

BioGrace-I GHG calculation tool – Changes from version 4c to version 4d

The following changes were made to version 4c of the BioGrace GHG calculation tool, resulting in “BioGrace GHG calculation tool – version 4d – Public”. For some of the proposed changes we have added in **green text** some explanations.

a. **General change**

We renamed the biofuel GHG calculation tool from “BioGrace” to “BioGrace-I” as to distinct it from the BioGrace-II GHG calculation tool. Sometimes we will also refer to “BioGrace” – when it concerns both BioGrace-I and BioGrace-II, for instance for the list of additional standard values.

b. **Change in calculation rules**

Some modifications to the calculation rules were implemented after consulting stakeholders and verifiers. The changes are:

- Change footnote 7 to rule 2.2.1 in the following way:

⁷: In case of

(a) Densities and lower heating values (LHV's),

(b) Fuel efficiencies and (CH₄ and N₂O) transport exhaust gas emissions,

(c) CH₄ and N₂O emissions (also called “emission coefficients” in the BioGrace list of standard values) from boilers, CHP's, machinery operation, steam or heat provision,

reliable information shall consist of reports of analyses following suitable ISO, CEN or ASTM standards or other commonly accepted methods, or public scientifically sound articles or reports that include or refer to such analyses or methods.

In case of

(d) Emission coefficients other than those mentioned under (c),

reliable information shall consist of (references to) peer reviewed or scientifically sound LCA analysis on the provision of the input material. In case of reference, the LCA analysis shall be public. The LCA study shall give the actual emission per MJ or kg of input material; Reliable information means that only standard values defined by scientifically peer-reviewed academic studies are accepted. Furthermore, any data used shall lie within the commonly accepted data range.

When transporting biofuels or biomass by ship, the fraction of the ships that returns empty is an important factor determining the GHG emissions from transport. Some economic operators can show that the empty return rate is much lower than the rate as used by JRC (and hence the calculated transport emissions are lower), however, the resulting new emission coefficients are not listed in peer reviewed academic studies

- Remove the following sentence from calculation rule 2.6

- ~~These previous partial calculations shall have been made using BioGrace.[†]~~

We learned that this rule avoids many companies to use BioGrace. Instead, they use own Excel sheets. So we can conclude that BioGrace will not avoid companies to use

[†]: ~~BioGrace is currently the only recognised voluntary scheme for making actual GHG calculations that includes calculation software (a “tool”) for making these calculations. If in the future another voluntary scheme including calculation software will be recognised for making actual GHG calculations, then it will be considered to rephrase this rule in a way that also allows the use of this other scheme. The European Commission will then be requested to accept this change.~~

(a) their own Excel sheets and (b) different calculators along the chain of custody. Therefore this rule can be removed as it is ineffective.

- Remove the following sentence from calculation rule 4.2.1

~~For products with a moisture content of 10 % (based on mass) or lower, an approximation to dry product is allowed.~~

We learned that this rule leads to confusion. After discussion we concluded that it is not needed. In the BioGrace-II tool we included the methodological background document in which we explained the difference between “energy content of the dry part of the product” and the LHV on wet basis (for allocation).

- Include a calculation rule 4.7 on how the efficiencies (of a boiler or CHP) need to be calculated (see further point d. below).

c. Add suggestion on how to deal with more extensive modifications of pathways

We have added the following text to the About page of the Excel tool:

Build modified or completely new pathways

Users of this tool might find that it is difficult to make extensive changes to pathways in this Excel tool when keeping the “Track changes” to “on” as this will mark all changes causing that lay-out gets lost. The BioGrace scheme holder cannot make a version of the Excel tool in which the track changes can be turned to “off” and later (after making changes to the pathway configuration) back to “on”, because this would cause that some changes to the input numbers in the tool can also be made with track changes set temporarily to “off”. The BioGrace scheme holder does not want to allow this as a verifier should be sure that all changes made to the input numbers are marked by “track changes”.

The scheme holders of the BioGrace-I and BioGrace-II GHG calculation tools propose the following solution when modified or completely new pathways need to be made:

1. Users can make a request to the BioGrace scheme holder to make a modified or completely new pathway.
2. The BioGrace scheme holder will decide whether this pathway will be made (and at which costs, see point 6. below) and communicate this back to the user making the request.
3. If the user and the scheme holder come to an agreement, the modified or new pathway will be made by or on behalf of the BioGrace scheme holder. Modifications will be made with “Track changes” set to “off”. After all modifications have been made, the BioGrace scheme holder will put “Track changes” to “on” again.
4. The BioGrace scheme holder is responsible for making a correct pathway, a double-check will be performed to make sure that the pathway is correct. As a result, a verifier does not need to check the modifications made to the pathway.
5. The pathway – without any prefilled input values – (as disaggregated default values cannot be used for such a modified pathway) will be made available on www.BioGrace.net.

6. The BioGrace scheme holder can ask to pay for the costs to make the modified pathway. Whether or not such a fee will be requested for will depend on how the scheme holdership is financed. This might be different for BioGrace-I as compared to BioGrace-II.
7. Once the modified pathway has been built, the BioGrace scheme holder will inform the European Commission about the addition of the pathway.

We have added this because – making the instruction video’s on inserting one step and modifying a pathway made us conclude that in the current tool it is almost impossible to build a completely new pathway, which is due to the track changes mode which removes all layout causing that the result of the modification is almost unworkable.

d. Update Excel tool:

- Add sheet “calculate efficiencies”. This is the same sheet as in the BioGrace-II tool to calculate the thermal and electrical efficiencies of boilers and CHP’s, with one modification: the calculation of the allocation factors (which make use of exergy) has been removed as this is not (yet?) included in the RED methodology.

We did not yet have guidance on calculating electrical and thermal efficiencies for boilers and CHP’s, which is important (as we learned during the BioGrace-II project).

- Include some transport steps in FAME/PVO/HVO pathways between “Oil mill” and “Refining” and between “Refining” and “Esterification”.

This has been asked for by stakeholders.

- Include transport step between collection of waste cooking oil and refining.

This has been asked for by stakeholders.

e. Update list of additional standard values.

The list of additional standard values is the same for the BioGrace-I GHG calculation tool and the BioGrace-II GHG calculation tool. We have updated the fertiliser data (new data from Fertiliser Europe) and we the GHG emissions from electricity from the grid (all individual countries)

f. Change “scheme holdership”

We changed the following paragraph on the “About page”

BioGrace as a recognised voluntary scheme

The BioGrace GHG calculation tool has been recognised by the European Commission as a voluntary scheme for biofuels. The tool has been prepared by the partners of the BioGrace-I project (for more information see www.biograce.net). **Per April 2015, IFEU is the BioGrace-I scheme holder.**