GUIDANCE FOR BONSUCRO EU-RED CHAIN OF CUSTODY (ChoC) STANDARD

Final Draft

17 December 2018

TABLE OF CONTENTS

1. Introduction

1.1 Bonsucro

Bonsucro is a global multi-stakeholder non-profit initiative dedicated to reducing the environmental and social impacts of sugarcane production while recognising the need for economic viability. The mission of Bonsucro is to achieve a sugarcane sector that is continuously improving and verified as sustainable by acting collaboratively within the sector and working to continuously improve the three pillars of sustainability: economic, social and environmental viability. Bonsucro aims to achieve this mission through providing the definition for sustainable sugarcane and all sugarcane derived products through a multi-stakeholder approach. Bonsucro also aims at ensuring the integrity of the implementation of the Bonsucro Production and Chain of Custody Standards, through the implementation of the Certification Protocol.

1.2 Objective of the EU-RED Chain of Custody Standard

The objective of this Bonsucro EU-RED Chain of Custody (EU-RED ChoC) Standard is to provide assurance that claims of compliance with EU-RED requirements can be tracked along the supply chain. The Bonsucro EU-RED Chain of Custody Standard is a separate standard to the generic Bonsucro Chain of Custody Standard (ChoC) and contains specific requirements for sugar derived products to be qualified for the EU-RED biofuels and bioliquids markets.

The Bonsucro EU-RED ChoC Standard is intended for ethanol, ETBE or other products wishing to demonstrate compliance with the EU Renewable Energy Directive (RED- 2009/28/EC), the EU Fuel Quality Directive (FQD- 2009/30/EC), amendments included in Directive 2015/1513 and additional communication from the European Commission (Com 2010/C 160/02 and BK/gs/ener.c.1(2014)3648524).

Economic operators undergoing the Bonsucro chain of custody certification process who wish to sell products in the EU-RED markets must comply with Bonsucro ChoC Standard **and** this Bonsucro EU-RED ChoC Standard. It must also be used by certification bodies and auditors when carrying out certification audits and surveillance audits.

1.3 Scope of the Bonsucro EU-RED ChoC Standard

The Bonsucro EU-RED ChoC Standard applies to any economic operator purchasing, handling and/or trading Bonsucro EU-RED compliant material who wishes to make any claim about the status of the material or representation of the material in relation to EU-RED sustainability requirements. It describes the requirements to ensure the traceability of Bonsucro EU-RED compliant material by

implementing a mass balance supply chain model. Any economic operator that wishes to make a claim regarding Bonsucro EU-RED certified material shall hold a valid EU-RED ChoC certificate.

Note that in cases of differing requirements between the ChoC standard and the EU-RED ChoC Standard the latter standard always prevails if pursuing compliance with EU-RED requirements.

1.4 History Of This Document

In September 2018, upon the recommendation of the Bonsucro Secretariat, the Board of Directors agreed to start the revision process of the Bonsucro Mass Balance ChoC Standard and Guidance. The Board instructed the Secretariat to follow the Standard Revision Procedure set up in line with the ISEAL Code of Best Practice for Standard Setting. The Secretariat called for one representative of each class of membership to form the Standard Revision Taskforce (SRT). The SRT was given the task to draft the new version of the Bonsucro Mass Balance ChoC Standard and Guidance. All meeting minutes are publicly available on the Bonsucro website. The SRT met remotely in October and December 2018.
Also a decision was taken to create an EU-RED ChoC Standard which is an "add on" to the generic Standard (with no substantive changes to the EU-RED ChoC Standard which was approved by the European Commission).

2. Definitions

Normative references for definitions referring to:

EU RED (2009/28/EC) and EU FQD (2009/30/EC)

Agriculture Residues: Agricultural residues are generated directly from sugarcane agriculture (e.g. leaves, thrashes, tops, stumps, roots). They do not include residues from related industries or processing, with the exception of sugarcane bagasse, which is considered as an agricultural residue, as per Annex V, part C, point 18 of EU RED (2009/28/EC).

Biofuel: Liquid or gaseous fuel for transport produced from biomass.

Bioliquid: Liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass.

Biomass: Biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.

Economic operator: Individual, company or organization which has ownership and/or control of sugarcane and/or all sugarcane derived products, from their origin to their market availability, for one or several steps in the supply chain. Please refer to the definition for Organization as well.

EU-RED: European Union Directive on the promotion of the use of energy from renewable sources (Renewable Energy Directive, 2009/28/EC).

Finished product: A finished product is a product where no further modification occurs (including repacking).

GHG: greenhouse gas(es).

Organization: legal entity or group of legal entities with one or more sites, seeking or holding Bonsucro ChoC certification. In case the organization holds a Bonsucro ChoC certificate, it is referred to as Bonsucro ChoC Certificate Holder or Certificate Holder.
In relation to EU-RED the term **economic operator** is used: this is the organization seeking or holding Bonsucro EU-RED ChoC certification. An economic operator in the case of Bonsucro EU-RED ChoC may only include a single legal entity.

