Bonsucro Guidance for EU-RED Standard Default Values
July 2024

This document provides guidance on the greenhouse gas (GHG) emission reduction requirements specified in the Bonsucro EU-RED Standard version 2.1, launched in May 2024. This guidance shall be used in conjunction with the information provided in the Bonsucro EU-RED Standard version 2.1 and the European Commission's documents, which the Standard makes reference to.

1. General requirements

Biofuels, bioliquids and biomass fuels placed on the EU market must lead to a minimum GHG emission reduction compared with their fossil fuel alternatives. This so-called 'greenhouse gas requirement' or 'greenhouse gas criterion' is laid down in the EU Renewable Energy Directive recast (Directive EU 2018/2001, hereafter referred to as RED recast), Article 29.10.

Operators placing biofuels, bioliquids and biomass fuels on the EU market shall provide evidence to competent authorities that the greenhouse gas criterion is met. To do so, they shall have information available on GHG emissions (and potentially emission reductions) that have taken place in the supply chain, e.g. during the cultivation of feedstocks and during the processing and transport of feedstocks, intermediary products and biofuels. Mills and other supply chain operators shall collect this GHG information and include it in the delivery contract, invoice and/or supporting documentation for the next operator in the supply chain.

2. Options to comply with the GHG requirement

The Bonsucro EU-RED Standard specifies different options for the greenhouse gas criterion:

1. Use of a default value;
2. Use of actual greenhouse gas values;
3. Use of a combination of disaggregated default values and actual greenhouse gas values.

Default values and disaggregated default values can only be applied if the production pathway has been specified in Annex V or Annex VI of the RED recast. Table 1 below shows relevant production pathways for which (disaggregated) default values are available and where these values can be found. For second-generation ethanol produced from bagasse, no default values are available, meaning that only actual values can be applied.

Table 1 Sugarcane-derived biofuels and biomass fuels for which default values are available.

Production pathway	Default value	Disaggregated default value
First-generation ethanol produced by fermentation of sugarcane juice[1]	Part D of Annex V of RED recast	Part D Annex V of RED recast
First-generation ethanol produced by fermentation of molasses[1]	Part D of Annex V of RED recast	Part D of Annex V of RED recast
Second-generation ethanol produced from bagasse	No default value is available	No disaggregated default value is available
Biomass fuels (solid) produced from bagasse[2]	Part C of Annex VI of RED recast	Part C of Annex VI of RED recast

[1]In Annex V of RED recast, this production pathway is referenced as 'Sugarcane ethanol' in tables with 'Biofuels and bioliquids production pathways'
[2]In Annex VI of RED recast, this production pathway is referenced as 'Bagasse briquettes' in tables with 'Biomass fuels production pathways'

Note: all tables with (disaggregated) default values in Annex V and Annex VI of RED recast provide both 'typical values' (2nd column) and 'default value' (3rd column). Only the (disaggregated) default values mentioned in the 3rd column shall be used.

Tables 2 and 3 summarise the current disaggregated default values and total default values for bioethanol from sugarcane and for biomass fuels from bagasse.

Note: (disaggregated) default values can be subject to change by the European Commission.
Bonsucro will publish any changes on its website and inform the Bonsucro EU-RED licensed certification bodies (CBs), who shall inform its certificate holders. Please also note that CBs are responsible for staying updated by checking the information on (disaggregated) default values from time to time to guarantee it is using the most up-to-date information.

Table 2 Disaggregated and total default values for bioethanol from sugarcane (juice and molasses).

Steps of the pathway	Disaggregated and total default values
Cultivation (eec)	17.1 g CO2eq/MJ
Processing (ep)	1.8 g CO2eq/MJ
Transport and distribution (etd)	9.7 g CO2eq/MJ
Total	28.6 g CO2/MJ

Table 3 Disaggregated and total default values for biomass fuels from bagasse.

