

**EIA Emission Factors**

<b>Emission Coefficients</b>			
<b>Fuel</b>	<b>Pounds CO2 per Unit Volume or Mass</b>		<b>Pounds CO2 per Million Btu</b>
<b>Petroleum Products</b>			
Aviation Gasoline	18.355	per gallon	152.717
	770.916	per barrel	
Distillate Fuel (No. 1, No. 2, No. 4 Fuel Oil and Diesel)	22.384	per gallon	161.386
	940.109	per barrel	
Jet Fuel	21.095	per gallon	156.258
	885.98	per barrel	
Kerosene	21.537	per gallon	159.535
	904.565	per barrel	
Liquified Petroleum Gases (LPG)	12.805	per gallon	139.039
	537.804	per barrel	
Motor Gasoline	19.564	per gallon	156.425
	822.944	per barrel	
Petroleum Coke	32.397	per gallon	225.13
	1356.461	per barrel	
	6768.667	per short ton	
Residual Fuel (No. 5 and No. 6 Fuel Oil)	26.033	per gallon	173.906
	1,093.38	per barrel	
<b>Natural Gas and Other Gaseous Fuels</b>			
Methane	116.376	per 1000 ft3	115.258
Landfill Gas	1	per 1000 ft3	115.258
Flare Gas	133.759	per 1000 ft3	120.721
Natural Gas (Pipeline)	120.593	per 1000 ft3	117.08
Propane	12.669	per gallon	139.178
	532.085	per barrel	
Electricity	Varies depending on fuel used to generate electricity		
Electricity Generated from Landfill Gas	Varies depending on heat rate of the power generating facility		
<b>Coal</b>			
Anthracite	3852.16	per short ton	227.4
Bituminous	4931.3	per short ton	205.3
Subbituminous	3715.9	per short ton	212.7
Lignite	2791.6	per short ton	215.4
<b>Renewable Sources</b>			
Biomass	Varies depending on the composition of the biomass		
Geothermal Energy	0		0
Wind	0		0
Photovoltaic and Solar Thermal	0		0
Hydropower	0		0

Tires/Tire-Derived Fuel	6160	short tons	189.538
Wood and Wood Waste 2	3814	per short ton	221.943
Municipal Solid Waste 2	1999	per short ton	199.854
<b>Nuclear</b>			
	0		0
<b>Other</b>			
	0		0

Notes:

1 For a landfill gas coefficient per thousand standard cubic foot, multiply the methane factor by the share of the landfill gas that is methane.

2 These biofuels contain "biogenic" carbon. Under international greenhouse gas accounting methods developed by the Intergovernmental Panel on Climate Change, biogenic carbon is part of the natural carbon balance and it will not add to atmospheric concentrations of carbon dioxide.<sup>3</sup> Reporters may wish to use an emission factor of zero for wood, wood waste, and other biomass fuels in which the carbon is entirely biogenic. Municipal solid waste, however, normally contains inorganic materials principally plastics that contain carbon that is not biogenic. The proportion of plastics in municipal solid waste varies considerably depending on climate, season, socio-economic factors, and waste management practices. As a result, EIA does not estimate a non-biogenic carbon dioxide emission factor for municipal solid waste. The U.S. Environmental Protection Agency estimates that, in 1997, municipal solid waste in the United States contained 15.93 percent plastics and the carbon dioxide emission factor for these materials was 5,771 lbs per ton.<sup>4</sup> Using this information, a

3 Intergovernmental Panel on Climate Change *Greenhouse Gas Inventory Reference Manual: Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* Vol. 3, Pg. 6.28, (Paris France 1997).

4 U.S. Environmental Protection Agency *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-1998* EPA 236-R-00-001, Washington, DC, April 2000

Source: U.S. Department of Energy Energy Information Administration.

<http://www.eia.doe.gov/oiaf/1605/factors.html>