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Additional requirements for organisations sourcing forest biomass – RED III

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Contents

Foreword

PEFC, the Programme for the Endorsement of Forest Certification, is a worldwide organisation promoting sustainable forest management through forest certification and labelling of forest-based products. Products with a PEFC claim and/or label offer assurances that the raw materials used in their manufacture originate from sustainably managed forests and Trees outside Forests (TOF) areas, recycled and controlled sources.

The PEFC Council endorses national and regional forest certification systems that comply with PEFC Council requirements. Systems are subject to regular evaluations.

This document had been developed in an open, transparent, consultative and consensus-based process covering a broad range of stakeholders.

Introduction

The PEFC Council is the owner of the PEFC forest certification scheme. The PEFC Council has revised the PEFC RED II certification scheme to bring it in compliance with the RED III Directive, to allow PEFC chain of custody certified organisations to comply with the obligations from the Directive.

The PEFC RED III certification scheme is built up over the PEFC Chain of Custody scheme, providing supplements and interpretations to the existing chain of custody requirements, as well as new requirements. It also includes additional requirements for chain of custody notified certification bodies and other technical requirements necessary to ensure the integrity, harmonised implementation, and consistency of the scheme, and to ensure that the scheme satisfies the needs and expectations of stakeholders and the market.

The scope of the PEFC RED III certification scheme is defined by the following attributes:

Type of biomass: Ligno-cellulosic material that is derived from forests (forest biomass and forestry residues); processing residues originating in forest-related industries and wastes.

Note: Biomass originating in agriculture, aquaculture, and fishery sources, including residues from related industries or processing, is not covered by the scope of the PEFC RED III certification scheme.

Type of fuel(s): Biomass fuels (pellets, wood chips and graded hog fuel) produced from ligno-cellulosic material for heating, cooling, and electricity production.

Note 1: "Bioliquids", "biofuels", "biogas", "renewable fuels of non-biological origin" and "recycled carbon fuels" are not covered by the scope of the PEFC RED III certification scheme.

Note 2: Graded hog fuels are wood fuels that have pieces of varying size and shape, produced by crushing with blunt tools (this definition is based on ISO 16559).

Geographic coverage: Global

Chain of custody coverage: Full biomass supply chain

This standard is international, and the requirements can be implemented globally.

The PEFC RED III certification scheme requires that organisations supplying forest biomass and ligno-cellulosic material derived from processing residues originating in forest-related industries and wastes for the production of heat, cooling, or energy shall hold a PEFC RED III certificate and a PEFC chain of custody certificate, in order to make RED III compliant declarations and claims.

The assurance of compliance of **forest biomass** with the RED III sustainability criteria relies within the PEFC RED III certified organisation. When sourcing **forest biomass**, PEFC RED III certified organisations can source:

a) **Forest biomass** produced in a country where there is a risk assessment recognised by PEFC that proves compliance at Level A with the RED III sustainability criteria. In those cases, the producer of the **forest biomass** does not need any additional PEFC certification.

b) **Forest biomass** from a country where there is a risk assessment recognised by PEFC at Level A. However, the risk assessment does not prove full compliance at Level A or where such a country risk assessment does not exist. In those cases, the PEFC RED III certified organisation shall ensure that the **forest biomass** is PEFC certified (produced by a holder of a valid and recognised PEFC SFM certificate). In addition, the PEFC RED III certified organisation shall require the biomass producer to comply with the corresponding requirements in chapter 6 of this standard to prove compliance at Level B with the non-compliant RED III sustainability criteria at Level A. The PEFC RED III certified organisation shall require the producer of **forest biomass** to provide evidence of compliance with the corresponding Level B requirements in Chapter 6.

1. Scope

This standard provides interpretations and additional requirements to *PEFC ST 2002, Chain of Custody of Forest and Trees Based Products - Requirements* that PEFC chain of custody certified organisations shall implement to use the PEFC certification scheme for the purpose of RED III compliance and obtain a PEFC RED III certificate.

As part of the additional requirements, the standard defines the information that chain of custody certified organisations shall require from biomass producers when showing compliance with the RED III sustainability criteria through level B risk assessment. When showing compliance with the RED III sustainability criteria through level B risk assessment, chain of custody certified organisations shall source from PEFC certified forests.

Moreover, the standard establishes the GHG calculation methods that producers of electricity, heating and cooling from forest biomass and ligno-cellulosic material from residues and waste shall use to calculate their reduction on GHG emissions.

Organisations shall hold a valid PEFC-recognised chain of custody certificate to implement the requirements of this standard and obtain a PEFC RED III certificate.

In this standard, the following verbal forms are used: “shall” indicates a requirement; “should” indicates a recommendation; “may” indicates a permission; “can” indicates a possibility or a capability. Further details can be found in the ISO/IEC Directives, Part 2.

2. Normative references

The following referenced documents are indispensable for the application of this standard. For both dated and undated references, the latest edition of the referenced document (including any amendment) applies.

