmark, jumped 23% to $59.672 per million British thermal units on Thursday, according to S&P Global Platts, pulled higher by a historic rally in European gas prices.
"Panic spread through the international gas markets over supply availability due to the Russia-Ukraine conflict," according to S&P Global Commodity Insights.



While only a handful of Asian importers are currently seeking spot LNG cargoes, they will need to pay sky-high rates to attract shipments away from Europe, according to traders surveyed by Bloomberg.

2 2

Dan Tsubouchi @Energy_Tidbits · Mar 4

Breaking: @iaeaorg press conference right now, @rafaelmgrossi says none of the six nuclear reactors was affected and no release of radiation at Ukraine's #Zaporizhzhia Nuclear Power Plant. What a relief. #OOTT

3

Dan Tsubouchi @Energy_Tidbits · Mar 3

Also @PXDtweets CEO concerns on labor, gas pipeline takeaway would limit #Permian growth over next few years. Remember #NatGas is associated gas in oil wells. Industry push on flaring/venting means if can't move #NatGas, can't produce oil. Great interview @meghangordon. #OOTT

SAF Group created transcript of excerpts from Platts Meghan Gordon interview with Pioneer CEO Scott Sheffield March 3, 2022. https://www.spglobal.com/commodity-insights/en/market-insights/podcasts/crude/220304-pioneer-ceo-scott-sheffield-oil-drillers-supply-growth

Items in "italics" are SAF Group created transcript

Gordon asking on the challenges to for US oil production to reach higher levels. Sheffield "*After having three downturns, the labor force, especially in the Permian, it's really hard to get people to move back. We had a downturn in 2009, we had one in 14, and we had a real bad one obviously in 2020. Three downturns, people change industries. So it's not as much the technical people. There are plenty of engineers and geologists. It's the labor force that is needed for the rigs, the frac fleets and the service companies. It's really hard to get people to change industries. And, after Covid, we're seeing people doing all kinds of things. Post Covid 19, you can't even get them to go to their current jobs. They want to work from home. So things have changed so much, it be really hard it will be one of the major impediments to ramping up the Permian to much higher levels over the next 2, 3, 4 years. There's shortages of frac sands going on already now. We've heard recent people that are increasing their activity that they're having to go to Wisconsin. And they're paying somewhere around $70, $80 a ton just to bring sand down from Wisconsin. That's unheard of. In addition to what also could limit growth is that everybody's committed to new flaring and venting guidelines. It looks like that we're going to have the next major pipeline won't be ready until the middle of 24 so that will present some issues to the Permian Basin. The private companies don't make commitments on pipelines downstream. So that could be one of the big bottlenecks is not having enough natural gas. with everybody's commitment not to flare and vent, that could affect prevent the Permian from growing substantially over the next several years. Those are the current bottlenecks.*"

Prepared by SAF Group

Commodity Insights Oil @SPGCIOil · Mar 3

#PODCAST: Top #Permian driller #Pioneer (@PXDtweets) rethinks slow growth plans with #oil #prices above $100/b

🎧 Full episode (15:35): okt.to/CDh71R

4 5

Dan Tsubouchi @Energy_Tidbits · Mar 3

ICYMI, Potential CP rail strike/lockout on March 16 if no negotiated deal. Union voted 96.7% for strike action if no deal. Latest data is Dec, total Cdn crude by rail exports to US of 131,000 b/d. #OOTT #Oil

tcrccalgary.ca/Strike_Mandate...

3 3

Dan Tsubouchi @Energy_Tidbits · Mar 3

#Calgary gasoline prices at #Husky station up 11 cents WoW for 91 octane to $1.799 per litre.

1 2

Dan Tsubouchi @Energy_Tidbits · Mar 3

Breaking market moving news tonight. must listen to @annmarie report on attack on Europe's largest nuclear power plant. #OOTT #NatGas #LNG

> **Bloomberg** @business · Mar 3
>
> LATEST: Ukraine's Foreign Minister Dmytro Kuleba calls on Russia's military to immediately halt firing on Europe's largest nuclear power plant.
>
> Here's the latest from @BloombergTV as Russian forces attack Zaporizhzhia nuclear facility in Ukraine trib.al/sGdjBo6
>
> Show this thread

1 1

Dan Tsubouchi @Energy_Tidbits · Mar 3

#JCPOA. reminder of the clear warning #Biden was prepared to give to push this over the goal line and any gives would be messaged as "details". #OOTT

