

Energy Tidbits

Bullish for Natural Gas & Coal in 2020s, AI Data Center Leader,
Dominion Energy, Fossil Fuels Provided 63.7% of 2023 Power

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Table 1. Summary of natural gas supply and disposition in the United States, 2019-2024

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
2019 total	40,780	36,447	2,548	33,899	61	-1,916	-503	-408	31,132
2020 total	40,730	36,521	2,710	33,811	63	-2,734	-180	-357	30,603
2021 total	41,677	37,338	2,809	34,529	66	-3,845	83	-188	30,646
2022									
January	3,628	3,235	252	2,983	6	-315	1,013	-95	3,593
February	3,266	2,914	227	2,687	5	-288	673	-17	3,059
March	3,663	3,282	256	3,026	6	-380	171	-43	2,781
April	3,568	3,199	250	2,950	6	-342	-220	-33	2,360
May	3,695	3,332	260	3,072	6	-386	-412	-39	2,241
June	3,565	3,232	252	2,980	6	-325	-332	-13	2,317
July	3,736	3,375	263	3,112	6	-303	-187	-46	2,583
August	3,730	3,392	265	3,128	6	-322	-213	-39	2,559
September	3,669	3,330	260	3,071	6	-293	-446	-50	2,288
October	3,814	3,438	268	3,170	6	-315	-432	-66	2,364
November	3,712	3,327	259	3,067	6	-308	78	-77	2,767
December	3,755	3,370	263	3,107	6	-304	588	-21	3,376
Total	43,802	39,428	3,075	36,353	73	-3,880	281	-539	32,288
2023									
January	£3,820	£3,429	272	£3,157	7	-333	456	17	3,304
February	£3,456	£3,103	249	£2,854	6	-331	399	20	2,948
March	£3,858	£3,475	286	£3,189	6	-401	224	-4	3,014
April	£3,729	£3,362	281	£3,081	5	-400	-269	3	2,421
May	£3,869	£3,500	290	£3,210	6	-422	-452	-27	2,315
June	£3,720	£3,375	278	£3,097	4	-376	-344	-19	2,363
July	£3,827	£3,495	292	£3,203	6	-378	-134	-31	2,666
August	£3,850	£3,534	295	£3,239	5	-388	-133	-50	2,673
September	£3,761	£3,426	293	£3,133	3	-396	-323	-44	2,373
October	£3,909	£3,537	303	£3,233	3	-421	-321	-56	2,438
November	£3,841	£3,469	293	£3,176	5	-403	65	-21	2,822
December	£3,994	£3,592	296	£3,297	6	-432	284	14	3,169
Total	£45,633	£41,296	3,427	£37,869	63	-4,681	-548	-197	32,506
2024									
January	£3,872	RE3,479	269	£3,210	R12	-350	844	R-14	R3,702
February	£3,723	RE3,348	276	RE3,072	R10	-385	263	R11	R2,971
March	£3,880	£3,487	304	RE3,182	R10	-424	46	R-15	R2,800
April	£3,716	RE3,352	301	RE3,051	R10	-345	-256	R-65	2,395
May	£3,834	£3,462	314	RE3,148	R10	-407	-363	R-54	R2,334
June	RE3,731	RE3,386	301	RE3,084	R9	-379	-254	R-29	R2,431
July	RE3,892	RE3,539	R306	RE3,232	R11	-328	-120	R-48	R2,747
August	£3,856	£3,514	310	£3,203	10	-381	-79	-33	2,721
2024 8-month YTD	£30,505	£27,566	2,382	£25,183	82	-3,000	83	-248	22,101
2023 8-month YTD	£30,129	£27,272	2,243	£25,030	46	-3,030	-252	-126	21,704
2022 8-month YTD	28,852	25,963	2,025	23,938	48	-2,660	492	-324	21,494

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

^b Equal to marketed production minus NGPL production.

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

^d Monthly and annual data for 2019 through 2022 include underground storage and liquefied natural gas storage. Data for January 2023 forward include underground storage only. Appendix A, Explanatory Note 5, contains a discussion of computation procedures.

^e Represents quantities lost and imbalances in data due to differences among data sources. Net imports and balancing item excludes net intransit deliveries. These net intransit deliveries were (in billion cubic feet): 115 for 2023; 94 for 2022; 184 for 2021; 207 for 2020; and -8 for 2019. Appendix A, Explanatory Note 7, contains a full discussion of balancing item calculations.

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

^R Revised data.

^{RE} Revised estimated data.

^E Estimated data.

Source: 2019-2022: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2022*. January 2023 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; Form EIA-191, *Monthly Underground Gas Storage Report*; EIA computations and estimates; and Office of Fossil Energy and Carbon Management, *Natural Gas Imports and Exports*. Table 7 includes detailed source notes for Marketed Production. Appendix A, Notes 3 and 4, includes discussion of computation and estimation procedures and revision policies.

Note: Data for 2019 through 2022 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 states and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Table 5. U.S. natural gas exports, 2022-2024

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

	2024 8-month YTD	2023 8-month YTD	2022 8-month YTD	August	July	June	May	2024 April
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	659,503	681,228	636,068	65,952	66,314	66,541	R66,528	R72,527
Mexico	1,563,463	1,485,081	1,418,077	212,753	209,404	203,180	211,481	190,281
Total pipeline exports	2,222,966	2,166,308	2,054,146	278,706	275,718	269,721	R278,009	R262,808
LNG								
Exports								
By vessel								
Antigua and Barbuda	49	24	15	7	6	12	8	5
Argentina	51,838	76,921	66,939	4,270	11,310	10,114	17,470	8,674
Bahamas	343	348	329	45	54	42	52	39
Bangladesh	9,863	17,650	12,663	0	0	3,294	0	3,289
Barbados	182	0	92	24	18	20	17	16
Belgium	33,786	37,985	60,616	0	0	0	0	3,247
Brazil	56,046	21,043	68,559	16,737	3,531	14,000	5,941	1,364
Chile	47,862	31,217	26,766	3,695	10,640	7,101	7,330	5,441
China	150,190	105,462	39,486	25,929	R29,700	R17,042	25,863	10,025
Colombia	29,909	5,996	2,004	5,160	1,376	953	436	1,444
Croatia	37,051	31,852	53,966	3,654	0	6,784	3,570	0
Dominican Republic	61,127	46,378	37,514	9,625	3,152	10,812	5,946	12,446
Egypt	53,265	0	0	14,658	24,297	14,310	0	0
El Salvador	0	1	0	0	0	0	0	0
Finland	13,181	25,315	0	0	3,432	3,212	3,321	3,215
France	224,583	307,218	382,531	8,293	14,207	6,630	19,797	37,672
Germany	145,202	135,655	0	14,167	14,262	17,970	26,177	21,479
Greece	25,272	29,171	61,316	1,651	1,208	3,702	5,182	0
Haiti	77	73	98	10	11	20	10	3
India	186,153	101,672	80,708	24,876	28,326	28,782	45,269	20,843
Indonesia	4,453	2,669	1,684	3,250	0	771	432	0
Italy	114,018	123,802	97,482	21,124	3,965	17,597	10,814	14,040
Jamaica	9,060	2,577	848	1	1,409	475	3	3
Japan	223,077	200,102	146,599	30,289	R30,453	27,862	41,155	22,227
Jordan	31,758	3,282	0	3,463	13,537	3,954	3,676	3,652
Kuwait	28,465	28,549	46,681	3,294	0	7,574	7,216	0
Lithuania	25,377	34,781	59,610	3,208	3,334	6,938	0	0
Malaysia	18,226	0	0	3,694	7,366	0	7,166	0
Malta	2,336	2,592	2,345	0	2,336	0	0	0
Mexico	4,060	8,224	3,292	751	0	33	3,190	0
Netherlands	324,568	414,303	247,164	37,494	22,461	34,890	37,694	47,486
Pakistan	0	0	3,074	0	0	0	0	0
Panama	14,710	12,510	9,676	1,945	0	2,375	0	3,265
Philippines	3,645	0	0	0	0	3,645	0	0
Poland	82,940	85,939	86,054	11,026	16,541	17,301	14,363	3,576
Portugal	48,771	53,447	43,014	6,188	6,314	3,743	4,238	6,469
Singapore	41,035	13,393	16,352	6,791	R3,329	3,371	6,851	3,617
South Korea	215,166	162,116	195,383	42,728	24,150	R44,575	28,401	17,457
Spain	143,621	176,569	318,732	20,877	12,532	17,364	8,399	10,127
Taiwan	82,291	74,429	75,150	9,828	R12,857	5,923	10,256	13,347
Thailand	89,845	40,540	22,315	10,917	14,037	6,811	7,289	19,342
Turkiye	75,167	78,501	126,866	0	0	0	0	3,057
United Arab Emirates	3,064	0	0	0	0	0	3,064	0
United Kingdom	128,688	309,966	220,930	13,891	3,703	6,398	7,100	6,887
By truck								
Canada	48	54	48	8	7	10	15	8
Mexico	108	497	969	8	12	14	13	14
Re-exports								
By vessel								
United Kingdom	607	0	0	0	0	0	0	0
Total LNG exports	2,841,089	2,802,823	2,617,873	363,574	323,873	356,423	367,723	303,776
CNG								
Canada	7	1	1	*	0	0	R2	R2
Total CNG exports	7	1	1	*	0	0	R2	R2
Total exports	5,064,061	4,969,132	4,672,020	642,280	599,591	626,144	645,734	566,586

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2022-2024

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

	2024				2023			
	March	February	January	Total	December	November	October	September
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	115,589	113,960	92,090	1,025,017	111,267	88,967	66,936	76,619
Mexico	181,856	169,433	185,076	2,241,553	174,602	179,002	200,466	202,402
Total pipeline exports	297,445	283,393	277,165	3,266,570	285,869	267,969	267,402	279,021
LNG								
Exports								
By vessel								
Antigua and Barbuda	3	7	2	47	6	4	7	7
Argentina	0	0	0	76,921	0	0	0	0
Bahamas	35	34	42	499	32	34	34	51
Bangladesh	3,281	0	0	24,147	3,257	3,240	0	0
Barbados	29	37	22	11	11	0	0	0
Belgium	6,899	9,386	14,255	97,017	14,272	10,288	20,775	13,697
Brazil	0	6,180	8,292	38,595	3,708	3,563	3,720	6,561
Chile	6,439	3,522	3,696	31,217	0	0	0	0
China	17,376	16,312	7,944	173,247	13,949	25,601	18,013	10,222
Colombia	7,974	6,101	6,465	32,014	7,162	1,844	6,689	10,322
Croatia	10,202	3,377	9,464	55,439	3,050	9,995	0	10,542
Dominican Republic	4,552	7,106	7,489	73,761	3,177	8,647	8,826	6,734
Egypt	0	0	0	0	0	0	0	0
El Salvador	0	0	0	1	0	0	0	0
Finland	0	0	0	38,469	2,762	3,335	0	7,057
France	60,572	49,363	28,049	492,906	40,692	58,907	54,072	32,016
Germany	17,060	16,715	17,371	204,605	19,439	14,382	17,901	17,228
Greece	3,240	3,136	7,153	39,426	8,287	0	0	1,968
Haiti	0	6	16	113	13	8	8	10
India	13,842	13,530	10,685	164,325	17,062	7,441	13,698	24,452
Indonesia	0	0	0	3,157	0	0	0	489
Italy	10,256	11,455	24,767	197,816	21,283	23,786	6,850	22,094
Jamaica	3	590	6,576	9,048	480	122	1,831	4,038
Japan	28,923	22,827	19,340	310,190	27,461	24,896	24,357	33,375
Jordan	3,477	0	0	3,282	0	0	0	0
Kuwait	7,207	3,175	0	35,185	0	0	0	6,636
Lithuania	3,641	7,174	1,083	55,332	3,409	0	6,476	10,666
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	2,592	0	0	0	0
Mexico	0	87	0	13,661	3,660	0	1,776	0
Netherlands	57,169	45,501	41,873	588,557	48,658	36,150	49,701	39,745
Pakistan	0	0	0	3,141	3,141	0	0	0
Panama	3,448	0	3,677	19,565	328	3,530	0	3,196
Philippines	0	0	0	6,823	0	3,445	3,378	0
Poland	3,685	10,702	5,746	139,635	10,862	14,500	14,213	14,121
Portugal	2,932	9,384	9,503	72,856	2,945	3,204	7,125	6,135
Singapore	7,031	6,851	3,194	23,320	0	0	3,279	6,649
South Korea	21,023	16,193	20,640	275,779	35,187	26,140	28,224	24,112
Spain	21,849	13,660	38,812	269,504	15,629	17,280	49,792	10,234
Taiwan	10,374	13,151	6,555	104,075	6,655	3,104	6,686	13,201
Thailand	14,737	8,809	7,904	59,477	3,818	7,581	7,538	0
Turkiye	8,963	20,454	42,693	156,403	42,304	27,560	4,507	3,531
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	13,663	34,117	42,928	450,181	60,209	47,642	24,900	7,464
By truck								
Canada	0	0	0	85	7	7	0	16
Mexico	12	14	21	604	20	26	27	35
Re-exports								
By vessel								
United Kingdom	0	607	0	0	0	0	0	0
Total LNG exports	369,898	359,563	396,260	4,343,027	422,935	386,262	384,403	346,604
CNG								
Canada	0	2	0	1	0	0	0	0
Total CNG exports	0	2	0	1	0	0	0	0
Total exports	667,343	642,958	673,426	7,609,597	708,805	654,230	651,805	625,625

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2022-2024

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

								2023
	August	July	June	May	April	March	February	January
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	68,390	76,567	75,320	77,984	75,674	106,178	95,691	105,422
Mexico	213,050	208,625	204,115	193,623	169,179	177,653	152,807	166,028
Total pipeline exports	281,440	285,193	279,435	271,608	244,853	283,832	248,498	271,450
LNG								
Exports								
By vessel								
Antigua and Barbuda	5	4	3	3	3	2	2	4
Argentina	0	11,162	22,663	26,930	11,536	2,343	2,287	0
Bahamas	47	47	45	45	43	53	27	42
Bangladesh	7,095	0	3,624	3,561	0	0	0	3,369
Barbados	0	0	0	0	0	0	0	0
Belgium	3,363	0	6,953	3,809	4,844	8,053	7,322	3,640
Brazil	3,287	0	8,628	4,196	3,598	1,334	0	0
Chile	3,065	7,144	4,011	6,419	0	7,271	0	3,307
China	14,252	35,337	20,261	6,593	3,426	5,132	2,565	17,896
Colombia	3,149	0	0	2,847	0	0	0	0
Croatia	3,023	10,121	0	2,932	3,163	3,694	6,006	2,913
Dominican Republic	10,055	6,076	7,443	7,871	6,901	876	3,514	3,643
Egypt	0	0	0	0	0	0	0	0
El Salvador	0	1	0	0	0	0	0	0
Finland	6,630	3,666	1,622	6,935	0	6,462	0	0
France	34,332	20,589	45,569	51,355	53,211	28,581	39,457	34,124
Germany	20,709	17,245	15,769	16,002	18,546	24,841	8,229	14,314
Greece	4,700	0	2,924	4,498	3,905	3,156	6,781	3,207
Haiti	9	8	6	12	11	8	11	8
India	13,713	20,494	14,488	7,140	14,585	10,230	14,064	6,956
Indonesia	766	1,097	0	0	0	0	0	805
Italy	21,519	13,923	13,959	18,845	17,378	13,699	17,555	6,925
Jamaica	3	1,443	3	289	31	540	161	107
Japan	31,302	44,016	28,031	31,208	13,687	20,102	14,058	17,696
Jordan	0	3,282	0	0	0	0	0	0
Kuwait	3,289	7,081	10,670	3,802	3,707	0	0	0
Lithuania	7,005	3,375	3,629	7,048	3,412	3,599	0	6,713
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	2,592
Mexico	0	1,954	0	0	0	3,051	0	3,219
Netherlands	53,596	53,296	45,866	64,538	60,234	61,017	39,301	36,453
Pakistan	0	0	0	0	0	0	0	0
Panama	0	3,295	0	3,289	0	3,209	0	2,718
Philippines	0	0	0	0	0	0	0	0
Poland	10,550	3,635	18,046	17,422	7,165	7,236	10,347	11,538
Portugal	6,660	9,845	3,194	10,424	4,237	6,133	6,138	6,816
Singapore	3,384	0	10,009	0	0	0	0	0
South Korea	34,932	16,462	17,044	10,958	24,734	10,807	22,672	24,507
Spain	20,023	34,106	12,274	12,266	13,680	38,096	32,138	13,987
Taiwan	14,117	13,090	6,848	10,262	9,774	10,311	6,557	3,471
Thailand	14,793	7,463	4,242	0	4,225	4,249	1,829	3,738
Turkiye	0	0	0	0	13,908	11,866	13,444	39,283
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	3,655	0	0	25,242	75,836	70,499	71,702	63,032
By truck								
Canada	8	8	17	7	7	7	0	0
Mexico	19	25	34	26	58	96	106	133
Re-exports								
By vessel								
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	353,059	349,292	327,872	366,774	375,843	366,552	326,275	337,155
CNG								
Canada	0	0	0	0	0	*	*	*
Total CNG exports	0	0	0	0	0	*	*	*
Total exports	634,499	634,485	607,307	638,382	620,697	650,384	574,773	608,605

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2022-2024

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

								2022
	Total	December	November	October	September	August	July	June
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	959,630	98,718	90,179	72,738	61,926	75,220	69,774	70,105
Mexico	2,078,627	158,638	160,986	171,766	169,159	182,596	189,652	182,995
Total pipeline exports	3,038,257	257,355	251,165	244,505	231,086	257,816	259,426	253,100
LNG								
Exports								
By vessel								
Antigua and Barbuda	22	1	2	2	3	2	2	3
Argentina	66,939	0	0	0	0	2,202	9,448	25,246
Bahamas	489	42	35	40	43	53	45	47
Bangladesh	12,663	0	0	0	0	0	0	0
Barbados	93	0	1	0	0	0	0	0
Belgium	80,245	3,274	0	7,190	9,165	3,589	0	7,023
Brazil	71,998	0	0	3,439	0	10,542	5,192	3,857
Chile	30,131	0	0	0	3,365	0	6,917	0
China	96,659	6,992	17,308	22,598	10,275	10,272	784	7,329
Colombia	5,703	0	0	3,699	0	606	0	912
Croatia	77,286	6,204	5,122	2,922	9,073	7,824	4,600	7,925
Dominican Republic	50,824	6,644	0	3,469	3,196	3,357	6,532	5,838
Egypt	0	0	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0	0	0
Finland	329	329	0	0	0	0	0	0
France	571,399	38,311	50,655	41,959	57,943	33,885	53,443	37,564
Germany	7,113	7,112	1	0	0	0	0	0
Greece	69,031	2,869	421	4,424	0	10,763	12,922	9,633
Haiti	115	9	0	0	8	11	8	13
India	122,518	14,139	10,138	7,005	10,528	10,265	13,902	10,653
Indonesia	6,579	3,256	505	625	509	967	0	0
Italy	116,034	6,992	3,205	0	8,355	15,462	9,914	7,137
Jamaica	1,516	147	137	144	240	110	121	48
Japan	209,220	20,535	24,396	10,684	7,005	20,156	18,189	21,561
Jordan	0	0	0	0	0	0	0	0
Kuwait	57,018	0	0	3,299	7,038	6,415	5,382	8,105
Lithuania	77,212	3,281	3,708	7,072	3,541	7,579	7,947	6,729
Malaysia	0	0	0	0	0	0	0	0
Malta	5,273	0	2,928	0	0	0	0	0
Mexico	3,832	539	0	0	0	0	0	3,292
Netherlands	378,329	39,893	20,645	39,703	30,924	50,020	32,637	34,420
Pakistan	3,074	0	0	0	0	0	0	0
Panama	13,759	249	3,833	0	0	0	0	623
Philippines	0	0	0	0	0	0	0	0
Poland	127,404	13,885	3,453	7,095	16,917	6,885	17,780	14,282
Portugal	69,583	10,025	3,732	7,005	5,806	3,202	6,412	5,582
Singapore	22,980	0	0	6,628	0	0	6,275	3,352
South Korea	292,732	24,700	14,069	38,844	19,736	36,033	34,342	25,054
Spain	426,657	33,847	26,445	26,369	21,263	26,140	34,396	29,639
Taiwan	106,738	9,203	3,592	9,041	9,753	8,901	9,353	6,892
Thailand	25,988	0	0	0	3,673	3,607	0	6,920
Turkiye	192,067	17,979	31,430	10,333	5,458	0	0	7,542
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	464,462	69,332	76,693	46,040	51,467	21,263	3,797	3,326
By truck								
Canada	76	8	0	19	0	0	0	8
Mexico	1,552	160	153	175	94	103	76	105
Re-exports								
By vessel								
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	3,865,643	339,960	302,608	309,823	295,379	300,215	300,415	300,659
CNG								
Canada	2	0	*	1	*	*	1	*
Total CNG exports	2	0	*	1	*	*	1	*
Total exports	6,903,902	597,316	553,774	554,328	526,465	558,031	559,842	553,760

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2022-2024

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

	2022				
	May	April	March	February	January
Exports					
Volume (million cubic feet)					
Pipeline					
Canada	79,214	80,475	105,074	74,630	81,577
Mexico	186,003	176,447	169,885	155,032	175,467
Total pipeline exports	265,217	256,922	274,958	229,662	257,045
LNG					
Exports					
By vessel					
Antigua and Barbuda	2	3	2	0	2
Argentina	20,111	9,933	0	0	0
Bahamas	42	34	43	31	34
Bangladesh	3,346	0	3,421	5,896	0
Barbados	0	0	34	31	28
Belgium	3,441	7,341	17,743	7,691	13,786
Brazil	15,303	3,448	2,236	10,660	17,322
Chile	9,943	3,530	3,214	0	3,162
China	0	10,217	7,527	3,357	0
Colombia	0	0	0	0	486
Croatia	8,543	6,763	3,358	5,870	9,084
Dominican Republic	4,964	3,645	6,530	0	6,647
Egypt	0	0	0	0	0
El Salvador	0	0	0	0	0
Finland	0	0	0	0	0
France	47,150	56,343	64,415	39,646	50,084
Germany	0	0	0	0	0
Greece	12,650	1,336	4,116	8,094	1,802
Haiti	9	11	10	16	20
India	7,152	14,223	10,438	7,210	6,866
Indonesia	0	0	0	717	0
Italy	21,696	15,519	7,088	13,629	7,037
Jamaica	144	135	92	111	86
Japan	24,024	13,231	17,697	10,214	21,527
Jordan	0	0	0	0	0
Kuwait	14,204	7,298	0	5,277	0
Lithuania	11,237	13,770	5,700	3,131	3,518
Malaysia	0	0	0	0	0
Malta	0	0	0	2,345	0
Mexico	0	0	0	0	0
Netherlands	28,902	28,395	24,922	31,591	16,279
Pakistan	0	3,074	0	0	0
Panama	1,192	1,536	0	3,069	3,255
Philippines	0	0	0	0	0
Poland	18,224	13,882	3,831	7,475	3,695
Portugal	3,888	6,632	10,728	3,703	2,868
Singapore	0	0	6,725	0	0
South Korea	17,538	13,813	19,289	27,489	21,824
Spain	40,337	40,259	59,224	39,359	49,379
Taiwan	15,975	9,541	12,161	6,115	6,211
Thailand	3,419	0	0	4,880	3,490
Turkiye	7,281	6,637	16,629	43,697	45,081
United Arab Emirates	0	0	0	0	0
United Kingdom	10,608	39,775	56,799	25,301	60,060
By truck					
Canada	8	15	0	4	13
Mexico	115	122	144	157	148
Re-exports					
By vessel					
United Kingdom	0	0	0	0	0
Total LNG exports	351,448	330,463	364,116	316,766	353,791
CNG					
Canada	0	0	*	0	0
Total CNG exports	0	0	*	0	0
Total exports	616,665	587,385	639,074	546,428	610,836

See footnotes at end of table.

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2019-2024

million cubic feet

Year and month	Alaska	Arkansas	California	Colorado	Kansas	Louisiana	Montana	New Mexico	North Dakota	Ohio
2019 total	329,361	524,757	196,823	1,986,916	183,087	3,212,318	43,534	1,769,086	850,826	2,651,631
2020 total	339,337	481,205	155,979	1,996,740	163,362	3,205,574	38,191	1,965,533	887,445	2,389,629
2021 total	354,660	448,283	136,034	1,890,260	152,986	3,443,767	38,719	2,237,165	999,094	2,278,731
2022										
January	32,865	36,087	11,347	155,786	12,478	318,772	3,119	199,405	81,490	190,930
February	30,014	32,336	9,814	141,557	11,122	290,031	2,977	184,452	75,867	172,453
March	32,473	36,319	11,603	159,101	12,465	319,562	3,370	218,272	88,106	190,930
April	30,910	35,043	11,384	153,816	12,347	324,537	3,175	216,047	68,665	181,993
May	31,677	35,781	11,593	154,313	12,826	348,337	3,170	222,902	81,340	188,060
June	28,644	34,299	11,296	149,081	12,302	336,152	3,208	215,334	86,437	181,993
July	29,654	35,096	11,734	153,856	12,659	348,334	3,367	228,003	90,288	193,328
August	29,380	35,394	12,177	155,140	12,814	351,777	3,544	229,728	89,688	193,328
September	29,288	34,211	11,260	151,515	11,854	348,817	3,491	231,482	90,550	187,092
October	31,122	35,112	11,520	156,992	13,008	365,742	3,560	250,312	93,103	190,335
November	30,934	33,568	11,095	151,304	12,206	357,021	3,266	239,821	85,482	184,195
December	36,181	32,951	11,396	150,558	11,764	355,708	2,461	251,472	76,605	190,335
Total	373,141	416,196	136,220	1,833,019	147,846	4,064,791	38,709	2,687,231	1,007,621	2,244,971
2023										
January	33,391	£34,788	£11,055	£151,849	£11,783	£363,863	£3,538	£254,905	£83,384	£198,189
February	30,726	£31,085	£10,042	£135,238	£10,528	£352,464	£3,233	£233,411	£80,766	£174,917
March	32,676	£34,429	£10,900	£150,138	£11,441	£370,158	£3,565	£268,590	£88,736	£199,571
April	31,313	£32,911	£10,652	£146,856	£11,228	£363,538	£3,475	£259,515	£88,066	£187,566
May	31,288	£33,689	£11,243	£152,690	£11,555	£379,548	£3,577	£263,626	£92,326	£191,104
June	28,991	£32,280	£10,795	£149,138	£10,817	£345,747	£3,469	£252,650	£92,129	£179,766
July	28,478	£33,094	£11,217	£155,584	£10,985	£363,583	£3,551	£264,909	£96,906	£189,040
August	26,756	£32,973	£11,217	£157,964	£11,293	£365,347	£3,654	£270,933	£97,655	£195,216
September	28,784	£31,874	£10,827	£152,177	£10,902	£351,720	£3,535	£265,057	£98,252	£188,594
October	31,535	£32,602	£10,908	£157,416	£11,305	£360,678	£3,579	£271,482	£100,209	£186,975
November	30,734	£31,377	£10,272	£154,244	£10,869	£343,826	£3,376	£270,985	£98,324	£185,717
December	33,356	£32,093	£10,619	£160,934	£10,952	£345,516	£3,621	£288,346	£103,484	£186,819
Total	368,027	£393,193	£129,747	£1,824,228	£133,657	£4,305,988	£42,174	£3,164,408	£1,120,237	£2,263,473
2024										
January	34,077	£29,234	RE10,455	RE155,526	£10,083	RE339,640	RE3,474	RE275,588	RE89,682	£179,681
February	31,472	£29,775	RE9,725	RE149,912	£10,092	RE329,477	RE3,367	RE272,978	RE94,211	£179,998
March	33,621	£31,746	RE10,440	RE161,175	£10,747	RE332,321	RE3,642	RE295,282	RE98,803	£184,582
April	31,174	£30,219	RE10,026	RE152,838	£10,076	RE301,025	RE3,568	RE283,277	RE98,189	£180,272
May	31,962	£31,054	RE10,396	RE156,163	£10,604	RE294,266	RE3,660	RE295,165	RE102,303	£190,090
June	RE28,952	RE29,676	RE10,139	RE148,869	RE10,190	RE282,992	RE3,580	RE289,976	RE98,341	RE177,260
July	29,235	RE30,531	RE10,425	RE154,641	RE10,521	RE307,281	RE3,692	RE305,857	RE100,559	RE179,158
August	28,311	£30,438	£10,268	£155,136	£10,464	£300,820	£3,774	£312,220	£102,811	£178,414
2024 8-month YTD	248,804	£242,674	£81,873	£1,234,261	£82,777	£2,487,822	£28,756	£2,330,344	£784,900	£1,449,454
2023 8-month YTD	243,618	£265,247	£87,122	£1,199,457	£89,628	£2,904,248	£28,064	£2,068,538	£719,968	£1,515,368
2022 8-month YTD	245,616	280,354	90,948	1,222,651	99,013	2,637,503	25,930	1,714,144	661,881	1,493,015

See footnotes at end of table.