Steps of the pathway	Disaggregated and total default values [3]
Cultivation (eec)[1]	0 g CO2eq/MJ
Processing (ep)	0.4 g CO2eq/MJ
Transport and distribution (etd) – if transport distance is 500-10,000 km[2]	5.2 g CO2eq/MJ
Transport and distribution (etd) – if transport distance is over 10,000 km[2]	9.5 g CO2eq/MJ
Total – if transport distance is 500-10,000 km[2]	6 g CO2eq/MJ
Total – if transport distance is over 10,000 km[2]	10 g CO2eq/MJ

[1] The disaggregated default value is zero as RED recast qualifies bagasse as a processing residue (no emissions from cultivation apply).

[2] If the transport distance is unknown, the more conservative (disaggregated) default value shall be used.

[3] In addition to the (disaggregated) default values mentioned in Table 3, Annex VI of RED recast also contains a disaggregated default value for 'Non-CO_2 emissions from fuel in use' (0.5 g CO2eq/MJ). This relates to non-CO_2 emissions such as CH_4 and N_2O that are emitted during the use (burning) of the bagasse briquettes. This value is only relevant for companies that use bagasse briquettes as fuel in the European Union. The value of non-CO_2 emissions from fuel in use is not included in the total default value mentioned in the table.

3. Use of the total default value

If a mill decides to use the total default value, the delivery contract, invoice and/or supporting documentation shall mention the words 'default value'. Also, following supply chain operators before the bioethanol producer or biomass fuel producer, shall mention the words 'default value' on their delivery contract, invoice and/or supporting documentation.

The bioethanol producer or biomass fuel producer (and following supply chain actors taking legal ownership) shall indicate the numeric default value mentioned in the Annexes specified above on the documentation (value expressed in g CO2eq/MJ).

In case the emissions from land use change (el) are more than zero, these (additional) emissions shall be added to the default value. The calculated emissions from el shall be specified separately in the documentation.

The same applies if emissions savings from soil carbon accumulation (esca) are taken into account. Emissions savings from soil carbon accumulation via improved agricultural management must be calculated following the GHG calculation methodology specified in Annex III of the Bonsucro EU-RED Standard. For esca, only actual calculations can be used as no disaggregated default values are available. The results of these calculations must be transferred through the supply chain, together with the total default value or the disaggregated default values and/or actual values for other steps.

4. Expression of values

Disaggregated default values shall be expressed in g CO2eq/MJ (as per Part A of Annex V and Part A of Annex VI of RED recast).
Actual values shall be expressed in kg CO2eq per dry tons of sugarcane, sugar, bagasse and other intermediary products and shall be expressed in kg CO2eq per MJ biofuels of biomass fuel. Actual values shall be calculated in accordance with the GHG calculation methodology specified in Annex I of the Bonsucro EU-RED Standard V2.1.

5. Emission values for actual calculations

Annex IX of the European Implementing Regulation 2022/996 contains standard emission factors, e.g. for the production of electricity, fertilisers, and for transport. When performing actual GHG calculations, the emission factors listed in Annex IX shall be used.
If a specific emission factor has not been provided in Annex IX, it is allowed to use other sources of information. Emission factors shall then be taken from a scientifically recognised database (e.g. EcoInvent) or from scientific literature sources.

Note: In the past, the BioGrace tool was an EC-approved tool to conduct actual greenhouse calculations. Currently, the BioGrace tool for actual GHG greenhouse calculations is outdated and can no longer be used.

6. References

[1]. Renewable Energy Directive 2018/2001 (RED recast) Directive - 2018/2001 - EN - EUR-Lex (europa.eu)
[2]. Implementing Regulation 2022/996 on rules to verify sustainability and greenhouse gas emissions saving criteria and low indirect land-use change-risk criteria Implementing regulation - 2022/996 - EN - EUR-Lex (europa.eu)
[3]. EcoInvent database: Database - ecoinvent