Processing Residues: is a substance that is not the end product(s) that a production process directly seeks to produce. It is not a primary aim of the production process and the process has not been deliberately modified to produce it.

Site: A single functional unit of an organization or a combination of units situated at one locality which is geographically distinct from other units. (Adapted from EU RED and Draft ISO Chain of Custody Standard 2015).

Waste: In the context of the EU RED, waste can be understood as any substance or object which the holder discards or intends or is required to discard. Raw materials that have been intentionally modified, or contaminated, to count as waste (e.g. by adding waste material to a material that was not waste) are not covered by this definition. See also: Article 3(1) of Directive 2008/98/EC of the European Parliament and of the Council.

3. System Description

3.1 Elements Of The Bonsucro Certification System

The Bonsucro Certification System consists of four main elements:

1. The "Bonsucro Production Standard" contains principles and criteria for achieving sustainable production of sugarcane and all sugarcane derived products in respect of economic, social and environmental dimensions. Bonsucro has developed guidance documents for members that provide further information on how to become compliant with the Bonsucro Production Standard. This standard also includes the requirements for producers that wish to comply with the EU RED requirements.
2. The "Bonsucro Chain of Custody Standard" (ChoC) presents the requirements for Mass Balance activities. The Standard includes references to Credit Trading however this is outside the scope of this Standard.
3. The "Bonsucro EU-RED Chain of Custody Standard" (EU-RED ChoC) which is a separate standard to the ('generic') "Bonsucro Chain of Custody Standard" and contains specific requirements for sugar products to be qualified for the EU-RED biofuels and bioliquids markets.
4. The "Bonsucro Certification Protocol": Bonsucro has developed a Certification Protocol for auditors that lists the process and procedures for certification against the Bonsucro Standards. This includes: 1) rules and requirements for independent Certification Bodies to audit against the Bonsucro standards, and 2) audit procedures for independent Certification Bodies to verify compliance with the Bonsucro Standards.

Together, these four elements form the Bonsucro Certification System. As such, these individual documents must always be used in relation to each other.

3.2 Relation Between the Bonsucro Choc Standard and the Bonsucro EU-RED ChoC Standard

The Bonsucro EU-RED ChoC shall be used in conjunction with the valid version of the Bonsucro ChoC Standard and the Bonsucro Production Standard.

Audits of economic operators against the requirements of the Bonsucro EU-RED ChoC Standard may only be carried out as an *add-on* to the requirements of the Bonsucro ChoC Standard and the Bonsucro Production Standard. This means that under the Bonsucro EU-RED ChoC Standard, all requirements of the Bonsucro ChoC Standard and the Bonsucro Production Standard must be met (including all EU-RED specific requirements in the Bonsucro Production Standard. This includes the EU-RED greenhouse gas calculation methodology included in that Standard).

Note that in cases of differing requirements between the ChoC standard and the EU-RED ChoC Standard the latter standard always prevails if pursuing compliance with EU-RED requirements.

If an economic operator is not already Bonsucro ChoC certified, the Bonsucro ChoC and the Bonsucro EU-RED ChoC audit process may occur simultaneously.

It is not possible to have operations certified against the Bonsucro EU-RED ChoC Standard without having a valid Bonsucro ChoC certificate in place that covers that same operation. Should the Bonsucro ChoC certification lapse for any reason the Bonsucro EU-RED Choc certification shall also lapse at the same time.

3.3 Supply Chain Models

Bonsucro follows a mass balance approach for tracing Bonsucro certified material in the supply chain, ensuring that at every point in the supply chain volumes of Bonsucro certified outputs match volumes of Bonsucro certified inputs.

In mass balance the volume of Bonsucro certified output is balanced with a physical volume of Bonsucro certified input. This allows the tracking of Bonsucro certified material along the entire supply chain from field to mill (including transportation), through various steps of production (for example conversion processing, manufacturing, transformation) to warehousing, transportation and trade up to and including the end product manufacturer.

For mass balance the Chain of Custody requirements shall apply to every organization throughout the supply chain that:

a. takes legal ownership, and
b. physically handles Bonsucro certified products at a location under the control of an organization including outsourced contractors.

After the end product manufacturer, when the product has been put in its final form and package there is no further requirement for Chain of Custody certification. This means that retailers and distributors of finished products do not need Chain of Custody certification.

These Chain of Custody requirements also apply under Bonsucro EU-RED Chain of Custody. This means that warehouses taking legal ownership and physically receiving Bonsucro EU-RED certified products into storage shall be Bonsucro EU-RED certified with the same exemptions applying before they may participate in the Bonsucro EU-RED scheme.

The Bonsucro EU-RED ChoC Standard does not allow credit trading.

3.4 Unit of Certification

Under Bonsucro EU-RED ChoC an economic operator has two options for its chosen unit of certification.

These are:

1. **Single Site** - a single functional part of an economic operator's operations or a combination of parts situated at one locality, e.g. sugarcane mill, terminal, food processing, storage, tanks.