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2019-2024

million cubic feet – continued

Year and month	Oklahoma	Pennsylvania	Texas	Utah	West Virginia	Wyoming	Other states	Federal Gulf of Mexico	U.S. total
2019 total	3,036,052	6,896,792	9,378,489	271,808	2,155,214	1,488,854	456,024	1,015,343	36,446,918
2020 total	2,673,207	7,168,902	9,813,035	241,965	2,567,990	1,206,122	435,117	791,491	36,520,826
2021 total	2,555,430	7,647,068	9,949,156	239,422	2,675,145	1,109,416	401,892	780,632	37,337,860
2022									
January	216,347	657,613	878,743	20,719	234,795	89,680	30,986	64,105	3,235,266
February	196,621	577,251	795,295	18,516	209,707	78,589	31,234	56,642	2,914,480
March	225,203	634,328	903,364	21,502	239,344	87,991	34,249	64,273	3,282,454
April	226,464	614,569	880,176	21,243	235,580	86,485	31,383	65,402	3,199,218
May	235,497	638,527	918,979	22,306	247,179	85,606	32,053	61,895	3,332,041
June	231,202	616,619	881,753	21,786	240,568	85,970	31,592	64,090	3,232,326
July	239,209	644,039	920,414	22,646	251,625	89,886	34,763	66,176	3,375,077
August	238,619	635,404	937,041	23,549	255,603	87,801	33,420	67,976	3,392,383
September	238,112	618,364	925,985	21,849	245,734	83,339	32,595	64,875	3,330,414
October	245,755	637,050	941,968	22,103	251,647	88,939	33,226	66,250	3,437,743
November	234,562	613,000	910,587	21,297	255,298	85,621	32,901	64,414	3,326,572
December	236,429	624,415	934,211	22,675	253,533	82,730	32,644	64,307	3,370,376
Total	2,764,019	7,511,179	10,828,515	260,192	2,920,613	1,032,634	391,046	770,406	39,428,350
2023									
January	£241,437	£646,645	£935,962	£22,310	£256,931	£79,538	£31,536	£67,666	£3,428,769
February	£217,813	£572,742	£842,907	£18,969	£231,585	£69,492	£27,372	£59,490	£3,102,781
March	£240,498	£642,354	£961,177	£22,752	£266,638	£78,520	£27,921	£64,871	£3,474,934
April	£232,276	£619,656	£932,661	£22,593	£256,029	£75,109	£30,110	£58,454	£3,362,007
May	£237,558	£648,124	£982,394	£24,031	£268,279	£81,880	£30,706	£56,290	£3,499,909
June	£233,220	£627,912	£949,437	£24,338	£266,083	£80,375	£31,225	£57,076	£3,375,450
July	£238,429	£643,265	£985,195	£24,165	£279,996	£70,816	£32,548	£63,043	£3,494,802
August	£236,507	£648,577	£996,400	£25,154	£282,678	£79,142	£32,273	£59,986	£3,533,722
September	£234,235	£616,784	£966,776	£24,587	£268,946	£78,776	£31,376	£62,802	£3,426,002
October	£239,892	£640,992	£999,974	£25,742	£284,310	£85,128	£32,256	£61,707	£3,536,693
November	£229,910	£643,405	£974,811	£25,583	£282,583	£84,830	£30,876	£57,038	£3,468,760
December	£235,522	£669,263	£1,012,273	£26,418	£295,117	£87,440	£31,385	£59,102	£3,592,260
Total	£2,817,297	£7,619,721	£11,539,966	£286,642	£3,239,174	£951,046	£369,584	£727,526	£41,296,088
2024									
January	£225,757	£666,020	£971,064	£26,306	£287,332	£84,988	£31,243	£58,706	£3,478,855
February	£219,966	£617,929	£941,407	£24,094	£269,068	£81,298	£29,369	£53,998	£3,348,137
March	£232,361	£601,193	£1,009,562	£25,722	£284,527	£85,478	£30,838	£54,488	£3,486,527
April	£228,427	£583,413	£969,952	£24,903	£276,228	£79,888	£31,462	£57,270	£3,352,207
May	£239,125	£602,978	£1,019,960	£25,752	£280,999	£82,035	£32,346	£52,774	£3,461,632
June	£230,102	£611,021	£995,083	£24,878	£277,988	£80,596	£31,237	£54,901	£3,385,781
July	£235,450	£649,870	£1,030,136	£25,749	£293,427	£82,601	£31,653	£57,853	£3,538,639
August	£231,222	£621,077	£1,042,502	£25,229	£289,951	£81,071	£31,755	£58,308	£3,513,772
2024 8-month YTD	£1,842,411	£4,953,501	£7,979,667	£202,634	£2,259,521	£657,955	£249,902	£448,296	£27,565,551
2023 8-month YTD	£1,877,737	£5,049,276	£7,586,132	£184,312	£2,108,218	£614,872	£243,690	£486,878	£27,272,373
2022 8-month YTD	1,809,161	5,018,350	7,115,765	172,267	1,914,402	692,006	259,680	510,560	25,963,245

^R Revised data.^{RE} Revised estimated data.^E Estimated data.

Source: 2019-2022: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2022*, Bureau of Safety and Environmental Enforcement (BSEE), IHS Markit, and Enverus. January 2023 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; and EIA computations.

Note: For 2023 forward, we estimate state monthly marketed production from gross withdrawals using historical relationships between the two. We collect data for Arkansas, California, Colorado, Kansas, Louisiana, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, West Virginia, Wyoming, and federal offshore Gulf of Mexico individually on the EIA-914 report. The "other states" category comprises states/areas not individually collected on the EIA-914 report (Alabama, Arizona, Federal Offshore Pacific, Florida, Idaho, Illinois, Indiana, Kentucky, Maryland, Michigan, Mississippi, Missouri, Nebraska, Nevada, New York, Oregon, South Dakota, Tennessee, and Virginia). Before 2023, Federal Offshore Pacific is included in California. We obtain all data for Alaska directly from the state. Monthly preliminary state-level data for all states not collected individually on the EIA-914 report are available after the final annual reports for these series are collected and processed. Final annual data are generally available in the third quarter of the following year. The sum of individual states may not equal total U.S. volumes because of independent rounding.

Executive Summary

August 2024

Summary

In August 2024, the United States exported 642.3 Bcf and imported 269.3 Bcf of natural gas, which resulted in 373.0 Bcf of net exports.

U.S. LNG Exports

The United States exported 363.6 Bcf (56.6% of total U.S. natural gas exports) of natural gas in the form of liquefied natural gas (LNG) to 35 countries.

- Asia (165.1 Bcf, 45.4%), Europe (141.6 Bcf, 38.9%), Latin America/ Caribbean (42.3 Bcf, 11.6%), Africa (14.7 Bcf, 11.6%)
- 12.3% increase from July 2024
- 3.0% increase from August 2023
- 79.6% of total LNG exports went to non-Free Trade Agreement countries (nFTA), while the remaining 20.4% went to Free Trade Agreement countries (FTA).

U.S. LNG exports to the top five countries of destination accounted for 44.4% of total U.S. LNG exports.

- South Korea (42.7 Bcf, 11.8%), Netherlands (37.5 Bcf, 10.3%), Japan (30.3 Bcf, 8.3%), China (25.9 Bcf, 7.1%), and India (24.9 Bcf, 6.8%).

U.S. Imports and Exports by Pipeline and Truck with Mexico

The United States exported 212.8 Bcf of natural gas to Mexico and imported less than 0.1 Bcf of natural gas from Mexico, which resulted in 212.7 Bcf of net exports.

- 1.6% increase from July 2024
- 0.2% decrease from August 2023

U.S. Imports and Exports by Pipeline and Truck with Canada

The United States exported 66.0 Bcf of natural gas to Canada and imported 269.2 Bcf of natural gas from Canada, which resulted in 203.3 Bcf of net imports.

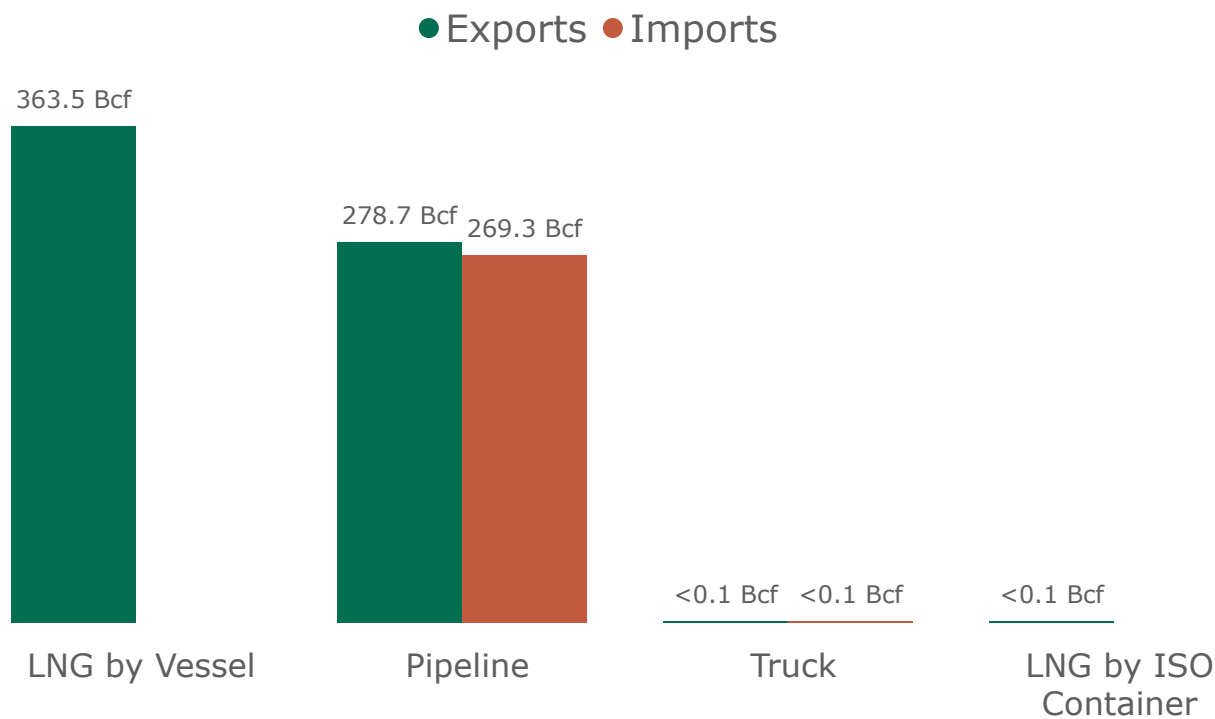
- 2.9% decrease from July 2024
- 9.1% increase from August 2023

U.S. Natural Gas Imports & Exports

Monthly Summary

2

U.S. Natural Gas Imports & Exports by Mode of Transport (August 2024)



1a. Monthly Summary: U.S. Natural Gas Imports & Exports by Mode of Transport

Volume (Bcf)	Monthly			Percentage Change	
Mode of Transport	Aug 2024	Jul 2024	Aug 2023	Aug 2024 vs. Jul 2024	Aug 2024 vs. Aug 2023
Exports					
LNG by Vessel	363.5	323.8	353.0	12%	3%
Pipeline	278.7	275.7	281.4	1%	<1%
Truck	<0.1	<0.1	<0.1	-18%	-43%
LNG by ISO Container	<0.1	<0.1	<0.1	-6%	36%
Total	642.3	599.6	634.5	7%	1%
Imports					
LNG by Vessel	0	0	0	-	-
Pipeline	269.3	275.7	254.4	-2%	6%
Truck	<0.1	<0.1	0.3	7%	-73%
LNG by ISO Container	0	0	0	-	-
Total	269.3	275.8	254.7	-2%	6%
Net Exports	373.0	323.8	379.8	15%	-2%

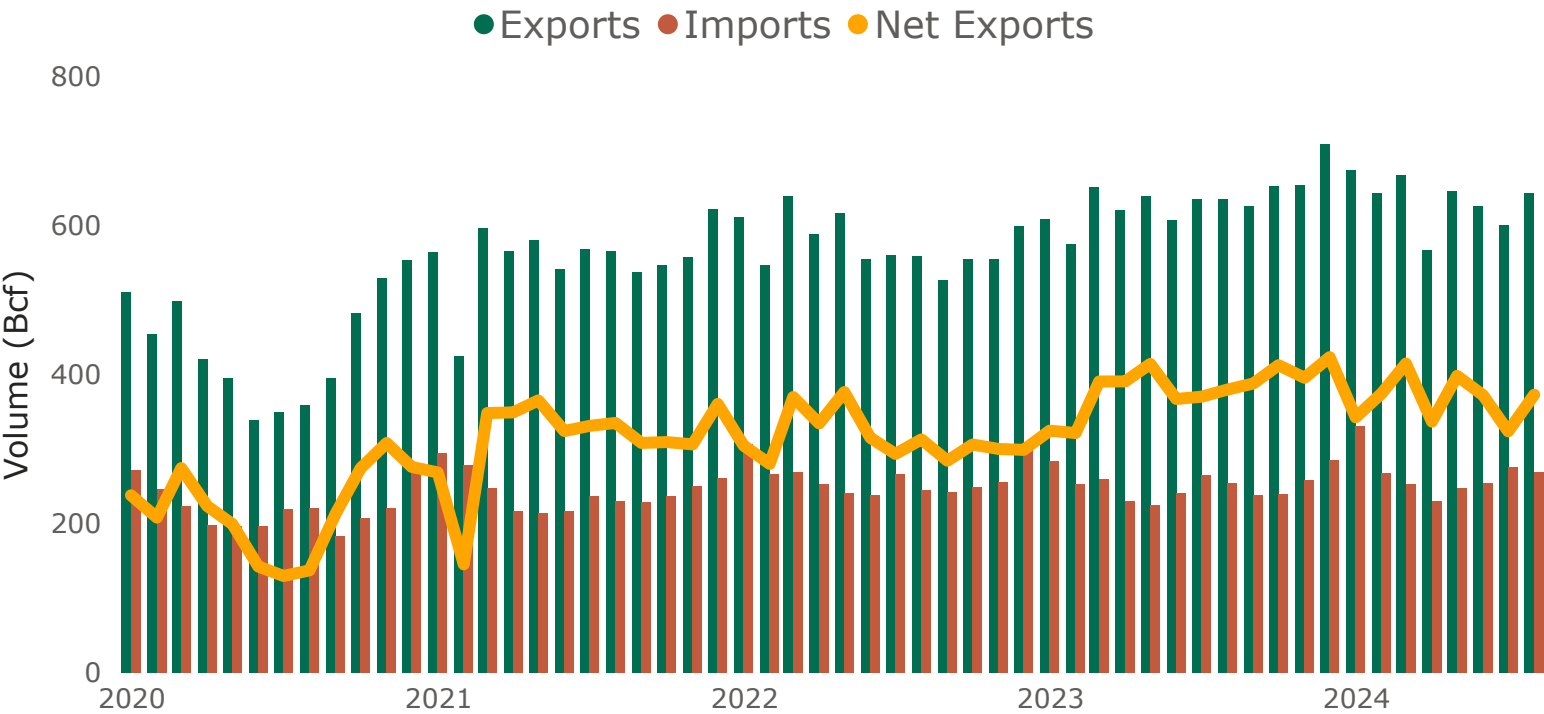
Notes

- Natural gas imports & exports by truck included compressed natural gas (CNG) and liquefied natural gas (LNG).
- Does not include LNG Re-Exports or Puerto Rico LNG Imports or Exports. See Table 6 for LNG Re-Exports and Table 8 for Puerto Rico LNG Imports and Exports.
- Totals may not equal sum of components because of independent rounding.
- not applicable(-).

U.S. Natural Gas Imports & Exports

Year-to-Date and Annual Summary

U.S. Natural Gas Imports & Exports



1b. Year-to-Date and Annual Summary: U.S. Natural Gas Imports & Exports by Mode of Transport

Volume (Bcf)	Year-to-Date (Jan-Aug)			Annual		
Mode of Transport	YTD 2024	YTD 2023	% Change	2023	2022	% Change
Exports						
LNG by Vessel	2,839.7	2,801.4	1%	4,341.2	3,861.9	12%
Pipeline	2,223.0	2,166.3	3%	3,266.6	3,040.8	7%
Truck	0.2	0.6	-71%	0.7	1.6	-57%
LNG by ISO Container	0.7	0.9	-22%	1.1	2.1	-48%
Total	5,063.5	4,969.1	2%	7,609.6	6,906.4	10%
Imports						
LNG by Vessel	11.5	10.5	9%	13.2	23.5	-44%
Pipeline	2,115.1	1,997.9	6%	3,015.7	3,104.0	-3%
Truck	0.8	1.6	-54%	2.4	2.1	14%
LNG by ISO Container	0	0	-	0	0	-
Total	2,127.3	2,010.1	6%	3,031.2	3,129.6	-3%
Net Exports	2,936.7	2,959.0	<1%	4,578.3	3,776.8	21%

- Notes
- Does not include LNG Re-Exports or Puerto Rico LNG Imports or Exports. See Table 6 for LNG Re-Exports and Table 8 for Puerto Rico LNG Imports and Exports.
 - Totals may not equal sum of components because of independent rounding.
 - not applicable(-).

Excerpt from BC NDP election platform “An Action Plan For You”

BUILDING A SUSTAINABLE ECONOMY WITH GOOD-PAYING JOBS

For too many in British Columbia, it seems like life is as uncertain now as in the depth of the pandemic. Costs keep going up while paychecks can't seem to keep pace. But David Eby believes there's a path forward to a prosperous, sustainable future for everyone in BC – and he's working on it every day.

It's a path that leverages our province's strengths to deliver new opportunities, good-paying jobs and a better future. Working in economic partnership with First Nations, your BC NDP team will bring together companies, workers, communities and others to:

Make BC a clean-energy superpower

Transition BC's economy from overreliance on fossil fuels to clean, affordable and reliable sources of energy | Doubling electricity generation by 2050, with calls for power every two years to grow more renewable sources like wind and solar....

Leverage our clean energy to attract global investment

Market BC to global companies that are making climate action a priority | A new Clean Economy Transition fund will use revenues raised from oil and gas development, including LNG, to build BC's clean-economy future, attracting even more investment....

Bring the certainty businesses are looking for

Making sure BC's economy has the space to grow and create jobs through a new Industrial Land Reserve – because we can't leave BC's prosperity to chance | Completing an "ease of doing business" review to remove barriers to establishing or growing businesses in BC....

Position BC's mining industry for global opportunities

Guaranteeing permit review timelines for priority critical mineral projects while maintaining environmental and safety standards | A new Critical Minerals Office to advance projects to final investment | A long-term strategy to attract investment and jobs....

Build out the physical and workforce resources BC's mining industry needs

Expanding the electricity grid to support mines with clean energy | Upgrading key highways in the northwest | Establishing union-led training programs to help workers keep pace with the changing nature of mining....

Deliver benefits to communities and people

We'll make sure resource development provides lasting benefits to communities in the northwest through the Resource Benefits Alliance, and to First Nations through continued revenue sharing and new equity ownership opportunities....

Create more good-paying forest jobs

A Forest Value Fund will fast-track wood-manufacturing facilities and the re-tooling of mills to process second growth timber | Get more jobs per tree by tying our working forest resources to mills that employ BC workers | Accelerate the growth of engineered-wood production....

Expand the BC Manufacturing Jobs Fund

By supporting the primary sector to invest in innovation that supports local jobs, we can help end the boom-and-bust economy that hurts communities, contractors, businesses, workers and their families....

Provide better access to fibre

Increasing fibre security for primary, secondary users and value-added manufacturers by working towards a harvest of 45 million cubic metres per year | Completing a full review of BC Timber Sales to improve access to public timber and drive better outcomes for workers and communities....

Defend the forest industry, communities and workers

Identifying reforms in the stumpage system in light of punishing tariffs | Pushing Ottawa to take tough tariff action now | David Eby is determined and prepared to use every resource and tool to fight these unjustified and unfair tariffs....

Reduce administration; cut red tape

Working toward First Nation agreements that make sure industry only pays once for stumpage – benefiting rural, remote and First Nation communities | Bringing efficiencies to the permitting process with a goal of granting faster access to timber harvesting....

Secure a more sustainable future for First Nations and forest communities

Double the land held in BC's new and existing community forests | Plant more than 300 million trees every year to help increase forest resilience | Improve stewardship of BC forests through new Forest Landscape Planning Tables....

Maximize opportunities on BC's agricultural lands

Inventory and protect agricultural land for future generations | Work with industry to identify land for agricultural innovation and food processing | Match young farmers with farmland available for purchase or lease....

Build resilience for farmers and farms

Protect farmers' crops and livelihoods through a topped-up perennial crop renewal program | Expand the agricultural Extreme Weather Preparedness Fund to help farmers and ranchers prepare and protect their farms and animals from extreme-weather emergencies....

Fuel high-growth industries that bring investment and jobs

Increasing the tax advantages BC offers to global film and TV production, and delivering those benefits faster | Driving made-in-BC life-saving treatments and creating jobs in BC's life sciences sector by increasing the amount of wet-lab space in BC....

Deliver more protection and less red tape for small business

Help small business owners avoid the high cost of resolving disputes with landlords through the courts by expanding the online dispute resolution tribunal to include business-landlord disputes | Change PST filing to quarterly from monthly....

Cut red tape for BC restaurants, wineries, breweries and distilleries

We'll modernize liquor laws and licensing, including a move to risk-based licensing that reduces administrative burdens on low-risk establishments and focuses inspection and enforcement resources on those that pose a greater risk....

Build the heart of communities by investing in tourism, arts and culture activities

Expanding the Arts, Culture & Sports Infrastructure Fund that helps local community and cultural organizations bring people together | Providing stable, year-over-year funding for fairs, festivals and events....

Train and attract people for good-paying jobs

Double all apprenticeship training | Train, hire and keep more doctors, nurses and other health professionals – particularly in rural BC – with incentives in return for a practice-in-BC guarantee | Train the workers needed to build complex clean-energy projects....

Protect the rights of BC workers

Make sure BC's minimum wage increases in line with inflation | Put BC jobs and workers first by preventing the offshoring of jobs on public projects | Increasing protections for Temporary Foreign Workers by removing certification for employers who inflict abuse....

Protect the health and wellbeing of BC workers

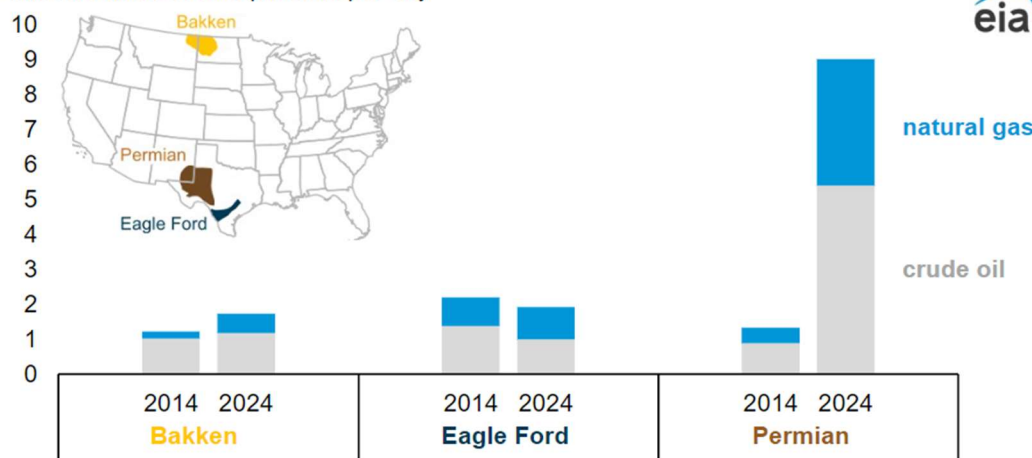
Increase the inspection and enforcement capacity of WorkSafeBC | Extend presumptive compensation for workers witnessing traumatic workplace deaths | Expand presumptive WCB coverage for firefighters who experience higher rates of cancer due to exposure to hazards....

In-brief analysis

October 31, 2024

Share of natural gas production in U.S. tight oil plays increased over the last decade

Average crude oil and gross natural gas production in select tight oil plays (2014, 2024)
million barrels of oil equivalent per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, October 2024 (Table 10b), and Enverus DrillingInfo

Note: 2024 represents year-to-date data through September. To calculate the barrel of oil equivalent, we use a conversion factor of 6,000 cubic feet of gross natural gas production per 1 barrel of oil.

Natural gas produced from the three largest tight oil-producing plays in the United States has increased in the last decade. Natural gas comprised 40% of total production from the Bakken, the Eagle Ford, and the Permian compared with 29% in 2014.

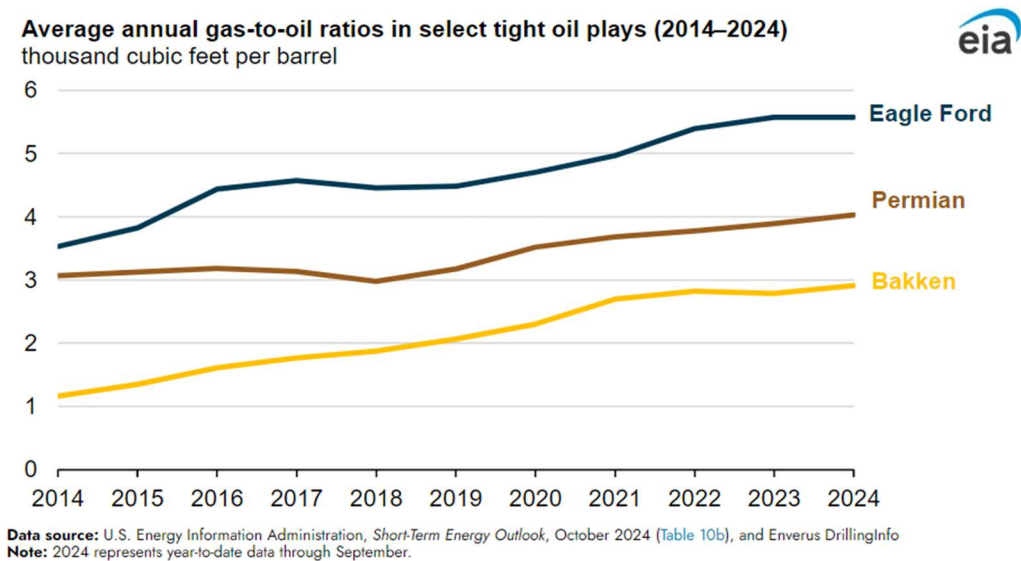
Combined crude oil and natural gas production from these plays more than doubled over this period as [hydraulic fracturing](#)—also known as fracking—and [horizontal drilling](#) have allowed producers to access and extract more crude oil and natural gas from [tight formations](#). However, production of [associated natural gas](#), which is natural gas produced from predominantly oil wells, has increased more rapidly from these tight oil plays. Natural gas production from these plays more than tripled—an increase of 22 billion cubic feet per day (Bcf/d)—over the period compared with crude oil output, which more than doubled—an increase of 4 million barrels per day (b/d).

We define [oil wells](#) as those with a [gas-to-oil ratio](#) (GOR) of less than or equal to 6.0 thousand cubic feet of natural gas per barrel of oil produced (Mcf/b). We classify wells with a GOR of more than 6.0 Mcf/b as natural gas wells. Any increase in the GOR in an oil well means more natural gas per barrel of oil is being produced. The GOR for a [play](#) represents the average share of natural gas production from its individual wells.

Historically, the Permian, Bakken, and Eagle Ford plays have predominantly consisted of oil wells, resulting in lower GORs for these plays.

As more oil and natural gas are released within a well, the GOR tends to progressively increase, increasing the volume of associated natural gas produced per every barrel of oil. Pressure within the

reservoir declines as more oil is brought to the surface, which allows more natural gas to be released from the geologic formation. The pressure will also decrease as more wells are concentrated within an area.



In the Permian play, located in West Texas and southeastern New Mexico, the share of natural gas produced relative to crude oil has remained relatively stable, although the GOR has steadily risen from 3.1 Mcf/b (34% of total production) in 2014 to 4.0 Mcf/b (40%) in 2024. Natural gas production in the Permian, the [largest producing tight oil play](#) in the United States, increased eight-fold in 2024 through September compared with 2014, and crude oil production increased six-fold.

In the Bakken play, located in North Dakota and Montana, the share of natural gas produced relative to crude oil has historically been relatively low, averaging only 1.2 Mcf/b (16% of total production) in 2014. However, the GOR [increased](#) to 2.9 Mcf/b (33%) in 2024, with average gross natural gas production increasing 186% compared with 2014 while crude oil production increased just 14%.

In the Eagle Ford play, located in southwest Texas, the share of natural gas produced relative to crude oil has remained the highest among these plays, increasing from 3.5 Mcf/b (37% of total production) to 5.6 Mcf/b (48%). This increased GOR reflects a 14% increase in average natural gas production and a 28% decrease in average crude oil production in 2024 through September compared with 2014.