> Dan Tsubouchi @Energy_Tidbits · Feb 1
>
> Sounds like #Biden prepared to make last minute concessions to get #JCPOA. "We are prepared to go back into the deal. It doesn't mean that every detail of the negotiation has been resolved from our side, but we are prepared to make those tough choices" US State Dept. #OOTT
>
> Senior State Department Official On the JCPOA Talks

1

Dan Tsubouchi @Energy_Tidbits · Mar 3

See why #Oil is $115. RUS exports down big at down -2.5 mmb/d (1.5 #CrudeOil, 1.0 #PetroleumProducts). In addition "but the rest" has been struggling to find buyers reports @energyintel.   #OOTT

energyintel.com
Russian Oil Exports Fall by One-Third
The Ukraine crisis has slashed Russian oil exports by an estimated one-third as buyers shun Russian ...

3 4

Dan Tsubouchi @Energy_Tidbits · Mar 2

#JCPOA. @SecBlinken is conveniently in Europe March 3-8. Would fit all the chatter that running out of time for a deal or no deal. Still in the camp that there is a return to JCPOA and any US gives will be messaged as a detail. #OOTT

state.gov/secretary-blin...

> **Dan Tsubouchi** @Energy_Tidbits · Feb 28
> Can #Biden now say the genie will be put back in the bottle & sign off on #JCPOA very soon? @IrnaEnglish reports Iran's nuclear commitments would be observed, so the quality and quantity of enrichment will go back to what was stipulated in the JCPOA. #OOTT
>
> 

1 2 2

Dan Tsubouchi @Energy_Tidbits · Mar 2

More support for #LNG Supply Gap in mid 2020s. In Q&A, #Exxon confirms Rovuma MZ LNG 2.0 bcf/d is NOT in 2027 LNG forecast. 3 yrs ago in 03/19 mgmt expected 1st LNG in 2024. MZ was game changer for LNG. See SAF 2021 blogs 04/28, 07/14, 11/23. #OOTT #NatGas safgroup.ca/news-insight

3 8

Dan Tsubouchi @Energy_Tidbits · Mar 2

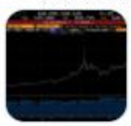
reminder Europe #NatGas demand is less than 1/2 winter demand. a huge supply issue to figure out before winter 22/23. will be urgency to fill storage this spring providing support for #NatGas #LNG prices in normally weak shoulder season. Thx @ENTSOG for data. #OOTT

Below is ENTSOG (European Network of Transmission System Operators for Gas) data from current summer and winter supply outlooks for Europe natural gas demand

https://www.entsog.eu/sites/default/files/2021-04/SO0028-21_Summer_Supply_Outlook_2021.pdf

https://www.entsog.eu/sites/default/files/2021-10/SO0032-21_Winter%20Supply%20Review%202020-21.pdf

Dan Tsubouchi @Energy_Tidbits · Mar 2



Good thing Europe winter #NatGas demand is mostly over. Dutch TTF prices just under US$50/mcf. #OOTT

1 2 6

Dan Tsubouchi @Energy_Tidbits · Mar 2

Good thing Europe winter #NatGas demand is mostly over. Dutch TTF prices just under US$50/mcf. #OOTT

1 4

Dan Tsubouchi @Energy_Tidbits · Mar 2 ···

ICYMI as it happened so quickly in new record short meeting time, #OPEC+ approves continuing as per plan to add 0.4 mmb/d in Apr. #OOTT opec.org/opec_web/en/pr...

https://www.opec.org/opec_web/en/press_room/6830.htm

26th OPEC and non-OPEC Ministerial Meeting concludes

No 06/2022 Vienna, Austria 02 Mar 2022

Following the conclusion of the 26th OPEC and non-OPEC Ministerial Meeting, held via videoconference on 2 March 2022, and based on internal consultation held exclusively by the OPEC and participating non-OPEC oil-producing countries in the Declaration of Cooperation of (DoC), it was noted that current oil market fundamentals and the consensus on its outlook pointed to a well-balanced market, and that current volatility is not caused by changes in market fundamentals but by current geopolitical developments.

