

**Table 11.1 Emissions of Greenhouse Gases, 1990-2009**

Year	Greenhouse Gases							Greenhouse Gases, Based on Global Warming Potential <sup>1</sup>					
	Carbon Dioxide <sup>2,3</sup>				Methane	Nitrous Oxide	HFCs PFCs SF <sub>6</sub>	Carbon Dioxide <sup>2,3</sup>	Methane	Nitrous Oxide	HFCs PFCs SF <sub>6</sub>	Total	
	Energy Related <sup>4</sup>	U.S. Territories <sup>5</sup>	Bunker Fuels <sup>6</sup>	Other Sources <sup>7</sup>									Total
Million Metric Tons of Gas							Million Metric Tons Carbon Dioxide Equivalent <sup>2</sup>						
1990	R5,039	32	-114	85	R5,041	R30.8	R0.7	--	R5,041	R769	R221	102	R6,133
1991	R4,996	36	-121	86	R4,997	R30.8	R.7	--	R4,997	R770	R223	93	R6,083
1992	R5,093	36	-111	88	R5,106	R30.9	R.8	--	R5,106	R772	R228	R97	R6,204
1993	R5,185	38	R-101	94	R5,217	R29.8	R.8	--	R5,217	R744	R229	97	R6,287
1994	R5,258	41	-99	97	R5,297	R29.8	R.8	--	R5,297	R745	R241	100	R6,384
1995	R5,314	39	-102	102	R5,353	R29.3	R.8	--	R5,353	R733	R236	119	R6,442
1996	R5,501	38	-103	104	R5,540	R28.9	R.8	--	R5,540	R722	R238	130	R6,630
1997	R5,575	39	-111	104	R5,608	R28.3	R.8	--	R5,608	R706	R224	R138	R6,676
1998	R5,622	41	-116	96	R5,644	R27.5	R.7	--	R5,644	R688	R222	R154	R6,708
1999	R5,682	41	R-111	97	R5,709	R26.8	R.7	--	R5,709	R669	R220	R152	R6,750
2000	R5,867	43	R-107	98	R5,900	R26.5	R.7	--	R5,900	R663	R218	R154	R6,935
2001	R5,759	54	R-103	97	R5,808	R26.0	R.7	--	R5,808	R649	R211	R141	R6,809
2002	R5,809	53	R-93	98	R5,867	R26.0	R.7	--	R5,867	R651	R210	R152	R6,880
2003	R5,857	57	R-90	99	R5,923	R26.4	R.7	--	R5,923	R661	R212	R145	R6,941
2004	R5,975	61	R-106	102	R6,031	R26.5	R.7	--	R6,031	R662	R222	R157	R7,072
2005	R5,996	58	R-103	103	R6,055	R26.8	R.8	--	R6,055	R669	R224	R161	R7,109
2006	R5,918	R60	R-122	106	R5,962	R27.1	R.8	--	R5,962	R679	R224	R164	R7,027
2007	R6,022	R57	R-125	R105	R6,060	R27.6	R.8	--	R6,060	R691	R229	R171	R7,150
2008	R5,838	R50	R-126	104	R5,866	R29.0	R.7	--	R5,866	R724	R223	R170	R6,983
2009	5,425	47	-113	87	5,446	29.2	.7	--	5,446	731	220	178	6,575

<sup>1</sup> Emissions of greenhouse gases are weighted based upon their relative global warming potential (GWP), with carbon dioxide equal to a weight of one (see 100-year net global warming potentials at [http://www.eia.gov/environment/emissions/ghg\\_report/pdf/tbl5.pdf](http://www.eia.gov/environment/emissions/ghg_report/pdf/tbl5.pdf)). See "Global Warming Potential" in Glossary.

<sup>2</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>3</sup> Excludes carbon dioxide emissions from biomass energy consumption. See Note, "Accounting for Carbon Dioxide Emissions From Biomass Energy Combustion," at end of section.

<sup>4</sup> U.S. carbon dioxide emissions from: fossil fuel combustion; the nonfuel use of fossil fuels; and electric power sector use of geothermal energy and non-biomass waste. Geographic coverage is the 50 States and the District of Columbia.

<sup>5</sup> U.S. Territories' energy-related carbon dioxide emissions. Geographic coverage is American Samoa, Guam, Puerto Rico, U.S. Pacific Islands, U.S. Virgin Islands, and Wake Island. According to the "United Nations Framework on Climate Change" (UNFCCC), emissions from the U.S. Territories are included in the U.S. inventory.

<sup>6</sup> U.S. carbon dioxide emissions from bunker fuels (marine, aviation, and military). According to the UNFCCC, emissions from bunker fuels are excluded from the U.S. inventory.

<sup>7</sup> U.S. carbon dioxide emissions from: cement manufacture; limestone consumption; flaring of natural

gas at the wellhead, and carbon dioxide scrubbed from natural gas; soda ash manufacture and consumption; carbon dioxide manufacture; aluminum manufacture; shale oil production; and waste combustion in the commercial and industrial sectors.

R=Revised. -- =Not applicable because these gases cannot be summed in native units.

Notes: • HFCs = hydrofluorocarbons; PFCs = perfluorocarbons; and SF<sub>6</sub> = sulfur hexafluoride. • Emissions are from anthropogenic sources. "Anthropogenic" means produced as the result of human activities, including emissions from agricultural activity and domestic livestock. Emissions from natural sources, such as wetlands and wild animals, are not included. • Because of the continuing goal to improve estimation methods for greenhouse gases, data are frequently revised on an annual basis in keeping with the latest findings of the international scientific community. Revisions reflect updates to GWP estimates, as well as to energy consumption data and updated emission factors, where applicable. • Totals may not equal sum of components due to independent rounding.

Web Page: For related information, see <http://www.eia.gov/environment/>.

Sources: **Energy-Related Carbon Dioxide:** Table 11.2. **Total Carbon Dioxide (columns 5 and 9):** Calculated as the sum of columns 1-4. **Methane (column 6):** Table 11.4. **Nitrous Oxide (column 7):** Table 11.5. **Total Greenhouse Gases:** Calculated as the sum of columns 9-12. **All Other Data:** U.S. Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2009* (March 2011), Tables 1, 15, and 16.