

Table 375. Emissions of Greenhouse Gases by Type and Source: 1990 to 2009

[In millions of metric tons (6,133.2 represents 6,133,200,000). Metric ton = 2,204.6 lbs. Emission estimates were mandated by Congress through Section 1605(a) of the Energy Policy Act of 1992 (Title XVI). Data shown below, by type and source, are measured in terms of their carbon dioxide equivalent]

Type and source	1990	2000	2004	2005	2006	2007	2008	2009 ¹
Total emissions	6,133.2	6,935.3	7,071.9	7,109.4	7,027.4	7,150.4	6,983.1	6,575.5
Carbon dioxide, total	5,040.9	5,900.3	6,031.3	6,055.2	5,961.6	6,059.5	5,865.5	5,446.8
From energy use by sector								
Residential	963.4	1,185.1	1,227.8	1,261.5	1,192.0	1,242.0	1,229.0	1,162.2
Commercial	792.6	1,022.0	1,053.5	1,069.0	1,043.4	1,078.6	1,073.5	1,003.6
Industrial	1,695.1	1,788.1	1,731.1	1,675.2	1,661.1	1,661.6	1,597.6	1,405.4
Transportation	1,587.7	1,872.0	1,962.3	1,990.7	2,021.9	2,039.6	1,937.9	1,854.5
Adjustments to energy ²	-82.9	-64.7	-45.3	-44.6	-62.7	-67.5	-76.1	-66.0
Adjusted energy subtotal	4,955.9	5,802.6	5,929.3	5,951.8	5,855.7	5,954.2	5,761.9	5,359.6
Other sources	85.1	97.8	102.0	103.5	105.9	105.3	103.6	87.3
Methane	768.8	663.1	661.6	669.2	678.5	690.9	724.2	730.9
Energy sources	293.1	281.7	280.0	277.0	279.8	285.8	299.3	303.0
Agricultural sources	190.6	201.2	204.0	209.9	211.8	212.3	219.7	215.9
Waste management	280.6	174.6	172.0	177.3	181.9	187.6	200.6	207.9
Industrial processes	4.5	5.6	5.6	5.0	5.1	5.1	4.6	4.2
Nitrous oxide	221.4	217.8	222.0	223.6	223.7	228.6	223.5	219.6
Agricultural sources	148.7	144.3	154.1	156.9	157.8	162.1	161.1	161.0
Energy use	40.2	52.1	49.7	48.2	47.2	47.3	45.1	42.5
Industrial processes	28.5	16.7	13.3	13.6	13.6	14.1	12.1	10.8
Waste management	4.0	4.7	4.9	5.0	5.1	5.2	5.2	5.3
High-GWP gases ³	102.1	154.0	157.0	161.3	163.6	171.4	169.9	178.2

¹ 2009 preliminary data. ² Carbon dioxide emissions from U.S. Territories are added to the U.S. total, and carbon dioxide emissions from fuels used for international transport (both ocean-going vessels and airplanes) are subtracted to derive total U.S. greenhouse gas emissions. ³ High global warming potential gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6).

Source: U.S. Energy Information Administration, Environment, *Greenhouse Gas Emissions in the United States, 2009*, Series DOE/EIA-0573 (2009), annual. See also <http://www.eia.gov/environment/emissions/ghg_report/>.

Table 376. Carbon Dioxide Emissions by Sector and Source: 1990 to 2009

[In million metric tons (5,040.9 represents 5,040,900,000), except as noted. Data below measured in terms of carbon dioxide equivalent. Data have been revised for years shown]

Sector	1990	2000	2004	2005	2006	2007	2008	2009 ¹
Total ²	5,040.9	5,900.3	6,031.3	6,055.2	5,961.6	6,059.5	5,865.5	5,446.8
Total ³	5,038.7	5,867.2	5,974.7	5,996.4	5,918.3	6,021.8	5,838.0	5,425.6
Petroleum	2,186.6	2,460.6	2,608.6	2,627.6	2,602.5	2,603.2	2,443.5	2,318.8
Coal	1,821.4	2,155.5	2,160.2	2,181.9	2,146.9	2,172.2	2,139.4	1,876.8
Natural gas	1,024.8	1,240.6	1,194.4	1,175.2	1,157.0	1,234.7	1,243.0	1,218.0
Residential	963.4	1,185.1	1,227.8	1,261.5	1,192.0	1,242.0	1,229.0	1,162.2
Petroleum	98.4	108.0	106.0	100.9	85.0	86.8	84.9	82.9
Coal	3.0	1.1	1.1	0.8	0.6	0.7	0.7	0.6
Natural gas	238.3	270.8	264.3	262.4	237.5	257.3	265.8	259.1
Electricity ⁴	623.7	805.2	856.4	897.3	868.9	897.2	877.5	819.5
Commercial	792.6	1,022.0	1,053.5	1,069.0	1,043.4	1,078.6	1,073.5	1,003.6
Petroleum ⁵	72.5	57.9	58.3	54.9	47.6	46.6	46.1	43.6
Coal	12.0	8.8	9.8	9.3	6.2	6.7	6.5	5.8
Natural gas	142.3	172.5	169.8	163.1	154.0	164.2	171.3	169.1
Electricity ⁴	565.9	782.8	815.6	841.8	835.6	861.1	849.5	785.1
Industrial ⁶	1,695.1	1,788.1	1,731.1	1,675.2	1,661.1	1,661.6	1,597.6	1,405.4
Petroleum	365.5	370.4	418.6	416.8	430.4	415.4	376.2	343.1
Coal	258.4	210.8	190.5	182.9	179.4	174.6	168.2	130.9
Natural gas	432.4	480.8	431.5	397.5	394.2	406.3	406.9	383.1
Electricity ⁴	638.3	718.6	674.7	672.8	650.2	662.3	641.8	551
Transportation ⁶	1,587.7	1,872.0	1,962.3	1,990.7	2,021.9	2,039.6	1,937.9	1,854.5
Petroleum	1,548.4	1,832.8	1,925.6	1,952.7	1,984.0	1,999.0	1,896.3	1,815.7
Natural gas	36.1	35.7	31.9	33.1	33.2	35.3	36.7	34.1
Electricity ⁴	3.2	3.6	4.8	5.0	4.7	5.3	4.9	4.7
Electric power sector ⁷	1,831.0	2,310.2	2,351.5	2,416.9	2,359.5	2,425.9	2,373.7	2,160.3
Petroleum	101.8	91.5	100.1	102.3	55.6	55.3	40.0	33.6
Coal	1,547.6	1,927.4	1,943.1	1,983.8	1,953.7	1,987.3	1,959.4	1,742.2
Natural gas	175.5	280.9	296.8	319.1	338.2	371.7	362.3	372.6

¹ Preliminary. ² Emissions from nonfuel uses, adjustments to energy, and other sources are included. ³ Emissions from renewables are included in total. ⁴ Share of total electric power sector carbon dioxide emissions weighted by sales to this sector. ⁵ Includes small amounts of petroleum coke. ⁶ Includes emissions from nonfuel uses of fossil fuels. ⁷ Emissions from the electric power sector are apportioned to each end-use sector according to their share of electricity sales.

Source: U.S. Energy Information Administration, Environment, *Greenhouse Gas Emissions in the United States, 2009*, Series DOE/EIA-0573 (2009), annual. See also <http://www.eia.gov/environment/emissions/ghg_report/>.