Principal contributor: Trinity Manning-Pickett

WEST CANADA TRACKER: Oil Exports Rise to Record on China Exports

2024-10-31 20:05:30.646 GMT

By Robert Tuttle

(Bloomberg) -- Oil exports by tanker from Western Canada rise to an average 398k b/d in Oct. from 310k b/d in Sept. as exports to China surge, according to Vortexa ship-tracking data dating back to Nov. 2020.

* Total outflows at 12.33m bbl vs 9.3m bbl in Sept

** US-West Coast shipments 189k b/d vs. 170k b/d

** Asia shipments 207k b/d vs. 123k b/d

* Click here for PDF of latest tankers departing from Western Canada to all destinations:

DESTINATION COUNTRY	MoM Change	Oct	Sep	Aug
Brunei	-17,245	0	17,245	0
China	84,803	207,480	122,677	89,733
Ecuador	1,455	1,455	0	0
Japan	0	0	0	16,662
South Korea	0	0	0	79,720
United States	18,863	188,828	169,965	182,665

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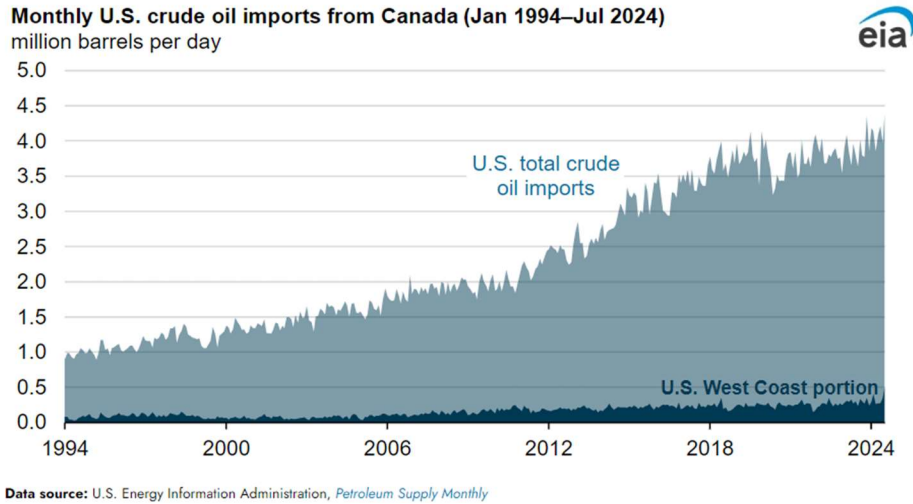
Simar Khanna

To view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/SM8HFAT1UM0W>

October 30, 2024

Crude oil imports from Canada reached a record after pipeline expansion



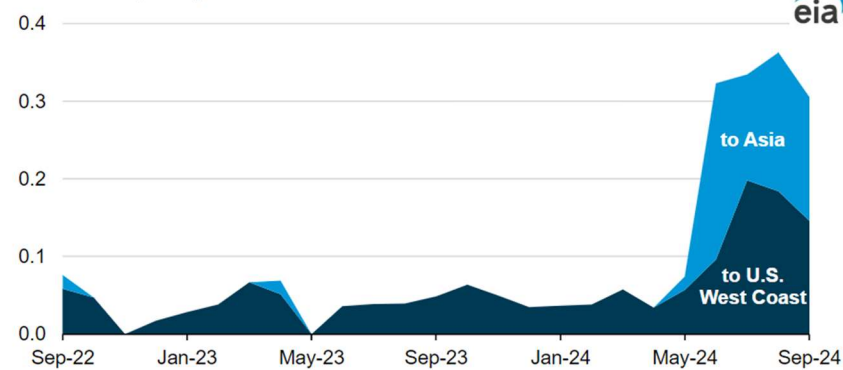
U.S. imports of crude oil from Canada reached a record of 4.3 million barrels per day (b/d) in July 2024 following the expansion of Canada's [Trans Mountain](#) pipeline. July is the most recent month for which data are available in our [Petroleum Supply Monthly](#) (PSM).

The Trans Mountain Expansion (TMX) tripled the line's previous 300,000-b/d capacity when it [began commercial operation](#) in May 2024, bringing [additional crude oil produced in the landlocked province of Alberta](#) to Canada's west coast, where it can be exported. Historically, most crude oil exports out of Alberta have made their way either to refiners in the U.S. Midwest via pipeline or to the U.S. Gulf Coast by rail shipments, where they are either consumed by refiners or loaded onto tankers for seaborne re-exports. TMX was added alongside the previous Trans Mountain pipeline to move larger volumes of crude oil to the coast of British Columbia to then be exported directly to Pacific Ocean buyers.

Since TMX came online in May, early data indicate that refiners on the U.S. West Coast have been key buyers of the new export volumes. Between June and September, the U.S. West Coast accounted for just over half of all maritime crude oil exports out of Western Canada, with the rest going to destinations in Asia, according to data from Vortexa Analytics. The U.S. West Coast imported 498,000 b/d of crude oil in July 2024, according to our PSM, a record high for the region and an increase of 115% compared with July 2023.

Monthly marine crude oil exports from West Canada by destination (Sep 2022–Sep 2024)

million barrels per day

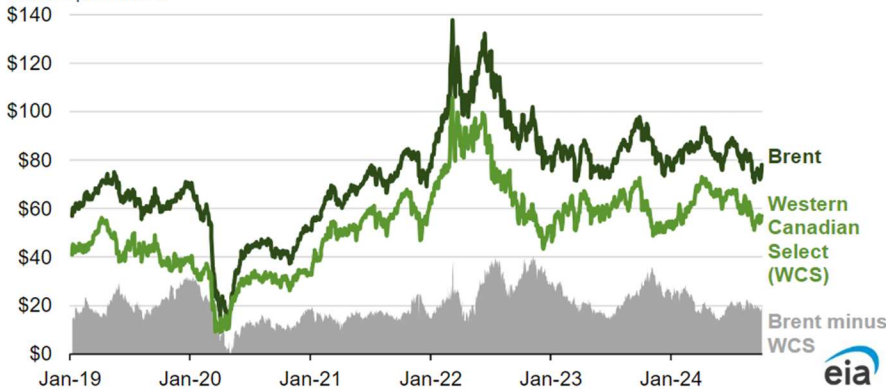


Data source: Vortexa Analytics

The Western Canadian Select (WCS) crude oil spot price at Hardisty is used as a [benchmark price](#) to reflect regional crude oil production in Alberta. Historically, WCS spot prices are significantly discounted to other benchmarks because of WCS's quality and the region's landlocked geography, which limit its market. Unlike Brent (the global crude oil benchmark grade), WCS has a higher sulfur content and a lower [API gravity](#), and additional costs are necessary to move WCS from its inland pricing location to a coastal seaborne export location.

Daily crude oil price difference between Brent and WCS (Jan 1, 2019–Sep 30, 2024)

dollars per barrel



Data source: Bloomberg L.P.

Note: Price premiums are calculated using the Dated Brent price minus the WCS spot market price at Hardisty.

Since TMX came online in May, added takeaway capacity has had a mixed impact on WCS prices. In July 2024, the monthly average Brent price premium to WCS was \$21 per barrel (b), \$5/b higher than it was at the same time last year despite the additional capacity provided by TMX. The August price differential was between the five-year (2019–23) average and last year's level. The September average price differential, however, was slightly below the five-year average level. As of October 29, the Brent price premium to WCS for October is narrower by \$10/b compared with October 2023.

The WCS price differential to Brent and other benchmarks often widens in the fall, when Midwestern refiners reduce runs to undergo maintenance, limiting the pool of buyers from Alberta's primary customers. If the price differentials remain near current levels through the end of the year, it may suggest that the added TMX capacity has helped to insulate Canada's crude oil producers from the operational decisions of refiners in the U.S. Midwest.

Principal contributor: Kevin Hack

10/29/2024 09:12:43 [BN] Bloomberg News

Russia's Crude Shipments Advance for Second Consecutive Week

The increase took flows to their highest in a month

By Julian Lee

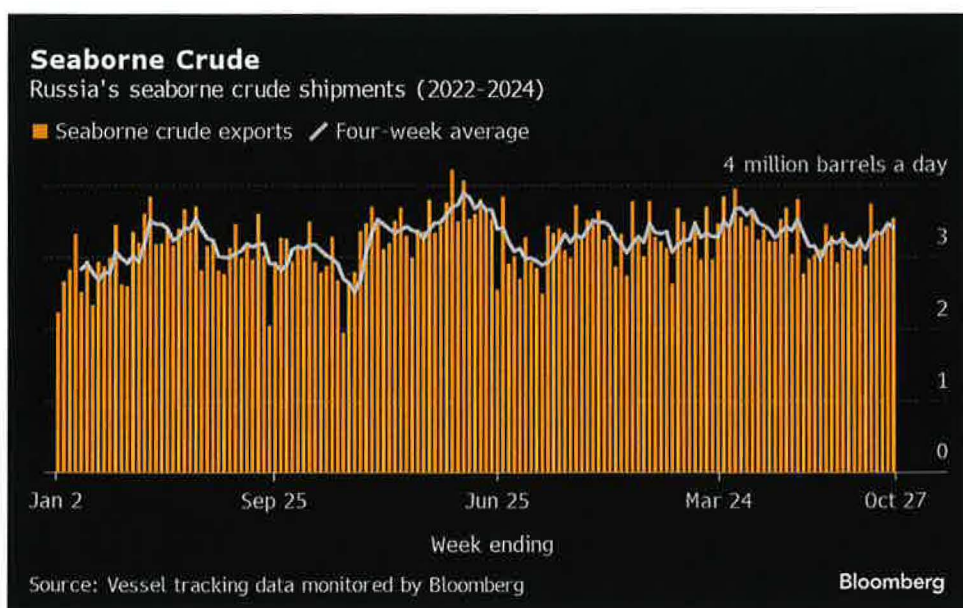
(Bloomberg) -- Russia's seaborne crude exports rose for a second consecutive week to reach the highest in a month.

Flows increased by 120,000 barrels a day, after adding a similar amount the previous week, with major ports on the Baltic and Pacific coasts operating near peak levels.

In contrast, four-week average cargoes slipped by 50,000 barrels a day to 3.41 million in the period to Oct. 27, the first decline in five weeks. The drop reflected a spike in exports seen in the week to Sept. 29 falling out of the calculation. But shipments on this basis remained above the 3.4 million marker, a level exceeded only four times since mid-May.

Russia's refining remains on course for a slump to the lowest since May 2022, leaving more crude available for export. Planned seasonal maintenance has cut runs, which may also be affected by lower margins that make processing at some facilities in southern Russia less attractive.

The increase in flows was boosted by small increases in the price of Russian crude, which helped lift the gross value of Moscow's exports by about \$50 million to \$1.6 billion in the week to Oct. 27.

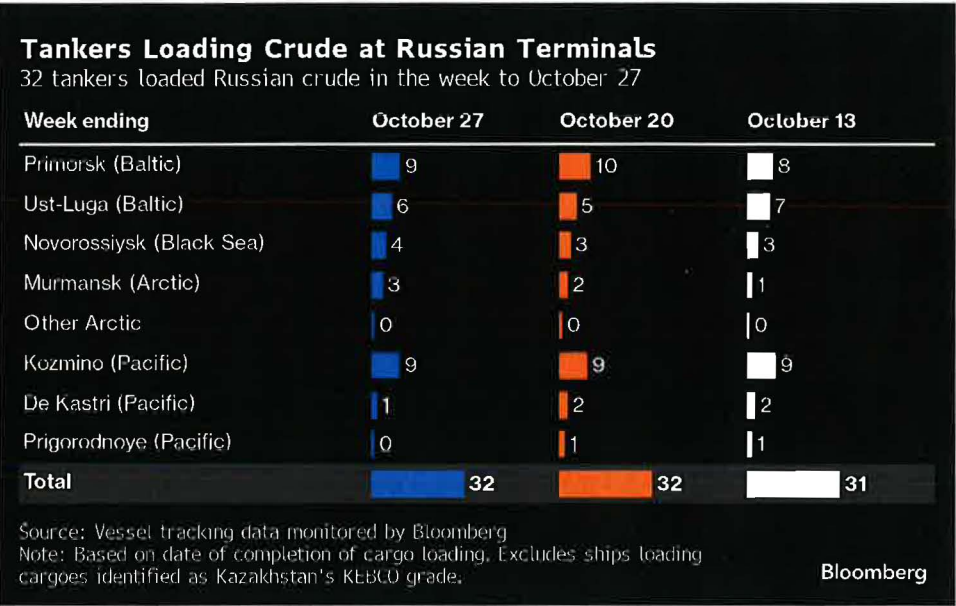


Sanctions against tankers hauling Russian oil have become less effective in recent months, despite a growing number of ships being targeted. The list of tankers named for involvement in Moscow's oil trade has risen to 90. But at least

16 shipments so far in October have been carried by sanctioned vessels, with half of those making the short trip between Russia's Pacific export terminals and Chinese ports.

Crude Shipments

A total of 32 tankers loaded 24.79 million barrels of Russian crude in the week to Oct. 27, vessel-tracking data and port-agent reports show. The volume was up from a revised 23.93 million barrels on 32 ships the previous week.

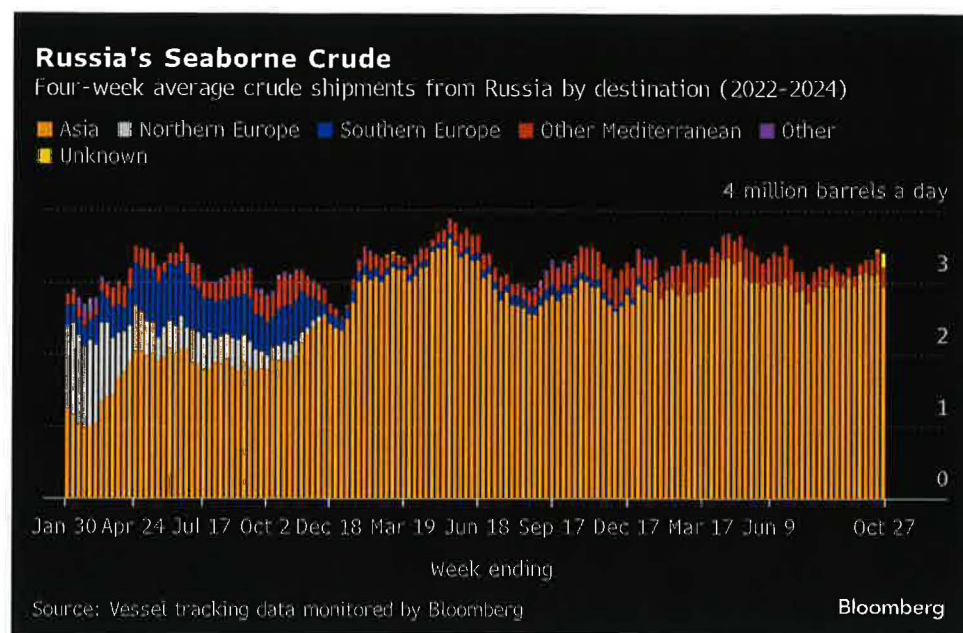


Despite the increase in weekly shipments, four-week average flows fell to 3.41 million barrels a day, down by 50,000 from the previous week.

Russia's more volatile daily crude flows in the week to Oct. 27 rose by about 120,000 barrels to 3.54 million, driven by an increase in flows from the country's Black Sea and Arctic ports, which more than offset lower shipments from the Pacific.

Crude shipments so far this year are about 40,000 barrels a day, or 1.3%, below the average for the whole of 2023.

One cargo of Kazakhstan's KEBCO crude was loaded at Ust-Luga on the Baltic Sea and one at Novorossiysk on the Black Sea during the week.



Russia terminated its export targets at the end of May, opting instead to restrict production, in line with its partners in the OPEC+ oil producers' group. The country's output target is set at 8.978 million barrels a day until the end of November, after a planned easing of some output cuts was delayed by two months.

Moscow has also pledged to make deeper output cuts in October and November this year, then between March and September of 2025, to compensate for pumping above its OPEC+ quota earlier this year.

Export Value

Four-week average income slipped to about \$1.57 billion a week, from \$1.59 billion in the period to Oct. 20.

On this basis, the price of Russia's shipments from the Baltic and Black Sea in the four weeks to Oct. 27 was up by about \$0.20 a barrel from the period to Oct. 20. Prices for key Pacific grade ESPO were higher by about \$0.40 a barrel.

In the seven days to Oct. 27, the value of Russia's crude exports increased to \$1.6 billion from a revised \$1.55 billion in the period to Oct. 20. Income rose with a jump in weekly-average prices for Russia's major crude streams adding to the effect of the higher export volume. The price increase was in line with broader gains for oil amid fears that Jerusalem would target Iran's oil infrastructure in retaliation for the missile barrage that the Persian Gulf nation launched against Israel at the start of the month.

Those fears largely evaporated after the Israeli response at the weekend focused on Iran's air defenses and other military targets, triggering a broad sell-off in oil when markets re-opened.

Export values at Baltic and Black Sea ports were up week-on-week by about \$0.70 a barrel. Prices for key Pacific grade ESPO moved in the opposite direction, edging lower by about \$0.10 compared with the previous week. Delivered prices in India increased, rising by about \$0.60 a barrel, all according to numbers from Argus Media.

Value of Exports

Gross income from seaborne crude exports (2022-2024)

■ Value of exports / Four-week average



Source: Bloomberg calculation using price data from Argus Media and vessel tracking data

Note: Weekly values are calculated by multiplying the weekly average Argus price and the export volume. Urals Baltic prices are used for Baltic and Arctic exports; Urals Black Sea is used for Novorossiysk and ESPO is used as a proxy for all Pacific shipments.

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Flows by Destination

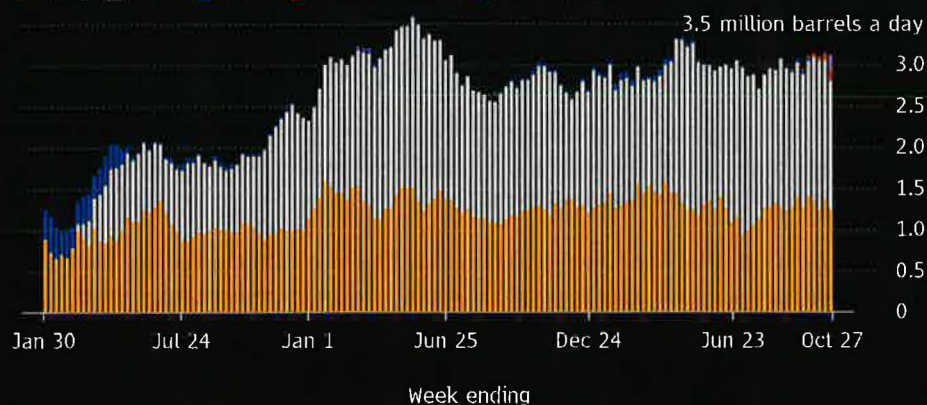
• Asia

Observed shipments to Russia's Asian customers, including those showing no final destination, edged lower to 3.12 million barrels a day in the four weeks to Oct. 27. That's about 4% below the average level seen during the recent peak in April.

Russia's Asian Customers

Four-week moving average of crude shipments from all Russian ports (2022-2024)

■ China ■ India ■ Other ■ Unknown Asia ■ Other Unknown



Source: Vessel tracking data monitored by Bloomberg

Note: Unknown Asia includes ships heading to the Suez Canal from Russia's western ports. Unknown includes vessels showing no clear destination and those that have transferred their cargo to unidentified ships.

Bloomberg

About 1.24 million barrels a day of crude were loaded onto tankers heading to China. The Asian nation's seaborne imports are boosted by about 800,000 barrels a day of crude delivered from Russia by pipeline, either directly, or via Kazakhstan.

Flows on ships signaling destinations in India averaged 1.55 million barrels a day, down from a revised 1.68 million for the period to Oct. 20.

The Indian figures, in particular, are likely to rise as the discharge ports become clear for vessels that are not currently showing final destinations. All of those are heading from Russia's western ports toward the Suez Canal, with most of the cargoes that head through the waterway ending up in the south Asian nation.

The equivalent of about 140,000 barrels a day was on vessels signaling Port Said or Suez in Egypt. Those voyages typically end at ports in India or China and show up as "Unknown Asia" until a final destination becomes apparent.

The "Other Unknown" volumes, running at about 190,000 barrels a day in the four weeks to Oct. 27, are those on tankers showing no clear destination. Most originate from Russia's western ports and go on to transit the Suez Canal, but some could end up in Turkey. Others may be moved from one vessel to another.

Two Aframax tankers, Neon and Lefkada, transferred their cargoes into the Turbo Voyager and the Marathon off Egypt's Port Said in the past two weeks. Two more are signaling their destinations as OPL Morocco, suggesting they may transfer their loads into a VLCC when they arrive there in early November.

Separately, Greek naval exercises that have been running since May, forcing most ship-to-ship cargo transfers out of the Laconian Gulf and nearby waters, are due to end next month, unless they are extended again.

Crude Shipments to Asia

Shipments of Russian crude to Asian buyers in million barrels a day

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
September 22, 2024	1.27	1.61	0.04	0.03	0.00	2.94
September 29, 2024	1.40	1.64	0.04	0.03	0.00	3.11
October 6, 2024	1.34	1.75	0.00	0.05	0.00	3.14
October 13, 2024	1.24	1.80	0.00	0.05	0.00	3.09
October 20, 2024	1.36	1.68	0.00	0.08	0.03	3.15
October 27, 2024	1.24	1.55	0.00	0.14	0.19	3.12

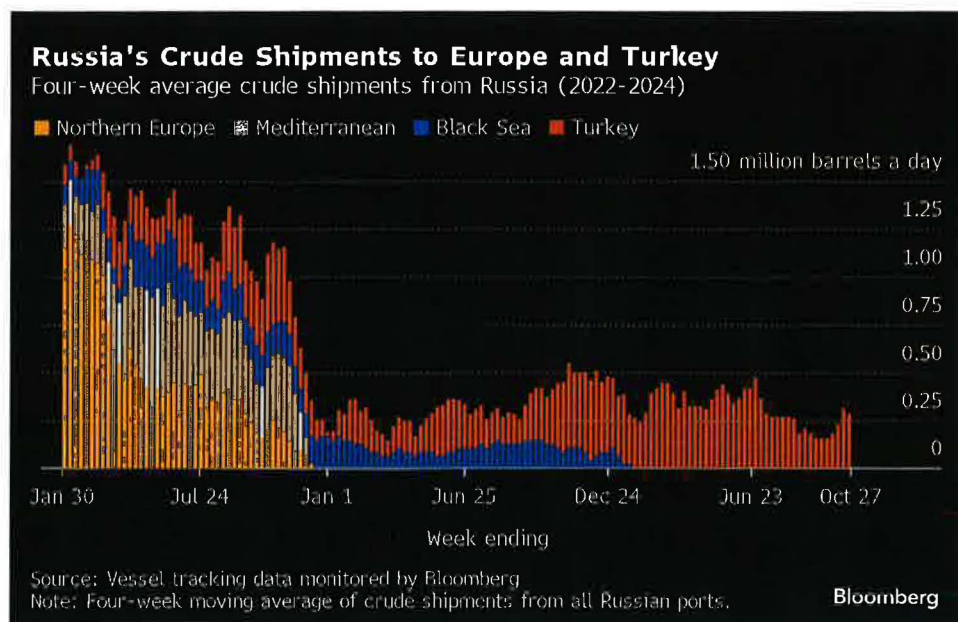
Source: Vessel tracking data compiled by Bloomberg

Bloomberg

• Europe and Turkey

Russia's seaborne crude exports to European countries have ceased, with flows to Bulgaria halted at the end of last year. Moscow also lost about 500,000 barrels a day of pipeline exports to Poland and Germany at the start of 2023, when those countries stopped purchases.

Turkey is now the only short-haul market for shipments from Russia's western ports, with flows in the 28 days to Oct. 27 edging down to about 290,000 barrels a day from a revised 310,000 the previous week, which was the highest in more than three months.



NOTES

This story forms part of a weekly series tracking shipments of crude from Russian export terminals and the gross value of those flows. The next update will be on **Tuesday, Nov. 5**.

All figures exclude cargoes identified as Kazakhstan's KEBCO grade. Those are shipments made by KazTransoil JSC that transit Russia for export through Novorossiysk and Ust-Luga and are not subject to European Union sanctions or a price cap. The Kazakh barrels are blended with crude of Russian origin to create a uniform export stream. Since Russia's invasion of Ukraine, Kazakhstan has rebranded its cargoes to distinguish them from those shipped by Russian companies.

Vessel-tracking data are cross-checked against port agent reports as well as flows and ship movements reported by other information providers including Kpler and Vortexa Ltd.

If you are reading this story on the Bloomberg terminal, click for a link to a PDF file of four-week average flows from Russia to key destinations.

--With assistance from Sherry Su.

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Table 4 - 1: World oil demand in 2024*, mb/d

World oil demand	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23 Growth	%
Americas	24.96	24.42	24.98	25.58	25.37	25.09	0.13	0.54
of which US	20.36	19.92	20.47	20.71	20.85	20.49	0.13	0.62
Europe	13.45	12.85	13.72	13.73	13.41	13.43	-0.02	-0.13
Asia Pacific	7.24	7.53	7.04	7.03	7.43	7.26	0.01	0.17
Total OECD	45.65	44.80	45.74	46.34	46.21	45.78	0.13	0.28
China	16.36	16.66	16.75	17.09	17.25	16.94	0.58	3.56
India	5.34	5.66	5.66	5.48	5.65	5.61	0.27	5.02
Other Asia	9.28	9.72	9.79	9.51	9.51	9.63	0.35	3.82
Latin America	6.69	6.67	6.77	6.92	6.88	6.81	0.12	1.77
Middle East	8.63	8.68	8.44	9.19	9.02	8.83	0.20	2.32
Africa	4.46	4.56	4.32	4.39	4.85	4.53	0.07	1.61
Russia	3.84	3.96	3.88	3.96	4.11	3.98	0.14	3.57
Other Eurasia	1.17	1.33	1.24	1.08	1.28	1.23	0.06	5.06
Other Europe	0.78	0.78	0.78	0.77	0.84	0.79	0.01	0.81
Total Non-OECD	56.56	58.02	57.62	58.38	58.40	58.36	1.80	3.18
Total World	102.21	102.81	103.36	104.72	105.61	104.14	1.93	1.89
Previous Estimate	102.21	102.90	103.61	104.8	105.61	104.24	2.03	1.99
Revision	0.00	-0.09	-0.25	-0.08	0.00	-0.11	-0.11	-0.10

Note: * 2024 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

Q4 105.61
Q1 104.41
- 1.20 QoQ

World Oil Demand

Table 4 - 2: World oil demand in 2025*, mb/d

World oil demand	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24 Growth	%
Americas	25.09	24.48	25.04	25.70	25.45	25.17	0.08	0.31
of which US	20.49	19.95	20.50	20.76	20.89	20.53	0.04	0.21
Europe	13.43	12.87	13.73	13.75	13.43	13.45	0.02	0.12
Asia Pacific	7.26	7.54	7.04	7.04	7.44	7.27	0.01	0.15
Total OECD	45.78	44.89	45.81	46.50	46.32	45.88	0.11	0.23
China	16.94	17.09	17.14	17.53	17.64	17.36	0.41	2.44
India	5.61	5.88	5.90	5.73	5.88	5.85	0.24	4.27
Other Asia	9.63	9.99	10.11	9.84	9.81	9.93	0.30	3.15
Latin America	6.81	6.81	6.91	7.07	7.02	6.95	0.14	2.09
Middle East	8.83	8.93	8.65	9.52	9.23	9.08	0.25	2.82
Africa	4.53	4.64	4.41	4.50	4.94	4.62	0.09	2.03
Russia	3.98	4.02	3.93	4.02	4.15	4.03	0.05	1.35
Other Eurasia	1.23	1.36	1.27	1.13	1.31	1.26	0.03	2.56
Other Europe	0.79	0.79	0.79	0.78	0.85	0.80	0.01	1.42
Total Non-OECD	58.36	59.52	59.10	60.11	60.83	59.90	1.54	2.63
Total World	104.14	104.41	104.91	106.61	107.15	105.78	1.64	1.58
Previous Estimate	104.24	104.60	105.26	106.79	107.26	105.99	1.74	1.67
Revision	-0.11	-0.19	-0.35	-0.19	-0.10	-0.21	-0.10	-0.10

Note: * 2025 = Forecast. Totals may not add up due to independent rounding.

Source: OPEC.

China's property market transactions up in October

Source: Xinhua

Editor: huaxia

2024-11-01 15:53:16

BEIJING, Nov. 1 (Xinhua) -- Transaction volume of new homes in China went up 0.9 percent year on year in October, reversing a decline since June last year, as the government introduced a series of measures to prop up the market, the latest figures showed on Friday.