ISO/IEC 17000, *Conformity assessment – Vocabulary and general principles*

ISO/IEC 17021-1, *Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part 1: Requirements*

ISO/IEC 17065, *Conformity assessment – Requirements for bodies, certifying products, processes and services*

ISO/IEC 17067, *Conformity assessment - Fundamentals of product certification and guidelines for product certification schemes*

ISO 19011, *Guidelines for auditing Management systems*

PEFC ST 1003, *Sustainable Forest Management – Requirements (available from www.pefc.org)*

PEFC ST 1002, *Group Forest Management Certification – Requirements (available from www.pefc.org)*

PEFC ST 2001, *PEFC Trademarks Rules – Requirements (hereinafter PEFC Trademarks standard), (available from www.pefc.org)*

PEFC ST 2002, *Chain of Custody of Forest and Trees Based Products, Requirements (available from www.pefc.org)*

PEFC ST 2002-1, *Requirements for the Implementation of PEFC EUDR Due Diligence System (PEFC EUDR DDS) (available from www.pefc.org)*

PEFC ST 2003, *Requirements for Certification Bodies providing certification against the PEFC International Chain of Custody Standard (available from www.pefc.org)*

PEFC ST 5003*, Additional requirements for certification bodies providing certification against PEFC ST 5002 – RED III*

PEFC ST 5004, *Requirements for the development of Level A risk assessments and its recognition by PEFC as per Article 29 (6a) and (7a) of the RED III Directive*

PEFC Template for the Assessment of the Risk at Level A against the RED III Sustainability Criteria for Forest Biomass sourced from [Geographical scope]

Directive (EU) 2018/2001 *on the promotion of the use of energy from renewable sources (RED II Directive)*

Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards *the promotion of energy from renewable sources*, and repealing Council Directive (EU) 2015/652 (*RED III Directive*)

Commission Implementing Regulation (EU) 2022/2448 of 13 December 2022 *on establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass laid down in Article 29 of Directive (EU) 2018/2001 of the European Parliament and of the Council (IR 2022/2448)*

Commission Implementing Regulation (EU) 2022/996 of 14 June 2022 *on rules to verify sustainability and greenhouse gas emissions saving criteria and low indirect land-use change-risk criteria apply and its annexes (IR 2022/996)*

Commission Implementing Regulation (EU) 2025/196 of 3 February 2025 *amending Implementing Regulation (EU) 2022/996 as regards the accreditation of certification bodies and correcting Annex VII to that Regulation (IR 2025/196)*

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 *on waste and repealing certain Directives*

Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 *on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation* and repealing Regulation (EU) No 995/2010

Commission Regulation (EU) No 1307/2014 of 8 December 2014 *on defining the criteria and geographic ranges of highly biodiverse grassland for the purposes of Article 7b(3)(c) of Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels and Article 17(3)(c) of Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources*

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 *on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC*

Council Directive 92/43/EEC of 21 May 1992 *on the conservation of natural habitats and of wild fauna and flora*

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 *on the conservation of wild birds*

Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down *the obligations of operators who place timber and timber products on the market*

Note: Regulation (EU) No 995/2010 (EUTR) has been repealed by Regulation (EU) 2023/1115 (EUDR). Transition from EUTR to EUDR shall follow the transition period defined in the EUDR

Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), United Nations, 1971

3. Terms and Definitions

3.1 General

The following definitions laid down in Article 2 of RED III, Article 2 of the *Commission Implementing Regulation (EU) on establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass* (hereinafter IR 2022/2448), and Article 2 of the *Commission Implementing Regulation (EU) on rules to verify sustainability and greenhouse gas emissions saving criteria and low indirect land-use change-risk criteria* (hereinafter IR 2022/996) are applicable for the implementation of this ST 5002.

3.1.1 Actual value

The greenhouse gas emissions savings for some or all the steps of a specific biofuel, bioliquid or biomass fuel production process, calculated in accordance with the methodology laid down in Part C of Annex V or Part B of Annex VI of RED III.

3.1.2 Agricultural biomass

Biomass produced from agriculture.

3.1.3 Biomass

The biodegradable fraction of products, **waste**, and **residues** from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of **waste**, including industrial and municipal **waste** of biological origin.

3.1.4 Biomass fuels

Gaseous and solid fuels produced from **biomass**.

3.1.5 Carbon pool

The whole or part of a biogeochemical feature or system within the territory of a Member State and within which carbon, any precursor to a greenhouse gas containing carbon, or any greenhouse gas containing carbon is stored.

3.1.6 Carbon stock

The mass of carbon stored in a **carbon pool**.

3.1.7 Carbon sink

Any process, activity or mechanism that removes a greenhouse gas, an aerosol, or a precursor to a greenhouse gas from the atmosphere

3.1.8 Certification audit (or initial audit)

An initial audit before participation in a scheme, with the purpose of issuing a certificate under a **voluntary scheme**.

3.1.9 Certification body

A certification body is an independent accredited conformity assessment body that concludes an agreement with a **voluntary or national scheme** recognised by the European Commission in accordance with Article 30(4)-(6) of Directive (EU) 2018/2001, as amended by Directive (EU) 2023/2413 to provide certification services for raw materials or fuels by carrying out audits of **economic operators** and issuing certificates on behalf of the **voluntary or national schemes** using the voluntary or national scheme's certification system.

Note: Certification bodies shall sign a PEFC RED III notification contract with PEFC. A certification body holding a valid PEFC RED III notification contract is referred to as a PEFC RED III notified certification body.

3.1.10 Country of harvest

The country or territory where the **forest biomass** raw material was harvested.

3.1.11 Critical nonconformity

The intentional violation of a voluntary scheme's standards such as fraud, irreversible **nonconformity**, or a violation that jeopardies the integrity of the **voluntary scheme**. Critical nonconformities shall include, but are not limited to, the following:

a) Non-compliance with a mandatory requirement of RED III, such as land conversion which contravenes Article 29(3), (4) and (5) of that Directive.

b) Fraudulent issuance of a proof of sustainability or self-declarations, for example, intentional duplication of a proof of sustainability to seek financial benefit.

c) Deliberate misstatement of raw material description, falsification of greenhouse gas (GHG) values or input data as well as the deliberate production of **wastes** or **residues**, for example, the deliberate modification of a production process to produce additional residue material, or the deliberate contamination of a material with the intention of classifying it as a **waste**.

