

FACTORS TO BE USED FOR CALCULATION OF “GREENING” ELEMENTS WITHIN GREEN INDUSTRY INNOVATION PROGRAMME POLAND, PL18

CO₂ emission factors

| Kind of activity | Annual CO ₂ emission reduction factor |
|--|--|
| 1 m ² solar collector 650 kWh/a - 2,34 GJ thermal | 0,22 Mg CO ₂ |
| Replacement of 1 MWh energy from the national grid | 0,8315 Mg CO ₂ |
| Emission from 1000 m ³ natural gas burning | 2,016 Mg CO ₂ |
| Emission reduction from 1 kWp PV - 1 MWh/a | 0,8315 Mg CO ₂ |
| Energy needed for production of 1 Mg steel - 96,3 GJ thermal | 9 Mg CO ₂ |
| CO ₂ emission factor for heating sector (coal) | 94,95 kg/GJ |
| CO ₂ emission reduction for biomass burning | 103 kg/GJ |
| Productivity of wind microturbine 4 MWh/a | 3,33 Mg CO ₂ |
| CO ₂ emission reduction for 1 Mg plastic recycled | 1,5 Mg CO ₂ |

Additionally, according to the Ordinance of Minister of Environment's of May 25, 2012 on the limitation levels of communal, biodegradable waste flow to dumping, in a mixed waste 42% energy from burning can be treated as renewable energy.

Calculations of air pollutant (SO₂ and NO_x) emissions reduction should be based on emission factors elaborated by the National Center for Emission Management presented in table below.

| Pollutant | Energy production average for the grid | Heat production average for heating plants in the country |
|--------------------|--|---|
| | kg/MWh | kg/GJ |
| SO ₂ | 1,491595 | 0,35484 |
| NO _x | 0,977104 | 0,147271 |
| Particulate matter | 0,073907 | 0,086082 |

Emissions lower than 100 kg per project are not to be taken into account.