2. **Multi Site -** More than one location either within a single legal entity or across legal entities that are related via an ownerships structure (e.g. common holding company). The following conditions apply:
    - Each site in a multi-site certificate shall maintain its own mass balance calculations and records. Mass Balance volumes shall not be transferred between sites.
    - Multi-site as a unit of certification for facilities that do any processing or transformation is <u>not</u> permitted.
    - Multi-site auditing for storage/tanks or any other holding facility is permitted, provided that the sites follow a common Internal Control System (ICS) and that the Central Office is always subject to audit.
    - One site shall be designated as responsible for maintaining the central administration of the ChoC requirements including the individual site mass balance accounting using an Internal Control System (ICS). This site is designated as the Central Office.

All operators wishing to comply with EU-RED requirements, and wishing to use multi-site certification, shall be subject to the following sampling formula for the minimum number of audits required for initial assessments:

> *Square root of the total number of sites, rounded up to a whole number for each set of assessments (audits), plus Central Office.*

The applicable multi-site sampling formulas shall be used as a <u>minimum</u>, and may be increased depending on the complexity and risk associated with the operations (depending on the auditor's professional judgement).

> As an example:
>
> A multi site storage facility with 7 sites, including the designated Central office:
>
> - Square root of 7 sites equals 2.6, rounded to **3 sites**
> - Central Office audit = **1 site**
> - **Total required site audits = 4 sites**

3.5 Summary of Differences Between ChoC Standard and the EU-RED ChoC Standard

This table is meant to highlight the areas of difference between the Bonsucro ChoC Standard and the EU-RED Choc Standard, with particular emphasis on requirements which are stricter in the EU-RED ChoC Standard.

	Requirement in ChoC	**Differences in EU-RED ChoC**
Scope	Global sugarcane and derivatives markets	Specific to products which shall meet EU-RED requirements for biofuels and bioliquids markets
Requirements for Participation	For mills with production base: compliance with the Production Standard and ChoC standard	For mills with production base: compliance with Production Standard including all EU-RED requirements, and compliance with both ChoC Standard and EU-RED ChoC Standard
	All other supply chain operators require compliance with the ChoC Standard	All other supply chain operators require compliance with both the ChoC and the EU-RED ChoC
Unit of Certification	Single Site Multi Site	Single Site Multi Site for storage facilities only. Each site shall maintain individual mass balance calculations and records.
Criterion 1.1 Implementing ChoC Standard	Indicators 1.1.1 through 1.1.8	Differences are in focus of content - not implementation
Criterion 2.1 Validating Data	Indicators 2.1.1 through 2.1.8	Additional EU-RED data required. Carryover shall be met with physical stock, otherwise not allowed.
Criterion 2.2 Greenhouse Gas Data	No requirements	Indicators 2.2.1 through 2.2.4

4. The Bonsucro EU-RED Chain of Custody (EU-RED ChoC) Standard

Principle 1: Implementing the Bonsucro EU-RED Chain of Custody

Criterion 1.1 The economic operator shall implement the Bonsucro EU-RED ChoC requirements within the scope identified

Indicator 1.1.1: Overall management responsibility

The economic operator shall establish and document its commitment to implement and maintain the Bonsucro EU-RED ChoC requirements. The commitment of the economic operator shall be made available to its personnel, suppliers, clients and other stakeholders.

Guidance
As per the 'generic' ChoC standard.

Indicator 1.1.2: Procedures

The economic operator shall have written procedures and/or work instructions or equivalent to ensure the implementation of all elements of the BonSucro EU-RED ChoC requirements. This shall include at minimum the following:

a. *Complete and up to date procedures covering the implementation of all the elements of the supply chain model requirements.*
b. *Complete and up to date records and reports that demonstrate compliance with the supply chain model requirements (including training records).*
c. *Identification of the role of the person having overall responsibility for and authority over the implementation of these requirements and compliance with all applicable requirements. This person shall be able to demonstrate awareness of the economic operator's procedures for the implementation of this standard.*

Guidance
As per the 'generic' ChoC standard.

Indicator 1.1.3: Record keeping

The economic operator shall maintain accurate, complete, up-to-date and accessible records and reports covering all aspects of the Bonsucro EU-RED ChoC Standard requirements. Retention times for all records and reports shall be a minimum of five (5) year.

Guidance
This includes e.g. purchase and sales documents, production records and volume summaries, records of internal procedures and changes thereof, records on training of personnel, records of internal audits. The system for recording data and documents (e.g. software) shall be adequate to the complexity of the economic operator.

Indicator 1.1.4: Training

The economic operator shall have a training plan covering BonSucro EU-RED ChoC Standard requirements, which is subject to on-going review.
Appropriate training shall be provided by the economic operator for personnel carrying out the tasks critical to the effective implementation of the EU-RED ChoC Standard requirements.
Training shall be specific and relevant to the task(s) performed. Records of participants and content shall be maintained

Guidance
As per the 'generic' ChoC Standard.

Indicator 1.1.5: Internal audits

The economic operator shall conduct an annual internal audit to determine whether they;

a. *conform to the requirements in the Bonsucro EU-RED ChoC Standard*
b. *effectively implement and maintains the Bonsucro EU-RED ChoC Standard requirements. Any non-conformities found as part of the internal audit shall direct corrective actions to be taken. The outcomes of the internal audits and all actions taken to correct non-conformities shall be subject to management review at least annually. The economic operator shall maintain the internal audit records and reports.*
c. *corrective actions taken as a result of any non-conformities identified in the internal audit shall be documented, including dates and descriptions of actions taken to resolve them.*

The procedure for the annual internal audit process shall be documented.

