

## C02 Emissions by source in 2015

If not otherwise indicated, data from: [data/raw/electricity/electricity\\_fuel\\_2015.csv](data/raw/electricity/electricity_fuel_2015.csv)

Fuel	Amount	Amt. Unit	Density [kg/m <sup>3</sup> ]	Density Source	Mass [kg]	Percentage
subbituminous coal	24479385	t			24.48E+09	48.78%
natural gas	10870993	Ml	0.90	[1a]	9.78E+09	19.50%
lignite	8846528	t			8.85E+09	17.63%
bituminous coal	2897518	t			2.90E+09	5.77%
wood	2680909	t			2.68E+09	5.34%
heavy fuel oil	698003	kl	930.00	[2a]	649.14E+06	1.29%
petroleum coke	577519	t			577.52E+06	1.15%
diesel	155734	kl	874.61	[2a]	136.21E+06	0.27%
methane	182914	Ml	0.72	[1a]	131.15E+06	0.26%
light fuel oil	57115	kl	719.23	[2a]	41.08E+06	0.08%
propane	58	kl	1.70	[2a]	98.60E+00	0.00%
<b>total</b>					<b>50.22E+09</b>	

### Sources

[1a] [http://www.engineeringtoolbox.com/gas-density-d\\_158.html](http://www.engineeringtoolbox.com/gas-density-d_158.html)

[2a] [http://www.engineeringtoolbox.com/fuels-densities-specific-volumes-d\\_166.html](http://www.engineeringtoolbox.com/fuels-densities-specific-volumes-d_166.html)

Emissions

KC02	KC02 Unit	KC02 Source	KC02 [kg/MJ]	ΔC	ΔC Unit	ΔC Source	ΔC [MJ/kg]	KC02 [kg/kg]	C02 mass [t]
93.3 kg/Mbtu	[1b]		88.43E-03	31.3 MJ/kg	[3b]		31.30	2.77	67.76E+09
53.07 kg/Mbtu	[1b]		50.30E-03	47.7 MJ/kg	[3b]		47.70	2.40	23.47E+06
97.7 kg/Mbtu	[1b]		92.60E-03	22 MJ/kg	[3b]		22.00	2.04	18.02E+06
93.3 kg/Mbtu	[1b]		88.43E-03	31.3 MJ/kg	[3b]		31.30	2.77	8.02E+06
0.39 kg/kWh	[2b]		108.33E-03	15 MJ/kg	[3b]		15.00	1.63	4.36E+06
73.16 kg/Mbtu	[1b]		69.34E-03	41 MJ/kg	[3b]		41.00	2.84	1.85E+06
102.1 kg/Mbtu	[1b]		96.77E-03	34.2 MJ/kg	[3b]		34.20	3.31	1.91E+06
3.2 kg/kg	[2b]							3.20	435.86E+03
2.8 kg/kg	[2b]							2.80	367.22E+03
2.6 kg/kg	[2b]							2.60	106.80E+03
63.07 kg/Mbtu	[1b]		59.78E-03	46.3 MJ/m3	[3b]		1.63	2.77	272.90E-03
<b>total</b>									<b>67.82E+09</b>

Sources

- [1b] [https://www.eia.gov/electricity/annual/html/epa\\_a\\_03.html](https://www.eia.gov/electricity/annual/html/epa_a_03.html)  
 [2b] [http://www.engineeringtoolbox.com/co2-emission-fuels-d\\_1085.html](http://www.engineeringtoolbox.com/co2-emission-fuels-d_1085.html)  
 [3b] <http://www.manualihoep.li.it/media/doc/pr243.pdf>