3.1.12 Deadwood

All non-living woody **biomass** not contained in the litter, either standing, lying on the ground, or in the soil, including wood lying on the surface, coarse debris, dead **roots**, and **stumps** larger than or equal to 10 cm in diameter or any other diameter used by the country concerned.

3.1.13 Default value

A value derived from a **typical value** by the application of pre-determined factors and that may, in circumstances specified in RED III, be used in place of an **actual value**.

3.1.14 Economic operator/Organisation

A producer of raw material, a collector of **waste** and **residues**, an operator of **installations** processing raw material into final fuels or intermediate products, an operator of **installations** producing energy (electricity, heating or cooling) or any other operator, including of storage facilities or traders that are in physical possession of raw material or fuels, provided that they process information on the **sustainability and GHG emissions saving characteristics** of those raw materials or fuels.

Note 1: The term "economic operator" is equivalent to the term "organisation" used in PEFC ST 2002.

Note 2: An organisation that holds a valid PEFC **RED III certificate** issued under the PEFC RED III certification scheme is called a PEFC RED III certified organisation.

3.1.15 Expired certificate

A certificate that is no longer valid.

3.1.16 First gathering point

A storage or processing facility managed directly by an **economic operator** or other counterpart under contractual agreement that is sourcing raw material directly from producers of **agricultural biomass**, **forest biomass**, **wastes** and **residues** or, in the case of renewable fuels of non-biological origin, the plant producing such fuels.

Note 1: The first gathering point for **waste** and **residues** is the collection point. A collection point is a storage or processing facility managed directly by an **economic operator** that is sourcing **ligno-cellulosic material** from **wastes** and **residues**.

Note 2: Within the scope of PEFC ST 5002, the first gathering point only covers **organisations** sourcing raw material directly from producers of **forest biomass** and **waste** and **residues** from **ligno-cellulosic material**.

3.1.17 First party auditing

A self-declaration by an **economic operator** supplying to the **first gathering point**.

3.1.18 Forest biomass

Biomass produced from forestry.

Note: Forest biomass includes **forestry residues**.

3.1.19 Forest regeneration

Re-establishment of a forest stand by natural or artificial means following the removal of the previous stand by felling or as a result of natural causes, including fire or storm.

3.1.20 Forestry residues

Residues that are directly generated by forestry and that do not include **residues** from related industries or processing.

3.1.21 Grassland

Terrestrial ecosystems dominated by herbaceous or shrub vegetation for at least five years continuously. It includes meadows or pasture that is cropped for hay but excludes land cultivated for other crop production and cropland lying temporarily fallow. It further excludes continuously forested areas as defined in Article 29(4)(b) of RED III unless these are agroforestry systems which include land-use systems where trees are managed together with crops or animal production systems in agricultural settings. The dominance of herbaceous or shrub vegetation means that their combined ground cover is larger than the canopy cover of trees.

Source: Commission Regulation (EU) No 1307/2014

3.1.22 Harvesting criteria at national or sub-national level

The criteria laid down in point (a) of Article 29(6) of RED III:

a) the country in which **forest biomass** was harvested has national or sub-national laws applicable in the area of harvest as well as monitoring and enforcement systems in place ensuring:

   i. the legality of harvesting operations;

   ii. **forest regeneration** of harvested areas;

   iii. that areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in **wetlands**, **grassland, heathland,** and peatlands, are protected with the aim of preserving biodiversity and preventing habitat destruction;

iv. that harvesting is carried out considering maintenance of soil quality and biodiversity in accordance with sustainable forest management principles, with the aim of preventing any adverse impact, in a way that avoids harvesting of stumps and roots, degradation of **primary forests**, and of **old growth forests** as defined in the country where the forest is located, or their conversion into plantation forests, and harvesting on vulnerable soils, that harvesting is carried out in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located and with locally and ecologically appropriate retention thresholds for deadwood extraction and that harvesting is carried out in compliance with requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats;

v. that harvesting maintains or improves the **long-term production capacity** of the forest;

vi. that forests in which the **forest biomass** is harvested do not stem from the lands that have the statuses referred to in RED III, Article 29, paragraph 3, points (a), (b), (d) and (e) [land with a high biodiversity value], paragraph 4, point (a) [**wetlands**], and paragraph 5 [peatlands], respectively under the same conditions of determination of the status of land specified in those paragraphs; and,

vii. Installations producing biofuels, bioliquids and biomass fuels from **forest biomass**, issue a statement of assurance, underpinned by company-level internal processes, for the purpose of the audits conducted pursuant to Article 30(3) of RED III, that the **forest biomass** is not sourced from the lands referred to in point (vi).

Note: This is also reflected on 4.1.8 of this standard.

3.1.23 Harvesting criteria at sourcing area level

The criteria laid down in point (b) of Article 29(6) of RED III:

b) when evidence referred to in point (a) of the previous definition is not available, the biofuels, bioliquids and biomass fuels produced from **forest biomass** shall be taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 of Article 29 RED III if management systems are in place at forest sourcing area level ensuring:

i. the legality of harvesting operations;

ii. **forest regeneration** of harvested areas;

iii. that areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in **wetlands**, **grassland**, **heathland** and peatlands, are protected with the aim of preserving biodiversity and preventing habitat destruction unless evidence is provided that the harvesting of that raw material does not interfere with those nature protection purposes;

iv. that harvesting is carried out considering the maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact in a way that avoids harvesting of stumps and roots, degradation of **primary forests** and of old growth forests, or their conversion into plantation forests, and harvesting on vulnerable soils, that harvesting is carried out in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, and with locally and ecologically appropriate retention thresholds for deadwood extraction and that harvesting is carried out in compliance with requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats;

v. that harvesting maintains or improves the **long-term production capacity** of the forest.

vi. that **forest biomass** does not originate in land that:

- had, in or after January 2008, status of **primary forests**, other wooded land of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed, **old-growth forests**, **highly biodiverse grassland**, and **heathland**;
- had, in or after January 2008, status of **highly biodiverse forest and other wooded land** unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;
- had in January 2008 status of wetland and no longer has that status;
- had in January 2008 status of peatland unless evidence is provided that the cultivation and harvesting of that material does not involve drainage of previously undrained soil.