Guidance
As per the 'generic' ChoC Standard

Indicator 1.1.6: Defining the unit of certification for the Bonsucro EU-RED ChoC

The economic operator shall define and document its unit(s) of certification.
In the case of multi-site certification, the economic operator shall define and document the legal entities and sites covered by the multi-site Bonsucro EU-RED ChoC certificate, including details on the site designated as the Central Office for administering Bonsucro EU-RED ChoC data.

Under Bonsucro EU-RED ChoC each site in a multi-site certificate shall maintain its own mass balance calculations and records. Mass balance data shall not be transferred between sites for the purpose of calculating mass balance volumes.

The relationship between the sites shall be described and documented. The economic operator shall document any changes that may occur in the scope of the unit(s) of certification, and notify its certification body and the Bonsucro Secretariat at least one week before the change goes into effect.

Guidance
As per the 'generic' ChoC Standard.

Indicator 1.1.7: Outsourcing activities

In cases where a Bonsucro EU-RED ChoC certified economic operator outsources activities to independent third parties (e.g. subcontractors for storage, transport or other outsourced activities), the certified economic operator shall ensure that the independent third party complies with the requirements of the Bonsucro EU-RED ChoC Standard.

This requirement is not applicable to outsourced storage facilities where the management of the Bonsucro certified product(s) and instructions for tank movements are controlled by the certified economic operator (not the tank farm manager).

A Bonsucro certified economic operator which includes outsourcing within the scope of their Bonsucro EU-RED ChoC certificate shall ensure the following:

a. *The certified economic operator has legal ownership of all input material to be included in outsourced processes;*
b. *The certified economic operator has an agreement or contract covering the outsourced process with each contractor through a signed and enforceable agreement with the contractor. The certified economic operator shall ensure that its certification body has access to the outsourcing contractor or operation if an audit is deemed necessary, including all necessary documentation. If this is not possible, the outsourced contractor shall obtain a Bonsucro EU -RED ChoC certificate independently.*
c. *The economic operator has a documented control system with explicit procedures for the outsourced process which is communicated to the relevant contractor.*

d) the economic operator shall record the names and contact details of all contractors used for the processing or physical handling of Bonsucro EU-RED certified products. An up to date record shall be made available to the economic operators certification body at its next audit.

Guidance

As per the 'generic' ChoC Standard.

Principle 2: Validating and reconciling Bonsucro EU-RED data

Criterion 2.1 The economic operator shall validate and document Bonsucro EU-RED data

Indicator 2.1.1: Verification of Bonsucro EU-RED status of the supplier

The receiving economic operator shall verify the current Bonsucro EU-RED status of the supplier at the time of the purchase.

No incoming material certified under other schemes can be considered as Bonsucro EU-RED compliant.

Incoming material which does not comply with the EU-RED requirements in the Bonsucro Production Standard and/or is from a supplier that is not Bonsucro EU-RED ChoC certified shall not be considered as Bonsucro EU-RED compliant.

Guidance:

This includes checking the validity of the supplier's Bonsucro EU-RED ChoC certificate. All Bonsucro EU-RED certified entities and certificate numbers are displayed on the Bonsucro website. In cases of uncertainty, the Bonsucro secretariat must be contacted for clarification.

Indicator 2.1.2 Verification of data of the incoming Bonsucro EU-RED certified product

The receiving economic operator shall verify that the supplier contract, invoice and/or supporting documentation, including associated sustainability characteristics of Bonsucro EU-RED certified products meet the following requirements:

- *Specification of original raw material or intermediary product: Sugarcane Sugarcane juice Sugarcane molasses Sugarcane bagasse Sugarcane straw Sugarcane thrashes (tops, leaves, roots).*
- *The mass (kg or tonnes) or volume (litres or m3).*
- *Specification of sugar (sugar content in % sucrose), molasses for fermentation (% Brix), or specification of ethanol (alcohol content in % v/v) or for any other derived products the appropriate measure of purity.*
- *Evidence showing compliance with the Bonsucro EU-RED Production Standard.*
- *Buyer and seller contact information.*
- *Country of origin.*
- *Date when biofuel/bioliquid installation started operations.*
- *Whenever actual GHG values are used, the actual GHG values [kg CO2eq] per dry tons (sugarcane, sugar, molasses, bagasse and other intermediary products) or per MJ*

(bioethanol) calculated according to the Annex V of the EU Renewable Energy Directive (2009/28/EC), Annex IV of the EU Fuel Quality Directive (2009/30/EC), and Annex II of Directive 2015/1513 and EC Note BK/abd/ener.c.1(2015)4507918, using any EC-approved GHG calculation tool. See also Annex 3 of Bonsucro Production Standard for more details.

