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NTA 8080-4

Duurzaamheidskader voor biomassa — Deel 4: Eisen aan ketenbeheer

Sustainability framework for biomass— Part 4: Chain-of-custody requirements

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Foreword

Please Note: This is a draft version, for information purposes only!

ISO 22095 defines a framework for chain of custody by providing:

— a consistent generic approach to the design, implementation and management of chains of custody;

— harmonized terminology;

— general requirements for different chain-of-custody models;

— general guidance on the application of the defined chain-of-custody models, including initial guidance on the circumstances under which each chain-of-custody model might be appropriate.

The chain-of-custody requirements in this document are aligned with the general requirements in ISO 22095, unless specific legislation has established deviating requirements.

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Sustainability framework for biomass — Part 4: Chain-of-custody requirements

1 Scope

This document describes the requirements for the chain of custody in case of biomass from their origin up to and including their use for energy or in products. This document describes the different chain-of-custody models, provides the requirements at organizational level and specifies the information to be transferred throughout the supply chain to maintain the chain of custody with the focus on the sustainability characteristics.

This document is applicable to following types of organizations that are part of the supply chain of biomass intended to be used for energy or in products:

— 'producer': organization that produces agricultural biomass or collects biobased residues and waste to be used for energy or in product, for which four sub-types are distinguished:

  1) 'primary producer';

  2) 'smallholder';

  3) 'collector of primary residues and waste';

  4) 'collector of non-primary residues and waste';

— 'processor': organization that processes biomass and or intermediates / semi-finished products for further use in the supply chain;

— 'trader': organization that buys and sells (processed) biomass without modifying the materials;

— 'end user': organization that valorises (processed) biomass for application in energy or finished products.

The operations of an organization can include more than one type.

NOTE 1 An organization that only transports produced and or processed biobased raw materials, but does not own this material, is not included in the scope of this document.

NOTE 2 NTA 8080-1:2024 provides more information about the different types of organizations.

In order for the 'end user' to make a declaration about the sustainability characteristics of the energy produced or product manufactured, it will be needed that all other organizations that are part of the supply chain have a chain-of-custody system in place that unambiguously supports this declaration.

NOTE 3 Legislation can prescribe the chain-of-custody models to be used. Where relevant, references are made to applicable legislation to demonstrate compliance if the requirements in this document are met.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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NTA 8080-1:2024, *Sustainability framework for biomass — Part 1: Terminology, overview and general requirements*

NTA 8080-2:2024, *Sustainability framework for biomass — Part 2: Sustainability requirements*

NTA 8080-3:2024, *Sustainability framework for biomass — Part 3: Requirements and guidance for greenhouse gas calculations*

ISO 22095:2020, *Chain of custody — General terminology and models*

3 Terms and definitions

For the purposes of this document, the terms and definitions in NTA 8080-1:2024 apply.

4 Chain-of-custody models

4.1 Overview and principles

4.1.1 ISO 22095 defines five different chain-of-custody models for chain-of-custody systems. Each model has specific requirements that allow different claims to be made about materials or products and/or production processes that are delivered using that chain-of-custody model. Table 1 summarizes the key properties of the four of the five chain-of-custody models, which are allowed for Better Biomass: The Book and claim model. Wherever this model is referenced in this document, it is to explain the differences between the models and does not imply that Book and Claim is accepted. Annex A provides simplified illustrations of the four chain-of-custody models. This clause describes the chain-of-custody models in generic terms. Specific chain-of-custody requirements related to the sustainability of biomass are provided in Clauses 5 to 7.

Table 1 — Summary of the properties of the chain-of-custody models
[SOURCE: ISO 22095:2020, Table 1]

Properties of chain-of-custody models	**Models without mixing**		**Models with mixing**	
	Identity preserved	**Segregated**	**Controlled blending**	**Mass balance**
Connection between administrative document flow and the physical flow of materials and products	Yes	Yes	Yes	Yes
Item-based expectations satisfied	Yes	Yes	Yes, for the percentage with specified charac-teristics	No
Market-based expectations satisfied	Yes	Yes	Yes	Yes

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Mixing material with specified characteristics and material with non-specified characteristics is possible	No	No	Yes	Yes
Assurance that volumes with specified characteristics sold match (or do not exceed) volumes of material with specified characteristics bought	Yes	Yes	Yes	Yes, within the specified time period
Specified characteristics preservation linked to volume reconciliation over a set time period	No	No	Yes	Yes
Physical separation of material or products to ensure that the specified characteristics are physically present in the output	Yes	Yes	Yes, for the part with the specified charac-teristics	No
Identify source of a material or product (or material component or product component)	Yes	No	No	No

4.1.2 The organization shall establish and implement one or more of the chain-of-custody models for all materials or products with specified characteristics and shall be transparent about the model chosen.

4.1.3 The organization shall only use the same chain-of-custody model as its supplier or a model with lower physical presence of the specified characteristic in the output. The list of chain-of-custody models, ranked from highest to lowest physical presence of the specified characteristics, is illustrated in Figure 1.

NOTE In the book-and-claim model, the administrative flow is not connected to the physical flows throughout the chain of custody and therefore not accepted for Better Biomass.

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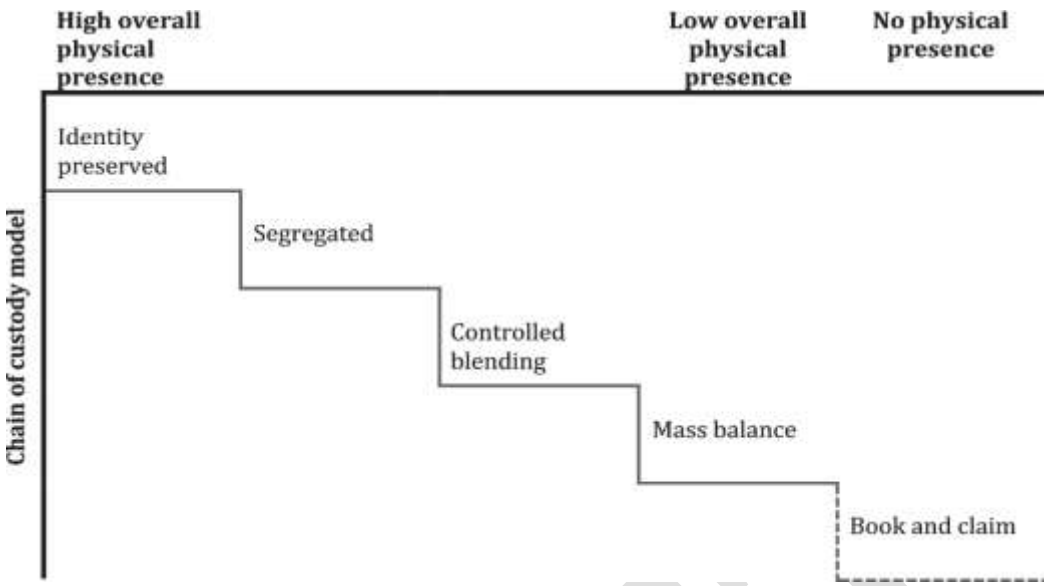

Figure 1 — Indicative illustration of chain of custody models ranked according to the physical presence of specified characteristics [SOURCE: ISO 22095:2020, Figure 1]

4.2 Chain-of-custody models without mixing

4.2.1 Identity preserved model

4.2.1.1 The identity preserved model is a chain-of-custody model, in which the inputs originate from a single source. In the identity preserved model, the material or product is kept physically separated and its characteristics are maintained throughout the supply chain. Materials or products are clearly identifiable throughout the supply chain as originating from the single source. The specified characteristics of the material or product determined by the specific source it originates from shall be maintained by the organizations active in the chain of custody. The material or product can be traced all the way back to the source from which it originates. A simplified illustration of the identity preserved model for a single tier in the supply chain is shown in Figure A.1.

4.2.1.2 The organization active in the chain of custody applying the identity preserved model shall ensure that the material or product with specified characteristics is physically separated and clearly identifiable throughout all stages of the production, processing, trading and valorisation process. In order to ensure that the material or product is clearly identifiable to a particular single source, the organization shall:

a) physically separate inputs and outputs with specified characteristics including single source from any other inputs and outputs during, for example, production, transport and storage;

b) clearly identify the materials or products during the process;

c) use an appropriate conversion factor so that the output quantities correspond to the input quantities.

4.2.1.3 The organization active in the chain of custody shall define which specified characteristics of the material or product are maintained (including the source) and which materials or products are kept physically separated from all others.

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4.2.2 Segregated model

4.2.2.1 The segregated model is a chain-of-custody model in which, from initial input to final output, the specified characteristics are maintained. Inputs from different sources may be mixed, based on identical characteristics. However, the identity of any particular source might be lost. In the segregated model, materials or products with certain specified characteristics are kept physically separated and their characteristics are maintained throughout the supply chain. The inputs will have identical characteristics, but may have different sources. A simplified illustration of the segregated model is shown in Figure A.2.

4.2.2.2 The organization active in the chain of custody applying the segregated model shall ensure that the material or product with specified characteristics is physically separated and clearly identifiable throughout all stages of the production, processing, trading and valorisation process. In order to ensure that the material or product is clearly identifiable, the organization shall:

a) physically separate inputs and outputs with specified characteristics from any other inputs and outputs during, for example, production, transport and storage;

b) clearly identify the material or products during the process;

c) use an appropriate conversion factor so that the output quantities correspond to the input quantities.