3.1.24 Heathland

Vegetation with low and closed cover, dominated by bushes, shrubs, dwarf shrubs (heather, briars, broom, gorse, laburnum etc.) and herbaceous plants, forming a climax stage of development.

Where a definition at country level is available for the term “heathland” other than this default definition, the country level definition shall apply. .

Source: EU Copernicus

3.1.25 Highly biodiverse forest and other wooded land

Land which is species-rich, not degraded, and has been identified as being highly biodiverse by the relevant competent authority.

Note 1: The term “not degraded” means that the land is not characterised by long-term loss of biodiversity due to for instance over grazing, mechanical damage to the vegetation, soil erosion or loss of soil quality (Commission Regulation (EU) No 1307/2014)

Note 2: The term “species rich” means:

a) a habitat of significant importance to critically endangered, endangered or vulnerable species as classified by the International Union for the Conservation of Nature Red List of Threatened Species or other lists with a similar purpose for species or habitats laid down in national legislation or recognised by a competent national authority in the country of origin of the raw material; or

b) a habitat of significant importance to endemic or restricted-range species; or

c) a habitat of significant importance to intra-species genetic diversity; or

d) a habitat of significant importance to globally significant concentrations of migratory species or congregatory species; or

e) a regionally or nationally significant or highly threatened or unique ecosystem.

(Commission Regulation (EU) No 1307/2014)

3.1.26 Highly biodiverse grassland

Grassland spanning more than one hectare that is:

a) natural, namely **grassland** that would remain **grassland** in the absence of human intervention and that maintains the natural species composition and ecological characteristics and processes; or

b) non-natural, namely **grassland** that would cease to be **grassland** in the absence of human intervention and that is species-rich and not degraded and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland.

Note 1: The EU Commission may adopt implementing acts further specifying the criteria by which to determine which **grassland** is to be covered by the term highly biodiverse grassland.

Note 2: Where land remains **grassland**, or would have remained **grassland** in the absence of human interventions, and is located in any of the geographic ranges listed in Regulation (EU) No 1307/2014, it shall be considered as natural, highly biodiverse grassland.

Note 3: The term “not degraded” means that the land is not characterised by long-term loss of biodiversity due to for instance over grazing, mechanical damage to the vegetation, soil erosion or loss of soil quality (Commission Regulation (EU) No 1307/2014)

Note 4: The term “species rich” means:

a) a habitat of significant importance to critically endangered, endangered or vulnerable species as classified by the International Union for the Conservation of Nature Red List of Threatened Species or other lists with a similar purpose for species or habitats laid down in national legislation or recognised by a competent national authority in the country of origin of the raw material; or

b) a habitat of significant importance to endemic or restricted-range species; or

c) a habitat of significant importance to intra-species genetic diversity; or

d) a habitat of significant importance to globally significant concentrations of migratory species or congregatory species; or

e) a regionally or nationally significant or highly threatened or unique ecosystem.

(Commission Regulation (EU) No 1307/2014)

Note 5: The term “human interventions” means ‘managed grazing, mowing, cutting, harvesting or burning

Note 6: The **grassland** identified in the following geographic ranges of the European Union is always regarded as highly biodiverse grassland:

a) habitats listed in Annex I to Council Directive 92/43/EEC;

b) habitats of significant importance for animal and plant species of Union interest listed in Annexes II and IV to Directive 92/43/EEC habitats of significant importance for wild bird species listed in Annex I to Directive 2009/147/EC.

3.1.27 Installation

A production unit of electricity, heating or cooling. An installation shall be considered to be in operation once the physical production of biofuels, biogas consumed in the transport sector, and bioliquids, and the physical production of heating and cooling and electricity from **biomass fuels** has started.

3.1.28 Legal predecessor

An **economic operator** that has been legally replaced by a new one, but no substantive changes or only superficial ones have been made regarding its ownership, management composition, working methods or scope of activity.

3.1.29 Level A

Evidence that the **country of harvest**, and, where applicable, the sub-national region where the **forest biomass** was harvested, has applicable legislation and regulation to the area of harvest in place and the existence of systems for ensuring monitoring of implementation and enforcement of the national and sub-national legislation and regulation. Additionally, Level A evidence also means that the country complies with the land use, land-use change and forestry (LULUCF) criteria at country level.

3.1.30 Level B

Evidence demonstrating compliance with the **RED III sustainability criteria** at the forest sourcing area level.

Note: Level B evidence is applied where the **Level A** evidence does not exist for a specific country or for specific **RED III sustainability criteria**.

3.1.31 Ligno-cellulosic material

Material composed of lignin, cellulose, and hemicellulose, such as **biomass** sourced from forests, woody energy crops and forest-based industries' **residues** and **wastes**.

3.1.32 Long-term production capacity

The health of the forest and its ability to continuously and sustainably deliver goods, such as wood of various quality grades, and non-wood-forest products and ecosystem services, including air and water purification, maintenance of wildlife habitat, recreation or cultural capital, over a long period of time, and where applicable, bridging several successive forestry rotations.