- *Accurate data on all relevant elements of the GHG emission calculation formula,(i.e. eec, el, ep,etd and eee) See also Annex 3 of Bonsucro Production Standard for more details.*
- *If at any point in the chain of custody emissions have occurred and are not recorded, so that the calculation of an actual value is no longer feasible for operators downstream in the chain of custody, this must be clearly indicated in the delivery notes.*
- *Whenever default GHG values are used, the mention "default value", with the exception of bioethanol producer, who shall indicate the default value as per EU RED Annex V and the corresponding GHG savings, compared to the fossil reference.*

The data shall be entered into the receiving economic operator's administrative system within one month of taking ownership.

Guidance

'Country of origin' is the country where the sugar cane was grown.

'Date when biofuel/bioliquid installation started operations' refers to the date on which the installation that produces the biofuels or bioliquids first became operational.

For installations* starting operations after 5 October 2015:

The greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 60 % less than the threshold established by the European Union legislation based on a Fossil Fuel Comparator (FFC) of 83.8 g CO2eq/MJ. Therefore, the global warming burden of compliant biofuel and bioliquids shall be less than 33.5 g CO2 eq/MJ.**

For installations* having started operations on or before 5 October 2015:

Until 31 December 2017, the greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 35 % less than the threshold established by the European Union legislation based on a Fossil Fuel Comparator (FFC) of 83.8 g CO2 eq/MJ. Therefore, the global warming burden of compliant biofuel and bioliquids shall be less than 54.4 g CO2 eq/MJ until 31 December 2017. With effect from 1 January 2018, the greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 50 % (therefore less than 41.9 g CO2 eq/MJ).**

*** The term 'installation' includes any processing installation used in the sugar, sugarcane or ethanol production process. This does not include production facilities that might have been intentionally added to the production chain only to qualify for the exemption foreseen in this provision.**

**** Should the threshold, FCC value, or default values change as established by European Union Legislation, this will be reflected in the scheme with immediate effect.**

In case of discrepancies between the documentation and the material received, the receiving economic operator shall contact its supplier and require for data correction. Corrected data shall be received and entered into the receiving economic operator's administrative system before sustainability data is passed on to the next economic operator.

Multiple receipts with common supplier and with identical Bonsucro EU-RED sustainability characteristics may administratively be combined as one batch for reporting purposes (internally and for client documentation).

Indicator 2.1.3: Conversion rates

A conversion rate describes the change in quantity of a specific material that occurs due to processing of the respective material at a specific site. Conversion rates and the resulting changes of quantities shall be site-specific and product-specific. Conversion rates shall be based on actual data (e.g. processing or production data). The output weight or volume after conversion shall be expressed as 100% sucrose or ethanol equivalents.

Conversion rates used shall be documented and are subject to verification during the audit.

Conversion rates shall be provided by any Bonsucro EU-RED ChoC certificate holder that modifies their inputs in any way all the elements of the chain of custody each time such a change in quantity occurs.

In the case of multi-site certificates the designated Central Office shall keep records of conversion rates realized at each site included in the multi-site certificate and for all products processed on those sites.

Guidance
As per the 'generic' ChoC Standard.

Indicator 2.1.4: Mixing of Bonsucro certified products with products fungible with sugarcane-derived products

In every case where a batch of Bonsucro certified product was mixed with other products which are fungible with sugarcane-derived products, the Bonsucro data may be allocated to any physical consignment taken from that batch, provided that input and output of Bonsucro data match (no overclaiming of Bonsucro data) .

Guidance

<u>Example:</u>

"Clean Energy" buys different biofuels. On May 4th, the economic operator bought 1,000 m3 of Bonsucro EU RED certified ethanol produced in Brazil. On the same day, it

bought 500 m3 biodiesel certified by ABC and with origin in Asia. On the next day, "Clean Energy" bought 2,000 m3 ethanol produced from corn and with XYZ certification. On May 6th, the economic operator sold to one of its clients, 500 m3 of biodiesel with ABC certification and 1,000 m3 Bonsucro EU RED certified ethanol. Since, biodiesel and ethanol are not fungible, i.e. cannot be mixed without losing its characteristics, the volumes must maintain the original certification. "Clean Energy" is compliant with indicator 2.1.4.

Procurement department

Date	Supplier	Product	Feedstock	Origin	Certification	Quantity
04/05/2018	X	Ethanol	Sugarcane	Brazil	Bonsucro	1000
04/05/2018	Y	Biodiesel	Palm	Asia	ABC	500
05/05/2018	Y	Ethanol	Corn	USA	XYZ	2000

Commercial department

Date	Client	Product	Origin	Certification	Quantity
06/05/2018	A	Biodiesel	Asia	ABC	500
06/05/2018	A	Ethanol	Brazil	Bonsucro	1000

Indicator 2.1.5: Supply of Bonsucro EU-RED certified product

The economic operator shall provide that the delivery contract, invoice and/or supporting documentation, including associated sustainability characteristics of Bonsucro EU-RED certified products meet the following requirements:

