

Table A14. World carbon dioxide emissions from power generation by region and fossil fuel type, High Oil Price case

million metric tons of carbon dioxide

Region and fuel	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Americas								
Liquid fuels	92	109	55	23	11	4	4	-10.7%
Natural gas	852	772	784	736	726	705	711	-0.6%
Coal	907	740	267	368	405	419	381	-3.1%
Total	1,851	1,622	1,106	1,128	1,141	1,128	1,095	-1.9%
United States								
Liquid fuels	8	8	5	5	5	3	3	-3.2%
Natural gas	646	554	570	527	512	490	494	-0.9%
Coal	842	688	202	266	259	254	214	-4.8%
Total	1,496	1,250	777	798	776	747	712	-2.6%
Canada								
Liquid fuels	2	2	0	0	0	0	0	-10.3%
Natural gas	27	28	5	2	2	2	2	-8.4%
Coal	33	16	0	0	0	0	0	-100.0%
Total	61	47	5	2	2	2	2	-10.9%
Mexico								
Liquid fuels	28	36	19	9	3	0	0	-18.4%
Natural gas	70	73	79	84	96	100	102	1.4%
Coal	7	8	19	21	21	21	21	4.1%
Total	105	117	117	114	120	121	124	0.6%
Brazil								
Liquid fuels	10	14	6	1	0	0	0	-14.9%
Natural gas	28	36	46	37	29	27	25	-0.4%
Coal	9	10	8	9	13	9	9	0.1%
Total	47	60	60	46	42	36	34	-1.2%
Other Americas								
Liquid fuels	44	50	25	8	3	0	0	-17.5%
Natural gas	81	80	84	86	86	86	86	0.3%
Coal	17	19	38	73	111	135	136	7.7%
Total	142	149	147	167	200	222	223	1.6%
Europe and Eurasia								
Liquid fuels	58	80	81	56	43	41	40	-1.3%
Natural gas	701	707	751	772	821	870	932	1.0%
Coal	848	813	661	649	629	715	713	-0.6%
Total	1,607	1,600	1,493	1,477	1,493	1,626	1,685	0.2%
Western Europe								
Liquid fuels	40	57	62	47	35	35	34	-0.5%
Natural gas	263	297	365	352	345	340	341	0.9%
Coal	481	452	321	326	307	393	392	-0.7%
Total	784	806	748	725	688	769	767	-0.1%
Russia								
Liquid fuels	13	19	16	5	4	3	2	-6.8%
Natural gas	315	297	291	324	351	374	398	0.8%
Coal	179	193	166	143	142	142	142	-0.8%
Total	508	508	473	473	497	519	541	0.2%
Eastern Europe and Eurasia								
Liquid fuels	4	4	3	3	3	3	3	-0.8%
Natural gas	123	113	95	96	125	155	194	1.6%
Coal	187	168	174	180	180	180	180	-0.1%
Total	315	285	273	279	308	338	377	0.6%
Asia Pacific								
Liquid fuels	49	55	32	18	10	7	6	-7.5%
Natural gas	618	656	645	630	657	756	813	1.0%
Coal	7,386	7,259	7,981	8,385	8,428	8,266	8,299	0.4%
Total	8,052	7,969	8,658	9,033	9,096	9,029	9,118	0.4%
Japan								
Liquid fuels	9	13	9	5	3	3	3	-4.1%
Natural gas	145	145	134	117	107	110	107	-1.1%
Coal	251	249	147	162	162	162	162	-1.6%
Total	406	406	290	284	272	275	272	-1.4%

South Korea								
Liquid fuels	2	3	4	3	2	2	2	0.5%
Natural gas	69	65	60	55	51	50	50	-1.1%
Coal	130	124	135	143	147	147	147	0.4%
Total	202	192	198	200	200	200	200	0.0%
Australia and New Zealand								
Liquid fuels	1	1	0	0	0	0	0	-7.3%
Natural gas	22	21	23	18	14	15	15	-1.4%
Coal	123	109	127	138	138	138	137	0.4%
Total	145	131	150	157	153	153	152	0.2%
China								
Liquid fuels	2	2	1	0	0	0	0	-11.1%
Natural gas	121	147	152	192	256	352	411	4.5%
Coal	5,206	5,065	5,251	5,388	5,197	4,887	4,913	-0.2%
Total	5,328	5,214	5,404	5,580	5,453	5,240	5,324	0.0%
India								
Liquid fuels	3	2	1	0	0	0	0	-14.5%
Natural gas	24	24	27	29	29	29	29	0.7%
Coal	1,077	1,138	1,492	1,536	1,590	1,538	1,419	1.0%
Total	1,104	1,164	1,520	1,565	1,619	1,568	1,448	1.0%
Other Asia Pacific								
Liquid fuels	33	34	18	10	5	2	0	-14.5%
Natural gas	237	254	249	219	200	200	201	-0.6%
Coal	598	574	830	1,018	1,194	1,392	1,521	3.4%
Total	867	862	1,097	1,247	1,399	1,594	1,722	2.5%
Africa and Middle East								
Liquid fuels	205	230	119	50	21	8	2	-15.2%
Natural gas	587	612	650	711	755	798	841	1.3%
Coal	212	189	209	241	263	251	270	0.9%
Total	1,004	1,031	978	1,002	1,039	1,056	1,113	0.4%
Africa								
Liquid fuels	31	31	12	2	0	0	0	-16.5%
Natural gas	166	167	172	188	206	221	241	1.3%
Coal	212	189	209	241	263	250	269	0.9%
Total	409	386	392	432	469	472	511	0.8%
Middle East								
Liquid fuels	174	200	107	48	21	8	2	-15.1%
Natural gas	421	445	478	523	549	576	600	1.3%
Coal	0	0	0	0	0	0	0	-5.9%
Total	595	645	586	571	570	584	602	0.0%
World								
Liquid fuels	404	475	288	147	84	60	51	-7.1%
Natural gas	2,757	2,747	2,829	2,850	2,959	3,130	3,297	0.6%
Coal	9,353	9,001	9,118	9,644	9,725	9,650	9,663	0.1%
Total	12,514	12,222	12,235	12,640	12,768	12,840	13,010	0.1%

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run hp_230822.081357 and Annual Energy Outlook 2023 (March 2023), www.eia.gov/aeo

Note: Totals may not equal sum of components due to independent rounding. Net carbon dioxide emissions represent gross emissions less CCS (carbon captured and sequestered) emissions from CCS capable units during the power generation.