

CO₂ Emission Factors by Fuel Type

Carbon	3 664 kg CO ₂ /t	32 066 MJ/t	0.114 kg CO ₂ /MJ
Coal	3 000 kg CO ₂ /t	32 373 MJ/t	0.093 kg CO ₂ /MJ
Coke	3 227 kg CO ₂ /t	29 951 MJ/t	0.108 kg CO ₂ /MJ
Coke Oven Gas	45 kg CO ₂ /GJ	- kJ/Nm ³	0.045 kg CO ₂ /MJ
Blast Furnace Gas	280 kg CO ₂ /GJ	- kJ/Nm ³	0.280 kg CO ₂ /MJ
Basic Oxygen Furnace Gas	185 kg CO ₂ /GJ	- kJ/Nm ³	0.185 kg CO ₂ /MJ
Other Ironmaking Gas	- kg CO ₂ /GJ	0 kJ/Nm ³	- kg CO ₂ /MJ
Natural Gas	56 kg CO₂ /GJ	37 000 kJ/Nm³	0.056 kg CO₂/MJ

<i>Natural Gas % of coal emissions</i>			$0.056/0.093 = 60.2\%$
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Liquefied Petroleum Gas	-	-	- kg CO ₂ /MJ
Heavy Oil	3 170 kg CO ₂ /t	40 569 MJ/t	0.078 kg CO ₂ /MJ
Light Oil	3 170 kg CO ₂ /t	- MJ/t	- kg CO ₂ /MJ
High Pressure Steam	267 kg CO ₂ /t	3 300 MJ/t	0.081 kg CO ₂ /MJ
Medium Pressure Steam	240 kg CO ₂ /t	3 200 MJ/t	0.075 kg CO ₂ /MJ
Low Pressure Steam	224 kg CO ₂ /t	3 100 MJ/t	0.072 kg CO ₂ /MJ
Electricity	856 g CO ₂ /kWh	9 200 kJ/kWh	0.093 kg CO ₂ /MJ
Oxygen	556 g CO ₂ /Nm ³	650 Wh/Nm ³	0.093 kg CO ₂ /MJ
Nitrogen	171 g CO ₂ /Nm ³	200 Wh/Nm ³	0.093 kg CO ₂ /MJ
Compressed Air	103 g CO ₂ /Nm ³	120 Wh/Nm ³	0.093 kg CO ₂ /MJ
Industrial Water	86 g CO ₂ /km ³	100 Wh/m ³	0.093 kg CO ₂ /MJ

Electricity	856 kg/MWh	REFERENCE	Page 254, Section 7.8
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NOTE: Year average numbers for Ontario Hydro Energy range from 850 to 890 kg/MWh depending on coal, oil and natural gas mix.