Second-hand home transactions rose for the seventh month by 8.9 percent year on year in October, the Ministry of Housing and Urban-Rural Development said.

On a monthly basis, transaction volume of new homes increased 6.7 percent and that of second-hand homes moved up 4.5 percent in October.

Dubbed "Golden September and Silver October" by the property market, the two months are considered a peak sales season in the second half of the year. Typically, September is the stronger of the two months as property developers push to hit third-quarter targets.

The ministry said that it was the first time since 2007 that October transactions exceeded those in September.

China's property market has seen a stabilization in the price decline with the continued implementation of existing policies and the introduction of incremental policies, said the ministry.

The growth trend in property transactions is more evident in first-tier cities and is expanding to more cities, the ministry added.

New home transactions in first-tier cities rose 14.1 percent year on year in October, while those of second-hand homes jumped by 47.3 percent year on year.

China has rolled out a slew of measures to bolster the property market, including cutting mortgage rates for existing loans, lowering down payment ratios and relaxing purchase restrictions.

The property market is expected to sustain the recovery momentum as policies continue to take effect, said the ministry. ■



Caixin China General Manufacturing PMI®

Manufacturing sector expansion resumes in October

Operating conditions in China's manufacturing sector improved at the start of the final quarter of the year. Higher new work inflows led to an acceleration in production growth. Firms also raised their purchasing activity and inventory holdings as confidence about future output heightened. That said, manufacturers remained cautious regarding workforce numbers, with employment falling again.

Meanwhile input prices rose in October, albeit only marginally. This led to manufacturers raising selling prices slightly for the first time since June.

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 to 50.3 in October, up from 49.3 in September. Rising past the 50.0 neutral mark, the latest data signalled that conditions in the manufacturing sector improved following a brief deterioration in September.

Central to the latest advancement in manufacturing sector conditions was renewed new business growth. Incoming new orders placed with Chinese manufacturers increased at the quickest pace in four months, attributed to better underlying demand conditions and successive new business development endeavours. Export orders remained in decline, however, but saw the rate of reduction ease in the latest survey period.

As a result of higher new work inflows, manufacturing production expanded at an accelerated pace. Confidence about future output also improved among Chinese manufacturers, as optimism levels climbed from September's low to the highest level in five months. Firms were generally hopeful that better economic conditions and R&D efforts can help to support sales in the year ahead.

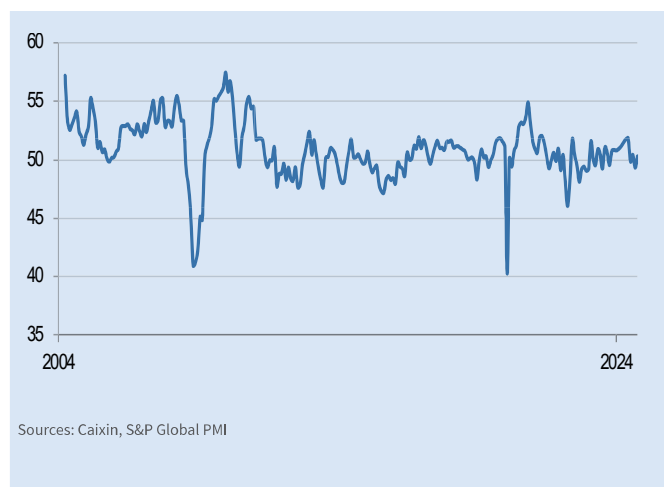
Purchasing activity meanwhile rose in response to the uptick in new work, which led to further accumulation of stocks of purchases. Post-production inventory holdings had also increased in tandem as production expanded. Anecdotal evidence suggested that some firms started to rebuild safety stock in October, anticipating higher future demand.

Caution was extended towards hiring, however, with the non-replacement of job leavers resulting in the quickest fall in employment levels in nearly one-and-a-half years. In turn, the level of unfinished work rose in October amid the reduction in workforce capacity.

Turning to prices, average input costs rose for the first time in three months, albeit only fractionally. Higher input material costs, such as for metals, and energy prices were often mentioned by panellists as reasons for renewed inflation. As a result, average selling prices increased for the first time since June as firms passed on higher input costs. Export charges continued to fall, however, as exporters faced higher competition. Furthermore, freight costs reportedly fell for some exports despite average lead times lengthening again in October.

China General Manufacturing PMI

sa, >50 = improvement since previous month



Key findings:

- Production grows at fastest pace in four months amid renewed rise in new orders
- Output prices rise fractionally in line with similar increase in input costs
- Job shedding intensifies in October

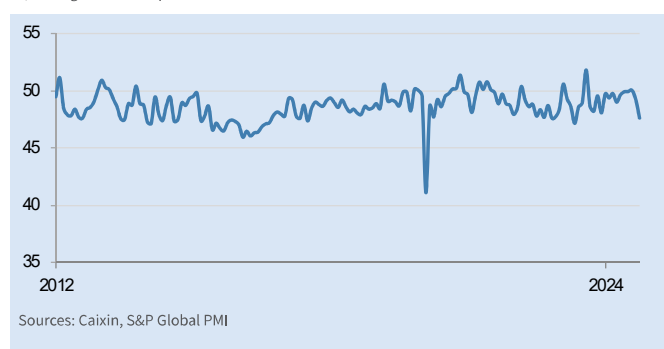
New Export Orders Index

sa, >50 = growth since previous month



Employment Index

sa, >50 = growth since previous month



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 50.3 in October, up 1 point from the previous month. This marks a return to expansion in the manufacturing sector.

“Supply and demand both expanded. Overall market demand recovered, while production grew steadily. In October, the output subindex remained in expansionary territory for the 12th month in a row, reaching a new high for the second half of the year. The subindex for total new orders returned to positive territory, hitting its highest level since June. Production and sales of intermediate goods were strong, but consumer goods production lagged.

“External demand, however, remained weak. The gauge for new export orders stayed in contractionary territory for the third consecutive month, reflecting sluggish global economic conditions, which weighed particularly on exports of investment and consumer goods.

“Employment fell. Despite the increase in supply and demand, manufacturers remained cautious about hiring, leading to a second consecutive month of job cuts. The employment subindex fell to its lowest level since May 2023, with widespread declines in staffing among companies producing investment goods. The rise in market demand combined with a shrinking workforce led to increased backlogs of work, pushing the corresponding measure into expansionary territory. The largest increase in backlogs was seen in companies producing investment goods.

“Prices edged up. Input and output prices both rose slightly in October, ending two- and three-month declines. Rising energy and industrial metal prices drove up input costs, while stable market demand allowed companies to pass some of these costs onto customers.

“Supplier delays continued. The gauge for suppliers’ delivery times remained in contractionary territory for the fifth month in a row, indicating ongoing

delays in transportation and production that struggled to meet demand. As the market recovered, manufacturers increased purchases and replenished inventories. In October, the gauges for quantity of purchases, raw material inventories, and finished goods inventories were all in expansionary territory.

“Business confidence improved. Manufacturers became more optimistic, with the gauge for future output expectations rebounding to its highest level in five months, up from the second-lowest level on record in September, although it was slightly below the historical average.

“In summary, October saw growth in manufacturing supply and demand, increases in prices, proactive inventory replenishment by companies, and logistics delays. Business optimism improved. However, weak external demand and declining employment remained areas of concern.

“In late September, China’s Politburo noted emerging challenges in the economy and emphasized the need to focus on key areas and introduce new policies. Following this, a series of new policies were rolled out. Data from the Caixin manufacturing PMI survey show that market demand stabilized and optimism improved, suggesting early signs of policy impact.

“However, the labor market remains under pressure, and price levels are still subdued. The effectiveness of these new policies in improving domestic demand, employment and livelihoods will require close monitoring. Additionally, achieving China’s 2024 growth target will depend on a sustained recovery in consumer demand. That means policy efforts should focus on increasing household disposable income more effectively.”

Malaysia rebuffs US on Iran oil sales, says it recognises only UN sanctions

[Zunaira Saieed](#) Malaysia Correspondent

UPDATED MAY 09, 2024, 11:51 PM

KUALA LUMPUR – Malaysia will recognise sanctions imposed by the United Nations only and not by individual countries, said **Home Minister Saifuddin Nasution Ismail on May 9**, following claims by a top US official that Iran has relied on Malaysian service providers to sell US-sanctioned oil in the region.

"I emphasised that we will only recognise sanctions if they are imposed by the United Nations Security Council.

"The delegation from the US respected our stance," Datuk Seri Saifuddin told reporters following a meeting with the US Treasury Department's top sanctions official Brian Nelson, who was visiting Kuala Lumpur.

Washington [has imposed sanctions on Iran and its proxies](#), including on the sale of Iranian oil, aimed at choking money flows that it claimed were being used to foment instability in the Middle East.

Mr Nelson, speaking to the local media after the meeting, said of the Washington claims against Malaysian service providers: "I would only say we have seen and we've promulgated some sort of guidance to the (Malaysian) marine sector about the type of services that they are engaging in.

"These are ship-to-ship transfers, particularly at night, which we see from time to time.

"They are really designed to obfuscate the origin of the commodity, in this case, Iranian oil," he told Malaysiakini.

Mr Nelson had said that the capacity of Iran to move its oil depended on parties such as port administrators and tugboat operators.

"Typical markers that we see are like when they turn off their location device and when they're trying to obscure the name of the ship, or they falsify or forge critical documents about the commodities that were issued," he added.

A recent Reuters report cited an unnamed senior US Treasury official as saying that there has been an uptick in money moving to Iran and its proxies, including Hamas, through the Malaysian financial system.

In the meeting with Mr Nelson, Mr Saifuddin said he underlined Malaysia's commitment to combating terrorism financing, with a clear strategic plan to tackle illicit financing activities and money laundering.

The minister also acknowledged concerns raised by US officials over possible money laundering activities involving certain individuals and organisations in Malaysia with purported ties to Iran and its proxies like Hamas, and said these needed verification.

Malaysian government spokesman Fahmi Fadzil, speaking to reporters on May 8, said the country would comply with UN sanctions, but not necessarily with those imposed by individual countries.

"We want to assert that Malaysia, as a sovereign nation, we comply with UN sanctions," Mr Fahmi told reporters.

"But when it comes to unilaterally applied sanctions, then I think we have to assess this situation."

Commenting on the issue, economics professor Geoffrey Williams at the Malaysia University of Science and Technology said: “Malaysian businesses can do business with anyone unless there are UN sanctions regulations to stop it, but the US cannot stop Malaysian companies doing business with others.

“However, if Malaysian companies are involved in activities that the US does not like, then the Americans can stop doing business with them,” he said.

Malaysian Prime Minister Anwar Ibrahim has been vocal in his support for Hamas amid the ongoing war in Gaza, even at the risk of US sanctions against those who support the group that Washington has deemed a terrorist organisation.

Meanwhile, Mr Nelson, who earlier visited Singapore, had said that sanctions imposed in 2023 against four Malaysian firms accused of helping Iran’s drone production have been impactful, while also highlighting the issue of the illicit sale of Iranian oil in the region.

“Malaysia clearly doesn’t want its financial institutions and its shipping industry to be abused by rogue nations and outside actors. We don’t want that because of the central importance of Malaysia, both as a trading nation and as a financial centre, and given America’s significant business presence here,” Mr Nelson, who is the US Treasury Department’s undersecretary for terrorism and financial intelligence, told reporters on May 9.

Mr Halmie Azrie Abdul Halim, a senior analyst at political risk consultancy Vriens and Partners, said the US delegation trip to Malaysia is an “intimidation tactic” because of Datuk Seri Anwar’s pro-Palestine stance.

Still, the “US would also not want to lose the support of Malaysia, which is one of its key Asean partners, as the country will assume the role of Asean chair next year”, he said.

Malaysia is among the US’ top 20 trading partners, with bilateral trade between the two nations amounting to US\$78.3 billion (S\$106 billion) in 2022.

First quarter highlights

Global market conditions in the first quarter of 2024 improved compared to the previous quarter, driven by increased crude oil prices as a result of lower global oil inventories and higher forecasted demand. Through its low-cost upstream operations and strategically integrated Downstream business, Aramco captured value from these market conditions and delivered robust earnings and free cash flow. In line with its aim to maximize value for shareholders, the Board declared a base dividend of SAR 76.1 billion (\$20.3 billion) and the fourth distribution of the performance-linked dividends of SAR 40.4 billion (\$10.8 billion), bringing the total declared dividends for the first quarter to SAR 116.5 billion (\$31.1 billion).

Aramco believes it is well positioned to help meet the world's growing need for affordable and reliable energy, and that oil and gas will continue to be an important part of the global energy mix. The Company continues to implement its capital program, with the growth in capital spending directed mainly towards upstream liquids and gas, downstream liquids to chemicals, and new energies such as renewables, lower-carbon fuels, and blue ammonia and hydrogen. Capital expenditures in the first quarter were SAR 40.6 billion (\$10.8 billion), reflecting the Company's intention to increase investment to capture unique growth opportunities and create long-term value for shareholders.

During the quarter, the Company announced the expansion of its venture capital funding available to Aramco Ventures by SAR 15.0 billion (\$4.0 billion). Half of the new funding will be directed toward disruptive technologies outside the energy sector, with the remaining portion earmarked for late-stage, larger-ticket ventures in the sustainability and digital domains. The increased funding will bring the total investment funds in Aramco's venture capital programs to SAR 28.1 billion (\$7.5 billion), including Wa'ed Ventures.

In March 2024, the Government announced it had transferred 8.0% of

the Company's issued shares to PIF's wholly-owned companies. This private transfer did not affect the Company's total number of issued shares and has no impact on the Company's operations, strategy, dividend distribution policy, or governance framework. The Government remains Aramco's largest shareholder, retaining an 82.19% direct shareholding.

In April 2024, Aramco announced a four-year global partnership to become FIFA's Major Worldwide Partner with rights across multiple events, including the FIFA World Cup 26™ and FIFA Women's World Cup 2027™. The partnership, which runs until the end of 2027, builds on a shared commitment to innovation and development, and will combine football's unique global reach with Aramco's history of championing innovation and community engagement. Through the partnership, Aramco aims to create impactful social initiatives and enable vibrant communities.

Upstream

Aramco achieved total hydrocarbon production of 12.4 mmbpd in the first quarter, reflecting its safe, reliable operations and unique operational flexibility.

In January 2024, the Government directed Aramco to maintain MSC at 12.0 mmbpd. This directive will have no impact on announced, near-term projects including the Dammam development and the Marjan, Berri, and Zuluf crude oil increments. Production from these projects will be used to maintain MSC at 12.0 mmbpd, which provides operational flexibility to increase production and supports Aramco's unique ability to rapidly respond to changing market conditions. Key developments during the quarter for these projects include the following:

- Construction activities continued for the Dammam development project, which is expected to add crude oil production of 25 mmbpd in 2024 and 50 mmbpd in 2027;

- Construction and procurement activities continued on the Marjan and Berri crude oil increments, which are expected to be onstream by 2025 and add crude oil production capacity of 300 mmbpd and 250 mmbpd, respectively; and,

- Construction and engineering work progressed at the Zuluf crude oil increment, which is expected to process 600 mmbpd of crude oil from the Zuluf field through a central facility by 2026.

Consistent with the Company's strategy to increase gas production by more than 60% over 2021 production levels by 2030, subject to domestic demand, and to develop an integrated global LNG business, Aramco delivered a number of key developments in the quarter:

- Announced the addition of 15 tscf of raw gas and two billion stock tank barrels of condensate as proven reserves at the Jafurah unconventional field.
- Progressed design, procurement, and construction activities at the Jafurah Gas Plant, part of the Jafurah unconventional gas field development that is expected to commence production in 2025 and gradually increase natural gas deliveries to reach a sustainable rate of 2.0 bscfd by 2030;
- Continued construction and procurement activities at the Tanajib Gas Plant, part of the Marjan development program. The Plant is expected to be onstream by 2025, adding 2.6 bscfd of additional processing capacity from the Marjan and Zuluf fields;
- Awarded SAR 28.9 billion (\$7.7 billion) of engineering, procurement, and construction contracts for the expansion of the Fadhili Gas Plant, which is expected to add additional processing capacity of 1.5 bscfd by 2027; and,
- Completed the acquisition of a minority stake in MidOcean, which subsequently acquired interests in a portfolio of integrated Australian LNG projects.

• 04 Dec 2023 | 17:18 UTC

COP28: Saudi Aramco CEO says fossil fuel investment more viable than renewables to meet demand

HIGHLIGHTS

Fossil fuel investment down 40% from 2014 levels: Nasser

Q4 2023 oil demand set to be higher than Q4 2019

Renewables, hydrogen not viable in the short term, he says

• Author Jennifer Gnana

• Saudi Aramco's CEO Amin Nasser on Dec. 4 called for more investment in oil compared to renewables to meet energy demand growth.

"If you look at this quarter, there is 103 million b/d of demand, compared to 2019 where we were running around 100 million b/d," Nasser told the Saudi Green Initiative, a side event at COP28 UN climate summit in Dubai, where fossil fuel companies have called for a seat at the table to discuss their contributions to the future energy mix.

"We anticipate there is going to be further growth in demand going forward and as such you need that investment to meet the call on our production and at the same time manage the decline in existing fields," he added.

Nasser's call for greater investment in fossil fuels is at odds with climate activists and observers at the United Nations Framework Convention on Climate Change event, who have questioned the sensibility of fossil fuel producers such as the UAE hosting climate talks.

Saudi Aramco has exclusive rights to produce crude oil within Saudi Arabia, pumping some 9-11% of global supply, depending on the kingdom's production quota under the OPEC+ accord. At the moment, Saudi Arabia has agreed to hold output at 9 million b/d, as the OPEC+ alliance seeks to bolster flagging prices, leaving some 3 million b/d of capacity offline.

According to S&P Global Commodity Insights, global oil demand is set to reach pre-pandemic levels for the first time in 2023 and hit an all-time high of 105 million b/d in 2025.

S&P Global forecasts global oil demand to be "solid" in the fourth quarter of this year with a 2.4 million b/d increase on the year. Mild-to-average global recession is set to slow growth to 1.2 million b/d for 2024, according to estimates.

Expensive hydrogen

Saudi Aramco's chief called for more investment in fossil fuels while dismissing the short-term viability of renewables due to what he suggested were higher costs and low demand for clean energy.

"I think we need more investment," Nasser said citing a 40% decline in investment in fossil fuels from 2014 levels.

"If you look at existing fields today and the level of maturity that we're seeing in conventional and unconventional resources, you're looking at a 7% decline," he added.

Saudi Aramco is currently boosting domestic oil production capacity to 13 million b/d by 2027 from around 12 million b/d presently. The company is also committed to reaching net-zero emissions by 2050, with projects underway to capture and store carbon dioxide from upstream processes, as well as investments in renewables and hydrogen.

It has said its capital expenditures for 2023 will be between \$48 billion to \$52 billion, with Q3 spending at \$11 billion, an increase over the \$9 billion spent in the same quarter of 2022.

"We're investing in renewables, hydrogen, e-fuels and all of that, but still you need a lot more investment and it needs to pass a certain threshold to make it commercial," Nasser said.

"Hydrogen now is waiting for demand. Demand is still not there for obvious reasons: it is expensive. At the same time, we need to continue to invest in oil and gas because there is more demand," he added.

Sent: October 24, 2024 12:39 PM

To: xxx

Subject: Woodmac Curated Research: Oil and gas in a delayed energy transition



Hello,

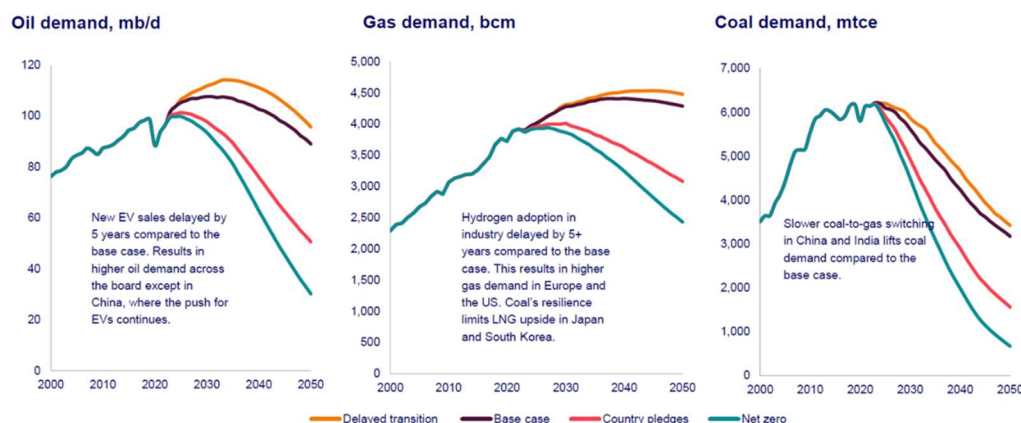
The energy transition isn't moving anything like fast enough. Achieving global net zero by 2050 looks increasingly in doubt. To reflect the uncertainty, we added a Delayed Energy Transition Scenario to our existing range of potential outcomes which is quite positive for fossil fuels. With slower displacement by EVs, oil demand continues to increase year-on-year, reaching a peak of 114 million b/d in 2033 (compared with a 108-million b/d peak in 2030 in the base case). Gas demand carries on growing until 2045. There are significant implications for the development of new supply, price and the strategic positioning of the industry at large. On the other hand, it'll take longer for low-carbon technologies to be scaled. The penetration rate of nascent technologies that require government support, such as EVs, green hydrogen and CCUS, lag the base case by five years. Renewables, already competitive with alternative sources of power generation, will continue to grow, albeit at a slower pace.

All links below provide complementary access to high level research. Contact us, with no obligation, to discuss these topics in more detail.

If you do not wish to receive any future messaging from us, [please click here to unsubscribe](#).

The impact on global oil and gas demand

In our delayed transition scenario, power demand growth dwindles due to lower electrolytic hydrogen production and reduced transport electrification. In its place, a larger percentage of ongoing energy demand growth, especially in developing countries, is met by oil and gas. As a result, demand for oil peaks in 2033 at 114 million b/d (compared with a 108-million b/d peak in 2030 in the base case) after which it plateaus. Gas demand carries on growing until 2045, when it reaches 4,536 billion cm – nearly 100 bcm higher than our base case – before also plateauing.



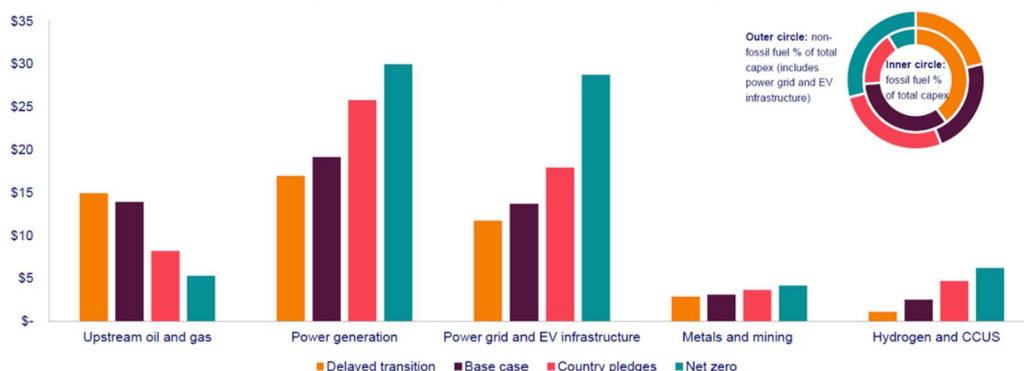
Implications for global oil and gas sector investment

The world doesn't yet seem to have found the right balance to tackle the energy trilemma of ensuring sustainability, security and affordability. Renewable energy scores strongly for

sustainability, and in the long-term could prove. However, in the short term, renewables face challenges relating to scaling up supply and infrastructure, as well as financing difficulties. This represents an opportunity for oil and gas.

In a delayed transition scenario, total capex for the energy sector between 2023 and 2050 reduces from US\$52 trillion in our base case to US\$48 trillion (in our net zero scenario it would hit US\$75 trillion). That equates to average annual spending of US\$1.7 trillion. The oil and gas' share of total energy sector spending would rise from the 25% it currently receives to 31%. As a result, investment in oil and gas would increase by nearly US\$2 trillion over the period to 2050.

Cumulative capex by segment and by scenario (2023-2050), US\$ trillion (real terms)



A different course for the US energy sector

The results of the November 2024 election, US tensions with China and US rising budget deficits could significantly alter the path of US energy policy and favour a delayed energy transition.

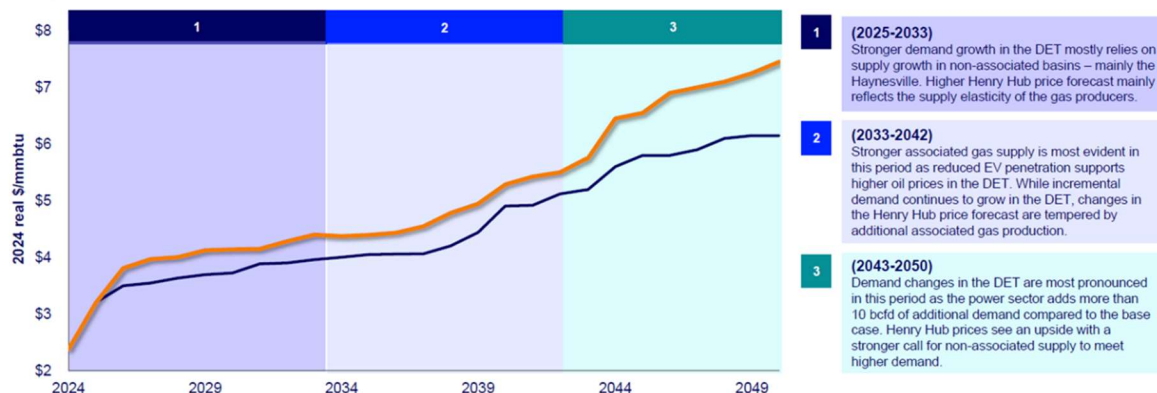
Under this scenario, Wood Mackenzie projects about US\$6.5 trillion in investment for the US energy sector over 2023-2050. Oil and gas account for more than half of this investment allowing for [new energy projects to be built](#).

The pace of electrification would ease in the near term. However, electrification is a structural trend. Amid continued load growth & less policy support for renewables the biggest states for **coal**-fired power generation – including Indiana, Michigan, Texas and Tennessee – would slow down coal retirements.

Natural **gas** will step in to meet power demand and replace coal plants that are shutting down. Henry Hub prices will strengthen throughout the forecast. Stronger gas demand and the need for more non-associated supply could send Henry Hub prices higher by an average of US\$0.40/mmbtu between 2026 and 2040 and more than US\$1/mmbtu beyond 2045. A stronger Henry Hub price forecast is beneficial to gas producers, but LNG export economics will take a hit, limiting the potential for incremental project development beyond 2043 and redefining its position in the [global LNG markets](#).

Henry Hub forecast strengthens by around US\$0.40/mmbtu between 2026 and 2040

Gas price outlook

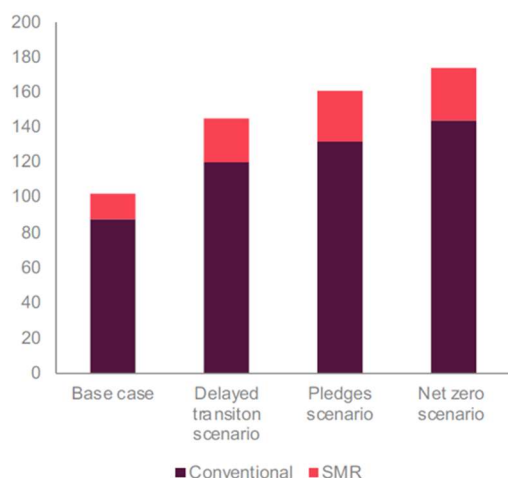


Delayed transition Base case

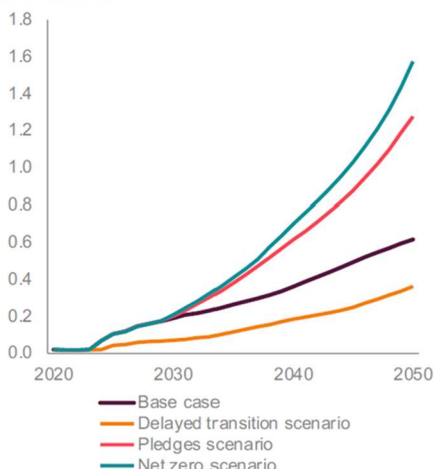
New **nuclear** capacity will be needed to meet power demand post-2040. In our delayed transition scenario, we would expect advanced nuclear power generation capacity driven by both large scale and small modular reactors (SMRs) to expand by about 40 GW. US needs to focus on four critical enablers for nuclear investment, with decisions needed within 3 to 5 years for projects to materialise by 2040.