The OPEC and participating non-OPEC oil-producing countries decided to:

- Reaffirm the decision of the 10th Ministerial Meeting on 12 April 2020 and further endorsed in subsequent meetings including the 19th Ministerial Meeting on 18 July 2021.
- [illegible] production by 0.4 mb/d for the month of April 2022, as per the attached schedule.
- Reiterate the critical importance of adhering to full conformity and to the compensation mechanism taking advantage of the [illegible]
- Hold the 27th OPEC and non-OPEC Ministerial Meeting on 31 March 2022.

	April 2022 Required Production
Algeria	1002
Angola	1450
Congo	309
Eq Guinea	121
Gabon	177
Iraq	4414
Kuwait	2665
Nigeria	1735
Saudi Arabia	10436
UAE	3006
Azerbaijan	681
Bahrain	195
Brunei	97
Kazakhstan	1621
Malaysia	565
Mexico	1753
Oman	838
Russia	10436
Sudan	71
South Sudan	123
OPEC 10	25315
Non-OPEC	16379
OPEC+	41694

2 2

Dan Tsubouchi @Energy_Tidbits · Mar 2

as usual, great day to follow @Amena__Bakr for #OPEC+ but as she is noting, we won't need to follow her all day with a statement ready to go. #OOTT

> **Amena Bakr** @Amena__Bakr · Mar 2
>
> A statement is ready to go, just needs a rubber stamp from all the members and bob's your uncle! #NOChange #OOTT #opec

1

Dan Tsubouchi @Energy_Tidbits · Mar 2

Risk of dealing with RUS #Oil #LNG means buyers are avoiding taking RUS oil even if no direct sanctions. On Tues, #Trafigura offered Urals crude at $18.60 discount,"but drew no bids" reports @alexlongley1 lsu23@bloomberg.net. #OOTT

bloomberg.com

Russia Oil Shunned Even Without Sanctions, Sparking Supply Panic

Russian oil sales are increasingly under an embargo in all but name, threatening a vital source of global crude supply.

1 1

Dan Tsubouchi @Energy_Tidbits · Mar 1

No bones thrown to US #Oil #NatGas sector in #Biden #SOTU to encourage more supply. Rather "lower the price of electric vehicles, saving you another $80 a month becaused you'll never have to pay at the gas pump again". #OOTT

politico.com/news/2022/03/0...

> **Dan Tsubouchi** @Energy_Tidbits · Feb 27
>
> #OPEC+ must love this. Read why #Biden doesn't focus on increasing drilling on federal lands, @PressSec says because US needs to reduce dependence on #Oil & look at other ways of having energy. Squeezing supply & not reducing demand hasn't worked so far. Bullish for Oil. #OOTT
>
> Excerpt https://abcnews.go.com/Politics/week-transcript-27-22-white-house-press-secretary/story?id=83130361
>
> **'This Week' Transcript 2-27-22: White House Press Secretary Jen Psaki, Sen. Tom Cotton & Amb. Oksana Markarova**
>
> *This is a rush transcript of "This Week" airing Sunday, February 27.*
>
> By **ABC News**
>
> 27 February 2022, 08:03 • 46 min read
>
> STEPHANOPOULOS: Senator Tom Cotton is coming up on the program next. He says the United States should be doing more to crack down on the Russian energy sector.
> Here's what he had to say.
>
> (BEGIN VIDEO CLIP)
>
> SEN. TOM COTTON,(R) ARKANSAS: How about we impose those sanctions, but we lift all those restrictions on the production of American oil and gas, so we can start drilling on federal lands again and putting out new leases, so we can re-open the Keystone Pipeline, which would bring more oil into America every day from Canada than we import every day from Russia.
>
> (END VIDEO CLIP)
>
> STEPHANOPOULOS: Is the president open to those proposals?
>
> PSAKI: Well, first, George, I think, on the energy sector, the way that the president -- President Biden has approached sanctions is we want to take every step to maximize the impact and the consequences on President Putin, while minimizing the impact on the American people and the global community.
>
> And so energy sanctions are certainly on the table. We have not taken those off. But we also want to do that and make sure we're minimizing the impact on the global marketplace, and do it in a united way.
>
> I would say that the congressman's recommendations there, the Keystone Pipeline, was not processing oil through the system. That does not solve any problems. That's a misdiagnosis, or maybe a -- a misdiagnosis of what needs to happen.
>
> I would also note that, on oil leases, what this actually justifies, in President Biden's view, is the fact that we need to reduce our dependence on foreign oil, on oil in general, and need to -- and we need to look at other ways of having energy in our country and others.
>
> One of the interesting things, George, we've seen over the last week or so is that a number of European countries are recognizing they need to reduce their own reliance on Russian oil. So I'm not sure we agree with that assessment of what needs to happen. But energy sanctions remain on the table.