- *Specification of original raw material or intermediary product: Sugarcane Sugarcane juice Sugarcane molasses Sugarcane bagasse Sugarcane straw Sugarcane thrashes (tops, leaves, roots).*
- *The mass (kg or tonnes) or volume (litres or m3).*
- *Specification of product purity (sucrose content % in sugar), molasses for fermentation (% Brix), or specification of ethanol (alcohol content in % v/v) or for any other derived products the appropriate measure of purity.*
- *Evidence showing compliance with the Bonsucro EU-RED Production Standard.*
- *Buyer and seller contact information.*
- *Country of origin.*

- *Date when biofuel/bioliquid installation started operations.*
- *Whenever actual GHG values are used, the actual GHG values [kg CO2eq] per dry tons (sugarcane, sugar, molasses, bagasse and other intermediary products) or per MJ (bioethanol) calculated according to the Annex V of the EU Renewable Energy Directive (2009/28/EC), Annex IV of the EU Fuel Quality Directive (2009/30/EC), and Annex II of Directive 2015/1513 and EC Note BK/abd/ener.c.1(2015)4507918, using any EC-approved GHG calculation tool. See also Annex 3 of Bonsucro Production Standard for more details.*
- *Accurate data on all relevant elements of the emission calculation formula, (i.e. eec, el, ep,etd and eee). See also Annex 3 of Bonsucro Production Standard for more details.*
- *If at any point of the chain of custody emissions have occurred and are not recorded, so that the calculation of an actual value is no longer feasible for operators downstream in the chain of custody, this must be clearly indicated in the delivery notes.*
- *Whenever default GHG values are used, the mention "default value", with the exception of bioethanol producer, who shall indicate the default value as per EU RED Annex V and the corresponding GHG savings, compared to the fossil reference.*

The sale data shall be entered into the economic operator's administrative system within one week terminating ownership

Guidance

'Country of origin' is the country where the sugar cane was grown.

'Date when biofuel/bioliquid installation started operations' refers to the date on which the installation that produces the biofuels or bioliquids first became operational.

For installations* starting operations after 5 October 2015:

The greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 60 % less than the threshold established by the European Union legislation based on a Fossil Fuel Comparator (FFC) of 83.8 g CO2eq/MJ. Therefore, the global warming burden of compliant biofuel and bioliquids shall be less than 33.5 g CO2 eq/MJ.**

For installations* having started operations on or before 5 October 2015:

Until 31 December 2017, the greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 35 % less than the threshold established by the European Union legislation based on a Fossil Fuel Comparator (FFC) of 83.8 g CO2 eq/MJ. Therefore, the global warming burden of compliant biofuel and bioliquids shall be less than 54.4 g CO2 eq/MJ until 31 December 2017. With effect from 1 January 2018, the greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 50 % (therefore less than 41.9 g CO2 eq/MJ).**

*** The term 'installation' includes any processing installation used in the sugar, sugarcane or ethanol production process. This does not include production facilities that might have been intentionally added to the production chain only to qualify for the exemption foreseen in this provision.**

**** Should the threshold, FCC value, or default values change as established by European Union Legislation, this will be reflected in the scheme with immediate effect.**

The sustainability characteristics of the batch may be delivered in any form or layout and are required to reference the specific batch. For example the sustainability characteristics may be included as part of the Delivery Note, and Invoice or be attached as an Annex to the the chosen contract document.

Multiple receipts with common supplier and with identical sustainability characteristics may administratively be combined as one batch for reporting purposes (internally and for client documentation).

Indicator 2.1.6: Inventory periods

The economic operator shall undertake inventories of the input/output balance of the Bonsucro EU-RED certified product at fixed regular intervals, for each operation site, with the intervals not exceeding three months.

Fixed inventory periods shall be continuous in time, i.e. gaps between inventory periods shall not occur. During any periods without movement of Bonsucro EU-RED certified material mass balances shall be kept.

The inventory periods for the certification period shall be clearly documented at the beginning of the certification term by the economic operator and shall be verified during the audit. For each inventory period a mass balance calculation including sustainability data transfer to the next period (carry over) must be documented and provided during the audit.

The inventory shall be undertaken at individual site level.

Guidance:
An economic operator may choose an inventory period less than three months.

Example: During the month of January, the economic operator buys 50 tonnes of Bonsucro EU-RED certified sugar and 40 tonnes of Bonsucro certified sugar (ChoC standard) and 10 tonnes of non Bonsucro certified sugar. In February, the economic operator sells 70 tonnes of Bonsucro EU-RED certified sugar. At the end of the month of February, the balance of Bonsucro EU-RED certified product is negative by 20 tonnes. However, in March, the economic operator buys 30 tonnes of Bonsucro EU-RED certified sugar, bringing the balance at the end of the 3-month period to +10 tonnes and, therefore, the economic operator is compliant with indicator 2.1.6.

Indicator 2.1.7: Balancing Bonsucro EU-RED volumes during and between inventory periods

The volume of Bonsucro EU-RED certified product received shall be greater than or equal to the volume or quantity of Bonsucro EU-RED certified product supplied to clients over a fixed inventory period of maximum three months.