4.2.2.3 The organization active in the chain of custody shall define which specified characteristics are maintained and kept physically separated.

4.3 Chain of custody models with mixing

4.3.1 Controlled blending model

4.3.1.1 The controlled blending model is a chain-of-custody model in which materials or products with a set of specified characteristics are mixed according to certain criteria with materials or products without that set of characteristics. This results in a known proportion of the specified characteristics within all parts of the final output. The ratio between inputs is known for all outputs at all times for a contained volume (e.g. batch, shipment, storage facility). The output percentages can therefore be ensured in all cases. A simplified illustration of the controlled blending model is shown in Figure A.3.

4.3.1.2 The organization active in the chain of custody shall ensure that the quantity of physical inputs and outputs (volume or weight) at the production location are monitored and documented. The organization shall ensure that the output supplied to customers from a production location does not exceed the percentage of input with specified characteristics received at the production location. The percentage of controlled blended output delivered is always subject of the available percentage as determined by input, current stock or combination thereof. For this, the organization shall:

a) physically separate blended material or product in terms of production, transport and storage;

b) clearly identify the blended material or product during the process;

c) use an appropriate conversion factor so that the output quantities correspond to the input quantities.

4.3.1.3 The requirement setter shall consider and document relevant minimum requirements for all inputs to the chain-of-custody system based on relevant risks.

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4.3.1.4 The organization active in the chain of custody shall deliver the required percentage of each output with specified characteristics in accordance with the requirements of the chain-of-custody system.

4.3.1.5 Materials or products with specified characteristics shall be processed over a specified timeframe. For the inventory balancing period, the incoming percentage of controlled blending input shall be known beforehand in order to determine the percentage of conforming output before delivery. The ratio determines the delivered percentage of controlled blending output per contained volume (e.g. batch, shipment, storage facility).

4.3.2 Mass balance model

Please note that the general mass balance model described in this section is not fully REDII compliant. Economic operators under the REDII must use the REDII compliant mass balance system as described in Section 5.2 and Annex B.

4.3.2.1 The mass balance model is a chain-of-custody model in which materials or products with specified characteristics are mixed with materials or products without some or all of these characteristics, resulting in a claim on a part of the output, proportional to the input. This chain-of-custody model gives the organization active in the chain of custody the opportunity to monitor input characteristics for continuous processes, a single production location, or multiple inputs between multiple production locations. A simplified illustration of the mass balance model is shown in Figure A.4.

For this mass balance model, two implementation methods can be distinguished:

1) rolling average percentage method (see 4.3.2.2);

2) credit method (see 4.3.2.3).

4.3.2.2 Rolling average percentage method

4.3.2.2.1 The rolling average percentage method is based on the use of a fluctuating proportion of input bearing specified characteristics entering the organization over a defined claim period, allowing a claim of an average percentage to be made for the output over the claim period.

4.3.2.2.2 The organization shall calculate the average percentage of the inputs and outputs of a defined category for each material or product. For each material or product, the organization shall define claim periods, which shall correspond to the claimed relation of the input to the output. These input and output claim periods shall not exceed the specified timeframe.

4.3.2.3 Credit method

4.3.2.3.1 The credit method is applicable when two or more types of input are used in a material or product. The recorded output amount of each type shall be equivalent to the physical input, taking into account the conversion factor. This conversion factor shall be defined within each material or product at each production location. It shall be applied to define the amount of credit to enter the credit account, when using the output as the basis for calculation, or to withdraw the credit when using the input as the basis for calculation.

4.3.2.3.2 The credit account balance shall be calculated for each period according to the Formula (1) when the conversion factor is applied before the material enters the account or Formula (2) when the conversion factor is applied when the material leaves the account:

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$$C_b = C_{bp} + (M_{in} \times \text{cf}) - M_o \quad (1)$$

$$C_b = C_{bp} + M_{in} - (M_o/\text{cf}) \quad (2)$$

where

C_b is the credit balance;

C_bp is the credit balance by the end of previous period;

M_in is the purchased material or product, into the credit account;

M_o is the produced material or product, deducted from the credit account;

cf is the conversion factor.

The given symbols are calculated on the basis of units, volumes or weights.

NOTE The calculations shown are designed to illustrate the principle of the credit method. Other more complex scenarios can also be used in practice. In particular, in some cases the credit amount is administered before the conversion factor is applied. In addition, the amount of input and output are often not the same as most organizations are likely to have a balance in their credit account before more input is added to the chain-of-custody system.

4.3.2.3.3 For each material or product, the organization shall set up and maintain a credit account for each type of input used as an output declaration. The organization shall ensure that the credit account is not overdrawn within the balancing period.

4.3.2.3.4 An organization using the credit method shall deduct from the credit account the respective credit of the output, up to the limit in, but not exceeding, the credit account within the balancing period. The balancing period shall not exceed the evaluation period. The balancing period should be as short as possible. The length of the balancing period shall be evaluated, taking into account the varying needs of different sectors and the desired effectiveness of the system. Credits shall expire after a defined period of time.

NOTE The expiry period is usually set by the requirements setter.

4.3.2.4 The organization active in the chain of custody shall determine, according to the requirements of the chain-of-custody system, the geographical area and the timeframe within which the materials or products are mixed.

4.3.2.5 The requirement setter shall consider and document relevant minimum requirements for all inputs to the chain-of-custody system based on relevant risks.

4.3.2.6 The inputs and outputs shall be balanced. The organization shall ensure a zero or positive balance within the balancing period.

4.3.2.7 The organization shall provide evidence that volumes of material or products with specified characteristics supplied to customers are balanced with the volumes bought by the organization with the same specified characteristics.

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5 Requirements for organizations active in chain of custody

5.1 Generic requirements for chain-of-custody system

5.1.1 The organization shall implement and maintain a chain-of-custody system adequate to the organization's type and complexity to ensure the continuous conformity to all applicable chain-of-custody requirements.

5.1.2 When designing the chain-of-custody system, the organization shall take into account the chain-of-custody models that may be applied to conform to the needs of the requirement setter.

5.1.3 The organization shall ensure that the chain-of-custody system:

a) specifies the boundaries and applicability of the system to establish its scope;

b) specifies the personnel responsible and their roles for implementing the various requirements of a specific chain-of-custody model;

c) specifies the procedures needed for the implementation of a specific chain-of-custody model, taking into account the requirements of the specific chain-of-custody model (see also 5.2);

d) provides documented information necessary for conformity with this document including the applicable sustainability characteristics and greenhouse gas emissions saving characteristics (see also 5.5).

5.1.4 The organization shall conform to the requirements of NTA 8080-1:2024, Clause 5 with respect to implementing and maintaining the chain-of-custody system as part of its overall management system and quality assurance.

5.1.5 For the purposes of calculating the gross final consumption of energy from renewable sources, if the biobased raw material is used for energy, the chain-of-custody system shall ensure that each consignment is counted only once in:

— gross final consumption of electricity from renewable sources;

— gross final consumption of energy from renewable sources in the heating and cooling sector; or

— final consumption of energy from renewable sources in the transport sector.

5.1.6 The chain-of-custody system shall include information on whether support has been provided for the production of that consignment, and if so, on the type of support scheme.

5.2 Specific requirements for chain-of-custody models with mixing of biomass to be used for energy

5.2.1 If the organization applies a chain-of-custody model that allows mixing (see 4.3), the organization shall demonstrate that its chain-of-custody system:

a) allows consignments of raw material or fuels with differing sustainability characteristics and greenhouse gas emissions saving characteristics to be mixed for instance in a container, processing or logistical facility, transmission and distribution infrastructure or production location;

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b) allows consignments of raw material with differing energy content to be mixed for the purposes of further processing, provided that the size of consignments is adjusted according to their energy content;

c) requires information about the sustainability characteristics and greenhouse gas emissions saving characteristics and sizes of the consignments referred to in item a) to remain assigned to the mixture;

d) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture and requires that this balance be achieved over an appropriate period of time.

5.2.2 Within the framework of Directive (EU) 2018/2001 and "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen", the organization shall assign the claim that the applicable sustainability characteristics are met for 100 % to a certain consignment. The sum of all consignments withdrawn (output) shall have the same sustainability characteristics, in the same quantities, as the sum of all consignments added (input).

NOTE This means that consignments are not delivered based on the actual percentage of the physical content that meets the sustainability characteristics.

5.2.3 If the organization applies a chain-of-custody model that allows mixing within the framework of Directive (EU) 2018/2001, the specific mass balance system requirements in Annex B shall be applied as laid down in Commission Implementing Regulation (EU) 2022/996.

5.2.4 If the chain-of-custody system is applied to different types of raw materials and fuels, the organization shall ensure that the information is maintained and provided in such way that the contribution of biofuels, bioliquids and biomass fuels towards the targets for renewable energy can be correctly and unambiguously determined.

NOTE Articles 26 and 27 of Directive (EU) 2018/2001 contain provisions for determining the contribution of biofuels, bioliquids and biomass fuels towards the targets for renewable energy at the level of Member States, for which reliable information is required to avoid double accounting.