3 11

Dan Tsubouchi @Energy_Tidbits · Mar 1

"double America's clean energy production in solar, wind and so much more; lower the price of electric vehicles, saving you another $80 a month because you'll never have to pay at the gas pump again. #Biden #SOTU #OOTT

politico.com

Full text: Biden State of the Union 2022 transcript

President Joe Biden delivered his first State of the Union address on March 1.

1 1 2

SAF

Dan Tsubouchi @Energy_Tidbits · Mar 1

Here's why, at least for now, @TotalEnergies says will no longer provide capital for "new" projects in Russia & not sell like @bp_plc @Shell. Existing currently moving ahead RUS #LNG projects are core part of their growth for 2020s. #OOTT #NatGas

totalenergies.com/media/news/pre...

2 2

Dan Tsubouchi @Energy_Tidbits · Mar 1

Iran also knows #Churchill "never let a good crisis go to waste". why not try to get more items while #RussiaUkraine is priority for #Biden et al. thx @staunovo #OOTT

Giovanni Staunovo 🇮🇹 @staunovo · Feb 28

#IranTalks: Two sources close to the talks said Iran had submitted new demands, while continuing to insist on existing ones, including the removal of a U.S. foreign terrorist organisation (FTO) designation against Iran's elite Revolutionary Guards (IRGC). #oott twitter.com/staunovo/statu...

5

SAF

Dan Tsubouchi @Energy_Tidbits · Feb 28

"quite honestly if you were to add a rig today, you would be 9 to 12 months before you really started seeing the impact" says #Devon CEO on impact of tight labor, sand, etc to @GuyJohnsonTV @kaileyleinz #OOTT

SAF Group created transcript of excerpts from Bloomberg TV (Kailey Leinz, Guy Johnson) with Devon CEO Rick Muncrief on Feb 28, 2022 https://www.bloomberg.com/news/videos/2022-02-28/biden-should-wait-on-spr-release-devon-ceo-says-video

Items in "italics" are SAF Group created transcript

At 0:40 min mark, Johnson asks *"even if you wanted to pump more oil, how restricted are you in terms of labor, in terms of all the other stuff that goes into producing a barrel of oil. how easy is to come by, how production restricted are you right now?"* Muncrief *" I can tell you that labor is tight .... the Permian Basin is probably where you are going to see most of the sustained growth. that's not to say the other basins couldn't have some growth. sustained growth is going to be the Permian... the market is tight, let's be patient, let's be disciplined ... things are tight. We've seen tightness in things like steel, things like sand and other things."*

At 3:00 min mark, Muncrief *"at what point could you see additional barrels put into the market. quite honestly if you were to add a rig today, you would be 9 to 12 months before you really started seeing the impact. Most of the development that we are doing here in the US today is on multi-well pads so you are drilling 4 to 6 wells on a pad. So you have to drill 4 wells. You have to complete those, set facilities. So if you could drop a flag today, you say roughly 12 months out. And that's where you start thinking about the impact of inflation with the additional activity, labor issues, things like that."*

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

5 9

SAF

Dan Tsubouchi @Energy_Tidbits · Feb 28

China Caixin PMI for Feb 50.4 vs Est 49.3 & Jan 49.1. "Supply in the manufacturing sector improved. Overall demand was strong, though external demand remained subdued" "manufacturing sector stayed on the track for recovery" Thx @IHSMarkitPMI #OOTT markiteconomics.com/Public/Home/Pr...

