Conversion Guidelines
- Greenhouse gas emissions -

Climate change is the greatest environmental challenge facing the world today and is caused by the release of greenhouse gases (GHG) into the atmosphere. Identifying which of your organization activities use a lot of energy, helps you reduce energy and resource use, and ultimately save money and understand your organization's contribution towards climate change.

When applying for projects under the EEA and Norway Grants, you are asked to estimate / forecast the green results of your project by comparing the current greenhouse gas emissions before the implementation of your project with the expected emissions afterwards.

In order to assess your project's potential and relevance, we need you to convert "your" greenhouse gas emissions to tonnes of CO_2 equivalents.

For this purpose, we ask you to gather data on activities / operational or production processes which release greenhouse gas emissions today, and that you intend to target with your project e.g.:

- electricity and gas use – kWh (data sources: electricity and bills, meters etc.),
- fuel used in owned equipment/vehicles and industrial processes – litre or tons of fuel (data sources: invoices, receipts, bills, etc.);
- waste disposal and recycling - tonnes of waste-to-landfill and recycled (data sources: waste collection provider, own data, contracts etc.)
- water supply – cubic meters (data sources: water bill, meters etc.)
- water treatment – cubic meters (data sources: water bill, meters etc.)

The reference period chosen for the data collection should be 12 months (yearly basis).
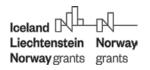
Then, calculate the associated greenhouse gas emissions using emission factors:

> Greenhouse gas emissions = Data x Emission Factor
> (quantity of emissions in tonnes of carbon dioxide equivalent -CO_2eq)

Emission Types and Conversion Factors

Burning:

- 1 ton coal = 2,86 ton CO_2
- 1 m^3 natural gas = 1,9 kg CO_2
- 1 ton waste incinerated = 0,445 ton CO_2

Electricity production:

- 1 MWh from coal fired plant = 850 kg CO_2
- 1 MWh from oil fired power plant = 590 kg CO_2
- 1 MWh from gas fired power plant = 185 kg CO_2
- 1 MWh Romania mix (2016) = 306 kg CO_2
- 1 MWh EU28 mix (2016) = 295,8 kg CO_2

District heating, hot water

- 1 MWh = 3.600 MJ from coal = 0,414 tons CO_2
- 1 MWh = 3.600 MJ from natural gas = 0,227 tons CO_2
- 1 MWh = 3.600 MJ from pellets (10% moisture) = 0,091 tons CO_2

Transport:

- 1 litre diesel = 2,640 kg CO_2
- 1 litre gasoline = 2,392 kg CO_2
- 1 personal car = 2,25 tons CO_2/year (150 g CO_2/km, 15.000 km/year)

Others

- 1 ton plastic recycled = 2300 kg CO_2 saved
- 1 ton metal recycled = 1750 kg CO_2 saved
- 1 ton paper recycled = 795 kg CO_2 saved
- 1 ton glass recycled = 529 kg CO_2 saved
- 1 m^3 water (supply) = 0,344 kg CO_2 saved
- 1 m^3 water (treatment) = 0,708 kg CO_2 saved

Presentation of results

We ask you to insert your gathered data into a Table for Converting Yearly Greenhouse Gas Emissions into CO_2 Emissions Equivalents.

The table is part of the Template "Expected outcomes of the implementation of the project", which again is a mandatory attachment to the Project Application.

When you have converted the greenhouse gas emissions into CO_2 emissions equivalents using the Conversion Factors (provided in this document), you can transfer the resulting CO2 emission equivalents/year, as baseline (start of the project) and target amounts (end of the project), to the expected outcomes-table.

Data - type Type of energy/fuel	Amount Amount of energy / fuel	Type of determination Measured / estimated	Reference period The measurement should refer to a yearly amount; The data used should not be older than 2018	Emission Factor used Choose from the "Emission Factors" list provided in this file	Greenhouse gas emissions [= Data x Emission Factor, kg CO2eq], calculating the current baseline of GHG emissions	Comments -If calculations are not based on real measurements over a reference period of 12 months, explain why -Specify if the data/amounts are estimated or measured; if data is estimated please state the assumptions used for estimating the amounts; -Indicate the source(s) for the data used in column "Emission factors", in case you used emission factors that are not specified in this document.
Natural gas	*200 m3*	*measured*	12 months	*e.g. 1 m3 natural gas = 1,9 kg CO2*	*e.g. 380 kg CO2eq*	*e.g. reference period used is only 6 months, because xxx* *e.g. data sources for the emission factors used: …* *e.g. assumptions used to estimate the yearly energy savings: …*
Current level of CO2 emissions before project implementation: Sum of the above cells, in kg CO₂eq					*[SUM] kg CO2eq*	