3.1.33 LULUCF criteria at national level

The criteria laid down in point (a) of Article 29(7) of RED III:

a) The country or regional economic integration organisation of origin of the **forest biomass**:

   i. Is a Party to the Paris Agreement.

   ii. Has submitted a nationally determined contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC), covering emissions and removals from agriculture, forestry and land use, which ensures that changes in **carbon stock** associated with biomass harvest are accounted towards the country's commitment to reduce or limit GHG emissions as specified in the NDC; or

   iii. Has national or sub-national laws in place, in accordance with Article 5 of the Paris Agreement, applicable in the area of harvest, to conserve and enhance **carbon stocks** and **sinks**, and providing evidence that reported LULUCF-sector emissions do not exceed removals.

3.1.34 LULUCF criteria at sourcing area level

The criteria laid down in point (b) of Article 29(7) of RED III:

b) Where evidence referred to in point (a)…[of the previous definition] is not available, the biofuels, bioliquids and **biomass fuels** produced from **forest biomass** shall be taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 of Article 29 of RED III if management systems are in place at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained, or strengthened over the long term.

3.1.35 Major nonconformity

Failure to comply with a mandatory requirement of RED III and a **voluntary scheme**, where the **nonconformity** is potentially reversible, repeated and reveals systematic problems or aspects that alone, or in combination with further **nonconformities**, may result in a fundamental system failure.

3.1.36 Management system for sourcing area

Information collected on the forest area at the sourcing area level, including in the form of text, maps, tables and graphs, and strategies or management activities planned and implemented to reach the forest resource management or development goals.

Note: The information collected at the sourcing area level feeds the organisation's management system: a set of interrelated or interacting elements of an **organisation** to establish policies and objectives and processes to achieve those objectives. The term **'**management system' means an information management system run by an **economic operator** to demonstrate that biomass sourcing is in compliance with the sustainability criteria at forest sourcing area level defined in Articles 29(6)(b) and 29(7)(b). The management system must document management practices with relevance to the sustainability criteria (as further described in this standard) that have been and are planned to be applied by forest managers/owners in the **sourcing area**. The management system is not to be confused with a forest management system, as in most cases, the **economic operator** will have no legal power or mandate to manage the forests where it sources the **biomass** from. The management system ensures that information necessary to demonstrate compliance with all sustainability criteria through a risk-based approach is collected, verified, assessed, securely stored by the **economic operator**, and appropriately passed down the supply chain using a mass balance chain of custody. The system needs to be accurate, reliable, and protected against fraud, including verification ensuring that materials are not intentionally modified or discarded so that consignments or part thereof could become a **waste** or **residue** (RED III Article 30(3). (Source: RED II BIO, 2.2.2 and 2.2.3).

3.1.37 Mass balance system

The mass balance system described in Article 30(1) of RED III describes a system in which the RED III "sustainability characteristics" remain assigned to "physical supplies". This means that at each step in the supply chain, material with different RED III sustainability characteristics can be physically mixed, as long as the material sold has the same RED III sustainability characteristics overall as the material that was taken in, i.e., units in = units out (taking into account any conversion factors). RED III sustainability characteristics can be allocated in a flexible manner to material taken out of the mixture. The mass balance system:

a) Allows consignments of raw material or fuels with differing **sustainability and GHG emissions saving characteristics** to be mixed for instance in a container, processing or logistical facility, transmission and distribution infrastructure or **site**.

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 and GHG emissions saving characteristics** and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and

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.

Note: The mass balance system is an additional and separate chain of custody method, specific for this ST 5002.

3.1.38 Minor nonconformity

A **nonconformity** that has a limited impact, constitutes an isolated or temporary lapse, is not systematic and does not result in a fundamental failure if not corrected.

3.1.39 Mix of raw material for the purpose of further processing

The physical mixing of raw material for the sole purpose of producing biofuels, bioliquids, or **biomass fuels**.

3.1.40 Natural disturbance

Any non-anthropogenic events or circumstances that cause significant emissions in forests and the occurrence of which is beyond the control of the relevant Member State, and the effects of which the Member State is objectively unable to significantly limit, even after their occurrence, on emissions.

3.1.41 Nonconformity

Non-compliance of an **organisation** or **certification body** with the rules and procedures, established by the **voluntary scheme** of which they are members or under which they operate.

3.1.42 Old-growth forests

A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes.

Where a definition for “Old-growth forest” is available at the country level, then the country level definition shall be used.

Source: European Commission (2023). Commission Staff Working Document, Commission Guidelines for Defining, Mapping, Monitoring and Strictly Protecting EU Primary and Old-Growth Forests. SWD (2023) 62 Final.

3.1.43 PEFC authorised body

An entity authorised by the PEFC Council to perform the administration of the PEFC scheme on behalf of the PEFC Council.

Note: The authorised body is either the **PEFC National Governing Body** (PEFC NGB) operating within its country or another entity that has been authorised by the PEFC Council to perform the administration of the PEFC scheme.

3.1.44 PEFC National Governing Bodies (PEFC NGBs)

The PEFC NGBs are independent, national organisations established to develop and implement a PEFC system within their country. A list of the PEFC NGBs and their contact details can be found on the PEFC website.

3.1.45 PEFC RED III authorised body

A **PEFC RED III authorised body** authorised by the PEFC Council to perform the operations of the **PEFC RED III scheme** on behalf of the PEFC Council.

Note 1: The authorised body is either the **PEFC National Governing Body** (PEFC NGB) operating within its country(ies) or other entity which has been authorised by the PEFC Council to perform the operations of the PEFC or **PEFC RED III scheme**.

Note 2: In countries where the PEFC Council has not authorised a **PEFC RED III authorised body**, the PEFC Council secretariat, on behalf of the PEFC Council, operates the tasks assigned to the PEFC RED III authorised bodies.