5.2.5 If a consignment is processed, information on the sustainability characteristics and greenhouse gas emissions saving characteristics of the consignment shall be adjusted and assigned to the output in accordance with the following requirements:

a) when the processing of a consignment of raw material yields only one output that is intended for the production of biofuels, bioliquids or biomass fuels, renewable liquid and gaseous transport fuels of non-biological origin, or recycled carbon fuels, the size of the consignment and the related quantities of sustainability and greenhouse gas emissions saving characteristics shall be adjusted applying a conversion factor representing the ratio between the mass of the output that is intended for such production and the mass of the raw material entering the process;

b) when the processing of a consignment of raw material yields more than one output that is intended for the production of biofuels, bioliquids or biomass fuels, renewable liquid and gaseous transport fuels of non-biological origin, or recycled carbon fuels, for each output a separate conversion factor shall be applied and a separate mass balance shall be used.

5.2.6 Within the framework of Directive (EU) 2018/2001, the organization may use evidence of other voluntary schemes and national schemes that are recognized by the European Commission for this purpose to demonstrate compliance with the requirements as laid down in Articles 29(2) to 29(7), 29(10), 30(1) and 30(2) of Directive (EU) 2018/2001 and the criteria for certification of low ILUC-risk biofuels, bioliquids and biomass fuels as laid down in Delegated Regulation (EU) 2019/807, as far as

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the scope of the applied recognized scheme covers the articles and criteria concerned. These materials can be accepted and delivered as “EU RED COMPLIANT” according to the requirements specified in Annex D. In these cases, the Better Biomass logo and claim shall not be used of any of the outgoing documents and also not by subsequent economic operators in the supply chain, including issuers of guaranties of origin for green gas or green electricity.

NOTE 1 The legal land-used based requirements for agricultural biomass are laid down in Articles 29(3) to 29(5) of Directive (EU) 2018/2001, and in case of forest biomass additionally in Articles 29(6) and 29(7). The legal requirements for providing accurate greenhouse gas emission data are laid down in Article 29(10) of Directive (EU) 2018/2001. The legal requirements related to the mass balance system are laid down in Articles 30(1) and 30(2) of Directive (EU) 2018/2001.

NOTE 2 NTA 8080-1:2023, Annex C provides a cross-references matrix between the requirements as laid down in Articles 29(2) to 29(7), 29(10), 30(1) and 30(2) of Directive (EU) 2018/2001 and the criteria for certification of low ILUC-risk biofuels, bioliquids and biomass fuels as laid down in Delegated Regulation (EU) 2019/80 and the corresponding requirements in the NTA 8080:2023 series.

5.2.7 Within the framework of "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen", the mass balance system shall indicate the biomass category or categories linked to each consignment.

NOTE This information is also required to be listed on the transaction document to be provided for every individual consignment (see 6.3).

5.3 Balancing period

5.3.1 Within the framework of RED2: The appropriate period of time for achieving the balance for the chain-of-custody model applied shall be 12 months for producers of agricultural and/or forest biomass and first gathering points sourcing only agricultural and/or forest biobased raw materials, and 3 months for all other organizations.

Within framework of RCVB:

The mass balance may relate to a period of no more than 12 months. If a positive balance (credit) remains, that surplus may be transferred to the following period. The same ‘account’ may be opened in the following period, at which point the remaining balance is transferred from the previous period. Credit can only be retained for a maximum of 12 months. Acquired credit older than 12 months will expire and cannot be transferred to the next mass balance period.

A negative mass balance (negative credits) is not allowed.

SOURCE: 7.4.2 of Verification protocol for Sustainable Biomass which must comply with the requirements of the Regulation on the Conformity Assessment of Solid Biomass for Energy Applications for the purposes of the SDE scheme

5.3.2 The start and end of the period shall be aligned with the calendar year or, where applicable, the four quarters of the calendar year. As an alternative to the calendar year, the organization may also use the economic year that it uses for bookkeeping purposes, provided that the choice is clearly indicated and applied consistently.

5.3.3 At the end of the balance period, the sustainability data carried forward shall be equivalent to the physical stock in the container, processing or logistical facility, transmission and distribution infrastructure or production location.

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5.4 Other considerations

5.4.1 Biomethane

5.4.1.1 In the case of biomethane, the organization that injects the biomethane into the gas grid is considered the 'end user'. The Chain of Custody is covered up to the point of injection into the gas grid.

The injected biomethane will be withdrawn from the grid by another organization to be applied as transportation fuel, input for electricity or heat production, or as raw material for producing biobased products. The organization that injects a certain volume of biomethane into the gas grid has usually a trade agreement with the organization that withdraws a similar volume of gas from the gas grid, corrected for minor losses due to transportation.

NOTE 1 The interconnected gas infrastructure is considered a physical facility, allowing for applying the mass balance approach.

NOTE 2 The certification of mass balancing of energy units of gaseous fuels within an interconnected infrastructure or between interconnected infrastructures shall only be provided if the voluntary scheme certification is complementary to the system mass balancing carried out with the support of the Union Database. Therefore, sustainability characteristics shall only be assigned to consignments of gas that have been registered in the Union Database, once the database is fully operational covering gaseous value chains. The mass balance of the interconnected infrastructure carrying the gas has to be in its entirety covered by the Union Database.

NOTE 2 The activities of national or regional registries involved in renewable gas certificates and the independent conformity assessment activities at the economic operator that withdraws gas from the gas grid, and possibly other conformity assessment activities after the injection of the biomethane into the gas grid complements the activities of Better Biomass.

5.4.1.2 The economic operator shall determine the greenhouse gas emissions savings in accordance with Directive (EU) 2018/2001, Annex V for biofuels or Annex VI for biomass fuels (see also NTA 8080-1:2015, Annex C) based on the information received from the organization that has injected the biomethane in the gas grid (i.e. 'end user') per trade agreement and taking into account any losses as defined in Directive (EU) 2018/2001. The economic operator that withdraws the gas from the gas grid shall demonstrate that it complies with the applicable requirements of Directive (EU) 2018/2001 through an independent conformity assessment.

5.5 Documented information

5.5.1 The organization shall in accordance with NTA 8080-1:2024, 5.2 be able to provide at least the following information when requested:

a) all transaction documents received and issued;

b) all agreements with suppliers and buyers, to the extent that they relate to the biobased raw material(s);

c) proof of calibrated measuring equipment used;

d) records per consignment received that at least include the details of the transaction document referred to under a);

e) records of the raw materials stored (including consumables), with at least the following information being included for every individual storage facility:

   — the description of the storage facility including location and maximum capacity;

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— the description of the raw materials stored (including consumables);

— if the identity preserved or segregated model is applied, the assurance that no mixing with raw materials that are not certified in accordance with the four parts of the NTA 8080:2024 series or equivalent takes place; and where, in the case of the identity preserved model, it is also assured that no mixing of materials from different sources takes place;

— the amount of raw material stored (including consumables);

f) description of the internal processes that includes:

— the raw materials (including consumables) used in the process;

— the processing steps that these substances undergo during the process;

— if the identity preserved or segregated model is applied, the assurance that no mixing with raw materials that are not certified in accordance with the four parts of the NTA 8080:2024 series or equivalent takes place in the process; and where, in the case of the identity preserved model, no mixing of raw materials from different sources takes place;

— the main products, by-products, residues and waste that occur during the process, including the common yields or conversion losses;

g) records of the final products stored (main products, by-products, residues and waste), with at least the following information being included for every individual storage facility:

— the description of the storage facility including location and maximum capacity;

— the description of the final products stored;

— if the identity preserved or segregated model is applied, the assurance that no mixing with final products that are not certified in accordance with the four parts of the NTA 8080:2024 series or equivalent takes place; and where, in the case of the identity preserved model, it is also assured that no mixing of final products from different sources takes place;

— the amount of final product stored;

h) registrations per consignment delivered, which at least include:

— the details of the transaction document referred to under a);

— the identifier of the organization to which the consignment is delivered.

The organization is not required to have all the data registered in records set up for such purpose, but this data shall be demonstrable or reducible when requested.

5.5.2 Within the framework of Directive (EU) 2018/2001, the organization shall enter all relevant information in the Union Database. The entries in the Union Database shall correspond with the figures that are part of the organization's bookkeeping and net mass balance data or other encoded information on their entities or sites. There shall be no deviations between data that has been registered in the Union Database and the respective data from the organization's documentation.

NOTE More information on the Union database can be found at: XXX

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5.5.3 The organization at the beginning of the chain of custody (i.e. 'producer') will not receive transaction documents, but only issue them. The organization at the end of the chain of custody (i.e. 'end user') will not issue transaction documents, but only receive them. The valorised biomass in accordance with the four parts of the NTA 8080:2024 series or equivalent shall be traceable in the balance system corresponding the chain-of-custody model applied (e.g. mass balance system). If valorisation comes with a sustainability declaration, this sustainability declaration shall be linked to the corresponding biobased raw material and shall be traceable in the balance system as well.

NOTE A sustainability declaration can be: proof of consignment of green electricity, green gas, renewable heat, or biofuel for transport.