Where the balance of inputs and outputs is positive at the end of economic operator's inventory period, sustainability data for the positive balance may be carried into the next inventory period. This is called carry over. Carry over is only possible from one inventory period to the next if at least the equivalent amount of physical material is in stock, as registered in the sustainability data stated in the bookkeeping records. This means it is not possible to have more carry over into the next inventory period than the quantity that is physically in stock at the end of any inventory period.

Guidance:

The generic ChoC Standard allows to carry over more sustainability data than there is physical material in stock at the end of an inventory period. This is not allowed under EU-RED ChoC.

Indicator 2.1.8. Expiration of Bonsucro EU-RED sustainability data

Bonsucro EU-RED sustainability data entered into an economic operator's mass balance system shall no longer be attached to outgoing consignments after one year from the date of entry into the system. Carryover is to be adjusted downward to reflect any expiring date of the material.

If the economic operator's Bonsucro EU-RED ChoC certificate is no longer valid, any remaining sustainability data in the economic operator's administrative system becomes invalid.

Indicator 2.1.9: Attribution of Bonsucro EU-RED sustainability characteristics

Whenever multiple sugarcane-derived products are produced at a given step in the sugarcane supply chain (e.g. mill), Bonsucro EU-RED sustainability characteristics shall be attributed to all materials equally with the exception of GHG emissions which shall be allocated on an energy basis.

Guidance:

For details on allocation of GHG emissions refer to Annex 3 of the Bonsucro Production Standard.

All the sugarcane-derived products produced at a given step shall carry the same sustainability characteristics, in line with the mass balance of entering Bonsucro or Bonsucro EU-RED compliant product (i.e. percentage of Bonsucro/Bonsucro EU-RED entering material + conversion factors).

Examples of multiple products include, juice and bagasse following the crushing of sugarcane, sugar and molasses following the refining of sugarcane juice and ethanol and vinasse following the fermentation of molasses

Indicator 2.1.10. Wastes and Residues

The economic operator must ensure that the raw material and derived intermediary products and final biofuel are clearly identified and that no Bonsucro EU-RED compliant material is intentionally modified or discarded to be considered as a waste or residue, including through deliberate modification of the production process.

Guidance:

- **Article 3(4) in the EU Renewable Energy Directive (2009/28/EC) requires EU Member States to achieve that 10% of the energy used in transport comes from renewable sources. For this purpose, certain feedstocks are "double counted", i.e. their energy content is counted twice towards the objectives, compared to other feedstocks. A list of double-counted feedstock is included in the EU Renewable Energy Directive as Annex IX, which is added as per Directive 2015/1513 Annex II.**
- **The exact raw material of origin shall be included in the product documentation (See Annex 1).**
- **In addition, consignments containing or derived from sugarcane, sugar, straw and bagasse must be accounted for separately. Consignments of ethanol based on sugar, bagasse or straw must be accounted for separately.**

Criterion 2.2 Greenhouse gas data

Indicator 2.2.1: Options to comply with the EU-RED greenhouse gas criterion

One of the following options shall be used for the EU-RED greenhouse gas criterion:

a. *Use of a total default value specified in Annex V of EU-RED. Default values can only be applied where el, calculated in accordance with point 7 of part C of Annex V of EU-RED is equal or less than zero; or*
b. *Use of actual greenhouse gas values to calculate total greenhouse gas savings according to the EU-RED methodology; or*
c. *Use of a combination of disaggregated default values and actual values.*

For actual greenhouse gas calculations, the requirements of the Bonsucro EU-RED Greenhouse Gas Methodology included in Annex 3 of the Bonsucro Production Standard shall be followed.

Indicator 2.2.2: Information to be included in actual greenhouse gas emissions

When using actual values, at each step of the chain of custody, GHG emission estimates shall be added to the GHG value included in the documentation to the consignment purchased from the previous operator in the chain of custody.

Bioethanol producers shall convert the total GHG emissions into g CO2eq/MJ and calculate GHG savings as: SAVING = (EF-EB)/EF Where EB = total GHG emissions from bioethanol EF = total GHG emissions from fossil fuel comparator (83.8 g CO2eq/MJ)

Guidance:

The following GHG emissions shall be considered:

a. Additional emissions from transport and/or processing have to be added to ep and or etd respectively.

b. Energy losses occurred during processing or if relevant transportation or storage have to be taken into account using a 'feedstock factor'.

c. Whenever a processing step yields co-products, emissions need to be allocated using an 'allocation factor' following the rules set out in the GHG emission calculation methodology.

d. At the last processing step the emission estimate needs to be converted into the unit g CO2eq/MJ of final biofuel.

For further details on actual greenhouse gas calculations, the requirements of the Bonsucro EU-RED Greenhouse Gas Methodology included in Annex 3 of the Bonsucro Production Standard shall be followed.

Whenever actual values are calculated at each step of the chain of custody, the additional emissions from transport and/or processing need to be added to ep and/or etd, respectively. Additionally, a 'feedstock factor' shall be applied to all emissions to take the energy losses occurred into account.