3.1.46 Plantation forest

A **planted forest** that is intensively managed and meets, at planting and stand maturity, all the following criteria: one or two species, even age class, and regular spacing. It includes short rotation plantations for wood, fibre and energy, and excludes forests planted for protection or ecosystem restoration, as well as forests established through planting or seeding, which at stand maturity resemble or will resemble naturally regenerating forests.

3.1.47 Planted forest

Forest predominantly composed of trees established through planting and/or deliberate seeding provided that the planted or seeded trees are expected to constitute more than fifty percent of the growing stock at maturity; it includes coppice from trees that were originally planted or seeded.

3.1.48 Primary forests

Naturally regenerated forest of native tree species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

3.1.49 Re-certification audit

An audit with the purpose of renewing a certificate issued by a **certification body** within the framework of a **voluntary scheme**.

3.1.50 Recognised national system

A national system recognised pursuant to Article 30(6) of RED III.

3.1.51 Recognised voluntary scheme

A **voluntary scheme** recognised pursuant to Article 30(4) of RED III:

*The Commission may decide that voluntary national or international schemes setting standards for the production of biofuels, bioliquids or **biomass fuels**, or other fuels that are eligible for counting towards the numerator referred to in point (b) of Article 27(1), provide accurate data on greenhouse gas emission savings for the purposes of Article 25(2) and Article 29(10), demonstrate compliance with Article 27(3) and Article 28(2) and (4), or demonstrate that consignments of biofuels, bioliquids or **biomass fuels** comply with the sustainability criteria laid down in Article 29(2) to (7). When demonstrating that the criteria laid down in Article 29(6) and (7) are met, the operators may provide the required evidence directly at sourcing area level. The Commission may recognise areas for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature for the purposes of point (c)(III) of the first subparagraph of Article 29(3).*

*The Commission may decide that those schemes contain accurate information on measures taken for soil, water and air protection, for the restoration of degraded land, for the avoidance of excessive water consumption in areas where water is scarce, and for certification of biofuels, bioliquids and **biomass fuels** with low indirect land-use change-risk.*

Note: The set of technical documents (the PEFC ST 5000 series (ST 5002, 5003, and 5004) and the additional *BD PEFC compliance with RED III requirement at scheme owner level)* that PEFC developed to be recognised as **voluntary scheme** by the European Commission comprise the PEFC RED III certification scheme.

3.1.52 RED III certificate

A conformity statement by a **certification body** within the framework of a **voluntary scheme**, certifying that an **economic operator** complies with the requirements of RED III.

Note: A conformity statement by a **certification body** within the framework of the PEFC **voluntary scheme** recognised by the European Commission under the RED III, certifying that an **economic operator** complies with the requirements of RED III is called a PEFC RED III certificate. An **organisation** holding a valid PEFC RED III certificate is referred to as a PEFC RED III certified **organisation**.

3.1.53 RED III product group

Raw materials, biofuels, bioliquids, non-gaseous **biomass fuels** with similar physical and chemical characteristics and similar heating values or gaseous **biomass fuels**, and LNG with similar chemical characteristics that all are subject to the same rules set out in Articles 7, 26 and 27 of RED III for determining the contribution of biofuels, bioliquids and **biomass fuels** towards achieving the targets for renewable energy.

Note: LNG stands for liquefied natural gas.

3.1.54 RED III sustainability criteria

RED III sustainability criteria are set in Article 29(2) to (7) of RED III. The applicable RED III sustainability criteria for biofuels, bioliquids and **biomass fuels** produced from **forest biomass** are set in Article 29(6) and (7). They are split into RED III sustainability criteria at harvesting level, and RED III sustainability criteria for maintenance or strengthening of carbon stock and sink levels.

At harvesting level, RED III sustainability criteria can be summarised as:

a) the legality of harvesting operations

b) **forest regeneration** of harvested areas

c) areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in **wetlands** and peatlands, are protected with the aim to preserving biodiversity and preventing habitat destruction

d) harvesting is carried out considering maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact, in a way that avoids harvesting of stumps and roots, degradation of **primary forests** and of old growth forests, or their conversion into plantation forests, and harvesting on vulnerable soils, that harvesting is carried out in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, and with locally and ecologically appropriate retention thresholds for deadwood extraction and that harvesting is carried out in compliance with requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats

e) areas where harvesting maintains or improves the **long-term production capacity** of the forest

f) **forest biomass** does not originate in land that:

i. had, in or after January 2008, status of **primary forests**, other wooded land of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed, **old-growth forests**, **highly biodiverse grassland**, and **heathland**;

ii. had, in or after January 2008, status of **highly biodiverse forest and other wooded land** unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

iii. had in January 2008 status of **wetlands** and no longer has that status;or

iv. had in January 2008 status of peatland unless evidence is provided that the cultivation and harvesting of that material does not involve drainage of previously undrained soil.

Note: As per the RED III Directive, this definition is complemented by the requirement that installations producing biofuels, bioliquids and biomass fuels from **forest biomass**, issue a statement of assurance, underpinned by company-level internal processes, for the purpose of the audits conducted pursuant to Article 30(3) of RED III, that the **forest biomass** is not sourced from the lands referred to in point (vi). This is required on 4.1.8 of this standard.

