

**Table 12.7c Emissions From Energy Consumption for Electricity Generation and Useful Thermal Output: Commercial and Industrial Sectors, 1989-2005** (Subset of Table 12.7a)

Year	Carbon Dioxide						Sulfur Dioxide					Nitrogen Oxides				
	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	MSW <sup>4</sup>	Geo-thermal <sup>5</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total	Coal <sup>1</sup>	Petroleum <sup>2</sup>	Natural Gas <sup>3</sup>	Other <sup>6</sup>	Total
	Million Metric Tons of Carbon Dioxide <sup>7</sup>						Thousand Short Tons of Sulfur Dioxide					Thousand Short Tons of Nitrogen Oxides				
<b>Commercial Sector<sup>8</sup></b>																
1989	R2.3	R0.6	R1.5	R0.8	—	R5.3	41	6	(s)	1	48	10	2	4	3	19
1990	R2.4	R.7	R2.3	R.9	—	6.3	43	5	(s)	1	49	11	1	6	4	23
1991	R2.6	R.5	R2.3	R1.0	—	R6.5	35	3	(s)	1	39	11	1	7	4	23
1992	2.5	R.5	R2.8	R1.2	—	R7.0	35	3	(s)	1	39	11	1	8	4	24
1993	3.0	R.6	R3.3	R1.3	—	R8.1	44	4	(s)	1	48	13	1	8	4	26
1994	2.9	R.6	R3.7	R1.3	—	R8.5	43	3	(s)	(s)	47	13	1	8	4	26
1995	3.1	R.5	R4.0	R1.4	—	R9.1	43	2	(s)	(s)	46	13	1	10	5	29
1996	3.6	R.5	R4.3	R2.0	—	R10.5	48	2	(s)	1	51	16	1	10	7	34
1997	3.8	.7	R4.6	R2.3	—	R11.4	62	4	(s)	3	69	17	1	11	9	37
1998	3.3	.8	R4.7	R2.1	—	R10.9	36	4	(s)	2	42	14	1	11	8	34
1999	3.4	.7	4.5	R2.0	—	R10.7	51	3	(s)	(s)	54	15	1	10	7	32
2000	3.6	.7	4.6	R1.7	—	R10.6	47	3	(s)	1	51	14	1	10	6	31
2001	3.3	.8	4.3	R1.4	—	R9.8	R48	R4	(s)	R2	R53	R14	R3	R21	R17	R55
2002	3.0	.6	4.0	1.5	—	9.1	R46	R3	(s)	R2	R50	R14	R3	R22	R14	R52
2003	3.9	.7	3.2	1.7	—	9.4	35	3	(s)	2	40	R10	R6	R18	R16	R50
2004	4.0	.9	3.9	1.9	—	10.7	R33	4	(s)	2	R39	R9	R8	R20	R18	R54
2005	4.0	.8	4.1	1.9	—	10.7	36	3	(s)	1	40	10	7	26	17	59
<b>Industrial Sector<sup>9</sup></b>																
1989	R50.4	R11.1	R47.0	R0.4	—	R108.9	679	186	(s)	35	901	241	24	110	69	444
1990	R55.2	R16.9	R54.1	R.7	—	R126.9	734	335	(s)	252	1,322	257	34	128	88	508
1991	R54.3	R15.5	R55.0	R.2	—	R125.0	681	256	(s)	254	1,191	237	30	119	73	459
1992	R57.1	R16.8	R57.3	R.3	—	R131.6	722	157	(s)	277	1,156	240	32	122	74	468
1993	R57.8	R17.0	R58.5	R.5	—	R133.8	739	124	(s)	283	1,147	241	32	122	77	472
1994	R59.5	R17.0	R61.1	R.6	—	R138.2	732	139	(s)	294	1,165	242	33	126	78	479
1995	R59.5	R15.3	R65.5	R.5	—	R140.8	713	146	(s)	291	1,150	243	30	142	81	496
1996	R59.7	R17.2	R67.9	R.7	—	R145.6	720	273	(s)	300	1,294	238	33	144	82	497
1997	R59.7	R17.5	R68.0	R.7	—	R145.9	753	253	(s)	247	1,253	238	35	150	79	502
1998	R58.3	R17.0	R72.5	R.5	—	R148.4	372	135	(s)	R141	648	225	32	157	75	490
1999	R58.4	R17.0	R75.7	R.5	—	R151.6	514	219	(s)	237	971	214	32	151	73	470
2000	R58.7	R15.4	R75.5	R.5	—	R150.1	520	167	(s)	239	927	208	24	164	69	465
2001	R54.1	R13.4	R71.4	R.6	—	R139.5	R640	R270	(s)	R285	R1,196	R227	R42	R206	R172	R648
2002	56.0	R11.6	67.1	.6	—	R135.3	R704	R243	(s)	R334	R1,282	R255	R39	R199	R188	R681
2003	51.8	R13.0	R62.3	.8	—	R127.9	R443	149	(s)	R247	R839	R112	R31	R171	R131	R446
2004	R55.1	R14.5	R65.1	1.0	—	R135.6	458	R150	(s)	R250	R859	R105	27	R173	R110	R415
2005	53.0	13.7	58.9	1.1	—	126.7	435	137	(s)	265	837	83	29	129	114	355

<sup>1</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

<sup>2</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

<sup>3</sup> Natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately.

<sup>4</sup> Municipal solid waste (only the estimated plastics portion of municipal solid waste is included) and tire-derived fuel.

<sup>5</sup> Carbon dioxide in geothermal steam.

<sup>6</sup> Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels; wood and wood-derived fuels; municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass; and chemicals, hydrogen, pitch, sulfur, and tar coal.

<sup>7</sup> Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.

<sup>8</sup> Commercial combined-heat-and-power (CHP) and commercial electricity-only plants.

<sup>9</sup> Industrial combined-heat-and-power (CHP) and industrial electricity-only plants.

R=Revised. — = No data reported. (s)=Less than 0.05 million metric tons or less than 500 short tons.

Notes: • Data are for emissions from energy consumption for electricity generation and useful thermal output. • See Table 12.7b for electric power sector data. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of Section 8. • See "Useful Thermal Output" in Glossary. • Totals may not equal sums of components due to independent rounding.

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

Sources: **Carbon Dioxide:** • 1989-1997—Energy Information Administration (EIA), Form EIA-867, "Annual Nonutility Power Producer Report." • 1998-2000—EIA, Form EIA-860B, "Annual Electric Generator Report—Nonutility." • 2001-2003—EIA, Form EIA-906, "Power Plant Report." • 2004 forward—EIA, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report." **Sulfur Dioxide and Nitrogen Oxides:** EIA, Form EIA-767, "Steam-Electric Plant Operation and Design Report." Data were adjusted by the Environmental Protection Agency's Continuous Emission Monitoring System.