This applies to each processing step, but can be also relevant for other steps in the chain of custody e.g. drying of feedstock and seasoning of woody biomass. Whenever a processing step yields co-products, emissions need to be allocated as set out in the GHG emission calculation methodology. Put more formally, the following formula should be applied to emissions from cultivation when processing intermediate products:

$$e_{ec}\,intemediate\,product_a\left[\frac{gCO2eq}{kg\,dry}\right] = e_{ec}\,feedstock_a\left[\frac{gCO2eq}{kg\,dry}\right] * Feedstock\,factor_a * Allocation\,factor_a$$

Where

$$Allocation\,factor_a = \left[\frac{Energy\,in\,intermediate\,product_a}{Energy\,in\,intermediate\,products\,and\,co-products}\right]$$

$$Feedstock\,factor_a = [Ratio\,of\,MJ\,feedstock\,required\,to\,make\,1\,MJ\,intermediate\,products]$$

At the last processing step, additionally, the emission estimate needs to be converted into the unit CO2eq/MJ of final biofuel. For this transformation, the following formula should be applied to emissions from cultivation :

$$e_{ec}biofuel_a\left[\frac{gCO2eq}{MJbiofuel}\right]_{ec} = \frac{e_{ec}feedstock_a\left[\frac{gCO2eq}{kg\ dry}\right]}{LHV_a\left[\frac{MJ\ feedstock}{kg\ dry\ feedstock}\right]} * Feedstock\ factor_a * Allocation\ factor\ biofuel_a$$

Where

$$Allocation\ factor\ biofuel_a = \left[\frac{Energy\ in\ biofuel}{Energy\ biofuel + Energy\ in\ co-products}\right]$$

$$Feedstock\ factor_a = [Ratio\ of\ MJ\ feedstock\ required\ to\ make\ 1\ MJ\ biofuel]$$

Indicator 2.2.3: GHG data transfer through the supply chain

Each consignment transacted shall contain information on GHG emissions, including accurate data on all relevant elements of the emission calculation formula. In case actual values are not used, information on the amount of GHG emissions shall not be transmitted through the chain of custody before the last processing step. If at any point of the chain of custody emissions have occurred and are not recorded, so that the calculation of an actual value is no longer feasible for operators downstream in the chain of custody, this must be clearly indicated in the delivery notes.

Indicator 2.2.4: Averaging of GHG data

Where a combined consignment is supplied to a client, averaging GHG data is not allowed. The original GHG value of each component of the consignment can be allocated to a similar amount of outgoing material. Alternatively, a group consignment can use the worst GHG performance.

Guidance

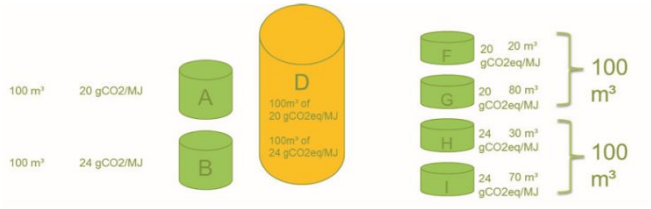
No averaging of GHG values from consignments grouped together is permissible. Each separate GHG value must be reported on the documents going to the client (buyer) or the highest (worst) GHG value can be used for the entire consignment. Other sustainability data such as country of origin and feedstock type can be grouped if identical.

Example 1

“Clean Energy” buys Bonsucro EU RED certified ethanol from two different suppliers. Each consignment, A and B, have different GHG values, 24 and 20 g C02eq/MJ, respectively. Consignments are mixed and stored in the same tank, D. Since there is no procedure in place to account for the different GHG values, the worst GHG value of 24 gC02eq/MJ is assigned to the mixture. “Clean Energy” then sells consignments F, G, H and I, which together sum the original volume of A+B-losses. All consignments F, G, H and I are assigned the GHG value of D, 24 CO2eq/MJ.

Example 2

"BioFuel" buys Bonsucro EU RED certified ethanol from two different suppliers. Each consignment, A and B, have different GHG values, 24 and 20 g C02eq/MJ, respectively. Consignments are mixed and stored in the same tank, D. "BioFuel's" system is prepared to keep the individual consignment GHG values after they are mixed into a group consignment. "BioFuel" knows that it has in tank D, 100 m3 of ethanol with 20 g CO2eq/MJ and 100 m3 of ethanol with 24 gCO2/MJ. "BioFuel" then sells consignments F, G, H and I, which together sum the original volume of A+B-losses (which in the example is considered to be 0). To different consignments F, G, H and I the original GHG values of consignments A and B are assigned, as long as the respective sum of the volumes matches the original consignments.



Example 3

"BioSugarFuel" buys Bonsucro EU RED certified ethanol from two different suppliers. Each consignment, A and B, have different GHG values, 24 and 20 g C02eq/MJ, respectively. Consignments are mixed and stored in the same tank, D. "BioSugarFuel" system averages GHG values after volumes are mixed into a group consignment. "Wrong#" knows that it has in tank D, 200 m3 of ethanol with 22 g CO2eq/MJ. "BioSugarFuel" then sells consignments F, G, H and I, which together sum the original volume of A+B-losses (which in the example is considered to be 0) and have a GHG value of 22 gCO2eq/MJ.