

# GHG calculation

**Info sheet**

# Info sheet on GHG calculation

The greenhouse gas emission saving of biofuels and fuels must be at least 50%. This indicates the percentage of greenhouse gas emissions that could potentially be saved by using biofuels or bioliquids instead of fossil fuels.

This limit value increases to at least 60% for biofuels and bioliquids produced in installations starting operation after 5 October 2015

An installation is considered to be in operation if the physical production of biofuels or bioliquids has taken place.

The greenhouse gas emissions and the savings resulting from the use of biofuels and bioliquids must be calculated in accordance with the current scheme principles for GHG calculation.

## GHG calculation options

### ➔ Individual calculation of actual values

- For input and intermediate products in the gCO<sub>2</sub>eq/kg dry matter
- For end products in gCO<sub>2</sub>eq/MJ dry matter
- The formula elements  $e_l$ ,  $e_{sca}$ ,  $e_{ccs}$ ,  $e_{ccr}$  and  $e_{ee}$  in accordance with RED 2009/28, Annex V can only be calculated individually

### ➔ Total or disaggregated default value

- Always refers to the final product and the respective description in accordance with RED 2009/28 Annex V
- Declaration of numerical values and conversion of MJ to kg not applicable
- Disaggregated values are only applicable for  $e_{ec}$ ,  $e_{td}$  and  $e_p$

### ➔ Combination of disaggregated default values and actual values

- Not possible to net several options and/or formula elements

## NUTS 2 values

- ➔ Alternatives to actual values for the cultivation phase in gCO<sub>2</sub>eq/kg dry matter
- ➔ Always take the values from the "Overview table on regional cultivation emissions (NUTS values)" see <https://ec.europa.eu/energy/en/topics/renewable-energy/biofuels/voluntary-schemes> or the REDcert NUTS tool, only for Germany and Poland;
- ➔ Only if values are missing in gCO<sub>2</sub>eq/kg dry matter in the overview may energy-based values related to the end product be used in gCO<sub>2</sub>eq/MJ, here the source is always the overview above

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- If there is also no data here, the "Emissions from biofuels cultivation - national reports" can be used as a source but only as an alternative until the overview above is complete
- Energy-based values must be converted into gCO<sub>2</sub>eq/MJ end product → gCO<sub>2</sub>eq/kg dry matter input product:

$$= e_{ec \text{ endprodukt}_a} \left[ \frac{\text{gCO}_2\text{eq}}{\text{MJ}} \right] / (\text{conversion factor}_a / (1 - \text{moisture content})) / \text{allocation factor(s)}$$
$$e_{ec \text{ feedstock}_a} \left[ \frac{\text{gCO}_2\text{eq}}{\text{kg}_{\text{dry}}}_{ec} \right]$$

- Source conversion factor: Note on conducting and verifying actual calculations of GHG emission savings, Annex I
- Source allocation factor(s) and moisture content: Biograce V.4d
- for farmers and the first collection points, it is enough to indicate the region or code
- The numeric value is to be identified no later than the first conversion stage
- Permitted in the REDcert-DE scheme and in the REDcert-EU scheme
- The following applies for biomass from different regions:
  - either the same values, then unproblematic **or**
  - different values, then the higher value can be identified for all types of biomass or a separate mass balance created
- NUTS 2 values also cover the emissions for cleaning and drying
- Disaggregated default values (if available) can always be used according to RED 2009/28, Annex V instead of NUTS 2 values

The tool for searching NUTS-2 regions can be found on REDcert's website at <http://nuts.redcert.org/> (Germany) and at <http://nuts-pl.redcert.org/> (Poland).