Caixin China General Manufacturing PMI™

Dan Tsubouchi @Energy_Tidbits · Feb 28

"never let a good crisis go to waste" #Churchill. #RussiaUkraine gives cover to #EU leaders to have a #MacronMoment and follow @moskwa_anna suggestion to hit pause button on #Fitfor55 #NetZero push? Thx @E_Krukowska. #Oil #NatGas should be strong thru 2020s. #OOTT

Poland Seeks Suspension of EU Carbon Market and Green Plan Talks
2022-02-28 14:52:10.145 GMT

By Ewa Krukowska
(Bloomberg) -- Poland said the proposals put forward so far to toughen EU climate policies should be revised following the energy crisis, aggravated by the invasion of Ukraine by Russia.
* The EU should aim for a low-carbon shift but it's "equally or even more important" to ensure energy independence, Climate Minister Anna Moskwa told reporters before an emergency meeting of the bloc's energy ministers.
* "In the moment of crisis we expect the EU Emissions Trading System to be suspended until normal prices are restored in the European markets and member states," she said.
* "Also, there's no time now for talks about the Fit for 55 package," she said, referring to a set of draft laws to align the EU to a more ambitious climate goal for 2030.
** "This is not a valid project anymore. Today we have to talk about independence, sovereignty and we will suggest a return to LNG projects and financial support for such projects."
* Poland will also seek "an end" rather that a freeze to the Nord Stream 2 project and stopping the existing Nord Stream 1 pipeline carrying Russian gas to Europe

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Emma Ross-Thomas

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/R80R4PT1UM0X

Dan Tsubouchi @Energy_Tidbits · Dec 9, 2021

Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have "transition" not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT twitter.com/Energy_Tidbits...

2 4

Dan Tsubouchi @Energy_Tidbits · Feb 28

#Shell exiting RUS Sakhalin is a huge deal. Even w/ Sakhalin, on 12/22 #Shell's RUS head saw need for "other regions" #LNG to meet Asian demand. See SAF Group 12/26 Energy Tidbits on #Shell's RUS head. #LNGCanada FID anyone? #OOTT
safgroup.ca/news-insights/
shell.com/media/news-and...

Excerpt Dec 26, 2021 Energy Tidbits https://safgroup.ca/news-insights/

Natural Gas – Does Shell incl LNG Canada 2 in "other regions" for LNG supply growth

We couldn't help think of LNG Canada Phase 2 in seeing the head of Shell's Russia operations (Ekaterina Grushetskaya) comments in her TASS interview on Wed. [LINK] She made 4 key points on Shell's LNG outlook. (i) LNG demand to almost double from 2020 to 2040, which is +45 bcf/d. This was consistent to Shell's forecast such as we noted in our Aug 2, 2021 Energy Tidbits memo on Shell's Q2 results call. See below item. (ii) 75% of the demand growth is in Asia. This was always in Shell's outlook, but Grushetskaya's 75% puts in perspective at approx. +34 bcf/d to 2040. (iii) Russia is ideally located for LNG supply project development because of its proximity to Asian markets. (iv) Then Grushetskaya notes that Shell's development of new LNG supply will have to come from places outside the Far East to supply the growing Asian LNG demand. Far East typically includes Australia and Papua New Guinea. She isn't specific, just calls its "other regions". Grushetskaya highlighted Russia, but then said "*Therefore, it is logical that Russia will occupy a significant place here. At the same time, we see that production capacity is not enough to meet this demand. In this sense, we would like to participate in such projects in the Far East, because the Asian market, of course, is in need of this energy resource.*" TASS asks "*That is, Shell's ambitions in the development of the LNG business lie in the Far East region?*" Grushetskaya replies "*Not necessarily just there. I'm talking about where it makes sense to develop this area in terms of proximity to the Asian region. But we may be interested in other regions as well.*" So the question is what are these "*other regions*" that Shell will look to supply LNG to the Asian LNG demand growth. If Shell is looking to advantaged areas, the three that jump to mind are future NW Shelf Australia development, future potential in Tanzania and, of course, our pick, LNG Canada Phase 2. Our Supplemental Documents package includes the TASS Grushetskaya interview.

LNG Canada Phase 2 would be a game changer to Western Can natural gas

If Grushetskaya's "other regions" does include Shell's LNG Canada Phase 2, it would fit perfectly with our views that LNG Canada Phase 2 is ideally positioned to take advantage of the abrupt change in Asian LNG buyers to long term supply deals. We have been highlighting that the best validation for a LNG supply gap in the 2020s is that Asian LNG buyers have made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG supply. On July 14, 2021 we posted our 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs*". Here is an excerpt from the blog "*The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas.*" Below is our graphic noting recent Asian long-term LNG supply contracts. Our Supplemental Documents package includes our July 14 blog.