CCUS will also be impacted. But carbon markets and CCUS costs - not policy - constrain CCUS in our delayed transition scenario. Due to wide bipartisan support within Congress, 45Q will remain as legislated through 2032. But flat carbon pricing, uncertainty around the 45Q extension post 2032 and cost staying high for longer will take a toll on CCUS and DAC deployment.

Nuclear capacity by outlook, GW

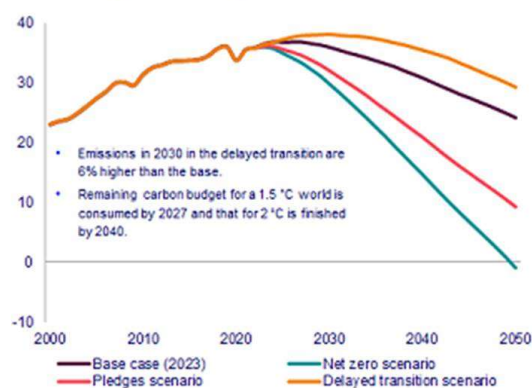


CCUS and DAC capacity forecast by scenario, Bt



Our base case outlook broadly aligns with a 2.5°C warming scenario and a delayed transition scenario, resulting in an average temperature rise of 3 °C and emissions peaking in 2032, looks gradually more likely.

Global energy-related CO₂ emissions, billion tonnes



Outlook	Trajectory	Policy	Enablers
Delayed Transition scenario	Consistent with ~3 °C global warming	Target rollbacks and reduced policy support	Economic and technical challenges slow the uptake of low-carbon technologies
Base case	Consistent with 2.5 °C global warming	Evolution of current policies and alignment with SPOs released in H1 2023	Steady advancement of current and nascent technologies
Country pledges scenario	Consistent with below 2 °C warming (Global net zero by 2070)	Aligned with net zero pledges announced in the run-up to COP26	Incorporates policy response to the current energy crisis, and geopolitical challenges facing the global economy
Net zero 2050 scenario	Consistent with 1.5 °C warming (Global net zero by 2050)	Aligned with most ambitious goal of Paris Agreement	Immediate peak energy; rapid hydrogen and carbon removal deployment; consumer shift

For further discussion on oil and gas matters, please contact us.

Kind regards,

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OIL DEMAND MONITOR: Market Frets Over China; OPEC+ Faces Choice

China's top legislative body to meet amid stimulus drive
OPEC+ weighs whether to restore output; US election looms

By John Deane

(Bloomberg) -- Traders will be keeping a watchful eye on a meeting of China's top legislative body next week, eager for any news on efforts to stimulate the biggest oil importer's lackluster economy.

The gathering of the National People's Congress Standing Committee, scheduled for Nov. 4-8, will conclude after the US election on Nov. 5, a vote that could redefine Washington's relationship with Beijing.

The Asian nation's muted oil demand and the battle for the White House are among factors being weighed by the OPEC+ alliance as it wrestles with a looming decision on whether to press on with, or further delay, plans to restore some production in December. Adding barrels to the market could bolster what many analysts expect to be a global surplus early next year.

The extent to which China's economic woes are casting a pall over the oil market was emphasized by International Energy Agency Executive Director Fatih Birol.

"This year, global oil demand is very weak, much weaker than the previous years, and we expect this will continue, because of China," he told Bloomberg Television in an interview. "China in the last 10 years was responsible for more than 60% of global oil demand growth. China was a very strong economy, and China is slowing down."

The growing popularity of electric cars is also impacting demand, said Birol, who reiterated his organization's expectation for consumption to peak before 2030. "China was the engine of the global oil demand growth, and this engine switches to electricity now," he said.



Birol emphasized that oil will still be needed after peak demand.

Giant Saudi producer Aramco is more bullish on both China's demand and the long-term prospects for consumption globally.

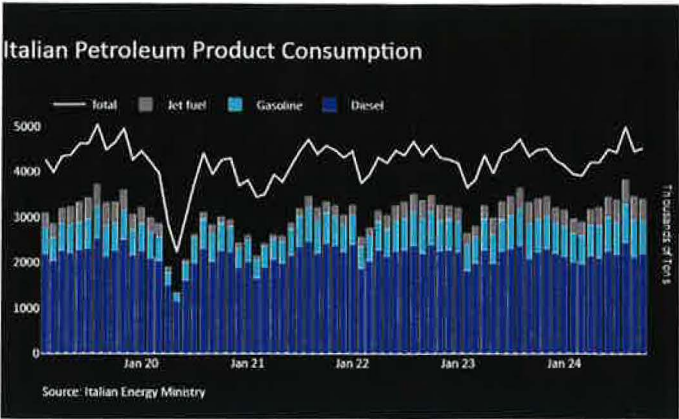
"Most analysts agree that even when the growth in global oil demand stops at some point, no abrupt drop in overall demand is anticipated, and that stage is likely to be followed by a long plateau," Amin H. Nasser, Aramco's chief executive officer, said at Singapore International Energy Week. "Rather than an energy transition, we are really talking about energy addition."

DEMAND BY COUNTRY:

Demand Measure	Location	% vs 2023	% vs 2022	% vs 2021	% vs 2020	% vs 2019	m/m chg	Freq	Latest Date	Latest Value	Source
Gasoline product supplied	US	5.3	5.8	-1.8	7.2	-6.4	7.5	w	Oct. 25	9.16m b/d	EIA
Distillates product supplied	US	5.4	-8.8	0.3	-8.5	-9.0	6.7	w	Oct. 25	3.88m b/d	EIA
Jet fuel product supplied	US	-4.8	24.5	12.2	60.7	-11.0	-15.5	w	Oct. 25	1.63m mb/d	EIA

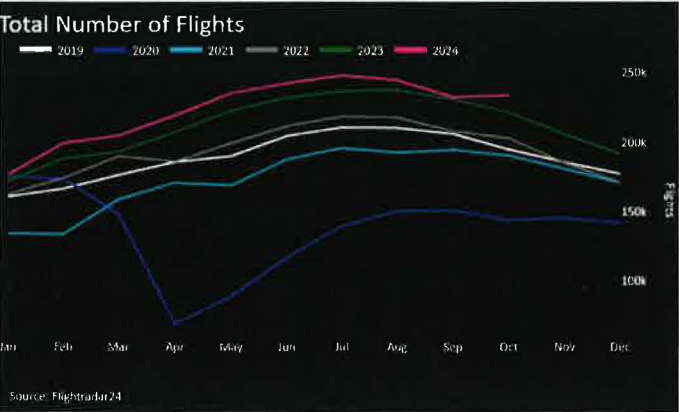
Total oil product supplied	US	8.9	5.6	9.1	10.2	-0.0	9.0	w	Oct. 25	21.64m b/d	EIA
Total products consumption	India	-1.6	6.2	14.8	18.4	10.7	-2.7	m	September	17.92m tons	PPAC
Diesel sales	India	-1.8	1.9	15.6	16.2	9.2	-2.0	m	September	6.37m tons	PPAC
Gasoline sales	India	3.0	11.4	21.2	28.5	32.7	-6.3	m	September	3.15m tons	PPAC
Jet fuel sales	India	10.4	22.6	77.4	131.8	11.1	-0.8	m	September	726k tons	PPAC
LPG sales	India	1.6	6.1	10.0	14.6	19.7	-2.3	m	September	2.59m tons	PPAC
All vehicles traffic	Italy	-1					-1	m	September	n/a	Anas
Heavy vehicle traffic	Italy	-1					+23	m	September	n/a	Anas
Diesel sales	Italy	-2.0	-8.2	-9.6	-2.5	-2.5	3.0	m	September	2.2m tons	Energy Ministry
Gasoline sales	Italy	2.5	0.4	8.2	20.4	20.8	-10.7	m	September	727k tons	Energy Ministry
Jet fuel sales	Italy	6.0	27.3	92.0	211.7	2.1	-6.2	m	September	480k tons	Energy Ministry
Total products consumption	Italy	0.9	-1.1	-1.1	6.4	-2.4	1.5	m	September	4.53m tons	Energy Ministry
Car use	UK	0.0	2.1	5.5	11.6		-2.0	m	Oct. 7	96	DfT
Heavy goods vehicle use	UK	0.9	2.9	-0.9	1.9		0.0	m	Oct. 7	108	DfT
All motor vehicle use	UK	1.0	4.1	6.3	12.1		-1.0	m	Oct. 7	102	DfT
Gasoline (petrol) avg sales per filling station	UK	4.8	7.7	-24.5	12.4		3.3	q	Week to Sept. 29	7,265 liters/day	BEIS
Diesel avg sales per station	UK	-1.7	-5.8	-33.1	-10.2		9.2	q	Week to Sept. 29	8,597 liters/day	BEIS
Total road fuels sales per station	UK	1.2	-0.0	-29.4	-1.1		6.4	q	Week to Sept. 29	15,862 liters/day	BEIS

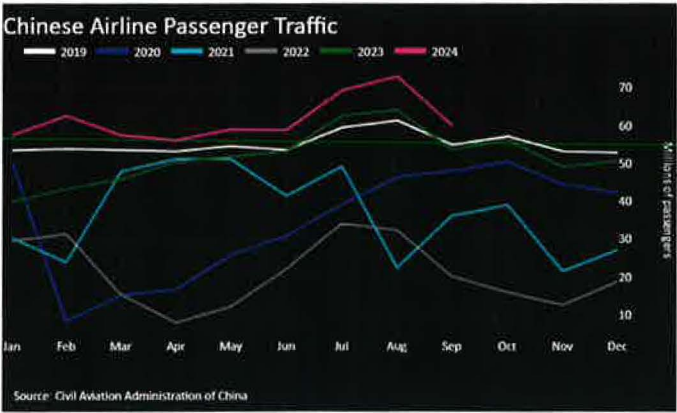
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- READ: [Portugal's ENSE Says Gasoline Consumption Rose 12% in September](#)
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- Click [here](#) for Exolum data on product deliveries in Spain in September
- Click [here](#) for Mundy's data on toll road usage to September
- NOTE: Click [here](#) for more on sources



AIR TRAVEL:

Measure	Location	vs 2023	vs 2022	vs 2021	vs 2020	vs 2019	m/m	w/w	Freq	Latest Date	Latest Value	Source
All flights	Worldwide	8.4	13.9	25.2	66.5	20.6	2.6		d	Oct. 30	228,392	Flightradar 24
Commercial flights	Worldwide	5.6	24.3	38.7	94.6	12.7	-0.8		d	Oct. 30	130,552	Flightradar 24
Airport passenger throughput (7-day avg)	US	7.8	14.3	37.1	198.0	12.1	2.8	-4.6	d	Oct. 29	2.46 million	TSA
Air traffic (flights)	Europe	6.1	14.2	32.2	134.1	-2.1	-10.7	-5.4	d	Oct. 30	29,548	Eurocontrol
Heathrow monthly passengers	UK	3.0	26.1	183.4	479.9	7.5	-8.6		m	September	7.29 million	Heathrow
Click here for link to OAG data on airline seat capacity												

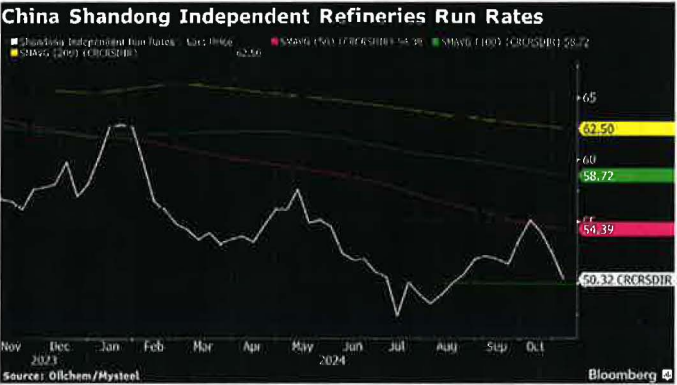




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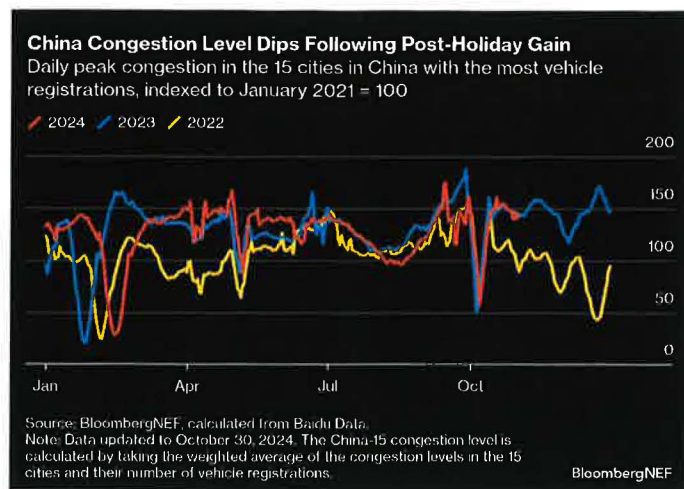
Measure	Location	vs 2023	vs 2022	vs 2021	vs 2019	m/m chg	Latest as of Date	Latest Value	Source
Crude intake	US	5.3	1.3	6.7	0.3	2.3	Oct. 25	16,053	EIA
Utilization	US	3.7	-1.5	4.0	1.4	1.5	Oct. 25	89.1	EIA
Utilization	US Gulf	5.9	1.1	8.2	2.7	3.8	Oct. 25	92.4	EIA
Utilization	US East	6.0	-25.5	0.9	18.1	-7.1	Oct. 25	77.5	EIA
Utilization	US Midwest	-2.2	-4.7	-4.1	-5.2	-0.1	Oct. 25	84.9	EIA

US refinery data is weekly. Changes are shown in percentages for the row on crude intake (millions of barrels a day), while changes in refinery utilization percentages are shown in percentage points.



CONGESTION:

- READ: [China Road Traffic Weekly: Congestion Eases After Rebound](#)



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Air Passenger Market Analysis

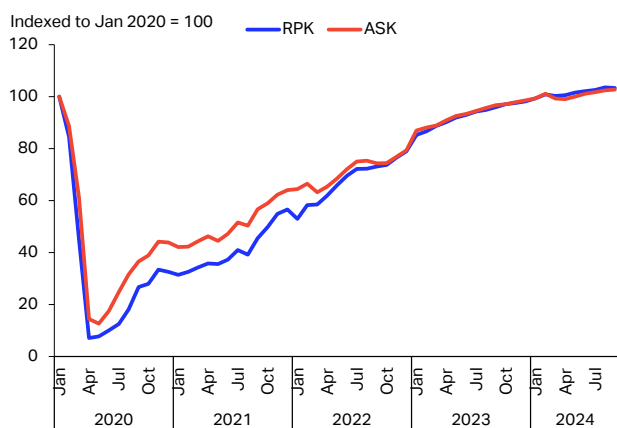
September 2024

Peak season ends with all-time high passenger traffic

- Industry total Revenue Passenger-Kilometer (RPK) grew 7.1% year-on-year (YoY), reaching an all-time high for the month of September. Available Seat-Kilometer (ASK) rose 5.8% YoY. Passenger load factor (PLF) is up by 2.0 percentage points (ppt) compared to the previous year, totaling 83.6% of the seat occupation in the industry on average.
- Domestic traffic for the industry grew 3.7% YoY. PR China remained in the leading position with 7.7% YoY, while all monitored markets showed signs of stabilization around pre-pandemic growth trends.
- Industry international passenger traffic climbed 9.2% YoY in September. Monthly growth rates remained comparable to previous values while quieting down as we move closer to the end of the year.
- Air travel demand growth is expected to maintain a positive trend, as indicated by ticket sales. The latest data suggest an increase of 7.4% YoY in ticket sales volumes for travel in October and November.

Sustained growth momentum as peak season comes to an end

Chart 1 – Global RPK and ASK, Seasonally Adjusted, Indexed to Jan 2020 = 100



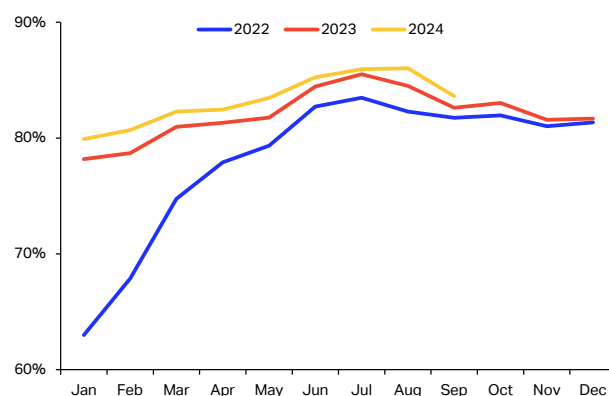
Sources: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

Industry-wide air passenger traffic, measured in Revenue Passenger-Kilometers (RPK), grew 7.1% year-on-year in September. In seasonally adjusted terms, RPK contracted 0.3% month-on-month (MoM) after five months of consecutive increases (**Chart 1**). Since the start of this year, the industry has seen only two months of slight contraction in MoM terms, hinting at an overall positive trajectory for total passenger traffic.

Airline seat capacity, measured in Available Seat Kilometers (ASK), increased 5.8% YoY and 0.3% MoM and was again outpaced this month by the rise in

passenger demand. The industry average passenger load factor (PLF) reached 83.6%, an all-time high for the month of September (**Chart 2**). While the average load factor has been growing over the past decades, recent industry dynamics, such as lower numbers of new aircraft deliveries, may drive lower seat capacity growth and, thus, higher load factors in the near term.

Chart 2 – Industry PLF, RPK's % share of ASK



Sources: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

The passenger load factor in **domestic** and **international** markets also exceeded previous records, at 83.3% and 83.8%, respectively.

The world's airlines saw diverse developments in passenger load factors. **North American** and **Latin American** carriers achieved, on average, lower load factors this month compared to the previous year; on the other hand, the remaining regions saw an increase.

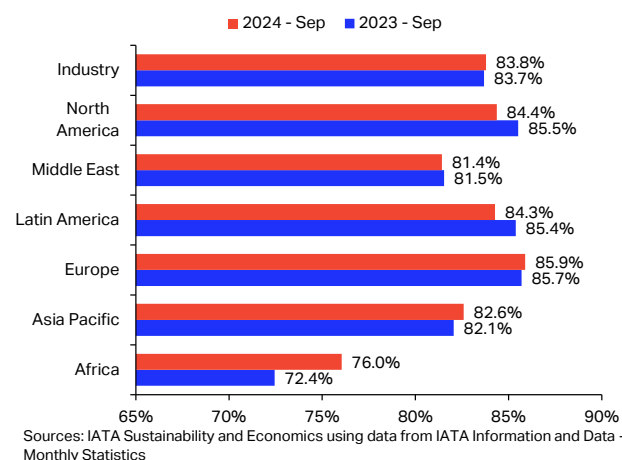
Air passenger market in detail - September 2024

	World share ¹	September 2024 (% year-on-year)				September 2024 (% year-to-date)			
		RPK	ASK	PLF (%-pt)	PLF (level)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	100.0%	7.1%	5.8%	1.0%	83.6%	11.3%	9.7%	1.2%	83.4%
International	60.1%	9.2%	9.1%	0.1%	83.8%	14.7%	14.5%	0.2%	83.1%
Domestic	39.9%	3.7%	0.7%	2.4%	83.3%	6.3%	2.7%	2.8%	83.9%

¹% of industry RPKs in 2023

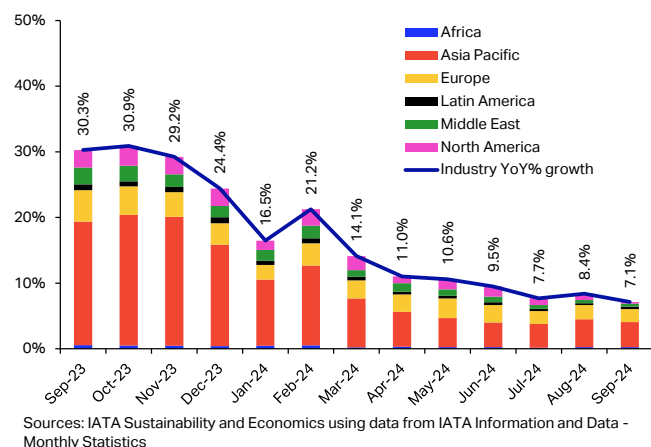
[Africa](#) saw the largest increase, with September 2024 PLF being 3.6 percentage points (ppt) higher than the previous year, reaching 76.0% (**Chart 3**).

Chart 3 – Regional and industry passenger load factors, RPK's %share of ASK



In September 2024, airlines in the [Asia Pacific](#) region contributed the most to the industry's total RPK growth, accounting for over half of the increase in traffic. [Europe](#) played a significant role in the annual rise in RPK this month again, while [North America](#) had the lowest growth among all regions, in contrast to these two important regions (**Chart 4**).

Chart 4 – Regional contribution to industry annual total RPK growth

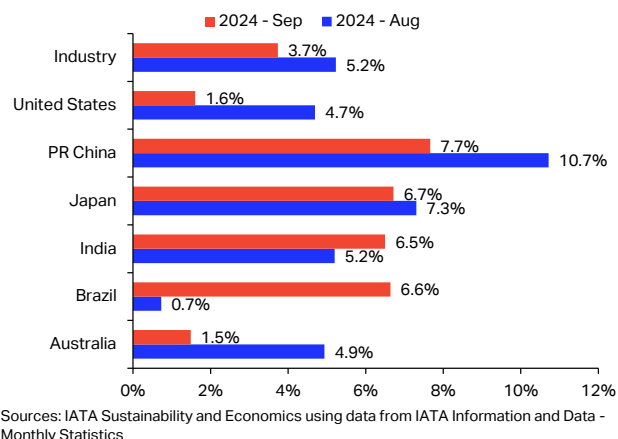


Record-setting domestic traffic in September

In September 2024, domestic RPK increased 3.7% over the previous year, establishing a new record for the industry. [All key markets](#), except [Japan](#), also saw all-time high domestic traffic for the month of September. In terms of RPK growth, [PR China](#) leads among the countries with 7.7% YoY (**Chart 5**). Over the past two years, domestic passenger traffic in the country saw great fluctuations and volatility due to surging demand and internal tourism. Traffic ramp-up nowadays seems to be realigned with the historical trend. Meanwhile, airline seat capacity contracted

1.8% YoY from a high base, pushing passenger load factor up by 7.4% ppt as demand held strong despite slowing consumer spending in the country.

Chart 5 – Domestic RPK growth by market, YoY%



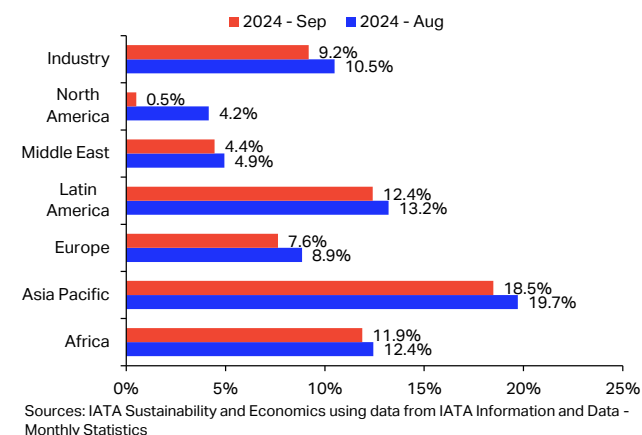
[Japan's](#) domestic passenger traffic grew 6.7% YoY, while seat capacity decreased by 1.0% YoY. Passenger load factor was 5.9ppt higher compared to the previous year, standing at 81.7%. In [India](#) and the [US](#), passenger demand climbed 6.5% and 1.6% YoY while outpaced by seat capacity, marking a 2.4ppt and 0.6ppt drop in load factor, respectively.

[Brazil's](#) air traffic growth accelerated in September, reaching 6.6% YoY against 0.7% in August. The load factor was 1.4ppt higher than the previous year, indicating strong passenger demand. In [Australia](#), RPK expanded 1.5% YoY, easing from the month prior, while ASK declined 0.6% YoY.

Overall, [all monitored countries](#) have continued to show signs of stability in terms of passenger traffic volumes with respect to their pre-pandemic trends despite fluctuations in yearly growth figures.

Quieting international passenger growth

Chart 6 – International RPK growth by airline region of registration, YoY%



International RPK growth slightly decelerated from the previous month, as expected from observations over the past year. Even so, international RPK growth stood at a solid 9.2% YoY (**Chart 6**), driving most of the total

industry growth. On the supply side, ASK closely followed RPK with a 9.1% annual increase.

Traffic operated by [Asia Pacific](#) airlines boasted the highest growth once again, climbing 18.5% over the year, however, from a lower base. September 2024 international RPK for this region stood 10.4% under 2019 levels, the highest mark since 2020.

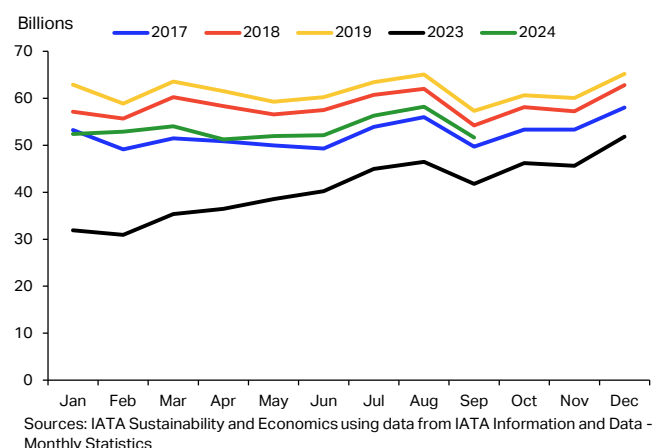
[Latin American](#) carriers registered a 12.4% yearly increase in international traffic. In comparison to pre-pandemic levels, the region has achieved tremendous expansion, exceeding 2019 international RPK by 14.1%.

[Middle East](#) and [African](#) carriers achieved rises in RPK close to those of August, with 4.4% and 11.9% YoY. [North America](#) and [Europe](#), the largest airline regions alongside Asia Pacific, reported 0.5% and 7.6% growth, respectively.

[International traffic within Asia remains lower compared to historical levels](#)

Over the past decades, PR China has become an important consumer base for international traffic within Asia. Nowadays, with lower consumer confidence and a weakened general economy, Chinese consumers have not yet fully returned to their preferred Asia destinations. Consequently, RPK [within Asia](#) remains lower than historical levels while displaying a sluggish ramp-up. Despite the current situation, RPK on this important route area still has significantly increased with respect to the previous year (**Chart 7**).

Chart 7 – International RPK, Within Asia route area



[Europe – Asia traffic under pre-pandemic figures](#)

Disruption of airspace and operational risks linked to geopolitical conflicts have made routes between [Europe and Asia](#) arduous, especially for European airlines. Given this challenging setting, passenger traffic, measured in RPK, between Europe and Asia stood under 2019 levels (**Chart 8**) while growing 20.0% YoY (**Chart 9**). Passenger load factor reached 84.1%, a level in line with pre-pandemic figures, signaling

sustained demand from consumers to travel between these two regions.

Chart 8 – International RPK, Europe – Asia route area

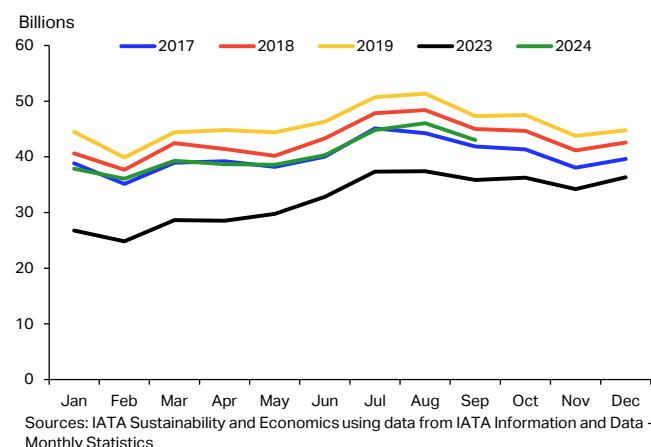
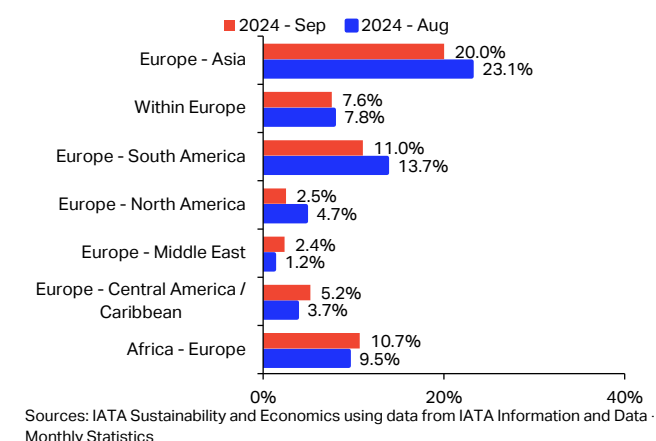


Chart 9 – International RPK, YoY% – Major route areas from and to Europe

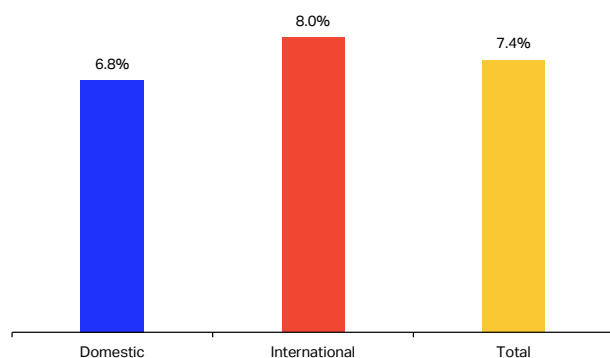


Continuous strong passenger demand from and to Europe was again reflected through the uninterrupted growth streak in international RPK. The most traffic-dense route areas, [Within Europe](#) and [Europe–North America](#), saw further traffic expansion this month, as RPK rose 7.6% and 2.5% YoY, respectively, while surpassing 2019 levels (**Chart 9**).