At carbon stock and sink level maintenance, RED III sustainability criteria can be summarised as:

a) The country or regional economic integration organisation of origin of the **forest biomass**:

i. Is a Party to the Paris Agreement;

ii. Has submitted a nationally determined contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC), covering emissions and removals from agriculture, forestry and land use and ensures that changes in **carbon stock** associated with biomass harvest are accounted towards the country's commitment to reduce or limit greenhouse gas emissions as specified in the NDC; or

iii. Has national or sub-national laws in place, in accordance with Article 5 of the Paris Agreement, applicable in the area of harvest, to conserve and enhance **carbon stocks** and **sinks**, and providing evidence that reported LULUCF-sector emissions do not exceed removals.

b) where evidence referred to in point (a) of this paragraph is not available, the biofuels, bioliquids and **biomass fuels** produced from **forest biomass** shall be taken into account for the purposes referred to in points (a), (b) and (c) of the first subparagraph of paragraph 1 of Article 29 of RED III if management systems are in place at forest certified area level to ensure that carbon stocks and sinks levels in the forest are maintained, or strengthened over the long term.

Note: The articles from RED III mentioned in this definition include more information. They also specify how these criteria can be implemented by **organisations**. For the purposes of PEFC ST 5002, we have summarised it. For further details, go directly to RED III.

3.1.55 Residue

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.

3.1.56 Second-party auditing

The auditing of a supplier by the **economic operator** managing the **first gathering point**. Second-party auditing processes are also covered during the third-party audits of the first gathering point.

Example of second-party audit: the assessment of additional evidence that a supplier of **forest biomass** may provide to the first gathering point to show compliance with the **RED III sustainability criteria**.

3.1.57 Site

A geographical location, logistical facilities, transmission, or distribution infrastructures with precise boundaries within which products can be mixed.

Note: Organisational units located in distinct physical sites can be considered part of a site if they are an extension without their own purchasing, processing, or sales functions (for instance, a remote storage facility). However, a single site cannot encompass more than one legal entity. Subcontractors used under outsourcing agreements (e.g., outsourced warehouses) are not categorised as sites.

3.1.58 Sourcing area

The geographically defined area from which the **forest biomass** feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the **forest biomass**.

Note: A sourcing area can comprise one or more PEFC SFM certified areas (certified area). A certified area is the forest area covered by an SFM system according to the PEFC SFM Standard (PEFC ST 1003). **Level B** evidence requirements, as per chapter 6, can be implemented at sourcing area, or at certified area.

3.1.59 Stumps and roots

Parts of the whole tree volume, excluding the volume of the above-stump woody **biomass**, considering the height of the stump as that at which the tree would be cut under normal felling practices in the relevant country or region.

3.1.60 Support scheme

Any instrument, scheme or mechanism applied by an EU Member State, or a group of EU Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased, including but not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and sliding or fixed premium payments.

3.1.61 Surveillance audit

Any follow up audit of certificates issued by a **certification body** within the framework of a **voluntary scheme** after certification and before a **re-certification audit**, which can be carried out quarterly, half-annually or annually.

3.1.62 Suspended certificate

A certificate temporarily invalidated due to **nonconformities** identified by the **certification body** or upon voluntary request of the **economic operator**.

3.1.63 Sustainability and greenhouse gas (GHG) emissions saving characteristics

The set of information describing a consignment of raw material or fuel that is required for demonstrating compliance of that consignment with the sustainability and GHG emissions saving criteria for biofuels, bioliquids and **biomass fuels** or the GHG emission savings requirements applicable for renewable fuels of non-biological origin and recycled carbon fuels.

3.1.64 Terminated certificate

A certificate that has been voluntarily cancelled while it is still valid.

3.1.65 Third party auditing

The auditing of an **economic operator** is carried out by a third party that is independent of the **organisation** subject to the auditing.

3.1.66 Typical value

An estimate of the greenhouse gas emissions and greenhouse gas emissions savings for a particular biofuel, bioliquid or biomass fuel production pathway, which is representative of the Union consumption.

3.1.67 Voluntary scheme

An **organisation** that certifies the compliance of **economic operators** with criteria and rules including, but not limited to, the sustainability and GHG saving criteria set out in RED III and in Delegated Regulation (EU) 2019/807 on *the determination of high ILUC-risk feedstock for which a significant expansion of the production area into land with high **carbon stock** is observed, and the certification of low ILUC-risk biofuels, bioliquids and **biomass fuels***.

3.1.68 Waste

Waste means any substance or object which the holder discards or intends or is required to discard as defined in Article 3(1) of Directive 2008/98/EC on waste, excluding substances that have been intentionally modified or contaminated to meet this definition.

3.1.69 Wetlands

Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.

Note: The wetland ecosystems are flooded or saturated in water, either permanently, for years or decades, or for a significant part of the year. Application of the definition need to reflect seasonal changes within a year.

Source: Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971)

3.1.70 Withdrawn certificate

A certificate that has been permanently cancelled by the **certification body** or the **voluntary scheme**.

4. Requirements for the implementation of the chain of custody controlled method

4.1 General

4.1.1 To use the PEFC scheme to demonstrate compliance with RED III requirements, the **organisation** shall hold a valid PEFC-recognised chain of custody certificate, and a valid PEFC **RED III certificate**.

4.1.2 The **organisation** shall cooperate with the European Commission and the competent authorities of the EU Member States, including granting access when requested and making available all information needed to fulfil their tasks under RED III.

Note: **Organisations** acting as **first gathering points** for **forest biomass**, they shall ensure that their suppliers of **forest biomass** comply with this requirement.

4.1.3 The **organisation** shall sign a PEFC RED III contract with the PEFC Council, or the **PEFC RED III authorised body** from the country where they are based, prior to obtaining the PEFC **RED III certificate**.

4.1.4 In the context of RED III certification, PEFC does not allow multisite or group certification. **Organisations** holding a multisite or group PEFC chain of custody certification must obtain an individual PEFC **RED III certificate** for each individual **site** or participant concerned and maintain separate RED III balance system accounts.