Dan Tsubouchi @Energy_Tidbits · Feb 21

Buckle up, could be huge for Cdn #NatGas M&A. @Shell just said like to align equity #NatGas supply and offtake obligations, used #LNGCanada, Shell has 40% interest so would be 1.44 bcf/d if it FIDs #LNGCanada phase 2. It's why #LNGCanada Phase ...

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Dan Tsubouchi @Energy_Tidbits · Feb 27

Be interesting to see who will take advantage of the fire sale? Will the price be compelling or will the buyers or investors not have #ESG limitations? China, India, Saudi, who? #OOTT

> Stephen Stapczynski @SStapczynski · Feb 27
>
> Western energy producers begin exit from Russia
> 👋🇷🇺
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> 🇬🇧 BP will dump shares in oil giant Rosneft, taking a financial hit of as much as $25 billion, and abandon other businesses in Russia
> 🇳🇴 Equinor will stop new investments in Russia and start exiting
>
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Dan Tsubouchi @Energy_Tidbits · Feb 27

#OPEC+ must love this. Read why #Biden doesn't focus on increasing drilling on federal lands, @PressSec says because US needs to reduce dependence on #Oil & look at other ways of having energy. Squeezing supply & not reducing demand hasn't worked so far. Bullish for Oil. #OOTT

Excerpt https://abcnews.go.com/Politics/week-transcript-27-22-white-house-press-secretary/story?id=83130061

'This Week' Transcript 2-27-22: White House Press Secretary Jen Psaki, Sen. Tom Cotton & Amb. Oksana Markarova

This is a rush transcript of "This Week" airing Sunday, February 27.

By **ABC News**

27 February 2022, 08:03 · 46 min read

STEPHANOPOULOS: Senator Tom Cotton is coming up on the program next. He says the United States should be doing more to crack down on the Russian energy sector.
Here's what he had to say.

(BEGIN VIDEO CLIP)

SEN. TOM COTTON (R) ARKANSAS: How about we impose those sanctions, but we lift all those restrictions on the production of American oil and gas, so we can start drilling on federal lands again and putting out new leases, so we can re-open the Keystone Pipeline, which would bring more oil into America every day from Canada than we import every day from Russia.

(END VIDEO CLIP)

STEPHANOPOULOS: Is the president open to those proposals?

PSAKI: Well, first, George, I think, on the energy sector, the way that the president -- President Biden has approached sanctions is we want to take every step to maximize the impact and the consequences on President Putin, while minimizing the impact on the American people and the global community.

And so energy sanctions are certainly on the table. We have not taken those off. But we also want to do that and make sure we're minimizing the impact on the global marketplace, and do it in a united way.

I would say that the congressman's recommendations there, the Keystone Pipeline, was not processing oil through the system. That does not solve any problems. That's a misdiagnosis, or maybe a -- a misdiagnosis of what needs to happen.

I would also note that, on oil leases, what this actually justifies, in President Biden's view, is the fact that we need to reduce our dependence on foreign oil, on oil in general, and need to -- and we need to look at other ways of having energy in our country and others.

One of the interesting things, George, we've seen over the last week or so is that a number of European countries are recognizing they need to reduce their own reliance on Russian oil. So I'm not sure we agree with that assessment of what needs to happen. But energy sanctions remain on the table.

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Dan Tsubouchi @Energy_Tidbits · Feb 27

Our weekly SAF Feb 27, 2022 Energy Tidbits memo is posted on our SAF Group website. This 55-pg energy research memo expands upon & covers more items than tweeted this week. See news/insights section of SAF website #Oil #OOTT #LNG #NatGas #EnergyTransition safgroup.ca/news-insights/

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Energy Tidbits

Feb 27, 2022

Produced by: Dan Tsubouchi

Huge Energy Week: RUS Invades Ukraine, JCPOA Deal Getting Close, Nord Stream 2 Halted, Shell's Bullish LNG View

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. The world and all markets are all about the escalating events/actions related to Russia's invasion of Ukraine (Click Here)
2. US says "*we're not quite at the point of a final [JCPOA] deal*", sounds like it's getting really close (Click Here)
3. Germany halts Nord Stream 2 certification process (Click Here)
4. Shell's bullish LNG forecast is now even more relevant with Nord Stream 2 limbo & increased risk on Russia energy supplies (Click Here)
5. Shell is still showcasing LNG Canada, which we believe points to LNG Canada Phase 2 in 2022. (Click Here)
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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