

Table J1. World carbon dioxide intensity of energy use by region, Reference case

metric tons per billion British thermal units

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
OECD								
OECD Americas	47.8	46.3	45.6	44.7	44.3	43.9	43.5	-0.3
United States	49.0	46.9	46.4	45.4	45.0	44.6	44.1	-0.3
Canada	37.3	38.6	37.1	36.7	37.1	37.3	37.4	0.0
Mexico and other OECD Americas	52.1	52.1	50.2	49.2	48.4	47.2	45.9	-0.4
OECD Europe	46.3	45.5	43.3	41.6	40.6	39.7	39.0	-0.6
OECD Asia	60.6	57.4	55.9	54.9	53.8	51.7	50.1	-0.6
Japan	59.5	59.2	57.5	57.1	56.1	53.2	50.2	-0.6
South Korea	63.2	58.2	57.9	57.0	56.5	55.3	55.0	-0.5
Australia and New Zealand	59.0	51.8	48.8	47.0	45.3	43.8	43.0	-1.1
Total OECD	49.4	47.8	46.5	45.3	44.6	43.7	43.0	-0.5
Non-OECD								
Non-OECD Europe and Eurasia	55.7	54.8	54.2	54.1	53.7	53.4	53.2	-0.2
Russia	54.0	53.7	53.5	53.5	53.2	53.0	52.8	-0.1
Other Europe and Eurasia	58.8	56.9	55.8	55.2	54.6	54.2	53.9	-0.3
Non-OECD Asia	67.4	63.5	59.9	57.8	55.9	54.3	52.6	-0.8
China	69.8	65.4	61.6	59.2	56.8	54.6	53.3	-0.9
India	67.8	61.8	56.2	54.9	53.8	52.2	48.5	-1.1
Other Asia	58.6	58.9	58.3	57.2	56.0	56.4	56.5	-0.1
Middle East	57.7	56.4	54.6	52.3	50.8	50.5	50.3	-0.5
Africa	54.7	53.4	51.5	50.3	48.2	46.0	44.5	-0.7
Non-OECD Americas	40.0	41.1	39.7	39.2	38.9	38.6	38.1	-0.2
Brazil	33.8	35.5	34.2	33.1	32.0	31.9	31.6	-0.2
Other Non-OECD Americas	47.3	47.8	46.2	46.1	46.4	45.7	44.5	-0.2
Total Non-OECD	62.0	59.4	56.7	55.0	53.4	52.2	50.8	-0.7
Total World	57.1	55.1	53.1	51.7	50.5	49.5	48.3	-0.6

Sources: Table by the U.S. Energy Information Administration (EIA), based on the Oxford Global Economic Model, (February 2021), www.oxfordeconomics.com (subscription site); EIA, World Energy Projection System (2021), run r_210719.163829; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

* Totals may not equal sum of components due to independent rounding.

Table J2. World energy intensity by region, Reference case

thousand British thermal units per 2015 dollar of GDP (PPP)

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
OECD								
OECD Americas	4.9	4.5	4.1	3.8	3.6	3.4	3.2	-1.4
United States	4.9	4.4	4.0	3.7	3.4	3.2	3.0	-1.6
Canada	8.9	8.2	7.8	7.5	7.2	6.9	6.6	-1.0
Mexico and other OECD Americas	3.2	3.1	3.0	2.9	2.8	2.8	2.8	-0.5
OECD Europe	3.4	3.1	3.0	2.9	2.8	2.7	2.6	-0.9
OECD Asia	4.3	4.2	4.0	3.9	3.9	3.8	3.7	-0.5
Japan	3.6	3.4	3.3	3.2	3.2	3.1	3.0	-0.6
South Korea	5.6	5.5	5.3	5.2	5.1	5.0	4.9	-0.4
Australia and New Zealand	5.0	4.8	4.5	4.3	4.1	3.9	3.8	-0.9
Total OECD	4.2	3.9	3.7	3.5	3.3	3.2	3.0	-1.1
Non-OECD								
Non-OECD Europe and Eurasia	8.1	7.2	6.7	6.2	5.8	5.4	5.0	-1.6
Russia	9.6	9.1	8.8	8.4	8.2	7.9	7.7	-0.7
Other Europe and Eurasia	6.3	5.2	4.6	4.1	3.7	3.4	3.1	-2.3
Non-OECD Asia	5.2	4.5	3.9	3.5	3.3	3.0	2.8	-2.0
China	6.6	5.4	4.6	4.1	3.7	3.4	3.1	-2.5
India	3.6	3.7	3.4	3.3	3.1	3.0	2.9	-0.8
Other Asia	3.6	3.3	3.1	2.8	2.7	2.5	2.3	-1.4
Middle East	7.5	7.2	6.6	6.2	6.0	5.7	5.3	-1.1
Africa	3.6	3.5	3.3	3.1	3.0	2.8	2.8	-0.9
Non-OECD Americas	5.0	4.7	4.4	4.3	4.1	4.0	3.9	-0.8
Brazil	5.1	5.1	4.9	4.9	4.9	4.9	4.9	-0.1
Other Non-OECD Americas	5.0	4.4	4.0	3.7	3.6	3.4	3.3	-1.4
Total Non-OECD	5.5	4.9	4.3	3.9	3.6	3.4	3.2	-1.8
Total World	4.9	4.4	4.0	3.7	3.5	3.3	3.1	-1.5

Sources: Table by the U.S. Energy Information Administration (EIA), based on the Oxford Global Economic Model, (February 2021), www.oxfordeconomics.com (subscription site); EIA, World Energy Projection System (2021), run r_210719.163829; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