5.5.4 The organization's records shall demonstrate unambiguously that the received, stored and delivered amount of biomass in accordance with the four parts of the NTA 8080:2024 series or equivalent is in balance, taking into account any conversion losses. If the organization uses more than one sustainability system, it shall be unambiguously demonstrated that the corresponding sustainability claims are conclusive in order to avoid double claiming of sustainable biobased raw materials. The balance period shall be in accordance with 5.3. Different factors can cause minor weight variations at the point of issue and at the point of intake. An increase in weight is not allowed for the purpose of chain-of-custody management.

5.6 Production location

5.6.1 If the organization applies the identity preserved or segregated model, the system shall be designed for each production location such that consignments with different sustainability characteristics would not be in contact with each other.

5.6.2 If the organization applies the controlled blending or mass balance model, the system shall be designed for each production location such that a mixture can take on any form, with the consignments would be in contact, such as in a container, processing or logistical facility or site (defined as a geographic location with precise boundaries where products can be mixed).

5.6.3 If more than one legal entity operates on a production location, each legal entity shall operate its own chain-of-custody system in accordance with 5.6.1 or 5.6.2.

6 Transaction document

6.1 To be able to maintain the chain of custody, every organization that is part of the supply chain shall provide at least the following details in a transaction document for every individual consignment:

a) name, address details and identifier of own organization (i.e. supplier);

b) name, address details and identifier of receiving organization (i.e. buyer);

c) date of (physical) loading;

d) place of (physical) loading or entry point, in case of biomethane injection;

e) place of (physical) delivery or exit point, in case of biomethane withdrawal;

f) unique identifier of the consignment;

g) name of voluntary scheme (i.e. 'Better Biomass');

h) proof of sustainability number (i.e. certificate number);

i) description of product;

j) description of production process, including biobased raw material produced, processed, traded and/or used;

k) waste or animal by-product permit number, if applicable;

l) country of origin of the biobased raw material;

m) volume;

n) assigned share to which the sustainability characteristics in accordance with NTA 8080 or equivalent apply;

NOTE 1 Within the framework of Directive (EU) 2018/2001 and "Regeling conformiteits-beoordeling vaste biomassa voor energietoepassingen, the share can only be 100 % (see 5.2.2).

o) greenhouse gas emission intensity in accordance with NTA 8080-3:2024, including the type of values that are used and, if applicable, non-recorded greenhouse gas emissions that have occurred in the chain of custody;

NOTE 2 NTA 8080-3:2024, Clause 7 provides the requirements about the use of default values, actual values and disaggregated default values, the conditions under which these values may be used and the minimum information to be transferred throughout the chain of custody. As explained in NTA 8080-3:2024, the greenhouse gas emission information is expressed in gCO_{2eq}/dry-ton material, based on which the final actor in the chain-of-custody can make the calculation of greenhouse gas emissions expressed in gCO_{2eq}/MJ in case of bioenergy.

NOTE 3 The type of values is an important aspect to inform the next actor in the chain of custody in order for this actor to determine in which way the greenhouse gas emissions performance may be calculated in accordance with NTA 8080-3:2024. By communicating about non-recorded greenhouse gas emissions, the next actor in de chain of custody is informed that calculating the greenhouse gas emissions savings based on actual values is no longer possible.

p) statement on whether the production process(es) has or have not been deliberately modified;

q) statement on whether the biobased raw material conforms to the criteria set out for low ILUC risk biofuels;

r) type of support scheme, if support has been provided for the production of the consignment;

s) information about the chain-of-custody model applied with a corresponding statement on whether the conditions that apply to the type of chain-of-custody model have been conformed with.

6.2 Within the framework of Directive (EU) 2018/2001, the transaction document shall in addition to the details in 6.1 also contain the following details:

a) statement on whether the organization has been assessed within the framework of Directive (EU) 2018/2001;

b) statement on whether the biobased raw material produced, processed, traded and/or used complies with the requirements as laid down in Articles 29(2) to 29(7), 29(10), 30(1) and 30(2) of Directive (EU) 2018/2001;

NOTE 1 The legal land-used based requirements for agricultural biomass are laid down in Articles 29(3) to 29(5) of Directive (EU) 2018/2001, and in case of forest biomass additionally in Articles 29(6) and

29(7). The legal requirements for providing accurate greenhouse gas emission data are laid down in Article 29(10) of Directive (EU) 2018/2001. The legal requirements related to the mass balance system are laid down in Articles 30(1) and 30(2) of Directive (EU) 2018/2001.

c) greenhouse emission data calculated in accordance with the methodology set out in Annexes V and VI of Directive (EU) 2018/2001 or Implementing Regulation 2022/996;

NOTE 2 See also NTA 8080-3:2024 for the calculation of greenhouse gas emissions saving and the requirements about the use of default values, actual values and disaggregated default values, the conditions under which these values may be used and the minimum information to be transferred throughout the chain of custody.

NOTE 3 This requirement supplements the general requirement about transferring greenhouse gas emission intensity per item o) in 6.1.

d) in case of fuels:

— date when production in installation has started;

— type of fuel;

— energy quantity taking into account the conversion factors in Annex III of Directive (EU) 2018/2001.

Annex C provides an example of a template for a transaction document that can be used by organizations that supply biomass within the framework of Directive (EU) 2018/2001.

6.3 Within the framework of "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen", the transaction document shall in addition to the details in 6.1 also contain the following details:

a) statement on whether the organization has been assessed within the framework of "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen";

b) description of the category as defined in "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen";

NOTE The “Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen” distinguishes five categories, namely:

1) woody biomass from Forest Management Units (FMUs);

2) woody biomass from Forest Management Units (FMUs) smaller than 500 ha;

3) residues from nature and landscape management;

4) agricultural residues;

5) biogenic residues and waste flows.

Reference is made to this regulation for the definitions of these five categories, for which in some cases another definition applies than the one used in NTA 8080-1:2024.

c) statement on whether the definition of 'endangered plant and animal species' as laid down in "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen" has been applied in this assessment.

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Annex C provides an example of a template for a transaction document that can be used by organizations that supply biomass within the framework of "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen".

6.4 In case of biobased products, the transaction document shall in addition to the details in 6.1 also contain the following details:

a) physical share of biobased content in the product;

b) method applied to determine the physical share of biobased content in the product;

NOTE The organization can determine the biobased content by using one of the methods contained in CEN/TR 16721 and specified in EN 16640, EN 16785-1 or EN 16785-2.

c) assigned share of biobased content in the product.

Annex C provides an example of a template for a transaction document that can be used by organizations that supply biobased products.

6.5 The transaction document shall be accompanied with the physical transfer of the consignment to which the transaction document relates.

7 Declarations

7.1 Declarations in the case of application in bioenergy

In the context of this document, the chain of custody for bioenergy ends when the product is valorised (e.g. by generating electricity, heating or cooling, blending with petrol or diesel, or injection into the gas grid). The product is still fully biobased, and the sustainability characteristics have been fully assigned to the product. The organization at the end of the chain of custody for application in bioenergy (i.e. 'end user') may issue a declaration that the product has been made from sustainably produced biomass in accordance with the four parts of the NTA 8080:2024 series or equivalent.

NOTE Normally, the organization needs to be certified to issue sustainability declarations, which will be branded as 'Better Biomass' in the case of conformance with the applicable requirements of the four parts of the NTA 8080:2024 series.

7.2 Declarations in the case of application in biobased products

7.2.1 In the context of this document, the chain of custody for biobased products cannot be established unequivocally due to the large variety in production chains. The product at the end of the chain of custody does not have to be entirely biobased, considering the processing steps that can take place in the chain (e.g. possibility of mixing with fossil-based raw materials or minerals) and the chain-of-custody models that may be applied. The organization at the end of the chain of custody for the application of biobased products (i.e. 'end user') may issue a declaration that the product has been made from sustainably produced biomass in accordance with the four parts of the NTA 8080:2024 series or equivalent.

7.2.2 When issuing a declaration, this declaration shall at least include:

a) the biobased content of the product (the physical share of biobased content in the product);

NOTE The organization can determine the biobased content by using one of the methods contained in CEN/TR 16721 and specified in EN 16640, EN 16785-1 or EN 16785-2.

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b) the assigned share of biobased content in the product (the accounting share of biobased content in the product);

c) the share of sustainably produced biomass in accordance with the four parts of the NTA 8080:2024 series or equivalent in the assigned biobased share in the product.

The organization shall document which method has been applied to determine the biobased content.

7.2.3 The declarations and the communication of the sustainability of biobased products should conform with EN 16848 or EN 16935 for business-to-business and business-to-consumer communication, respectively.