[Ticket sales volumes point to a further increase in air traffic](#)

Latest ticket sales data suggest that trip bookings made between August and September for travel between October and November are up 7.4% YoY compared to the previous year. Bookings for international travel saw the highest growth, rising 8.0% YoY, while sales rose 6.8% YoY for domestic traffic (**Chart 10**).

**Chart 10 – Ticket sales made in August to September,
for travel in October to November, YoY%**



Sources: IATA Sustainability and Economics using data from DDS

Air passenger market in detail - September 2024

	<i>World share ¹</i>	September 2024 (% year-on-year)				September 2024 (% year-to-date)			
		RPK	ASK	PLF (%-pt)	PLF (level)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	100.0%	7.1%	5.8%	1.0%	83.6%	11.3%	9.7%	1.2%	83.4%
Africa	2.1%	12.2%	6.9%	3.6%	76.5%	13.9%	10.9%	2.0%	75.0%
Asia Pacific	31.7%	12.4%	8.0%	3.2%	83.1%	18.6%	13.8%	3.4%	83.2%
Europe	27.1%	6.7%	6.4%	0.3%	86.5%	9.0%	8.6%	0.3%	84.5%
Latin America	5.5%	7.2%	7.6%	-0.3%	83.4%	8.2%	7.3%	0.7%	83.7%
Middle East	9.4%	4.7%	4.6%	0.0%	81.4%	10.3%	9.9%	0.3%	80.7%
North America	24.2%	1.1%	2.2%	-0.9%	82.4%	5.5%	5.7%	-0.2%	84.6%
International	60.1%	9.2%	9.1%	0.1%	83.8%	14.7%	14.5%	0.2%	83.1%
Africa	1.8%	11.9%	6.6%	3.6%	76.0%	13.7%	10.4%	2.2%	74.5%
Asia Pacific	14.7%	18.5%	17.7%	0.5%	82.6%	29.5%	28.8%	0.4%	83.8%
Europe	23.6%	7.6%	7.4%	0.2%	85.9%	10.0%	9.8%	0.2%	83.7%
Latin America	2.7%	12.4%	13.9%	-1.1%	84.3%	15.6%	15.3%	0.2%	85.0%
Middle East	9.1%	4.4%	4.6%	-0.1%	81.4%	10.2%	10.0%	0.2%	80.7%
North America	8.1%	0.5%	1.9%	-1.1%	84.4%	7.8%	9.2%	-1.1%	84.5%
Domestic	39.9%	3.7%	0.7%	2.4%	83.3%	6.3%	2.7%	2.8%	83.9%
Dom. Australia	0.8%	1.5%	-0.6%	1.8%	86.3%	4.1%	3.3%	0.6%	80.3%
Domestic Brazil	1.2%	6.6%	4.8%	1.4%	82.8%	3.1%	1.8%	1.1%	81.2%
Dom. China P.R.	11.2%	7.7%	-1.8%	7.4%	84.2%	13.2%	3.4%	7.2%	82.9%
Domestic India	1.8%	6.5%	9.6%	-2.4%	83.1%	4.9%	5.8%	-0.7%	86.3%
Domestic Japan	1.1%	6.7%	-1.0%	5.9%	81.7%	2.9%	-0.7%	2.7%	76.8%
Domestic US	15.4%	1.6%	2.3%	-0.6%	81.3%	4.6%	4.2%	0.3%	84.3%

¹% of industry RPKs in 2023

Note: the six domestic passenger markets for which broken-down data are available account for approximately 31.4% of global total RPKs and 78.8% of total domestic RPKs

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic. Historical statistics are subject to revision.

IATA Sustainability & Economics
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 31 October 2024

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Air Cargo Market Analysis

September 2024

Industry capacity and demand volumes at all-time highs

- Global Cargo Tonne-Kilometers (CTK) increased by 9.4% year-on-year (YoY) last month, delivering the 14th consecutive month of demand growth. Demand contracted by 0.4% month-on-month (MoM), net of seasonal adjustment,
- International CTK added 10.5% from last year, with growth in all regions and major trade lanes. Latin America and Caribbean carriers led the expansion with 19.8% YoY. Cargo demand for the within-Europe trade lane outpaced other route areas with an 18.0% annual surge.
- Global air cargo capacity, measured in Available Cargo Tonne-Kilometers (ACTK), saw a 6.4% growth YoY in September, slower growth than before while delivering record high capacity.
- Global air cargo yield maintains a moderate upward trend while jet fuel prices fall.

Air cargo demand sustains 14-month consecutive growth

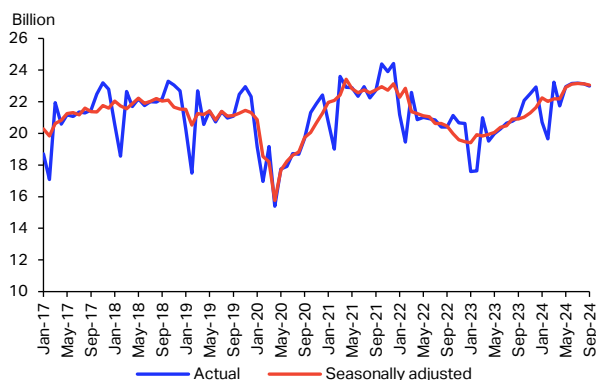
September marked the global air cargo industry's 14th consecutive month of demand growth, with a 9.4% YoY (**Chart 1**). Concurrently, last month's CTK volumes were the highest on record. In MoM terms, the industry CTK fell for the second consecutive month by -0.4% (after seasonal adjustment).

September. Middle East airlines contributed 15%, while North America contributed 11% during the same period.

So far this year, air cargo demand in September surged 12.6% compared to 2023, setting a new year-to-date record.

September sees strong growth in international cargo demand from all regions

Chart 1 – Industry CTK, billion



Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

For the sixth consecutive month, the largest contributors to the annual CTK surge were carriers from Asia Pacific and Europe. They contributed 42% and 26% to the global increase, respectively, in

International routes have experienced exceptional traffic levels for the fifth month, with a 10.5% YoY increase in September. Airlines are benefiting from rising e-commerce demand in the US and Europe amid ongoing capacity limits in ocean shipping. Carriers from all regions have seen growth in international traffic for most of the year compared to the previous year, and September continues this trend, showing strong growth rates between 1.8% and 19.8% (**Chart 2**).

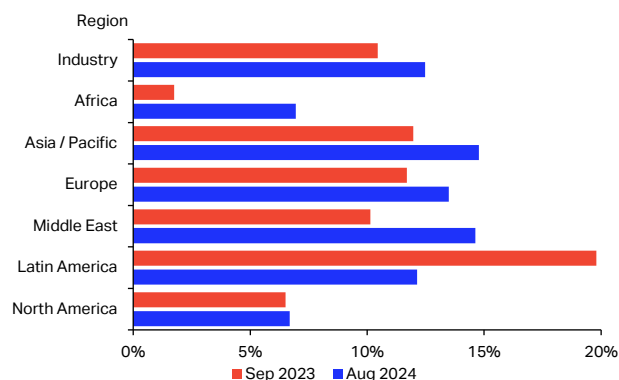
Airlines in [Latin America and Caribbean](#) marked the highest annual growth in international CTK at 19.8% YoY. [Asia Pacific](#) airlines followed with 12.0%, and [European](#) airlines saw an 11.7% increase.

Air cargo market in detail - September 2024

	World share ¹	September 2024 (% year-on-year)				September 2024 (% year-to-date)			
		CTK	ACTK	CLF (%-pt)	CLF (level)	CTK	ACTK	CLF (%-pt)	CLF (level)
TOTAL MARKET	100.0%	9.4%	6.4%	1.3%	45.6%	12.6%	8.4%	1.7%	45.2%
International	86.6%	10.5%	8.1%	1.1%	50.8%	13.5%	10.8%	0.2%	50.6%

Note 1: % of industry CTKs in 2023

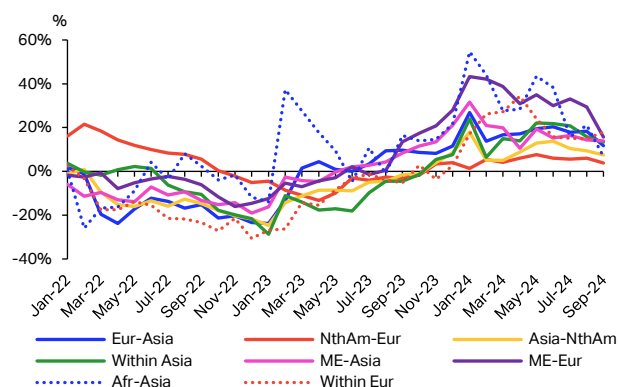
Chart 2 – International CTK by airline region of registration, YoY, %



Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

Annual international CTK growth was positive across all major routes, though at varying levels (**Chart 3**). The highest increase came from routes **within Europe** at 18.0%, marking nine straight months of double-digit growth. **Middle East-Europe** followed with 15.6% YoY growth, sustaining growth for 14 months, including 13 months at double digits. **Middle East-Asia** ranked third, rising 13.9% YoY, maintaining 16 consecutive growth months, 12 of which were double digits. The largest markets, **Asia-North America** and **Europe-Asia**, grew more moderately at 7.6% and 11.8%, respectively. The former logged 11 consecutive growth months and 19 for the latter.

Chart 3 – International CTK by route area, YoY, %

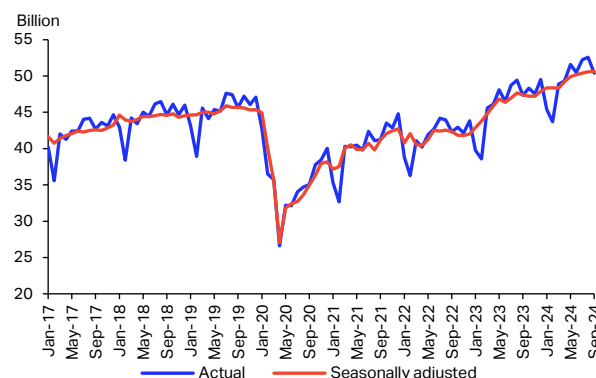


Source: IATA Sustainability and Economics using data from IATA Information and Data

September continues record air cargo capacity streak

Global ACTK rose by 6.4% YoY in September, with a 0.2% MoM increase after seasonal adjustment. (**Chart 4**). Industry-wide capacity continued to hit record highs for the ninth consecutive month in 2024. Year-to-date, ACTK surged by 8.4%. The air cargo load factor, indicating the balance between demand and supply, increased by 1.3 percentage points compared to September 2023.

Chart 4 – Industry ACTK, billion

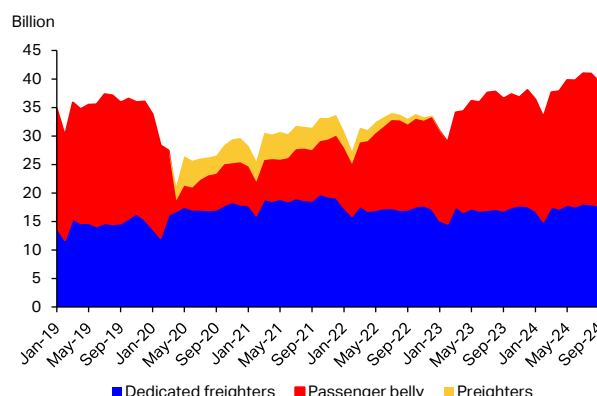


Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

Air cargo capacity growth last month mirrored demand trends, driven largely by international routes, which saw an 8.1% YoY increase. This growth continued the pattern of recent years, with a significant boost in international belly-hold capacity, which surged by 10.3% YoY, marking the 41st consecutive instance of double-digit annual growth in this category (**Chart 5**). Overall, international air cargo capacity reached its highest volumes for any September on record despite decelerating growth rates.

Year-over-year growth in belly-hold capacity has steadily declined from its peak in April 2021, though volumes remain near record highs. In contrast, dedicated freighter volumes are still below their 2021 peak, with a modest growth of 5.4% YoY in September.

Chart 5 – International ACTK by cargo business type, billion



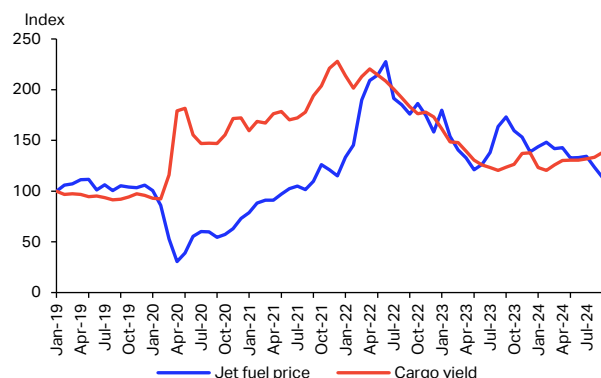
Source: IATA Sustainability and Economics using data from IATA Information and Data

Global air cargo yields rise further amid falling fuel costs

For September, global jet fuel prices averaged a 4.4% decline from the previous month and dropped 34.4% YoY, settling at USD 85.8 per barrel on September 30 (**Chart 6**). The jet fuel crack spread narrowed to 12.9 USD.

Global oil demand growth is slowing, largely influenced by a decline in consumption in China. Airlines can benefit from lower oil prices through reduced jet fuel costs, a significant factor in their overall operating expenses. After a period of exceptionally wide crack spread, a return to more conservative figures is a welcome development for airlines' margins.

Chart 6 – Jet fuel price and air cargo yield (with surcharges), global index, Jan 2019 = 100



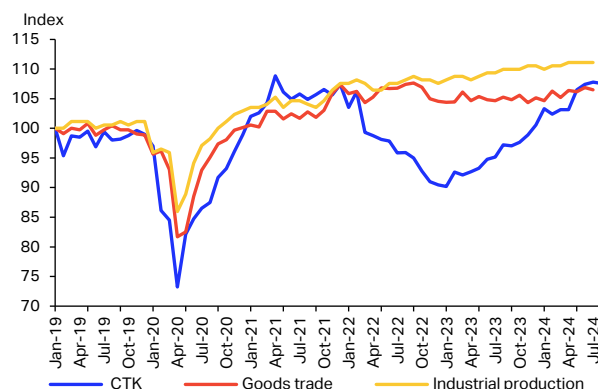
Source: IATA Sustainability and Economics using data from IATA Jet fuel price monitor, CargoS

In the meantime, the global air cargo yield (including surcharges) increased by 3.6% MoM and 11.7% YoY, building on, and enhancing the positive trend from the previous month. By the end of September, air cargo yields stood at 50% above 2019 levels. The current high yield is partly driven by new e-commerce businesses and companies transitioning from sea to air transport due to limited ocean shipping capacity and rising sea freight costs, competing for space with traditional air cargo customers.

Strong industrial production and trade amid weak PMIs for exports and output

In August, industrial production—mining, manufacturing, and utilities—rose by 0.5% MoM in constant USD terms (**Chart 7**). Year-over-year, the index grew 1.6%, maintaining the moderate post-pandemic growth trend. Global goods trade increased 2.8% from the previous year, marking its sixth consecutive month of growth, and monthly growth reached 1.4%, the highest in seven months. This rise in trade is partly due to inventory stockpiling in anticipation of potential uncertainties, particularly surrounding the U.S. presidential election in November.

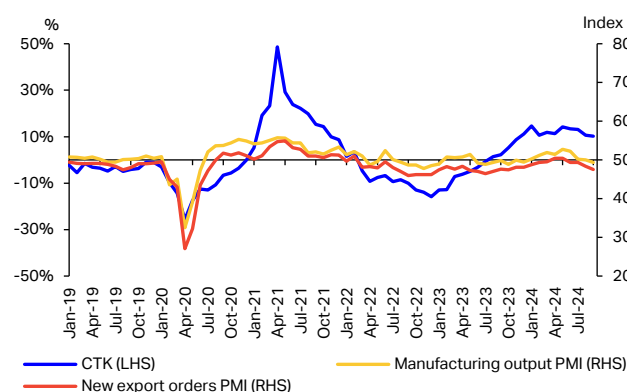
Chart 7 – CTK, industrial production at constant USD prices, and cross-border goods trade volume, global index, seasonally adjusted, Jan 2019 = 100



Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics, Macrobond

The global manufacturing sector continued to contract in September, with the Purchasing Managers' Index (PMI) falling for the fourth consecutive month. It dropped to 49.4, remaining below the key 50-point threshold that separates growth from contraction. This suggests a further deterioration in the manufacturing sector's overall health. Key factors contributing to the decline include a significant drop in production in the eurozone, led by Germany, followed by weaker performance in the U.S. At the same time, China saw its third straight month of stalled growth (**Chart 8**). The global new export orders PMI, which reflects the health of international trade, showed another contraction in September, scoring 47.5 points, 0.9 points below August. Purchasing managers signaled that new export orders were expected to shrink for the second consecutive month, highlighting continued weakness in global trade demand and uncertainty across key markets.

Chart 8 – Seasonally adjusted industry CTK, YoY, % (LHS), and global manufacturing PMIs, 50 = no change (RHS)

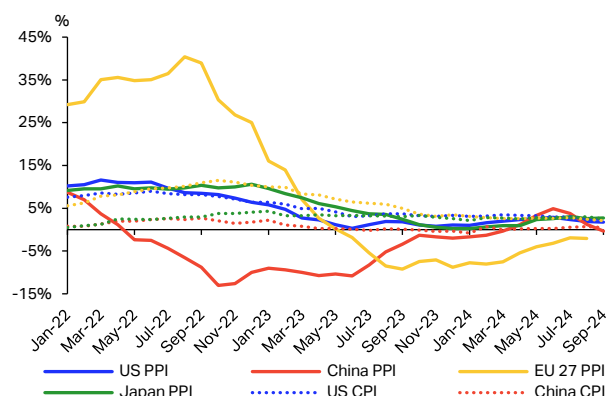


Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics, S&P Global Market

Consumer price inflation drops further in EU and US while China's CPI rise reverses last month

US headline inflation, based on the annual Consumer Price Index (CPI), declined by 0.2 percentage points to 2.4% in September, marking the seventh straight month of easing inflation (**Chart 9**). In the same month, the inflation rate in the EU fell by 0.3 percentage points to 2.1%, continuing a process started in January 2023.

Chart 9 – Consumer price index and producer price index in major economies, YoY, %



Source: IATA Sustainability and Economics using data from Macrobond

In September, Japan's consumer price inflation rate fell by 0.5 percentage points to 2.5%, marking the first slowdown in five months. This was largely due to slower increases in energy costs. China's consumer inflation remained low at 0.4% in September amid concerns of an economic slowdown.

The Producer Price Index (PPI), which tracks price changes at the producer level, often hints at upcoming trends in consumer inflation. In September, the PPI in the U.S. decreased to 1.8%, marking a 0.2 percentage point drop from August and the third monthly decline. In China, producer prices fell into negative territory at -0.3%, down by 1.5 percentage points from August's 1.2%. Conversely, Japan's PPI increased slightly to 2.8%, up by 0.2 percentage points. While the EU's September PPI data isn't yet available, August showed a continued deflationary trend at -2.1% YoY, largely unchanged from July.

Air cargo market in detail - September 2024

	<i>World share</i> ¹	September 2024 (% year-on-year)				September 2024 (% year-to-date)			
		CTK	ACTK	CLF (%-pt)	CLF (level)	CTK	ACTK	CLF (%-pt)	CLF (level)
TOTAL MARKET	100.0%	9.4%	6.4%	1.3%	45.6%	12.6%	8.4%	1.7%	45.2%
Africa	2.0%	1.7%	13.9%	-4.7%	39.2%	11.9%	17.3%	-2.0%	42.1%
Asia Pacific	33.3%	11.7%	8.5%	1.4%	48.5%	15.6%	12.4%	1.3%	46.4%
Europe	21.4%	11.7%	7.5%	1.9%	52.5%	13.6%	9.3%	2.0%	52.9%
Latin America	2.8%	20.9%	7.9%	3.9%	36.8%	11.9%	8.1%	1.2%	36.1%
Middle East	13.5%	10.1%	2.9%	3.1%	47.4%	16.4%	7.5%	3.5%	46.4%
North America	26.9%	3.8%	4.2%	-0.1%	38.9%	6.3%	3.5%	1.0%	39.5%
International	86.6%	10.5%	8.1%	1.1%	50.8%	13.5%	10.8%	0.2%	50.6%
Africa	2.0%	1.8%	13.5%	-4.6%	40.1%	11.9%	17.1%	2.2%	43.2%
Asia Pacific	29.8%	12.0%	12.4%	-0.2%	54.9%	15.6%	16.4%	0.4%	54.1%
Europe	21.0%	11.7%	7.9%	1.8%	54.3%	13.8%	9.7%	0.2%	55.0%
Latin America	2.4%	19.8%	8.9%	3.7%	40.7%	10.7%	9.7%	0.2%	40.0%
Middle East	13.4%	10.1%	2.9%	3.1%	47.7%	16.4%	7.5%	0.2%	46.8%
North America	17.9%	6.5%	5.4%	0.5%	46.4%	8.1%	6.3%	-1.1%	46.7%

Note 1: % of industry CTKs in 2023

Note 2: the total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic. Historical statistics are subject to revision.

IATA Sustainability and Economics

economics@iata.org

31 October 2024

Get the data

Access data related to this briefing through IATA's Monthly Statistics publication:

www.iata.org/monthly-traffic-statistics

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Remarks by Amin H. Nasser at the Singapore International Energy Week (SIEW)



Aramco President & CEO

[SINGAPORE] October 20, 2024

Your Excellencies, Ladies and Gentlemen, good morning.

It is a pleasure to be with you all. I would like to thank everyone at the Energy Market Authority for their hospitality, and organizing this important annual conference.

This country has an outstanding reputation for turning vision into reality, through leadership, talent, and a relentless focus on what works. That has important lessons for the global energy transition, as I will explain this morning.

It is also wonderful to see people from across the region, as Asia becomes the world's economic center of gravity once again. Asia now accounts for almost half of world GDP, as well as half of the world's population.

This year alone, Asia is likely to contribute roughly 60 percent of global economic growth. And Asia consumes more than half of global energy supplies.

Crucially, 84 percent of that consumption is still supplied by conventional energy. In short, Asia is vital to the global economy, our shared climate ambitions, and the hopes and dreams of billions of people.

So you would think that Asia's priorities play an equally vital role in global energy transition planning. But as Singapore's late, great leader, Mr. Lee Kuan Yew, might have said, the hard truth is that you would be wrong.

This may be Asia's century. But Asia's voice and priorities, like those of the broader Global South, are hard to see in current transition planning, and the whole world is feeling the consequences. d. Transition progress is far slower, far less equitable, and far more complicated than many expected.

Three reality gaps stand out in particular.

First, oil-use sectors differ significantly, which matters. The only major one where a practical energy alternative is currently available is light duty vehicles. Electric vehicles are certainly making progress. But out of almost 1.5 billion vehicles on the road, only 57 million are EVs, or less than 4 percent.

Even that low level of penetration is mostly limited to the US, China, and the richer countries in the EU, driven by policies, subsidies, and incentives. In the rest of the world – particularly in Asia, Africa, and Latin America, where a lot of the population and energy demand growth is expected – EVs lag far behind.

Consumers generally struggle with affordability and infrastructure concerns, while they increasingly appreciate that the electricity used to charge batteries comes from different energy sources. In Asia, almost 70 percent of electricity is still powered by conventional energy, with only 12 percent by wind and solar.

Furthermore, electricity consumption per person is one-tenth the levels of advanced economies. So powering EVs is likely to be increasingly challenging in the region. Also, EV sales are beginning to face headwinds in the mass market now that the niche market of early, affluent adopters is mostly served.

Additionally, EV progress has no bearing on the other 75 percent of global oil demand. Massive segments like heavy transportation and petrochemicals have few economically viable alternatives to oil and gas.

Second, geographic regions differ and also matter. Yes, oil growth has plateaued in a few mature economies such as the EU, the U.S., and Japan, but they still consume large quantities of oil.

And while U.S. oil consumption is roughly 22 barrels per person per year, and the EU is around 9 barrels, it is 2.4 barrels in Vietnam, 1.4 barrels in India, and only 1 barrel in Africa. So the Global South is likely to see significant growth in oil demand for a long time as national economies grow and living standards rise. Just as developed countries enjoyed for decades.

Third, forecasts differ and matter too. Most analysts agree that even when the growth in global oil demand stops at some point, no abrupt drop in overall demand is anticipated. And that stage is likely to be followed by a long plateau.

If so, more than 100 million barrels per day would realistically still be required by 2050. This is a stark contrast with those predicting that oil will, or must, fall to just 25 million barrels per day by then. Being short 75 million barrels every day would be devastating for energy security and affordability.

And we are not long on confidence, with a sizeable gap between prediction and reality already. Despite trillions of dollars being invested in the global energy transition, oil demand is at an all-time high. Gas demand has also grown, by almost 70 percent since 2000.

So, rather than an energy transition, we are really talking about energy addition, where just the growth is mostly met by alternatives, instead of replacing conventional energy in any meaningful way.

Yet the current transition plan continues to ignore this reality, which is why it has failed to deliver in the three core areas we were promised it would help most.

One, energy that is affordable. For example, electricity prices in Europe rose as much as three to five-folds in many countries over the past two decades, despite the shift to renewables.

Two, progress is way off the pace. I mentioned low EV penetration, while wind and solar combined supply under four percent of world energy.

And **three**, transition will be expensive for everyone, with estimates of between 100 and 200 trillion dollars required globally by 2050. For developing countries, almost 6 trillion dollars may be required each year.

Moreover, in a transition that requires staggering amounts of front-end capital investment, the cost of capital is more than twice as high in developing countries where the need is greater. And for the least developed countries the future looks especially bleak if many have to spend up to half their total GDP every year on transition alone.

It is why almost all the recent growth in clean energy investments has been in advanced economies and China. In other words, despite progress in the Global North, the Global South cannot afford massive investments in new energy, especially when many countries are only at the start of their development journey.

Trying to force an unworkable, unaffordable transition plan on them will only threaten their economic progress and even social cohesion. And the hammer blow for the current plan is that it has not even been able to reduce demand for highly carbon intensive coal, let alone replace it, with the highest levels ever seen!

Because of these multiple deficiencies, the world is not on track to meet affordability, transition speed, or emissions reduction targets. So the world urgently needs a transition plan that works.

What could that re-set look like? To begin with, planners must stop assuming the world can replace its conventional energy needs with half-baked alternatives, almost overnight, particularly in the Global South.

This assumption is seriously discouraging investments in these crucial conventional sources. Let us be clear: all sources of energy will be required for decades to come. Planners must also abandon the belief that a single plan can meet the needs of more than 200 countries.

That assumption is like asking for a wi-fi password in a village without electricity! Each country should choose an energy mix that helps them meet their climate ambitions at a speed and manner that is right for them.

And those actual priorities, especially those of the Global South, must be the DNA of global transition if it is to succeed. In addition, the world must of course accelerate the development of new energy sources and lower carbon technologies that can one day compete on price and performance.

Consumers can then embrace lower carbon products without the mandates, subsidies, and tariffs that distort markets. But our main focus should be on the levers available now. This means also encouraging the essential investments in proven and reliable energy sources like oil and gas that developing nations need and can afford.

It also means prioritizing the reduction of greenhouse gas emissions associated with those conventional sources. For example, a shift from coal to renewables has certainly reduced CO2 emissions from US electricity generation. But the shift from coal to gas accounted for almost two-thirds of the reduction. And it means going after the low hanging fruit of more efficient energy use, a Circular Carbon Economy, and CCUS.

This ideology-free approach simply prioritizes systematic emissions reduction, where the impact is greater, at an acceptable cost, within reasonable timeframes, and whatever the source or technology.

It is what I call a multi-source, multi-speed, and multi-dimensional approach that addresses the actual security, affordability, and sustainability priorities of all countries, not just a few.

A Transition Plan 2.0, with Asia at its heart.

