
1994 Carbon Dioxide Fact Sheet

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The 1994 issue of the 'Carbon Dioxide Fact Sheet' follows the same format as in previous years but has been extended to include other countries and regions of interest. The calculations rely upon the *BP Statistical Review of World Energy* for consumption data for the world and its principal regions and nations. This well-accepted source of data appears in the June following the year under review and thus provides a means of estimating emissions of CO₂ from the fossil fuels throughout the world on a consistent basis as early as six months after the conclusion of the subject year.

The conversion of 1 million tonnes of oil equivalent (MTOE), the basic energy unit adopted in the *Review*, was taken as 42 petajoules, the value also adopted by the World Energy Council. The specific factors applied to the three fossil fuels were those employed by the International Energy Agency: for oil—19.9 million tonnes of carbon (not the dioxide) per exajoule (MTC/EJ); for natural gas—13.8 MTC/EJ; and for coal—24.1 MTC/EJ, calculated on the basis of the higher heating value. Should it be desired to express emissions in terms of CO₂ rather than the carbon convention used in this note, the factor is 3.67. The limitations on the use of energy consumption data for the estimation of CO₂ emissions have been noted previously. (Walsh, J.H. (1993) '1992 Carbon Dioxide Fact Sheet,' *Energy Studies Review*, 5:2:131-35).

In 1994, world emissions of CO₂ increased slightly by 0.9% while world primary energy consumption (excluding biomass and non-commercial forms of energy as is the practice in the *Review*) also grew 0.9%. The fossil fuels accounted for 90.2% of the world's energy consumption in that year. As listed in Table 1, Canadian emissions increased 3.4% and accounted for 2.2% of the world's total. Per capita emissions at 4.38 tonnes C/person/year remained second only to the US. A pronounced decline in emissions of -8.9% con-

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Table 1: 1994 CO₂ Emissions from Selected Countries and Regions

Country	1993				1994				% Increase	% of World	Per Capita T C/p.c.
	Oil MTC/%	Nat.Gas MTC/%	Coal MTC/%	Total MTC/%	Oil MTC/%	Nat.Gas MTC/%	Coal MTC/%	Total MTC/%			
World	2608 44.7%	1059 18.1%	2169 37.2%	5836 100.0%	2652 45.0%	1057 18.0%	2179 37.0%	5888 100%	+0.9%	100%	1.05
Canada	64.4 51.9%	35.7 28.8%	24.0 19.3%	124.1 100%	66.4 51.7%	36.8 28.7%	25.2 19.6%	128.4 100%	+3.4%	2.2%	4.38
U.S.A	659.7 45.2%	304.4 20.8%	495.7 34.0%	1459.8 100%	675.2 45.5%	309.0 20.9%	498.5 33.6%	1482.7 100%	+1.6%	25.2%	5.75
E. U. (12)	469.0 55.5%	141.0 16.7%	235.3 27.8%	845.3 100%	469.5 55.6%	142.6 16.9%	232.7 27.5%	844.8 100%	-0.1%	14.4%	2.41
East. Europe	274.4 27.4%	340.0 33.9%	387.7 38.7%	1002.1 100%	243.1 26.6%	315.6 34.6%	353.9 38.8%	912.6 100%	-8.9%	15.5%	2.20
Austra- lia	27.3 37.3%	9.1 12.4%	36.8 50.3%	73.2 100%	28.5 37.2%	9.9 12.8%	38.4 50.0%	76.8 100%	+4.7%	1.30%	4.31
Brazil	52.6 80.9%	2.3 3.5%	10.1 15.6%	65.0 100%	55.8 81.5%	2.4 3.6%	10.2 14.9%	68.4 100%	+5.2%	1.2%	0.44
China	117.4 17.4%	8.5 1.3%	548.2 81.3%	674.1 100%	120.4 17.0%	8.6 1.2%	579.0 81.8%	708.0 100%	+5.0%	12.0%	0.60
France	76.1 71.0%	16.8 15.7%	14.4 13.3%	107.3 100%	75.6 71.4%	16.1 15.1%	14.3 13.5%	106.0 100%	-1.3%	1.8%	1.81
India	52.7 29.4%	8.5 4.7%	118.4 65.9%	179.6 100%	56.5 29.9%	9.1 4.8%	123.3 65.3%	188.9 100%	+5.1%	3.2%	0.21
Japan	211.2 65.8%	29.4 9.2%	80.2 25.0%	320.8 100%	224.6 66.2%	31.5 9.3%	83.0 24.5%	339.1 100%	+5.7%	5.8%	2.71
Rest of World	679.5 62.2%	180.1 16.5%	232.6 21.3%	1092.2 100%	711.4 62.5%	191.7 16.8%	235.3 20.7%	1138.4 100%	+4.2%	19.3%	0.52

tinued in Eastern Europe (a category that includes all the CIS nations), reflecting the difficult economic conditions in that region. The 12 nations of the European Union of 1994 also experienced a very small decline of 0.1%. France, though a member of the EU, was listed separately because of the importance of nuclear power in the generation of its electricity (73.1% in 1992); this country also experienced a decline in emissions of -1.3%. The United States remains the largest source of emissions accounting for 25.2% of the world's total and the largest per capita source at 5.75 tonnes C/person/year.

The growth in emissions in the large developing countries of Brazil, China, and India is noteworthy at 5.2%, 5.0%, and 5.1% respectively though their per capita levels remain low. In the rather heterogeneous category of the Rest-of-World (calculated after deducting all the countries or regions specifically listed in Table 1 from the world total), emissions rose 4.2% but per capita emissions were low at 0.52 tonnes C/person/year.

It is clear that if economic conditions improve in Eastern Europe, world emissions of CO₂ will resume their increase.