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Annex A
(informative)

Illustrations of chain-of-custody models

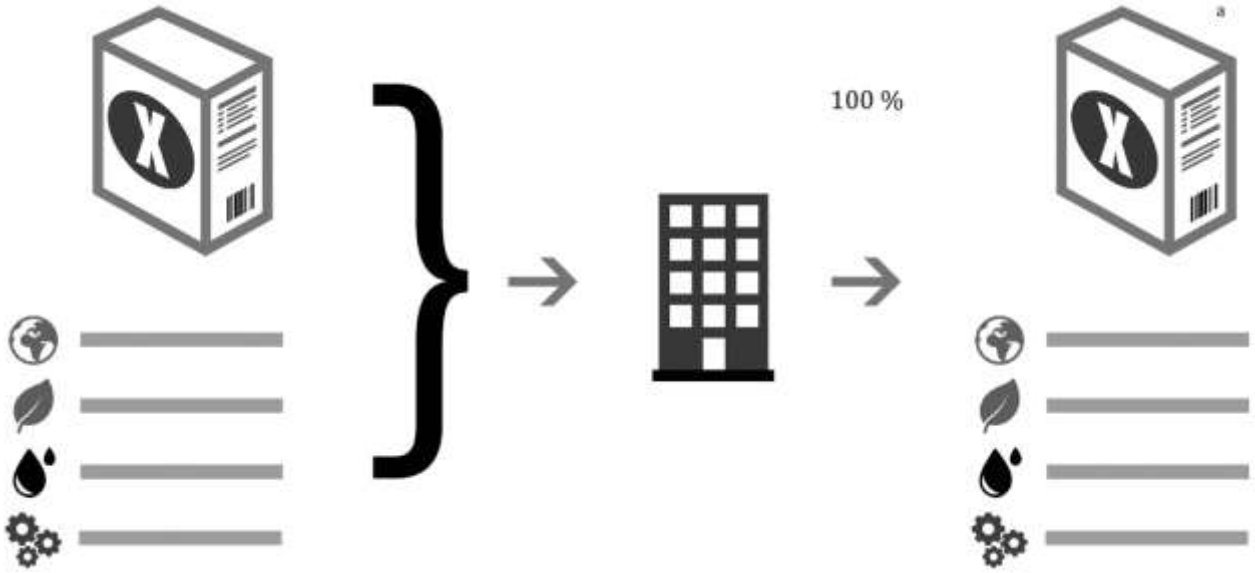
This annex provides simplified illustrations of the following chain-of-custody models as described in this document:

— identity preserved model in Figure A.1;

— segregated model in Figure A.2;

— controlled blending model in Figure A.3;

— mass balance model in Figure A.4;



Key

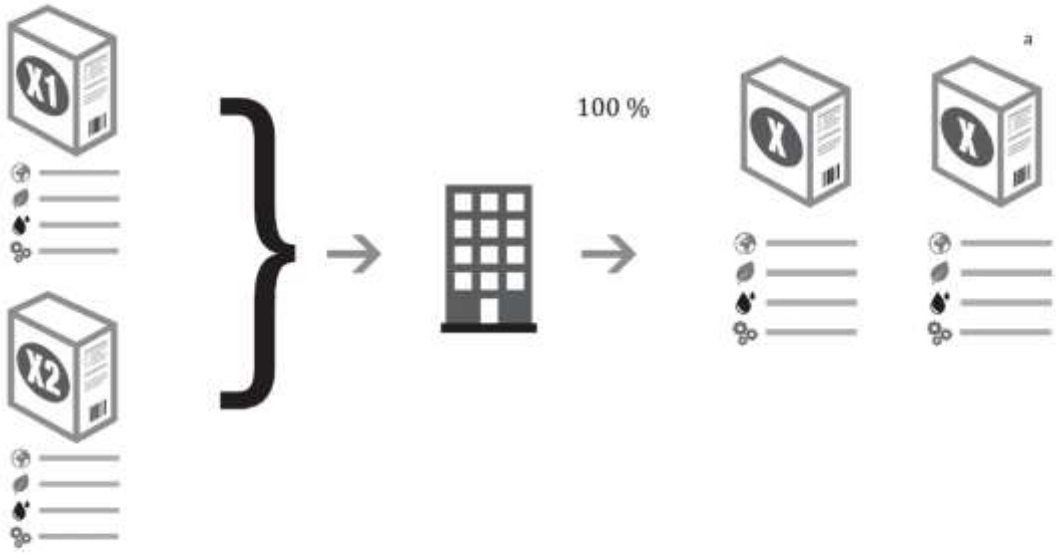
inputs with specified characteristics

outputs with specified characteristics

organization

a The specified characteristics are clearly identifiable as originating from a single source.

Figure A.1 — Simplified illustration of the identity preserved model [SOURCE: ISO 22095:2020, Figure 2]



Key

	inputs with identical specified characteristics from different sources		outputs with identical specified characteristics
	organization	a	The outputs can contain inputs from different sources with identical specified characteristics.

NOTE The proportions of X1 and X2 need not always be the same unless the specified characteristics require it.

Figure A.2 — Simplified illustration of the segregated model [SOURCE: ISO 22095:2020, Figure 3]

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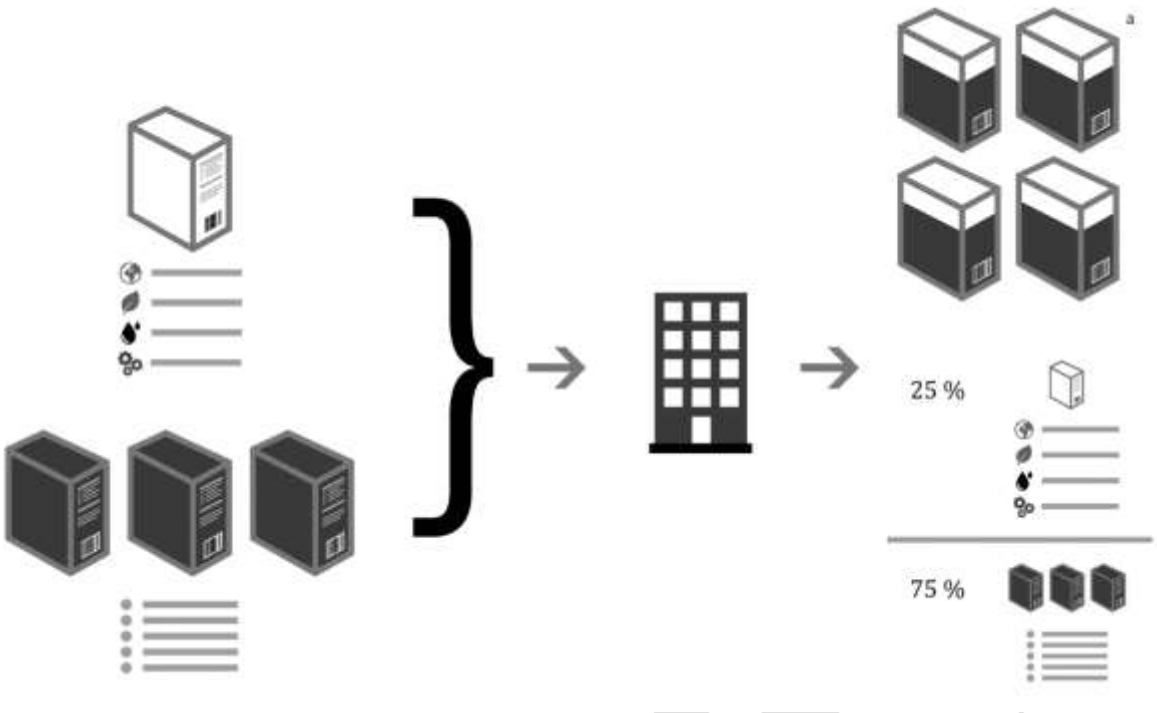

Key

	inputs with specified characteristics		outputs
	inputs with non-specified characteristics	[a]	Each output contains a verifiable amount of 25 % material with specified characteristics.
	organization		

Figure A.3 — Simplified illustration of the controlled blending model [SOURCE: ISO 22095:2020, Figure 4]

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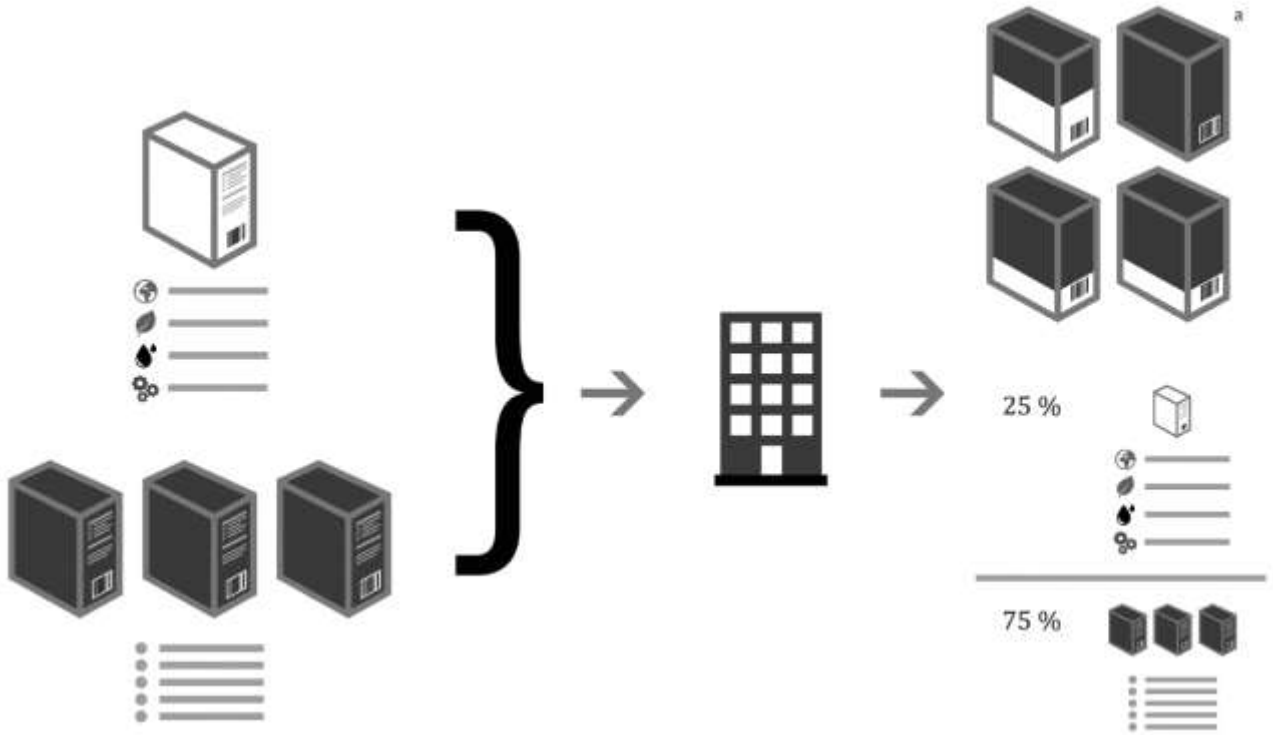