Ladies and Gentlemen, as energy consumers around the world are served an increasingly unrealistic and expensive transition, the less they like the taste. They hunger for something that connects their passion for the net-zero future we all want, with a reality we can all afford, and a relentless focus on what works.

This was Mr. Lee Kuan Yew's mindset, and I believe it could change mission impossible into mission possible.

Thank you.

15, 2024

DOMINION ENERGY

2024 INTEGRATED RESOURCE PLAN

CTRONIC DELIVERY

Logan, Clerk
at Control Center
poration Commission
Main Street, Tyler Bldg., 1st Fl.
d, VA 23219

*Commonwealth of Virginia, ex rel. State Corporation Commission,
In re: Virginia Electric and Power Company's 2024 Integrated Resource Plan
filing pursuant to Va. Code § 56-597 et seq.
Case No. PUR-2024-00184*

Logan:

lease find enclosed for electronic filing in the above-captioned proceeding the **2024 Integrated Resource Plan** (the "2024 IRP") of Virginia Electric and Power Company (the "Company") filed pursuant to § 56-597 et seq. of the Code of Virginia ("Va. Code") and the Resource Planning Guidelines adopted by the State Corporation Commission of Virginia ("Commission") in Case No. PUE-2008-00099 ("Guidelines"). As required by the Guidelines, a reference index is enclosed that identifies the sections of the 2024 IRP that correspond to the Va. Code, the Guidelines, and the requirements of relevant prior Commission orders. Also enclosed is a copy of the Company's proposed notice in this proceeding pursuant to the Guidelines.

Along with the 2024 IRP, the Company is filing its Motion for Entry of a Protective Order and Additional Protective Treatment for Extraordinarily Sensitive Information under Rule 1e.

Separate from these filings with the Commission, the Company is providing Commission staff with the Guidelines schedules associated with the 2024 IRP in electronic format pursuant to the Guidelines, and is providing a copy of the 2024 IRP to members of the General Public pursuant to Va. Code § 56-599.

To the extent the Commission modifies Rule 260 of the Rules of Practice and Procedure, Rules 260-260, in its procedural order for this proceeding related to the deadline to respond to discovery requests, the Company respectfully requests that the Commission allow the Company, and all respondents at least five (5) business days to respond or object to interrogatories or requests for production of documents after the receipt of same. Requiring the response time to

Chapter 3. Producing Cleaner Energy While Ensuring Reliability

Dominion Energy relies on a diverse resource mix, including its own generating resources and market purchases, to meet customers' energy and capacity needs and ensure system reliability. While the demand for power has been growing, carbon emissions from the Company's fleet have fallen significantly since the year 2000. The Company has implemented various demand-side management (DSM) programs, which offset the need in energy and capacity and result in increasing power generation and emissions.

To meet the development targets of the VCEA for renewable and energy storage resources, the Company seeks proposals to acquire renewable and energy storage projects and enter into power purchase agreements for the output from such projects. While the Company is developing and building new renewable resources, natural gas-fired electric generating units are facilitating the transition to renewable resources over the next decade and longer by reliably generating power when customers need it. As demand increases, gas-fired resources bridge the gap, allowing time for new technologies, such as SMRs, or LDES, to continue being researched, developed, and ultimately deployed.

At the same time, Dominion Energy plans to proactively position itself in the short-term (2024 to 2029) to meet its commitment to provide reliable, affordable, and increasingly clean energy for the benefit of all customers over the long term.

3.1 Supply-Side Generating Resources

2023 CAPACITY

3.1.1 System Fleet

The Company operates a diverse fleet of generation resources in North Carolina, Virginia, and West Virginia. Figure 3.1.1.1 shows the Company's 2023 capacity resource mix by unit type.

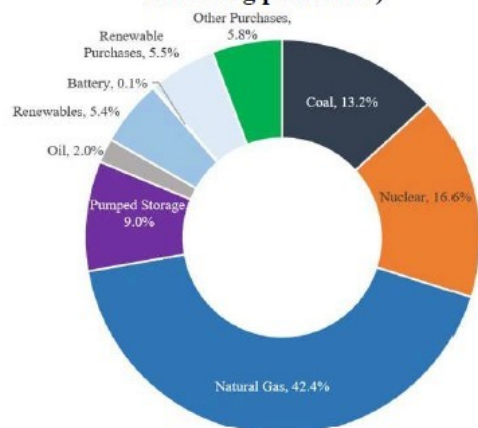
Figure 3.1.1.1: 2023 Capacity Resource Mix by Unit Type

Generation Resource Type	Number of Generating Units	Net Summer Capacity (MW)	P
Nuclear	4	3,348	
Natural Gas	29	8,533	
Pumped Storage	6	1,808	
Coal	6	2,666	
Oil	21	400	
Renewable - solar, wind, hydro, biomass	27	1,087	
Energy Storage	1	20	
Renewable Purchases		1,109	
Other Purchases		1,160	
Total		20,131	

Note: Some of the Company's natural gas units have dual-fuel capability. Oil units run only on oil.

ferences in operating and fuel costs of various types of units and PJM system conditions, the Company's energy mix is not equivalent to its capacity mix. PJM dispatches all generating and storage resources within the power pool in the PJM footprint, including the Company's fleet. PJM dispatches resources in the PJM power pool from the lowest cost units to the highest cost units, while maintaining its mandated reliability standards. The Company's electric customers receive the economic and reliability benefits of all resources in the PJM power pool regardless of the source. Figures 3.1.1.2. and 3.1.1.3 provide the Company's 2023 actual capacity mix. Appendix 3A provides capacity-related information directed by the SCC.¹⁷

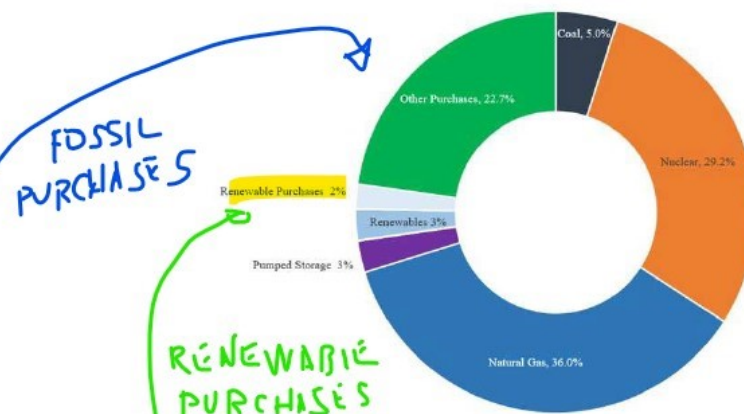
Figure 3.1.1.2: Capacity Mix (Summer Installed Capacity as of December 31, 2023, including purchases)



represents potentially available contribution of each type of generating resource owned by the Company or procured through bilateral transactions (such as bundled PPAs).

ACTUAL POWER BY FUEL

Figure 3.1.1.3: 2023 Energy Mix



The energy mix chart shows the sources of energy actually delivered to the Company's customers. While fossil-based resources still represent a significant portion of the mix, the contribution of solar in 2023 was almost 5 times the contribution of pumped storage.

3.1.2 Power Purchase Agreements

Dominion Energy supplements its generation fleet with third-party PPAs. The Company has existing contracts with renewable energy and fossil based PPAs, for approximately 1,000 MW (nameplate capacity) as of the end of 2023.

During the past several years, the Company has increased its engagement of third-party solar and energy storage developers in both its Virginia and North Carolina service territories.

In Virginia, the Company issues annual request for proposals ("RFPs") for solar and energy storage resources, and will continue to do so.

In North Carolina, the Company offers the avoided cost tariffs to qualifying facilities under the Public Utilities Regulatory Policies Act, to sell capacity and energy at the Company's North Carolina Schedule 19 rates. The Company has 90 effective PPAs totaling approximately 1,000 MW (nameplate). Of this, 687 MW (nameplate) are from 89 solar facilities that were executed as of the first quarter of 2024.

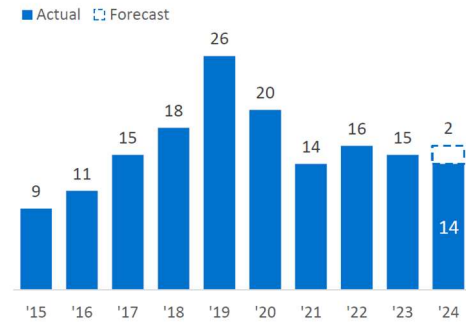
There have been no new notifications to PJM of the Company's intention to retire or deactivate Company-owned generating resources in the Company's 2023 IRP. Accordingly, there is no information to provide in response to (vi) of the SCC's order No. PUR-2020-00035 (Final Order at 11 n. 50).

Dominion Energy Virginia

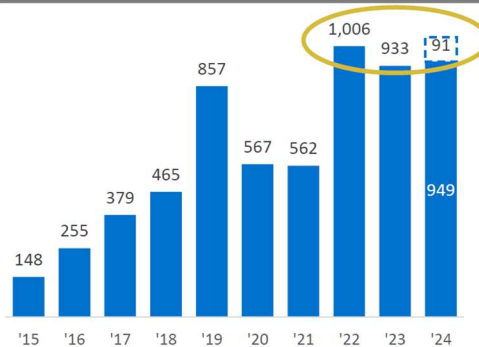
Northern Virginia leads the world in data center markets

- Connected 14 new data centers YTD and expect to connect 16 data centers total in 2024 (updated)
- Since 2013, averaged ~15 data center connections per year

Data center annual connects



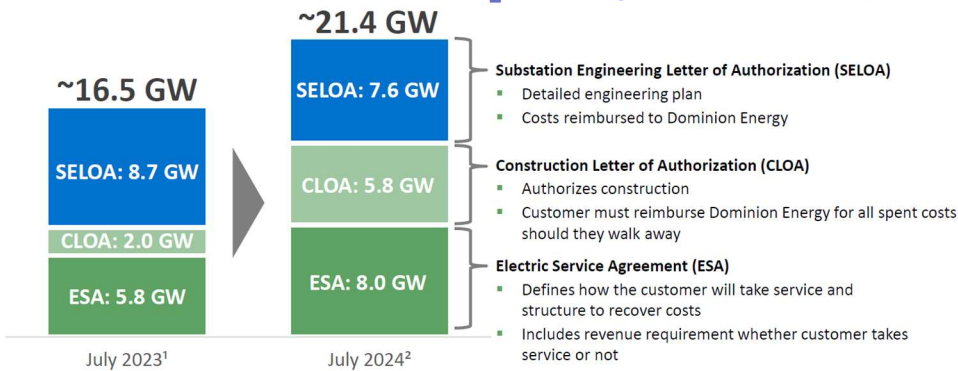
Data center capacity additions per year (MW)



Dominion Energy Virginia

Data center contracted capacity

↑5GW/30% vs. July 2023 data center contracted capacity

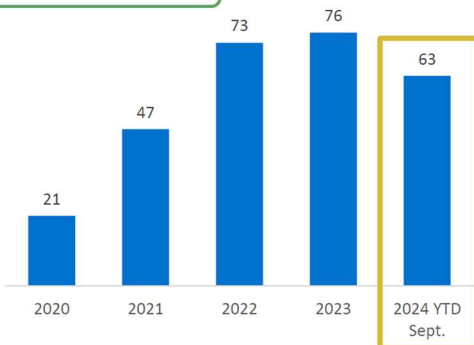


Dominion Energy Virginia

DOM Zone data center construction delivery point requests

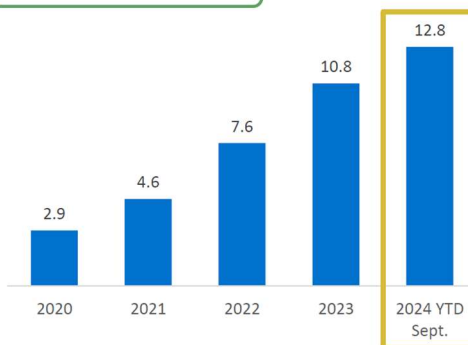
Annual number of requests

Total: 280 since 2020



Annual capacity requested (GW)

Total: ~40 GW since 2020

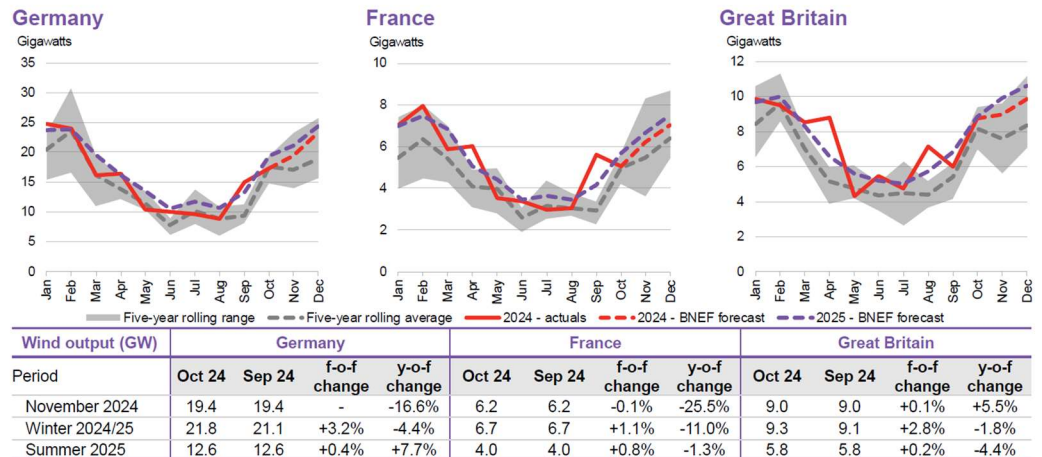


Excerpt BloombergNEF European Power Monthly October 2024, Posted October 31, 2024

Supply and demand outlook

Wind generation outlook (1)

Wind power generation across Germany, Great Britain and France is expected to rise 17% month-on-month in November, to 35GW. Compared to last November, total wind output across these markets is set to be 14% lower year-on-year, as 2023 was exceptionally windy in Northwest Europe.

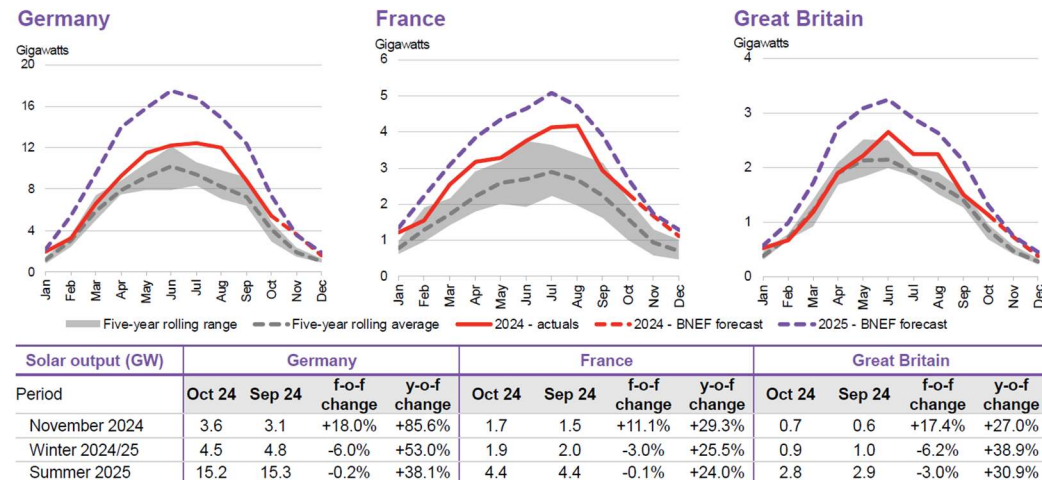


Source: BloombergNEF. Note: BNEF actuals data shows average values for October 2024 up to October 21. "f-o-f" is forecast-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the previous one for select traded time periods/contracts. "y-o-f" is year-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the historical value for select traded time periods/contracts. The values in the charts for this month are a weighted average between historical values and BNEF's forecast for the remainder of the month. Winter 2024/25 includes the months of October to March, while summer 2025 includes the months of April to September.

Supply and demand outlook

Solar generation outlook (1)

BNEF sees solar power output totaling 6GW across Germany, France and Great Britain in November, down 30% from October following the seasonal variation in generation. However, continued capacity build has boosted next month's outlook for solar output by 58% compared to November 2023.



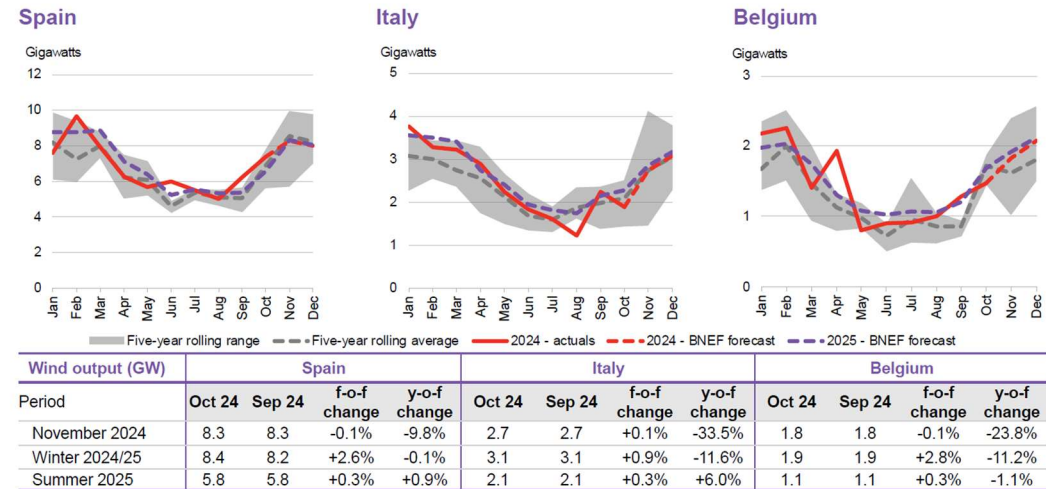
Source: BloombergNEF. Note: BNEF actuals data shows average values for October 2024 up to October 21. "f-o-f" is forecast-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the previous one for select traded time periods/contracts. "y-o-f" is year-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the historical value for select traded time periods/contracts. The values in the charts for this month are a weighted average between historical values and BNEF's forecast for the remainder of the month. Winter 2024/25 includes the months of October to March, while summer 2025 includes the months of April to September.

Excerpt BloombergNEF European Power Monthly October 2024, Posted October 31, 2024

Supply and demand outlook

Wind generation outlook (2)

Wind power generation across Spain and Italy is estimated to total 11GW in November, down 17% versus the same period last year because of the exceptional wind speeds seen in November 2023. BNEF's outlook consider current forecasts for wind speeds, which are lower than last year.

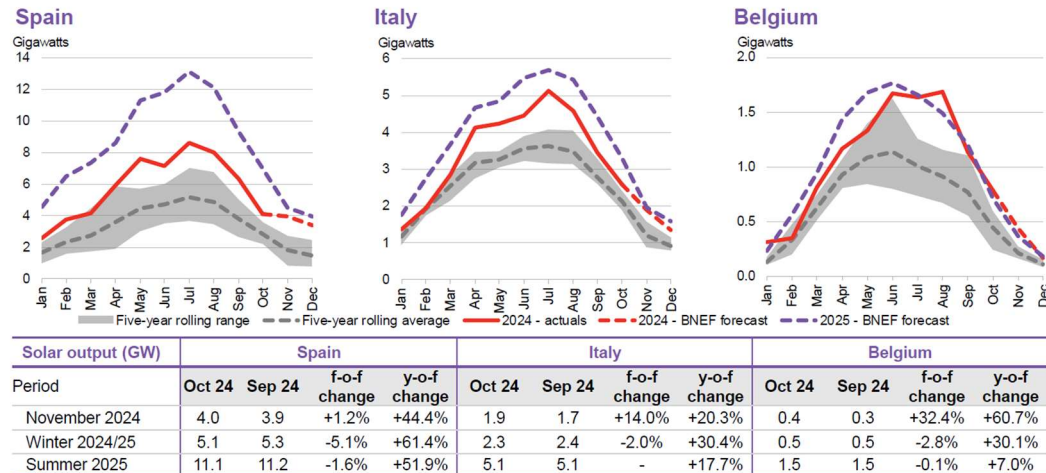


Source: BloombergNEF. Note: BNEF actuals data shows average values for October 2024 up to October 21. "f-o-f" is forecast-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the previous one for select traded time periods/contracts. "y-o-f" is year-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the historical value for select traded time periods/contracts. The values in the charts for this month are a weighted average between historical values and BNEF's forecast for the remainder of the month. Winter 2024/25 includes the months of October to March, while summer 2025 includes the months of April to September.

Supply and demand outlook

Solar generation outlook (2)

Italy and Spain's solar output is set to total 5.8GW in November, down 10% from October as the sunny season comes to an end. However, BNEF expects solar generation across these two markets to average 36% higher year-on-year in November as additional capacity is leveraged. To see how the increase in installations drives changes in profitability, see [European Renewable Merchant Revenues: Data Viewer \(web | terminal\)](#).



Source: BloombergNEF. Note: BNEF actuals data shows average values for October 2024 up to October 21. "f-o-f" is forecast-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the previous one for select traded time periods/contracts. "y-o-f" is year-on-forecast and shows the change in the value predicted by the BNEF model in this outlook and the historical value for select traded time periods/contracts. The values in the charts for this month are a weighted average between historical values and BNEF's forecast for the remainder of the month. Historical solar generation for Spain is from the European Network of Transmission System Operators for Electricity and shows grid generation only, while BNEF's forecast includes grid and embedded solar.

		Ford Blue	Ford Model e	Ford Pro
Q3 2024 Results				
H / (L) Q3 2023				
Wholesales (000)		721	32	342
	YoY	(2) %	(11) %	9 %
Revenue (\$B)	\$	26.2	\$ 1.2	\$ 15.7
	YoY	3 %	(33) %	13 %
EBIT (\$M)	\$	1,627	\$ (1,224)	\$ 1,814
	YoY	(91)	105	160
EBIT Margin (%)		6.2 %	(104.4) %	11.6 %
	YoY	(0.5) ppts	(28.8) ppts	(0.4) ppts
First Nine Months 2024 Results				
H / (L) First Nine Months 2023				
Wholesales (000)		2,088	68	1,125
	YoY	(3) %	(17) %	11 %
Revenue (\$B)	\$	74.7	\$ 2.4	\$ 50.7
	YoY	(1) %	(43) %	19 %
EBIT (\$M)	\$	3,703	\$ (3,687)	\$ 7,386
	YoY	(2,946)	(556)	1,975
EBIT Margin (%)		5.0 %	(151.3) %	14.6 %
	YoY	(3.8) ppts	(78.5) ppts	1.9 ppts

The quarter included strong truck sales as well as the launch of the all-new Ford Explorer and Lincoln Aviator in the U.S., with more refreshed and derivative products on the way, like the Maverick pickup and Bronco Sport SUV in Q4 and the new Expedition and Navigator in early 2025.

Ford Model e reported an EBIT loss of \$1.2 billion. The \$500 million of year-over-year cost improvements were offset by expected industrywide pricing pressure. The segment continues to improve its profit trajectory, achieving almost \$1 billion in cost improvements year-to-date.

Ford continues to remove barriers to EV adoption by offering customers greater access to charging both at home, through [the Ford Power Promise](#), and on the road through a growing charger network. And the nearly 3,000 Ford dealers now able to sell electric vehicles are a competitive advantage as Ford reaches new customers in areas of the U.S. that might otherwise be slow to adopt electric vehicles.

Ford Credit reported third-quarter earnings before taxes (EBT) of \$544 million, an increase of \$186 million year-over-year.

Full-Year 2024 Outlook

Ford now expects adjusted EBIT of about \$10 billion with adjusted free cash flow between \$7.5 billion and \$8.5 billion. Capital expenditures are expected to be between \$8 - \$8.5 billion.

Full-year EBIT for Ford Pro is now expected to be about \$9 billion, Ford Blue about \$5 billion, and Model e a full-year loss of about \$5 billion. Earnings before taxes from Ford Credit are now expected to be about \$1.6 billion.

Ford plans to report fourth-quarter 2024 financial results following the close of market on Feb. 5,

Cautionary Note on Forward-Looking Statements

Statements included or incorporated by reference herein may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on expectations, forecasts, and assumptions by our management and involve a number of risks, uncertainties, and other factors that could cause actual results to differ materially from those stated, including, without limitation:

- Ford is highly dependent on its suppliers to deliver components in accordance with Ford's production schedule and specifications, and a shortage of or inability to acquire key components or raw materials, such as lithium, cobalt, nickel, graphite, and manganese, can disrupt Ford's production of vehicles;
- To facilitate access to the raw materials and other components necessary for the production of electric vehicles, Ford has entered into and may, in the future, enter into multi-year commitments to raw material and other suppliers that subject Ford to risks associated with lower future demand for such items as well as costs that fluctuate and are difficult to accurately forecast;
- **Ford's long-term competitiveness depends on the successful execution of Ford+;**


5

- Ford's vehicles could be affected by defects that result in recall campaigns, increased warranty costs, or delays in new model launches, and the time it takes to improve the quality of our vehicles and services could continue to have an adverse effect on our business;
- Ford may not realize the anticipated benefits of existing or pending strategic alliances, joint ventures, acquisitions, divestitures, or business strategies;
- Ford may not realize the anticipated benefits of restructuring actions and such actions may cause Ford to incur significant charges, disrupt our operations, or harm our reputation;
- Operational information systems, security systems, vehicles, and services could be affected by cybersecurity incidents, ransomware attacks, and other disruptions and impact Ford and Ford Credit as well as their suppliers and dealers;
- Ford's production, as well as Ford's suppliers' production, and/or the ability to deliver products to consumers could be disrupted by labor issues, public health issues, natural or man-made disasters, adverse effects of climate change, financial distress, production difficulties, capacity limitations, or other factors;
- Failure to develop and deploy secure digital services that appeal to customers could have a negative impact on Ford's business;
- Ford's ability to maintain a competitive cost structure could be affected by labor or other constraints;
- Ford's ability to attract, develop, grow, and reward talent is critical to its success and competitiveness;
- Ford's new and existing products and digital, software, and physical services are subject to market acceptance and face significant competition from existing and new entrants in the automotive and digital and software services industries, and its reputation may be harmed if it is unable to achieve the initiatives it has announced;
- **Ford's results are dependent on sales of larger, more profitable vehicles, particularly in the United States;**
- With a global footprint and supply chain, Ford's results and operations could be adversely affected by economic or geopolitical developments, including protectionist trade policies such as tariffs, or other events;
- Industry sales volume can be volatile and could decline if there is a financial crisis, recession, public health emergency, or significant geopolitical event;
- **Ford may face increased price competition or a reduction in demand for its products resulting from industry excess capacity, currency fluctuations, competitive actions, or other factors, particularly for electric vehicles;**
- Inflationary pressure and fluctuations in commodity and energy prices, foreign currency exchange rates, interest rates, and market value of Ford or Ford Credit's investments, including marketable securities, can have a significant effect on results;
- Ford and Ford Credit's access to debt, securitization, or derivative markets around the world at competitive rates or in sufficient amounts could be affected by credit rating downgrades, market volatility, market disruption, regulatory requirements, or other factors;
- The impact of government incentives on Ford's business could be significant, and Ford's receipt of government incentives could be subject to reduction, termination, or clawback;
- Ford Credit could experience higher-than-expected credit losses, lower-than-anticipated residual values, or higher-than-expected return volumes for leased vehicles;
- Economic and demographic experience for pension and OPEB plans (e.g., discount rates or investment returns) could be worse than Ford has assumed;
- Pension and other postretirement liabilities could adversely affect Ford's liquidity and financial condition;
- Ford and Ford Credit could experience unusual or significant litigation, governmental investigations, or adverse publicity arising out of alleged defects in products, services, perceived environmental impacts, or otherwise;

Dan Tsubouchi  @Energy_Tidbits · Oct 27
Brent opens down \$3.05 as markets take near term fear of regional escalation out of the oil price following Iran's downplaying of Israel's Friday night attack.

#OOTT



Dan Tsubouchi  @Energy_Tidbits · Oct 27
SAF Group Oct 27, 2024 Energy Tidbits memo is posted on the insights section of SAF Group website. this 62-pg energy research memo covers more items than tweeted this week. Hope it helps your energy views.
#Oil #OOTT #LNG #NatGas #EnergyTransition #EVs ...

3 2.4K

Dan Tsubouchi  @Energy_Tidbits

Final BC election counts posting starting 9am PT.

But as of today's 4pm PT update, recount is increasing NDP lead in both seats.

Juan de Fuca Malaha: lead now +113.

Surrey City Centre: lead now +178.

Looks like NDP to govern with some form of Green support.


NDP 46

Conservatives 46

Green 2

#OOTT

electionsbccnr.blob.core.windows.net/electionsbccnr...

Dan Tsubouchi  @Energy_Tidbits · Oct 22
BC final election count Oct 26-28 to incl two recount seats.

