

**Table 371. Emissions of Greenhouse Gases by Type and Source: 1990 to 2008**

[In millions of metric tons (6,187.4 represents 6,187,400,000). 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. Data have been revised for years shown]

Type and source	1990	1995	2000	2004	2005	2006	2007	2008 <sup>1</sup>
<b>CARBON DIOXIDE EQUIVALENT</b>								
<b>Total emissions</b> .....	<b>6,187.4</b>	<b>6,522.3</b>	<b>7,009.8</b>	<b>7,152.1</b>	<b>7,182.6</b>	<b>7,100.8</b>	<b>7,209.8</b>	<b>7,052.6</b>
Carbon dioxide, total .....	5,022.3	5,341.5	5,886.4	6,009.9	6,029.0	5,928.7	6,017.0	5,839.3
From energy use by sector								
Residential .....	958.6	1,035.5	1,179.8	1,221.9	1,254.5	1,186.7	1,235.1	1,220.1
Commercial .....	785.1	845.1	1,013.1	1,043.3	1,059.6	1,034.9	1,070.3	1,075.1
Industrial .....	1,689.5	1,739.5	1,784.7	1,728.5	1,671.4	1,657.8	1,655.2	1,589.1
Transportation .....	1,586.9	1,682.2	1,872.7	1,958.9	1,988.7	2,014.3	2,025.7	1,930.1
Adjustments to energy <sup>2</sup> .....	-82.9	-63.1	-61.7	-44.6	-48.8	-70.9	-74.9	-79.0
Adjusted energy subtotal .....	4,937.2	5,239.1	5,788.7	5,907.9	5,925.5	5,822.8	5,911.5	5,735.5
Other sources .....	85.1	102.3	97.8	102.0	103.5	106.0	105.6	103.8
Methane .....	783.5	756.2	683.0	686.6	691.8	706.3	722.7	737.4
Energy sources .....	294.4	284.8	277.6	278.9	274.2	276.7	282.8	295.7
Agricultural sources .....	201.5	219.1	211.1	212.5	218.8	221.8	222.6	225.0
Waste management .....	283.0	246.8	188.6	189.6	193.7	202.6	212.1	212.1
Industrial processes .....	4.6	5.6	5.7	5.6	5.1	5.2	5.2	4.7
Nitrous oxide .....	279.3	305.6	289.8	302.2	304.0	305.2	299.8	300.3
Agricultural sources .....	196.4	199.2	199.1	213.9	217.9	220.8	213.9	217.9
Energy use .....	51.6	70.4	71.0	71.4	68.8	67.1	66.8	63.9
Industrial processes .....	22.8	33.1	16.7	13.7	14.0	14.0	15.9	15.1
Waste management .....	2.6	2.8	3.1	3.2	3.3	3.3	3.4	3.4
High-GWP gases <sup>3</sup> .....	102.3	119.0	150.5	153.5	157.8	160.5	170.3	175.6

<sup>1</sup> 2008 preliminary data. <sup>2</sup> Carbon dioxide (CO<sub>2</sub>) emissions from U.S. Territories are added to the U.S. total, and CO<sub>2</sub> emissions from fuels used for international transport (both ocean-going vessels and airplanes) are subtracted to derive total U.S. greenhouse gas emissions. <sup>3</sup> High global warming potential gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

Source: U.S. Energy Information Administration, *Greenhouse Gas Emissions in the United States, 2008*, Series DOE/EIA-0573 (2008), annual. See also <<http://www.eia.doe.gov/oiat/1605/ggrpt/index.html>>.

**Table 372. Carbon Dioxide Emissions by Sector and Source: 1990 to 2008**

[In million metric tons (5,022.3 represents 5,022,300,000), except as noted. Data below measured in terms of carbon dioxide equivalent. Data have been revised for years shown]