Key

inputs with specified characteristics

outputs

inputs with non-specified characteristics

[a] On average and over a certain period of time, the outputs contain a minimum of 25 % material with specified characteristics.

organization

Figure A.4 — Simplified illustration of the mass balance model [SOURCE: ISO 22095:2020, Figure 5]

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Annex B
(normative)

Specific mass balance system requirements within framework of Directive (EU) 2018/2001

B.1 General

This annex specifies the requirements for a mass balance system to be applied within the framework of Directive (EU) 2018/2001, in case the organization applies a chain-of-custody model that allows mixing.

NOTE These requirements are laid down in Article 19 of Commission Implementing Regulation (EU) 2022/996 and can duplicate the generic requirements of chain-of-custody models as described in Clause 5.

B.2 Requirements for implementing a mass balance system

B.2.1 Raw materials or fuels shall only be considered to be part of a mixture if they are mixed in a container, at a processing or logistical facility, or at a transmission and distribution infrastructure or production location.

B.2.2 Different raw materials shall only be considered to be part of a mixture if they belong to the same product group, except where the raw material is mixed for the purpose of further processing at the fuel production plant for the purpose of producing biofuels, bioliquids or biomass fuels.

B.2.3 Raw materials or fuels shall only be considered to be part of a mixture if they are physically mixed, unless they are physically identical or belong to the same product group. Where raw materials or fuels are physically identical or belong to the same product group, they shall be stored in the same interconnected infrastructure, processing or logistical facility, transmission and distribution infrastructure or site.

NOTE For the purposes of this document, product group means raw materials or fuels with similar physical and chemical characteristics and similar heating values that are subject to the same requirements as laid down in Articles 7, 26 and 27 of Directive (EU) 2018/2001 for determining the contribution of biofuels, bioliquids and biomass fuels towards achieving the targets for renewable energy.

B.2.4 Fuels introduced into a logistical facility or a transmission or distribution infrastructure such as the gas grid or a pipeline network for liquid fuels, stored in LNG or other storage facilities shall only be considered to be part of a mixture pursuant to point B.2.3 where that infrastructure is interconnected.

B.2.5 Separate mass balances shall be kept for raw materials and fuels that cannot be considered part of a mixture. Transfer of information about the sustainability and greenhouse gas emissions saving characteristics and sizes between different mass balances is not allowed. Pursuant to points B.2.1 to B.2.3, raw materials inside biofuels, bioliquids or biomass fuels production facilities are considered to be part of a mixture. Therefore, the requirement to keep separate mass balances shall not apply to such facilities and a single mass balance can be kept.

B.2.6 The mass balance system shall include information about the sustainability and the greenhouse gas emissions saving characteristics as well as quantities of raw materials and fuels, including information about the quantities of raw materials and fuels for which no sustainability or greenhouse gas emissions saving characteristics have been determined.

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B.2.7 If a consignment of fuel is delivered to an organization that is not participating in a recognized scheme, this delivery shall be reflected in the mass balance by withdrawing an equivalent quantity of raw material or fuel. The type of fuel to be booked out shall correspond to the physical nature of the raw material or fuel delivered.

B.2.8 If a consignment of fuel is used to comply with an obligation placed on a fuel supplier by a Member State, it shall be considered to be withdrawn from the mixture.

B.2.9 If biofuels, bioliquids or biomass fuels are blended with fossil fuels, the information about the sustainability and greenhouse gas emissions saving characteristics assigned to the blend shall correspond to the physical share of the biofuel, bioliquids or biomass fuels in the blend. The information about the sustainability and greenhouse gas emissions saving characteristics assigned to the blend shall be established in accordance with Clause B.3.

B.2.10 The sustainability and greenhouse gas emissions saving characteristics of a consignment of raw material or fuel shall be considered as a set. If a consignment is withdrawn from a mixture, any of the sets of sustainability characteristics may be assigned to them provided that the sets of sustainability and greenhouse gas emissions saving characteristics are not split and the mass balance is achieved over the appropriate period of time.

B.2.11 The mass balance system shall include information on whether support has been provided for the production of the fuel or fuel precursor, and if so, the type of support.

B.2.12 In the case of certification of (bio-)LNG, the liquefaction/re-gasification plant shall be certified in the Chain of Custody.

B.3 Requirements for co-processing

B.3.1 The organization shall document the quantities and types of biomass entering the process as well as the quantities of biofuel and biogas that are produced from that biobased raw material. Claims shall be substantiated with evidence including the results of the ^{14}C tests. If the organization uses alternative assessment methods as a main method, the organization shall still use ^{14}C tests to control the correctness of the results of the main method used. If the ^{14}C test, or other alternative control test, shows a deviation of more than 1 % in absolute terms, compared to the results of the alternative main method used by the organization, the lower value of both tests shall be retained. In addition, the organization shall review its testing methods in order to correct any system errors leading to such deviation. Alternative control tests other than the ^{14}C test may be used, if the biobased content assessed does not contain carbon.

B.3.2 The frequency for carrying out the control tests per B.3.1 shall be determined by taking into account the complexity and variability of the key parameters of the co-processing, in such a way as to ensure that at any time the share of biofuels and biogas claimed reflect their actual shares.

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Annex C
(informative)

Examples of templates for a transaction document

This annex provides an example of a template for a transaction document, which includes optional sections (in grey) to be used by organizations that supply:

— biomass within the framework of Directive (EU) 2018/2001; and/or

— biomass within the framework of "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen"; and/or

— biobased products.

C.1 Example transaction document

Company Logo	**Transaction certificate (PoS)**

Supplier: <Company name> <Street> <Zip code, City> <Country>	**Better Biomass certificate:**	<XXX-12345678>
The organization has been assessed within the framework of ☐ Directive (EU) 2018/2001 ☐ Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen		

Customer: <Company name> <Street> <Zip code, City> <Country>	**Transaction Certificate Nº**: Date:	<12341564789> <dd-dd-yyyy>

Product characteristics	Product: Production process:	<product description> <Process description>
Waste & residues: ☐ The production process(es) has or have not been deliberately modified. **ILUC-safe:** ☐ The biobased raw material conforms to the criteria set out for low ILUC risk biofuel		
For primary residues within scope of Directive (EU) 2018/2001**:**		

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☐ the biobased raw material complies with the requirements as laid down in Articles 29(2) to 29(7), 29(10), 30(1) and 30(2) of Directive (EU) 2018/2001.
Within scope of Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen: ☐ the definition of 'endangered plant and animal species' as laid down in "Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen" has been applied.

Delivery characteristics	Date of loading/entry Place of loading/entry Delivery date: Place of delivery/exit Quantity in <tons>: Identification of delivery Contract No (optional)	<mm-dd-yyyy> <place> <mm-dd-yyyy> <place> <##> <tons> <##> <##>

Sustainability data	NTA 8003 code of the product: Country of origin of raw material: ☐ Default value Total amount CO2 equivalents ☒ Actual value Eec El ..	<123> <Country> <123> g $CO_{2,eq}$/MJ <123> g$CO_{2,eq}$/MJ / kgCOeq/dry-ton <123> g $CO_{2,eq}$/MJ
	(calculated in accordance with the methodology set out in Annexes V and VI of Directive (EU) 2018/2001 or Delegated Regulation (EU) 2019/807)	

In case of fuels within scope of Directive (EU) 2018/2001:	Date when production in installation has started; Type of fuel; Energy quantity taking into account the conversion factors in Annex III of Directive (EU) 2018/2001. Incentives/subsidies used for the production:	<mm-dd-yyyy> <fuel type> <1234 > MWh <SDE+>

Only within the scope of Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen:	Biomass Category	☐ 1) Woody biomass from Forest Management Units (FMUs); ☐ 2) Woody biomass from Forest Management Units (FMUs) smaller than 500 ha; ☐ 3) Residues from nature and landscape management; ☐ 4) Agricultural residues; ☐ 5) Biogenic residues and waste flows.

