

Table J1. World carbon dioxide intensity of energy use by region, Low Zero-carbon Technology Cost case

metric tons per billion British thermal units

Region	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Americas	45.8	44.3	39.5	37.5	37.0	35.9	34.5	-1.0%
United States	49.0	46.7	40.0	37.3	36.7	35.4	33.2	-1.4%
Canada	37.4	36.2	33.8	32.3	31.7	31.3	30.9	-0.7%
Mexico	54.1	54.6	52.8	51.6	51.3	50.3	49.4	-0.3%
Brazil	29.4	30.0	29.6	28.3	27.8	27.1	26.7	-0.3%
Other Americas	45.4	45.6	44.8	44.6	44.2	43.3	42.5	-0.2%
Europe and Eurasia	48.9	47.7	46.5	45.4	44.5	44.3	44.1	-0.4%
Western Europe	45.2	43.7	42.1	40.5	38.9	38.5	38.1	-0.6%
Russia	54.1	54.1	53.6	52.8	53.0	53.0	53.0	-0.1%
Eastern Europe and Eurasia	60.3	57.6	57.2	57.4	57.6	57.2	56.2	-0.3%
Asia Pacific	63.9	61.8	60.4	57.9	54.6	51.3	47.8	-1.0%
Japan	55.9	54.9	50.5	49.6	47.8	46.5	45.7	-0.7%
South Korea	49.3	48.1	47.0	46.0	45.1	44.4	43.7	-0.4%
Australia and New Zealand	56.4	54.8	54.6	53.0	51.7	49.0	48.1	-0.6%
China	66.7	64.3	62.4	60.3	56.6	52.7	47.8	-1.2%
India	63.9	61.7	60.5	54.6	50.9	46.5	43.8	-1.3%
Other Asia Pacific	62.0	60.4	60.6	59.8	57.3	56.5	54.6	-0.5%
Africa and Middle East	57.7	56.2	54.4	53.4	53.0	51.6	50.0	-0.5%
Africa	54.7	52.9	50.7	49.5	49.5	47.6	45.9	-0.6%
Middle East	59.5	58.3	57.0	56.3	55.8	55.1	53.8	-0.4%
World	55.9	54.4	52.4	50.6	48.8	46.8	44.6	-0.8%

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run lz_230821.151531 and Annual Energy Outlook 2023 (March 2023), www.eia.gov/aeo; Oxford Economics, Global Economic Model (February 2023), www.oxfordeconomics.com (subscription site)

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