NDP 46

Conservatives 46

Green 2...

[Show more](#)

[19_Candidate.html](#)

SAF PRO Dan Tsubouchi 
@Energy_Tidbits

US 10 yr now >4.28%

8 days to Nov 5 election.

thx @business

#OOTT



Last edited 11:57 AM · Oct 28, 2024 · 1,123 Views

SAF PRO Dan Tsubouchi 
@Energy_Tidbits

Breaking

BC NDP now on track for a majority govt.

NDP 47 seats

Conservatives 44 seats

Green 2 seats

Elections BC update as of 3pm PT

#OOTT

2024 GENERAL ELECTION RESULTS

INITIAL COUNT

Complete

FINAL COUNT

In Progress

As of October 28, 2024 11:00 PT

Final count is in progress. Read more about [initial count](#) and [final count](#).

Results will be updated below as counting progresses. Final voting results will be available after final count is complete for all electoral districts.

Independent and Unaffiliated candidates do not represent a political party

Party	Electoral Districts Leading	Total Votes	% of Vote
BC Green Party	2	173,137	8.24 %
BC NDP	47	942,391	44.86 %
Conservative Party	44	909,283	43.28 %
Electoral Heritage Party of B.C.	0	364	0.02 %
Communist Party of BC	0	638	0.03 %
Freedom Party of BC	0	1,263	0.06 %
Libertarian	0	1,373	0.07 %
Independent	0	47,064	2.24 %
Unaffiliated	0	25,448	1.21 %

SAF Dan Tsubouchi
@Energy_Tidbits

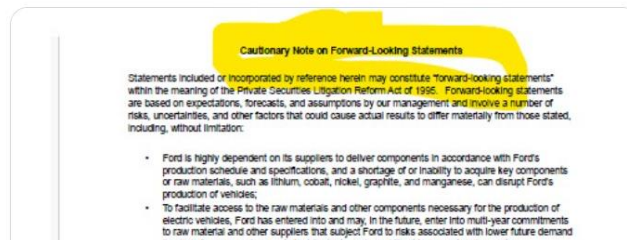
Good stuff in Ford's cautionary statement and not upfront in the Q3 message?

Success depends on selling ICE trucks in US. "Ford's results are dependent on sales of larger, more profitable vehicles, particularly in the US".

Big risk is all-about EVs. "Ford may face increased price competition or a reduction in demand for its products resulting from industry excess capacity, currency fluctuations, competitive actions, or other factors, particularly for electric vehicles".

Note: Ford expects adjusted EBIT of ~\$10b after Model e a full-year loss of about \$5b

#OOTT #EVs



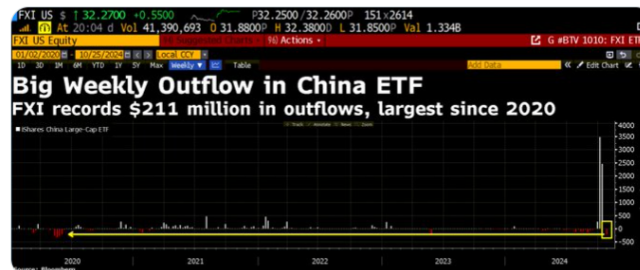
SAF Dan Tsubouchi
@Energy_Tidbits

More investors move to sidelines on China.

Outflows from US listed ETFs for wk end Oct 25.

"China had the biggest outflow, of \$162.2 million, following withdrawals of \$211 million from the \$10.3 billion iShares China Large-Cap — its largest weekly withdrawal since May 2020" @thatsleda

#OOTT



7:01 PM · Oct 28, 2024 · 1,201 Views

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#OOTT

FUTURE INVESTMENT INITIATIVE
www.futureinvestmentinitiative.com

We will maintain our pre-eminence in the oil sector

TODAY **GOING FORWARD**

...

#OOTT

[illegible]

SAF Dan Tsubouchi
@Energy_Tidbits

For those who aren't near their laptops, at 8:30 am MT,
@EIAgov released #Oil #Gasoline #Distillates inventory as of Oct 25.
Table below compares EIA data vs
@business analyst survey expectations and vs @APIenergy estimates
yesterday. Prior to release, WTI was \$68.25. #OOTT

Oil/Products Inventory Oct 11: EIA, Bloomberg Survey Expectations, API			
(million barrels)	EIA	Expectations	API
Oil	-2.19	1.50	-1.60
Gasoline	-2.20	-2.00	-5.90
Distillates	-3.53	-2.50	-2.70
	-7.92	-3.00	-10.20

Note: Oil is commercial. So excludes a +1.0 mb build in SPR for the Oct 11 week
Note: Included in the oil data, Cushing had a 0.11 mmb build for Oct 11 week
Source EIA, Bloomberg
Prepared by SAF Group <https://safgroup.ca/news-insights/>

8:32 AM · Oct 30, 2024 · 4,102 Views

SAF Dan Tsubouchi
@Energy_Tidbits

The oil fundamental that can/should cause Saudi et al to push back the
Dec 1, 2024 start of adding back voluntary barrels - #Oil demand in
Q1/25 seasonally declines -1.2 mmb/d QoQ vs Q4/24.

Challenge is that if could push back return to Q2/25.
#OOTT

Table 4 - 1: World oil demand in 2024*, mb/d							
	2023	1Q24	2Q24	3Q24	4Q24	2024	Change 2024/23 Growth %
World oil demand	102.21	102.81	103.36	104.7	105.61	104.14	1.93
Americas	24.96	24.42	24.98	25.58	25.37	25.09	0.13
of which US	20.38	19.92	20.47	20.71	20.85	20.49	0.13
Europe	13.45	12.85	13.72	13.73	13.41	13.43	-0.02
Asia Pacific	7.24	7.53	7.04	7.03	7.43	7.26	0.01
Total OECD	45.65	44.80	45.74	46.34	46.21	45.78	0.13
China	16.36	16.66	16.75	17.09	17.25	16.94	0.58
India	5.34	5.66	5.66	5.48	5.65	5.61	0.27
Other Asia	9.28	9.72	9.79	9.51	9.51	9.63	0.35
Latin America	6.69	6.67	6.77	6.92	6.88	6.81	0.12
Middle East	8.63	8.68	8.44	9.19	9.02	8.83	0.20
Africa	4.46	4.56	4.32	4.39	4.85	4.53	0.07
Russia	3.84	3.96	3.88	3.96	4.11	3.98	0.14
Other Eurasia	1.17	1.33	1.24	1.08	1.28	1.23	0.06
Other Europe	0.75	0.78	0.78	0.77	0.84	0.79	0.01
Total Non-OECD	56.56	58.02	57.62	58.36	59.40	58.36	1.80
Total World	102.21	102.81	103.36	104.7	105.61	104.14	1.93
Previous Estimate	102.21	102.90	103.61	104.8	105.61	104.24	2.03
Revision	0.00	-0.09	-0.25	-0.08	0.00	-0.11	-0.10

Note: *2024 = Forecast. Totals may not add up due to independent rounding.
Source: OPEC.

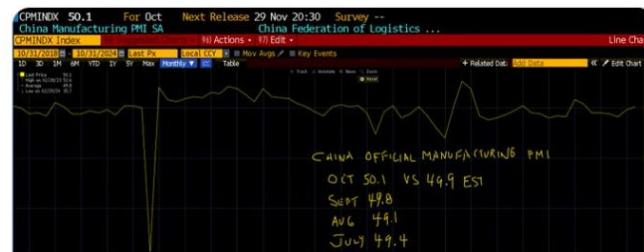
Q4 105.61
Q1 104.41
-1.20 QoQ

...

#OOTT



#OOTT



SAF Dan Tsubouchi
@Energy_Tidbits

The big positive for WCS less WTI diffs not seasonally blowing out only has a small positive impact on Q3/24.

The big positive will show up in the YoY comps in Q4/24.

See 📌 Oct 25 tweet, WCS less WTI diffs have stayed narrow and not blown out like normal in Oct.

#OOTT

SAF Dan Tsubouchi @Energy_Tidbits · Oct 25

Continued big positive to Cdn #Oil in H2/24

Ramp up of volumes on new 590,000 b/d TMX has, at least so far, kept WCS less WTI differentials from normal Sept/Oct widening.

...
[Show more](#)



SAF Dan Tsubouchi
@Energy_Tidbits

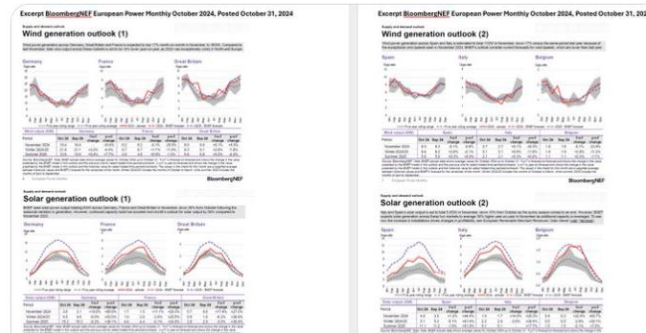
Wind & Solar 101.

EU wind has big gains from summer trough to winter peak vs solar has big losses from summer peak to winter trough.

Offsetting seasonality means adding solar + wind capacity doesn't add 1 +1 in terms of actual generation in EU

But a modest net up in winter ie. less demand for #NatGas generation especially if hot winters like 22/23 & 23/24.

Thx @BloombergNEF
#OOTT



SAF Dan Tsubouchi
@Energy_Tidbits

Breaking.

Ford to halt production of its F-150 Lightning electric vehicle pickup trucks for 6 weeks from Nov. 18 to Jan. 6. "We continue to adjust production for an optimal mix of sales growth and profitability," a Ford spokesperson said." reports @davidshepardson x.com/davidshepardson...

See 🗨️ 10/28 tweet, Ford was clear, its results depend upon selling ICE pickup trucks.

#OTT

SAF Dan Tsubouchi @Energy_Tidbits · Oct 28

Good stuff in Ford's cautionary statement and not upfront in the Q3 message?

Success depends on selling ICE trucks in US. "Ford's results are dependent on sales of larger, more profitable vehicles, particularly in the US".

...
[Show more](#)

including, without limitation:

- Ford is highly dependent on its suppliers to deliver components in accordance with Ford's production schedule and specifications, and a shortage of or inability to acquire key components or raw materials, such as lithium, cobalt, nickel, graphite, and manganese, can disrupt Ford's production of vehicles;
- To facilitate access to the raw materials and other components necessary for the production of electric vehicles, Ford has entered into and may, in the future, enter into multi-year commitments to raw material and other suppliers that subject Ford to risks associated with lower future demand for such items as well as costs that fluctuate and are difficult to accurately forecast;
- Ford's long-term competitiveness depends on the successful execution of Ford's

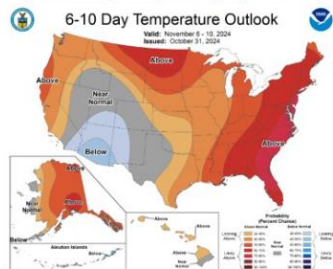
SAF Dan Tsubouchi
@Energy_Tidbits

Warm winters and a warm start to winter are never good for #NatGas

@NOAA updated 6-10 day, 8-14 day, and 30-day temperature forecast call for warmer than normal (less heating demand) to start winter across most of the Lower 48 especially the populous east and south.

#OTT #NatGas

<https://www.cpc.ncep.noaa.gov/products/predictions/610day/>



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



SAF MEMBER Dan Tsubouchi 
@Energy_Tidbits

Air travel is back to the most part.

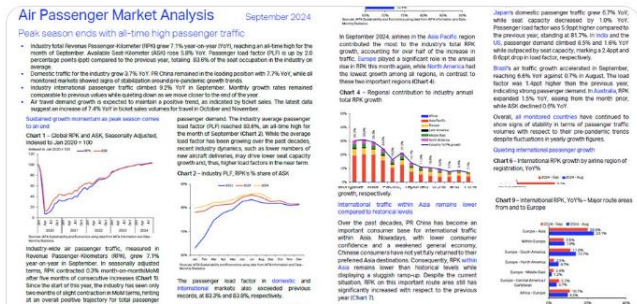
@IATA Sept air passenger data.

Overall, industry total RPK was +7.1% YoY "reaching an all-time high for the month of Sept"

Domestic > pre-Covid. Domestic RPH +3.7% YoY "establishing a new record for the industry."

International: No total vs pre-Covid but infers is less given Within Asia and Europe/Asia both below pre-Covid.

#OOTT



SAF MEMBER Dan Tsubouchi 
@Energy_Tidbits

Negative indicator for China recovery.

Despite stimulus, 7th consecutive month of negative net monthly foreign direct investment flows.

US \$ B

Sept: -2.53

Aug: -4.58

July: -5.32

June: -0.44

May: -4.50

Apr: -5.99

Mar: -0.9

Feb: 5.3

Jan: 3.9

Dec: -0.8

Nov: -2.0

Thx @business

#OOTT

SAF POWER Dan Tsubouchi 
@Energy_Tidbits

...

Headline: China smaller & export oriented firms back to expansion in Oct.

BUT "External demand, however, remained weak. The gauge for new export orders stayed in contractionary territory for the 3rd consecutive month..."

China Caixin Manufacturing PMI:

Oct 50.3 vs Est 49.7

Sep 49.3

Aug 50.4

Jul 49.8

Jun 51.8

May 51.7

Apr 51.4

Mar 51.1

Feb 50.9

Jan 50.8

Dec 50.8

Thx @SPGlobalPMI

50.

SAF POWER Dan Tsubouchi 
@Energy_Tidbits

...

Seems still pointing to LNG Canada 1.8 bcf/d Phase 2 FID.

Shell CEO Sawan in Q3 call Q&A.,

Phase 1. 1.8 bcf/d is 95% complete, still hoping for 1st commercial cargos by mid 2025.

Phase 2. 1.8 bcf/d. "has to be an investable opportunity. They are developing that, and in due course, they'll be able to put it forward to us to be able to reflect, along with the other shareholders doing the same."

#OOTT #NatGas

Q - Giacomo Romeo (BIO 21978037 <GO>)

Yes, thank you.

Two questions for me. The first one is on the LNG market, you mentioned the contract you signed with BOLTAS in Turkey. There have been some headlines suggesting that term pricing is coming down, particularly related to this agreement. Are you seeing a more challenging market in the third market? the second question I wanted to ask is, can you remind us where we stand in terms of the key hurdles to taking FID on the second phase of LNG Canada? Are you happy with the acreage you have around those assets? Would you be looking to add more acreage in the area?

CEO

A - Wael Sawan (BIO 17559980 <GO>)

Giacomo, thank you for that.

I'll touch on both. I think on the LNG markets, you'll appreciate. I won't be able to disclose specific term prices. What I would say is there is nothing that we're seeing at the moment that is different than previous cycles, where you see sometimes the pendulum swings towards buyers, sometimes towards sellers, and where we have always positioned ourselves on both sides.

Where we are a significant off-taker of volumes, we are a buyer, and of course we are a significant seller being one of the biggest players in the market. And so what we do to do so

SHELL Q3 Q+A

SAF Dan Tsubouchi
@Energy_Tidbits

Cdn #Oil tanker exports new record as 590,000 b/d TMX expansion ramps up.

Oil exports by tanker from BC up to 398 kbd in Oct vs 310 kbd in Sept reports @roberttuttle @Vortexa

It's why WCS less WTI differentials ~\$12 instead of normal big widening in Oct. See 📌 Oct 25 tweet.

#OOTT

WEST CANADA TRACKER: Oil Exports Rise to Record on China Exports 2024-10-31 20:05:30.646 GMT

By Robert Tuttle
(Bloomberg) -- Oil exports by tanker from Western Canada rise to an average 398k b/d in Oct. from 310k b/d in Sept. as exports to China surge, according to Vortexa ship-tracking data dating back to Nov. 2020.

- * Total outflows at 12.33m bbl vs 9.3m bbl in Sept
- ** US-West Coast shipments 189k b/d vs. 170k b/d
- ** Asia shipments 207k b/d vs. 123k b/d
- * Click here for PDF of latest tankers departing from Western Canada to all destinations:

DESTINATION COUNTRY	MoM Change	Oct	Sep	Aug
Brunei	-17,245	0	17,245	0
China	84,803	207,480	122,677	89,733
Ecuador	1,455	1,455	0	0

SAF Dan Tsubouchi
@Energy_Tidbits

Saudi Energy Minister straight talk points to approx 3.5% decline rate for Saudi oil productive capacity.

Adding 550kbd Marjan/Berri, 600 kbd Zuluf & 75 kbd Damman for total 1.225 mmbd to maintain 12.3 mmbd MSC thru 2027.

Consistent with my 📌 05/07/24 tweet on Aramco Q1.

#OOTT

Well, there is something called natural declines. And if you don't attend to that, you lose over time. And if you don't continue spending 60% of an upstream company on maintaining potential, you lose that potential." Saudi Energy Minister Abdulaziz bin Salman

Group created transcript of comments by Saudi Arabia Energy Minister, H.E. Prince Abdulaziz bin Salman Al Saud, at Future Investment Initiative 2024 on October 29, 2024.
The in "italics" are SAF Group created transcript



18:45 min mark, Abdulaziz "we are also committed to maintaining 12.3 million of crude capacity. We will of that. But look at what it takes to maintain that capacity. And there are so many people who just to be understanding of it. If Saudi Arabia has to go through these investments to maintain potential, you lose that potential. However, there are good people that take these things right. But, anyway, as [xxx] was saying, in one of his [xxx] only time and patience will prove the country."

well by SAF Group <https://safgroup.ae/>



SAF Dan Tsubouchi
@Energy_Tidbits

321 crack spreads -\$0.09 WoW to \$16.82 on Nov 1.

WTI -\$2.29 WoW to \$69.49.

WTI -\$2.29 with crack spreads ~flat reinforces WTI is impacted more by global markets than by cracks.

\$16.82 cracks not high enough to incentivize refineries to take extra crude.

Thx @business
#OOTT



5:43 PM · Nov 1, 2024 · 1,979 Views

SAF Dan Tsubouchi
@Energy_Tidbits

Big positive to Cdn #Oil Q4/24 cash flows.

Ramp up of volumes on 590,000 b/d TMX has, at least so far, kept WCS less WTI differentials from normal Sept/Oct/Nov widening.

WCS less WTI diffs:

11/01/24: \$12.45

11/01/23: \$25.25

11/01/22: \$29.90

Thx @garquake @business
#OOTT



6:01 PM · Nov 1, 2024 · 3,681 Views

SAF Dan Tsubouchi
@EnergyTidbits

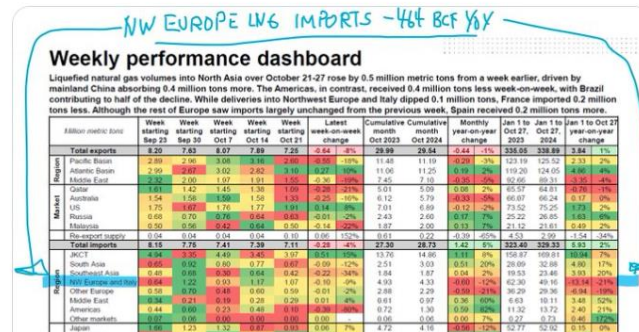
NW Europe #LNG imports -0.50 bcf/d WoW to 5.40 bcf/d in Oct 21-27 week.

Storage would be full if NW EU hadn't cut back LNG imports in Q2/Q3.

YTD Oct 27, NW EU #LNG imports -464 bcf or -1.54 bcf/d YoY to 5.78 bcf/d.

If not for Israel/Iran or RUS/UKR risk, EU #NatGas prices would be lower going into winter.

Thx @BloombergNEF
#OOTT



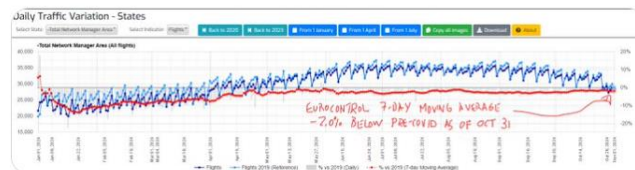
SAF Dan Tsubouchi
@EnergyTidbits

Daily Europe air traffic close but still stuck below pre-Covid.

7-day moving average as of:

Oct 31: -2.0% below pre-Covid
Oct 24: -1.6%
Oct 17: -1.9%
Oct 10: -1.7%
Oct 3: -2.9%
Sept 26: -2.9%
Sept 19: -2.8%
Sept 12: -3.0%
Sept 5: -2.8%
Aug 29: -3.1%

Thx @eurocontrol
#OOTT



6:33 AM · Nov 2, 2024 · 1,740 Views

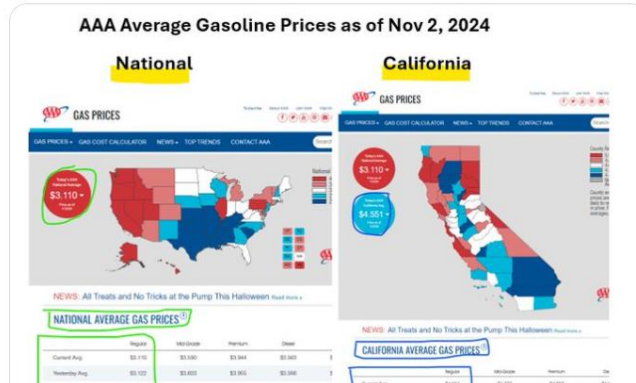
SAF Dan Tsubouchi
@Energy_Tidbits

AAA National average prices -\$0.03 WoW to \$3.11 on Nov 2, -\$0.09 MoM & -\$0.34 YoY.

California average prices -\$0.05 WoW to \$4.55, -\$0.13 MoM & -\$0.66 YoY

US election is Nov 5. National average prices were ~\$3.80 at time of 2022 mid-terms.

Thx @AAAnews
#OOTT



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Reason to be cautious on #NatGas as long as temp forecasts are for a warm start to winter.

Other than 2022 where global #NatGas markets were driven up post Russia 02/24/22 invasion of Ukraine, HH prices have weakened in Nov/Dec with warm or even normal temps in Nov/Dec.

#OOTT

Figure 8: HH gas prices seasonal comparison to Nov 1, 2024 close



SAF Dan Tsubouchi
@Energy_Tidbits · Oct 31

Warm winters and a warm start to winter are never good for #NatGas

@NOAA updated 6-10 day, 8-14 day, and 30-day temperature forecast call for warmer than normal (less heating demand) to start winter across most of the Lower 48 especially the populous east and south....

[Show more](#)

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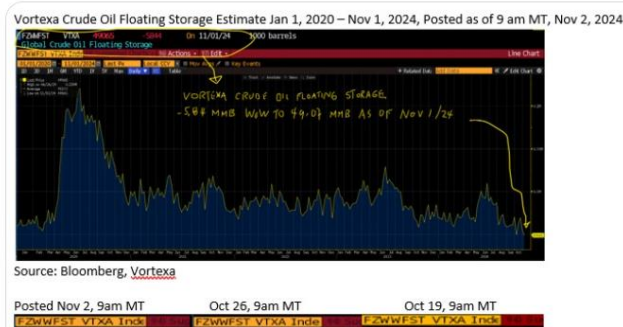
Floating Oil Storage

Vortexa crude #Oil floating storage -5.84 mmb WoW to 49.07 mmb at Nov 1

Only 2nd wk below 50 mmb since Covid, other was Oct 4/24 of 49.63 mmb.

Last 7 wk moving average is 59.57 mmb and last 4 wks are only times 7-wk moving average <60 mmb since Covid

Thx @vortexa @business
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Iran Supreme Leader Khamenei 🇮🇷 tweets this morning.

"The US and the Zionist regime will definitely receive a crushing response for what they do against Iran and the Resistance Front"

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← **Khamenei.ir** 
12.5K posts



⋮ 🔍 ✉️ Follow

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News, messages & statements from Imam Sayyid Ali Khamenei, Iran's Supreme Leader--- BN: [@KhameneiBangla](#) | AZ: [@az_Khamenei](#) | FA: [@Khamenei_fa](#) | AR: [@ar_Khamenei](#)

📍 Islamic Republic of Iran 🌐 [khamenei.ir](#) 🗓 Born July 16
📅 Joined March 2009

23 Following 1.3M Followers

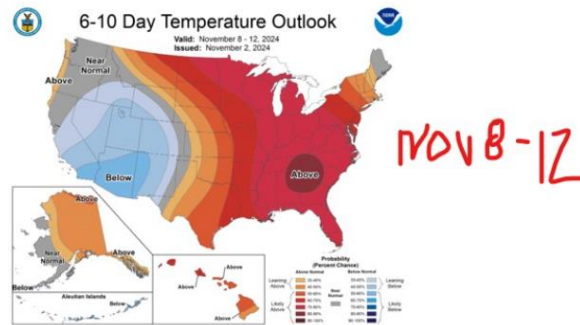
 Followed by Abhi Rajendran, ELINT News, and 7 others you follow

A warm start to winter is never a positive to HH #NatGas prices.

@NOAA updated 6-10 & 8-14 day temp outlook for Nov 8-16 calls for much warmer than normal temps across east 2/3 of Lower 48.

#OOTT

<https://www.cpc.ncep.noaa.gov/products/predictions/610day/>



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



Numbers don't lie!

Dominion's huge data center growth in 2020s/2030s is bullish for #NatGas #Coal.

Fossil fuels provided 63.7% of \$D's power in 2023.

2024 IRP: 2023 capacity vs % of actual energy supplied:

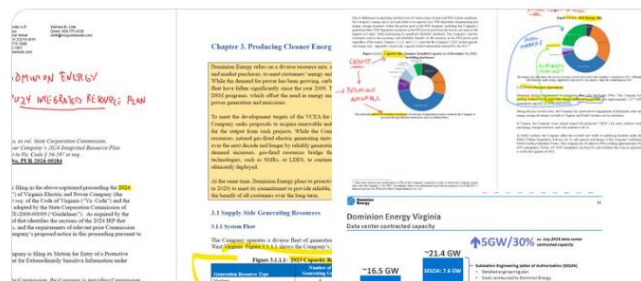
Renewables incl purchases: 10.9% vs 5.0%

Nuclear: 16.6% vs 29.2%

Fossil Fuels incl purchases: 63.4% vs 63.7%.

Pumped storage: 9% vs 3%

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SAF Source @Energy_Tidbits

China PHEV sales up >1 million YoY in 2024.

Sept:
BEV: +154,059 YoY or +32.2% YoY to 632,893.
PHEV: +201,007 YoY or +131.4% YoY to 353,949.

YTD Sept 30:
BEV: +711,300 YoY or +21.0% YoY to 4,091,110.
PHEV: +1,014,692 YoY or +89.3% YoY to 2,150,471.

Haven't seen good estimates of % of PHEV kms in gasoline vs electric mode. Volvo 🇸🇪 says their PHEVs are 50/50.

#OOT

CHINA SEPT CAR SALES BY FUEL TYPE								
China Car Sales								
September 2024								
	Sep-24	Sep-23	Volume change	% change	YTD Sep-24	YTD Sep-23	Volume change	% change
BEV	632,893	478,834	154,059	32.2%	4,091,110	3,379,810	711,300	21.0%
Range Extended BEV	119,984	62,846	57,138	90.9%	811,395	384,009	427,386	111.3%
PHEV	353,949	152,942	201,007	131.4%	2,150,471	1,135,779	1,014,692	89.3%
HEV	98,212	74,895	23,317	31.1%	684,799	653,921	30,878	4.7%
Gasoline	955,789	1,195,032	(239,243)	(20.0%)	8,122,790	9,635,763	(1,512,973)	(15.7%)
Diesel	1,623	1,247	376	30.2%	11,231	10,950	281	2.6%
Other	2,858	4,655	(1,797)	(38.6%)	26,998	39,915	(12,917)	(32.4%)
Total	2,165,308	1,970,451	194,857	9.9%	15,898,794	15,240,147	658,647	4.3%

Source: Bloomberg
*Prepared by SAF Group

Dan Tsubouchi 
SAF Source @Energy_Tidbits

Will values of China's homes stop going down?

"Transaction volume of new homes in China went up 0.9 percent year on year in October, **reversing a decline since June last year**" reports Xinhua.

If increased YoY volume leads to increased home values, it should change Chinese consumer sentiment.

See 🇸🇪 10/17 tweet, China new & used home values have declined MoM for >16 months.

#OOT

China's property market transactions up in October

Source: Xinhua Editor: huaxia 2024-11-01 15:53:16

BEIJING, Nov. 1 (Xinhua) -- Transaction volume of new homes in China went up 0.9 percent year on year in October, reversing a decline since June last year, as the government introduced a series of measures to prop up the market, the latest figures showed on Friday.

Second-hand home transactions rose for the seventh month by 8.9 percent year on year in October, the Ministry of Housing and Urban-Rural Development said.

On a monthly basis, transaction volume of new homes increased 6.7 percent and that of second-hand homes moved up 4.5 percent in October.

Dubbed "Golden September and Silver October" by the property market, the two months are considered a peak sales season in the second half of the year. Typically, September is the stronger of