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	Better Biomass certified share CoC model applied:	<123> % ☐ Identity preserved ☐ Segregated ☐ Controlled blending ☐ Mass balance
The following conditions that apply to the CoC model applied have been conformed with: <conditions: mixing, no mixing, etc.>		

For biobased products	Physical share of biobased content in the product; Method applied to determine the physical share of biobased content in the product; Assigned share of biobased content in the product.	<123> % < EN 16640 / EN 16785-1 / EN 16785-2> <123> %

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Annex D
(normative)

Acceptance of other schemes

All voluntary schemes and national schemes that are formally recognised by the European Commission in the framework of the RED II, in accordance with Article 30(4) of Directive (EU) 2018/2001, are accepted under Better Biomass only to the extent of the scope of their recognition. Materials certified under those schemes can only be accepted by Better Biomass certified operators as "**EU RED COMPLIANT**".

D.1 EU RED COMPLIANT

Better Biomass shall not refuse recognition of voluntary schemes and national schemes that are recognised by the European Commission in accordance with Article 30(4) of Directive (EU) 2018/2001, regarding the verification of compliance with the sustainability criteria set out in Art. 29 (2) to (7) and (10) as well as the greenhouse gas saving thresholds set out in Art. 25 (2) of this directive and the criteria for certification of low ILUC-risk biofuels, bioliquids and biomass fuels set out in Delegated Regulation (EU) 2019/807.
Materials certified under those schemes can be accepted by Better Biomass certified operators as "EU RED COMPLIANT". Acceptance of voluntary schemes is limited to the scope of their recognition by the European Commission.

D.2 Verification of accepted schemes

The Better Biomass certified operator shall verify whether the suppliers' certificate is valid and whether it is issued based on a voluntary scheme which has passed a (preliminary) positive assessment by the European Commission within the framework of RED II.
A list of all officially recognised schemes and schemes that have passed a (preliminary) positive assessment by the European Commission can be found here.

D.3 Claims

Under Better Biomass the "EU RED Compliant" claims can be applied to outgoing deliveries. The claim "EU RED Compliant" means that the entire upstream supply chain including cultivation or collection of the raw material is certified under a voluntary scheme that is recognised in the framework of the RED II. Sustainable material shall be considered "EU RED Compliant" if the Better Biomass certified operator receives deliveries from suppliers that are certified under any recognised voluntary certification scheme**. In these cases, the Better Biomass logo shall not be used of any of the outgoing documents and also not by subsequent economic operators in the supply chain, including issuers of guaranties of origin for green gas or green electricity.**
The claim "Better Biomass certified" means that the entire upstream supply chain, including the cultivation or collection of the raw material is certified according to Better Biomass, and the material used in the supply chain consists entirely and solely of Better Biomass material, at least on a quantity bookkeeping basis.
The transaction certificate shall clearly indicate whether the outgoing delivery (i.e. consignment) is "EU RED Compliant" or "Better Biomass certified". For deliveries under Better Biomass, the certified

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operators may choose not to include the statement “Better Biomass certified” and the Better Biomass logo. Deliveries of sustainable material without any such statement shall be considered “EU RED Compliant” by default.
For further information on the use of claims and logos under Better Biomass please see NTA 8080-01:2023, Annex B.

D.4 Withdrawal

Better Biomass reserves the right to withdraw the acceptance of schemes in case of, for example, bankruptcy or indication of fraud of an accepted scheme. Better Biomass informs all relevant Better Biomass users and cooperating Certification Bodies about the withdrawal of the acceptance. The information on the Better Biomass website will also be updated accordingly.

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Annex E
(informative)

Examples of mass balance systems

E.1 General

This annex gives a number of examples of mass balance systems for various applications with different complexity. The examples are adopted from several sources and are for illustration only. The organization should establish a mass balance system that fits to the purpose of its operations.

E.2 Example of mass balance for biofuels

Table E.1 gives an example of a mass balance for biofuels [source: CEN/TS 16214-2:2014, Table E.1].

Table E.1 — Example of a mass balance for biofuels

Incoming biomass	**From incoming product declaration**							
Internal reference	**Previous economic operator**	**Previous economic operator consignment unique reference #**	**Quantity** (t)	**Date of delivery**	**GHG intensity** (kg CO_{2eq}/t rapeseed)	**Land-use criteria met?**	**Feedstock**	**Quantity from heavily degraded land** (t)
2015–001	Oper1	66	105,000	2015-01-02	1 200	Yes	Rapeseed	
2015–002	Oper1	67	25,000	2015-01-02	1 150	No	Rapeseed	
2015–003	Oper2	24	30,000	2015-03-02	1 100	Yes	Rapeseed	20
2015–004	Oper3	149	35,000	2015-03-10	1 200	Yes	Rapeseed	
2015–005	Oper3	150	65,000	2015-03-20	Default	Yes	Rapeseed	
2015–006	Oper4	29	50,000	2015-03-20	Default	Yes	Soy	

Incoming biomass	**From own processing documentation**			
Internal reference	**Conversion factor** (t oil produced/ t feedstock)	**Energy allocation from feedstock to oil**	**Conversion factor** (g CO_2/gCO_2)	**Own energy consumption for processing** (kg CO_{2eq}/t feedstock)
2015–001	0,6	61,30 %	1,022	50
2015–002	0,6	61,30 %	1,022	50
2015–003	0,6	61,30 %	1,022	50
2015–004	0,6	61,30 %	1,022	50
2015–005	0,6	61,30 %	1,022	50
2015–006	0,4	63,00 %	1,575	50

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Internal balance							
Internal reference	**Quantity of oil produced** (t)	**Date of delivery**	**Land-use criteria met?**	**Feedstock**	**Quantity from degraded land**	**GHG intensity for feedstock** (kg CO_{2eq}/ t oil)	**Energy for crushing** (kg CO_{2eq}/ t oil)
2015–001	63,000	2015-01-02	Yes	Rapeseed	0,0	1 226,0	51,1
2015–002	15,000	2015-01-02	No	Rapeseed	0,0	1 174,9	51,1
2015–003	18,000	2015-03-02	Yes	Rapeseed	12,0	1 123,8	51,1
2015–004	21,000	2015-03-10	Yes	Rapeseed	0,0	1 226,0	51,1
2015–005	39,000	2015-03-20	Yes	Rapeseed	0,0	Default	51,1
2015–006	20,000	2015-03-20	Yes	Soy	0,0	Default	78,8

Checks				
Internal reference	**GHG total** ($kgCO_{2eq}$/t oil)	**GHG total for meal**	**GHG recheck** (kg $CO2_{eq}$/t rapeseed)	**Judgement**
2015–001	1 277,1	1 209,375	1 250	OK
2015–002	1 226,0	1 161	1 200	OK
2015–003	1 174,9	1 112,625	1 150	OK
2015–004	1 277,1	1 209,375	1 250	OK
2015–005	Default cultivation + 51,1			
2015–006	Default cultivation + 76,6			

Outgoing balance of oil								
Unique ref # as stated on outgoing product declaration	**Next economic operator**	**Date of delivery**	**Quantity** (t)	**GHG intensity** (kg CO_{2eq}/ t oil)	**Sus-tain-able**	**Feedstock**	**Quantity from heavily degraded land** (t)	**Comment (for understanding only)**
1	OperNext 1	2015-02-01	80,000	1 277,1	Yes	Rapeseed		(Batch 001 + 17 t from 004) can be aggregated because batches have similar sustainability characteristics including GHG intensity
2	OperNext 2	2015-02-05	4,000	1 277,1	Yes	Rapeseed		Remainder of batch 004
3	OperNext 2	2015-02-05	18,000	1 123,8	Yes	Rapeseed	12	Batch 003
4	OperNext 3	2015-03-21	15,000	1 174,9	No	Rapeseed		Batch 002, non-sustainable material has not impacted other batches

In stock at end of period	Processing status	t oil or t oil equivalent	GHG intensity	Sustainable	Feedstock
2015–005	Feedstock	39,000	Default cultivation + 51,1	Yes	Rapeseed
2015–006	Oil	20,000	Default cultivation + 76,6	Yes	Rapeseed

Mass balance check at end of period (2015-03-31)	
Mass balance result (sum of oil equivalent from all stock at start of the period and incoming batches minus sum of oil equivalent of all outgoing batches)	59,000 t
Volume of oil equivalent in stock at end of period	59,000 t
Balance matching:	Yes

E.3 Example of mass balance for biogas

Mass balance for a digester that accepts certified and non-certified substrates [source: *Handbook sustainability certification of biogas* (NL Agency)].

A digester accepts 60 t of substrate A. This substrate is Better Biomass certified, and has a specific biogas production of 10 m^3/t. In addition, this digester accepts 40 t of substrate B. This substrate is not Better Biomass certified, and has a specific biogas production of 20 m^3/t. Table E.2 summarizes these metrics, which shows that 43 % of all biogas produced is produced from Better Biomass certified substrate, and thus can be Better Biomass certified.

Table E.2 — Example of a mass balance for digester

Substrate	Sustainability claim	Quantity (t)	Specific biogas production (m^3/t)	Biogas production per substrate (m^3)	Percentage of total biogas production
A	Better Biomass certified	60	10	600	43 %
B	Not certified	40	20	800	57 %
Totals		100		1 400	100 %

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E.4 Examples on the allocation of sustainability characteristics in mass balance calculations

Example 1: Soybeans and rapeseed in separate silos

Soybeans and rapeseed are stored on the same site in different silos. When material is delivered from that site, the sustainability declaration should refer to the material which is actually delivered and to its sustainability characteristics. It is not allowed to randomly allocate sustainability characteristics between deliveries of soybeans and rapeseed.