Sector	1990	2000	2003	2004	2005	2006	2007	2008 <sup>1</sup>
<b>Total</b> <sup>2</sup> .....	<b>5,022.3</b>	<b>5,886.4</b>	<b>5,908.8</b>	<b>6,009.9</b>	<b>6,029.0</b>	<b>5,928.7</b>	<b>6,017.0</b>	<b>5,839.3</b>
Petroleum <sup>3</sup> .....	5,020.1	5,850.4	5,838.6	5,952.5	5,974.3	5,893.7	5,986.4	5,814.4
Natural gas .....	2,185.9	2,461.3	2,516.7	2,605.4	2,625.7	2,594.9	2,588.6	2,436.0
Coal .....	1,024.7	1,240.6	1,194.6	1,195.4	1,176.1	1,157.1	1,231.7	1,241.8
<b>Residential</b> .....	<b>958.6</b>	<b>1,179.8</b>	<b>1,224.9</b>	<b>1,221.9</b>	<b>1,254.5</b>	<b>1,186.7</b>	<b>1,235.1</b>	<b>1,220.1</b>
Petroleum .....	99.2	108.6	106.8	107.2	101.1	85.5	86.7	80.1
Natural gas .....	238.3	270.8	277.5	264.5	262.7	237.5	256.8	265.0
Coal .....	3.0	1.1	1.2	1.1	0.8	0.6	0.7	0.7
Electricity <sup>4</sup> .....	618.2	799.3	839.5	849.1	889.9	863.0	890.9	874.4
<b>Commercial</b> .....	<b>785.1</b>	<b>1,013.1</b>	<b>1,026.1</b>	<b>1,043.3</b>	<b>1,059.6</b>	<b>1,034.9</b>	<b>1,070.3</b>	<b>1,075.1</b>
Petroleum <sup>5</sup> .....	70.1	54.7	55.8	54.9	52.4	44.8	44.3	41.4
Natural gas .....	142.3	172.5	173.7	170.0	163.2	154.0	164.2	169.9
Coal .....	11.8	8.8	7.8	9.8	9.2	6.2	6.7	6.4
Electricity <sup>4</sup> .....	560.8	777.2	788.7	808.6	834.8	830.0	855.2	857.3
<b>Industrial</b> .....	<b>1,689.5</b>	<b>1,784.7</b>	<b>1,690.3</b>	<b>1,728.5</b>	<b>1,671.4</b>	<b>1,657.8</b>	<b>1,655.2</b>	<b>1,589.1</b>
Petroleum .....	367.2	373.1	396.5	421.1	419.2	432.5	417.2	385.3
Natural gas .....	432.5	480.7	431.7	432.0	397.9	394.3	403.6	409.0
Coal .....	256.8	210.0	190.2	190.7	182.0	178.3	173.7	167.5
Electricity <sup>4</sup> .....	632.5	713.4	666.1	668.9	667.2	645.8	657.7	622.6
<b>Transportation</b> .....	<b>1,586.9</b>	<b>1,872.7</b>	<b>1,897.4</b>	<b>1,958.9</b>	<b>1,988.7</b>	<b>2,014.3</b>	<b>2,025.7</b>	<b>1,930.1</b>
Petroleum <sup>6</sup> .....	1,547.7	1,833.4	1,859.5	1,922.2	1,950.7	1,976.4	1,985.1	1,889.4
Natural gas .....	36.1	35.7	33.4	32.0	33.1	33.2	35.4	35.9
Electricity <sup>4</sup> .....	3.2	3.6	4.5	4.7	4.9	4.7	5.2	4.9
<b>Electric power sector</b> <sup>7</sup> .....	<b>1,814.6</b>	<b>2,293.5</b>	<b>2,298.8</b>	<b>2,331.3</b>	<b>2,396.8</b>	<b>2,343.5</b>	<b>2,409.1</b>	<b>2,359.1</b>
Petroleum .....	101.8	91.5	98.1	100.1	102.3	55.6	55.3	39.7
Natural gas .....	175.5	280.9	278.3	296.8	319.1	338.2	371.7	362.0
Coal .....	1,531.2	1,910.8	1,910.7	1,922.9	1,963.9	1,937.8	1,970.6	1,945.9

<sup>1</sup> Preliminary. <sup>2</sup> Includes other items, not shown separately. <sup>3</sup> This includes carbon dioxide from international bunker fuels, both civilian and military, which are excluded from the accounting of carbon dioxide emissions under the United Nations convention.

<sup>4</sup> Share of total electric power sector carbon dioxide emissions weighted by sales to this sector. <sup>5</sup> Includes small amounts of petroleum coke. <sup>6</sup> Includes lease and plant fuel. <sup>7</sup> Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Beginning 2005, also includes emissions from municipal solid waste and geothermal electricity generation. Emissions from the electric power sector are apportioned to each end-use sector according to their share of electricity sales.

Source: "State Energy Data Report"; 1990 to 2000, "Emissions of Greenhouse Gases in the U.S., 2006"; and after, *Annual Energy Outlook*. See also <<http://www.eia.doe.gov>>.