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Table J3. Gross domestic product per capita expressed in purchasing power parity, Reference case

2015 dollars per person

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
OECD								
OECD Americas	\$41,990	\$47,342	\$50,369	\$54,254	\$58,165	\$62,791	\$67,560	1.6
United States	\$57,548	\$64,877	\$69,113	\$74,641	\$80,046	\$86,540	\$93,119	1.6
Canada	\$43,109	\$47,461	\$49,147	\$51,378	\$53,784	\$56,486	\$59,274	1.1
Mexico and other OECD Americas	\$16,328	\$18,722	\$20,120	\$21,713	\$23,452	\$25,250	\$27,095	1.7
OECD Europe	\$38,615	\$44,008	\$46,459	\$48,920	\$51,623	\$54,704	\$58,188	1.4
OECD Asia	\$41,101	\$45,767	\$48,587	\$50,804	\$52,961	\$55,380	\$58,059	1.2
Japan	\$39,875	\$44,110	\$46,217	\$47,782	\$49,480	\$51,355	\$53,548	1.0
South Korea	\$41,659	\$47,464	\$51,491	\$54,259	\$56,781	\$60,104	\$63,770	1.4
Australia and New Zealand	\$45,217	\$49,427	\$52,594	\$55,723	\$58,293	\$60,650	\$63,044	1.1
Total OECD	\$40,401	\$45,682	\$48,452	\$51,516	\$54,701	\$58,414	\$62,413	1.5
Non-OECD								
Non-OECD Europe and Eurasia	\$18,965	\$22,101	\$24,625	\$27,902	\$31,238	\$34,649	\$38,293	2.4
Russia	\$24,672	\$27,604	\$29,809	\$32,955	\$35,745	\$38,203	\$40,471	1.7
Other Europe and Eurasia	\$14,721	\$18,078	\$20,914	\$24,375	\$28,165	\$32,272	\$36,855	3.1
Non-OECD Asia	\$11,143	\$14,333	\$17,520	\$20,839	\$24,241	\$27,910	\$31,629	3.5
China	\$16,440	\$21,362	\$25,831	\$30,435	\$35,039	\$39,983	\$44,847	3.4
India	\$6,249	\$8,632	\$11,568	\$14,699	\$17,956	\$21,531	\$25,264	4.8
Other Asia	\$10,393	\$12,686	\$14,998	\$17,458	\$20,122	\$22,987	\$25,976	3.1
Middle East	\$16,258	\$17,611	\$18,457	\$19,205	\$19,964	\$20,697	\$21,446	0.9
Africa	\$4,818	\$5,198	\$5,534	\$5,862	\$6,201	\$6,551	\$6,928	1.2
Non-OECD Americas	\$12,106	\$13,805	\$15,111	\$16,299	\$17,468	\$18,809	\$20,264	1.7
Brazil	\$13,687	\$15,069	\$16,065	\$16,935	\$17,546	\$18,047	\$18,486	1.0
Other Non-OECD Americas	\$10,700	\$12,710	\$14,306	\$15,775	\$17,406	\$19,408	\$21,626	2.4
Total Non-OECD	\$10,568	\$12,856	\$14,961	\$17,075	\$19,144	\$21,279	\$23,359	2.7
Total World	\$15,854	\$18,503	\$20,572	\$22,707	\$24,825	\$27,082	\$29,337	2.1

Sources: Table by the U.S. Energy Information Administration (EIA), based on the Oxford Global Economic Model, (February 2021), www.oxfordeconomics.com (subscription site); EIA, World Energy Projection System (2021), run r_210719.163829; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

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Table J4. World population by region, Reference case

million persons

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
OECD								
OECD Americas	570	591	611	629	644	657	669	0.5
United States	330	342	353	362	371	379	386	0.5
Canada	38	40	42	44	46	47	49	0.8
Mexico and other OECD Americas	202	210	217	223	228	232	234	0.5
OECD Europe	590	597	602	607	611	613	613	0.1
OECD Asia	208	208	207	205	202	199	195	-0.2
Japan	126	124	121	117	114	110	106	-0.6
South Korea	51	51	51	51	50	48	47	-0.3
Australia and New Zealand	31	32	34	37	39	41	42	1.1
Total OECD	1,369	1,396	1,420	1,441	1,457	1,469	1,478	0.3
Non-OECD								
Non-OECD Europe and Eurasia	342	344	343	343	343	342	341	0.0
Russia	146	145	143	141	139	137	136	-0.2
Other Europe and Eurasia	196	199	200	202	204	205	206	0.2
Non-OECD Asia	3,972	4,120	4,242	4,339	4,409	4,453	4,473	0.4
China	1,440	1,458	1,464	1,461	1,449	1,429	1,402	-0.1
India	1,382	1,447	1,505	1,555	1,594	1,621	1,640	0.6
Other Asia	1,151	1,215	1,273	1,323	1,367	1,403	1,432	0.7
Middle East	287	316	342	364	385	404	422	1.3
Africa	1,302	1,465	1,638	1,822	2,014	2,212	2,413	2.1
Non-OECD Americas	452	472	489	503	514	522	528	0.5
Brazil	213	219	224	227	229	230	229	0.2
Other Non-OECD Americas	239	253	265	276	285	292	299	0.7
Total Non-OECD	6,354	6,716	7,055	7,371	7,665	7,934	8,177	0.8
Total World	7,723	8,112	8,475	8,812	9,122	9,403	9,655	0.7

Sources: Table by the U.S. Energy Information Administration (EIA), based on the Oxford Global Economic Model, (February 2021), www.oxfordeconomics.com (subscription site); EIA, World Energy Projection System (2021), run r_210719.163829; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

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