This has been illustrated below:

Figure E.1 — Soybeans and rapeseed in separate silos

Example 2: Physical mix of different intermediate materials belonging to the same product group

Refined rapeseed oil and refined soybean are mixed in a storage tank. If a batch of material is taken from the tank and delivered, the sustainability declaration must reflect the share of both materials in the tank and their sustainability characteristics. In other words, it is not allowed to randomly allocate the sustainability characteristics of both oils to the batch taken from the mixture.

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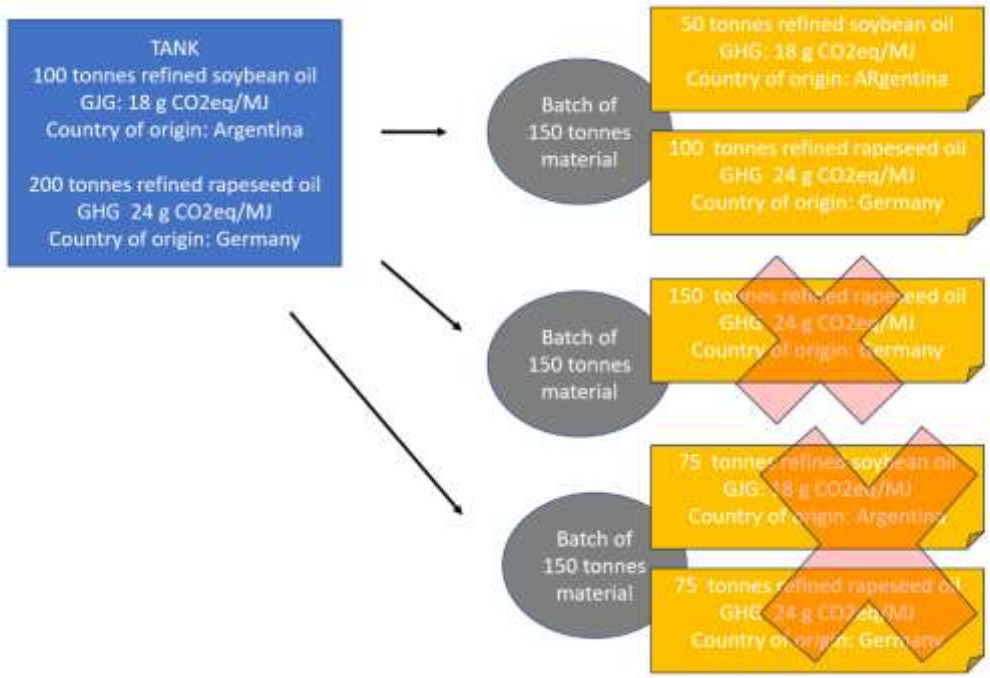

Figure E.2 — Refined rapeseed oil and refined soybean mixed in a storage tank

Example 3: Mixture of final biomass fuels

Two batches of wood pellets made from forest biomass are mixed in a tank. One batch is Better Biomass certified material, the other batch is ISCC EU certified material. There are two options to allocate sustainability characteristics to a batch of material taken from the mixture:

- The sustainability characteristics are allocated based on the share of the biomass fuels in the mixture.
- The sustainability characteristics are not allocated based on the share of biomass fuels in the mixture. In this case, any of the sets of sustainability characteristics in the mixture may be assigned to the batch taken out provided that the sets of sustainability and GHG emissions saving characteristics are not split and the mass balance is achieved over the appropriate period of time.

The figure below illustrates both options (on top is the allocation based on the share of the biomass fuels in the mixture, and below are two examples of random assignment of sustainability characteristics):

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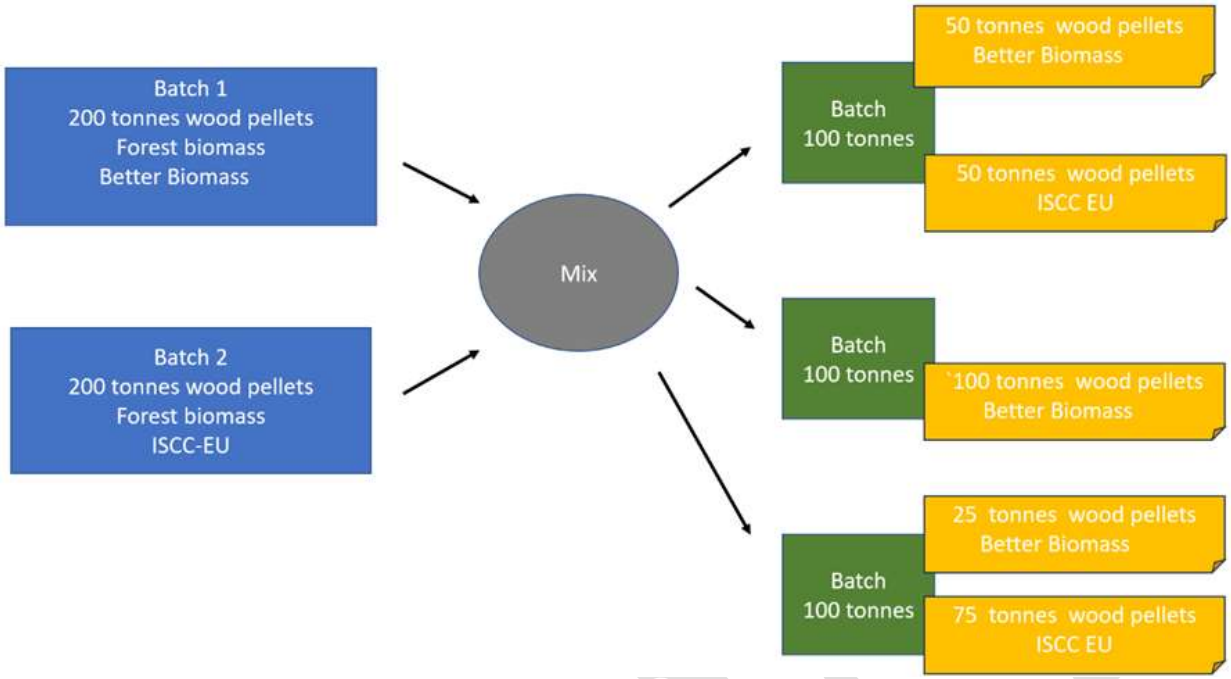

Figure E.3 — Mixture of certified biofuels

Example 4: Allocating sustainability characteristics to residues from sugar beet extraction process

When juice is extracted from sugar beet in a processing plant, the sustainability characteristics of the sugar beet shall be allocated to the juice as this is the primary (intermediate) product of the processing plant. Under the RED recast the residues from the beet extraction process (i.e. the left-over parts of the beet) are considered a processing residue, and the processing plant is the point of origin where the residue first arises.

Relevant sustainability characteristics that shall be allocated to the beet juice include information on compliance with the land use criteria, the country where the beet was grown, and the greenhouse gas emissions associated with the growing of the beet (eec). Also, the greenhouse gas emissions related to the beet extraction process (ep) shall be allocated to the juice.

As the mill is the point of origin where the beet residues arise, the beet processing residues are exempt from the land-related sustainability criteria. The auditor shall confirm during its audit that the material is indeed a processing residue from beet extraction and is not another material that has been intentionally modified to qualify as beet residue. The material needs to be allocated all other relevant sustainability characteristics, including the country where the beet residue arises.

Bibliography

[1] CEN/TS 16214-2, *Sustainability criteria for the production of biofuels and bioliquids for energy applications – Principles, criteria, indicators and verifiers – Part 2: Conformity assessment including chain of custody and mass balance*

[2] CEN/TR 16721, *Bio-based products – Overview of methods to determine the bio-based content*

[3] Commission Delegated Regulation (EU) 2019/807 of 13 March 2019 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council as regards the determination of high indirect land-use change-risk feedstock for which a significant expansion of the production area into land with high carbon stock is observed and the certification of low indirect land-use change-risk biofuels, bioliquids and biomass fuels

[4] Commission Implementing Regulation (EU) 2022/996. of 14 June 2022on rules to verify sustainability and greenhouse gas emissions saving criteria and low indirect land-use change-risk criteria

[5] Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide

[6] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources

[7] EN 16640, *Bio-based products – Determination of the bio-based carbon content of products using the radiocarbon method*

[8] EN 16785-1, *Bio-based products – Bio-based content – Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis*

[9] EN 16785-2, *Bio-based products – Bio-based content – Part 2: Determination of the bio-based content using the material balance method*

[10] EN 16848, *Bio-based products – Requirements for business-to-business communication of characteristics using a data sheet*

[11] EN 16935, *Bio-based products – Requirements for business-to-consumer communication and claims*

[12] *Global Nitrous Oxide Calculator (GNOC)*, Joint Research Centre of the European Commission, https://gnoc.jrc.ec.europa.eu/ [last viewed on 2021-12-01]

[13] *Handbook sustainability certification of biogas*, NL Agency, November 2013

[14] *IPCC Guidelines for National Greenhouse Gas Inventories*, Intergovernmental Panel on Climate Change (IPCC)

[15] *Note on the conducting and verifying actual calculations of GHG emission savings – Version 2.0*, European Commission DG Energy, reference: BK/abd/ener.c.1(2017)2122195

[16] Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen

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