

Table A18. Energy-related carbon dioxide emissions by sector and source
(million metric tons, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Residential								
Petroleum	81	85	74	69	65	61	59	-1.5%
Natural gas	259	267	265	262	259	257	253	-0.2%
Coal	1	1	1	1	1	1	1	-1.3%
Electricity ¹	819	879	759	791	838	883	925	0.2%
Total	1159	1232	1098	1122	1163	1202	1236	0.0%
Commercial								
Petroleum	49	51	44	44	44	44	44	-0.6%
Natural gas	169	173	181	185	186	190	194	0.5%
Coal	6	6	6	6	6	6	6	0.0%
Electricity ¹	785	805	734	776	826	872	916	0.5%
Total	1009	1035	965	1010	1061	1111	1159	0.5%
Industrial²								
Petroleum	339	344	362	361	358	357	362	0.2%
Natural gas ³	383	408	442	457	452	448	451	0.4%
Coal	128	157	147	169	174	180	186	0.7%
Electricity ¹	551	583	542	565	563	547	531	-0.4%
Total	1401	1492	1493	1552	1547	1532	1529	0.1%
Transportation								
Petroleum ⁴	1818	1836	1833	1818	1798	1798	1824	-0.0%
Natural gas ⁵	34	36	40	41	42	43	45	0.9%
Electricity ¹	4	4	4	5	7	9	12	4.5%
Total	1856	1876	1877	1864	1846	1850	1881	0.0%
Electric power⁶								
Petroleum	34	33	24	24	25	26	26	-0.9%
Natural gas	373	399	439	428	417	455	483	0.8%
Coal	1741	1828	1565	1673	1780	1818	1862	0.1%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total	2159	2271	2039	2136	2234	2311	2383	0.2%
Total by fuel								
Petroleum ³	2320	2349	2338	2317	2290	2286	2315	-0.1%
Natural gas	1218	1283	1366	1373	1356	1393	1425	0.4%
Coal	1876	1990	1718	1847	1961	2004	2054	0.1%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total	5425	5634	5434	5549	5618	5695	5806	0.1%
Carbon dioxide emissions								
(tons per person)	17.6	18.1	16.7	16.2	15.7	15.2	14.9	-0.8%

¹Emissions from the electric power sector are distributed to the end-use sectors.

²Fuel consumption includes energy for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes lease and plant fuel.

⁴This 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. From 1990 through 2009, international bunker fuels accounted for 90 to 126 million metric tons annually.

⁵Includes pipeline fuel natural gas and compressed natural gas used as vehicle fuel.

⁶Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

⁷Includes emissions from geothermal power and nonbiogenic emissions from municipal waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 emissions and emission factors: U.S. Energy Information Administration (EIA), *Monthly Energy Review, October 2011* DOE/EIA-0035(2011/10) (Washington, DC, October 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D121011B.