Note 1: A **site** refers to a singular operational entity of an **organisation** located at a specific physical **site**, separate from other units within the same **organisation**. Organisational units located in distinct physical **sites** can be considered part of a **site** and being covered by an individual PEFC RED III certificate with multiple addresses if they are an extension without their own purchasing, processing, or sales functions (for instance, a remote storage facility). However, a single **site** cannot encompass more than one legal entity. Subcontractors used under outsourcing agreements (e.g., outsourced warehouses, outsourced grinding operations) are not categorised as **sites**. Examples of typical **sites** include processing or trading facilities like manufacturing **sites**, sales offices, or company-owned warehouses.

Note 2: Subcontractors cannot be used when the outsourcing agreements includes a transfer of ownership of the materials. If the subcontracted activities involve a transfer of ownership of the materials, the subcontractor needs to obtain a separated PEFC RED III certificate.

4.1.5 The **first gathering point** is the first **organisation** within the supply chain that shall get certified against this PEFC ST 5002 and the first that shall provide a RED III Declaration to their client **organisations** to demonstrate that the material supplied is RED III compliant.

Note: Appendix 1 of PEFC ST 5002 includes a template for RED III Declarations.

4.1.6 **Forest biomass** shall comply with the **RED III sustainability criteria**.

4.1.7 For any sourced **forest biomass** or **ligno-cellulosic material** from forest-related industry **waste** and **residues** to be RED III compliant, the **organisation** acting as an installation shall comply with RED III GHG emissions calculations requirements (as per chapter 7) from the process of collection if RED III Directive defines for the organisations a threshold for greenhouse gas savings (Art 29(10)). Further details in chapter 7.

4.1.8 The organisation acting as an installation producing biofuels, bioliquids and biomass fuels from **forest biomass** shall issue a statement of assurance, underpinned by company-level internal processes, for the purpose of the audits conducted pursuant to Article 30(3) of the RED III Directive.

4.2 Management system

4.2.1 The **organisation** shall maintain an auditable system for safekeeping and reviewing all evidence related to the claims it makes or relies on. The requirements in this PEFC ST 5002 shall be appropriately covered under the existing PEFC chain of custody management system.

4.2.2 The **organisation** shall define procedures, implement processes, and keep records on the material declared as RED III compliant and the applicable information that proves compliance, including conversion factors.

4.2.3 The **organisation** shall receive records of commercial transactions transmitted through the previous organisations within its supply chain to allow auditors to trace back through the supply chain to verify any RED III compliance claims made, as appropriate.

4.2.4 The **organisation** shall keep records and any evidence relating to RED III compliant declarations necessary to comply with the IR and RED III for a minimum of 5 years or longer where it is required by the relevant national authority.

4.2.5 The **organisation** shall prepare and provide the **certification body** with any information relating to the auditing of such evidence.

4.2.6 The **organisation** shall provide to the auditor/s all mass balance data in advance of the planned audit, upon request by the **certification body**,

4.3 Implementation of the Due Diligence System

4.3.1 The **organisation** shall implement a PEFC recognised Due Diligence System (either the PEFC DDS as per PEFC ST 2002 or the PEFC EUDR DDS as per PEFC ST 2002-1) on any **forest biomass** and **biomass fuels** used as input for a **RED III product group** for the avoidance of material from controversial sources. The **organisation** shall make sure that any material used as input for **RED III product groups** went through the PEFC DDS or the PEFC EUDR DDS, and resulted in "negligible risk" that it originates from controversial sources prior to entering the **mass balance system**.

Note 1: The PEFC DDS is described in Chapter 7 and Appendix 1 of PEFC ST 2002:2020, *Chain of Custody of Forest and Tree-Based Products*, and the PEFC EUDR DDS on the PEFC ST 2002-1, *Requirements for the Implementation of PEFC EUDR Due Diligence System (PEFC EUDR DDS)*.

Note 2: "Negligible risk' is a level of risk that applies to forest and tree-based materials, including **biomass** and **biomass fuels**, where, on the basis of a full assessment of material-specific and general information and, where necessary, of the application of the appropriate mitigation measures (as specified in Chapter 7 and Appendix 1 of PEFC ST 2002:2020 or the corresponding chapters of the PEFC EUDR DDS), those forest and tree-based materials show no cause for concern as originating in controversial sources.

Note 3: Where the **organisation** procures material under a valid X% PEFC certified, 100% PEFC Origin or PEFC controlled sources claim from a supplier that holds a valid PEFC chain of custody certificate, or material that is declared as RED III compliant by a supplier with a valid PEFC **RED III certificate**, the risk can automatically be considered as negligible, provided that there are no substantiated concerns or complaints. In addition, for material that goes through the PEFC EUDR DDS, the material needs to be delivered with the additional claim: PEFC-EUDR.

4.3.2 **Waste** and **residues** are excluded from the implementation of the PEFC DDS or PEFC EUDR DDS, except for **residues** from primary production processes, which shall go through the PEFC DDS or PEFC EUDR DDS and result in negligible risk prior to being classified as RED III compliant.

***Note*:** Both PEFC ST 2002 as well as PEFC ST 5002 require the implementation of the PEFC DDS for **residues** resulting from primary production processes such as sawmilling **residues** (sawdust, chips, bark, etc.). Organisations can implement either the PEFC DDS or the PEFC EUDR DDS.

4.4 Identification of inputs and declaration of outputs

4.4.1 Identification of inputs at the first gathering point

4.4.1.1 The **organisation** acting as the **first gathering point** for **forest biomass** shall demonstrate that **forest biomass** entering the PEFC RED III **system** as input complies with the **RED III sustainability criteria**.

4.4.1.2 The **organisation** acting as the **first gathering point** for **forest biomass** shall demonstrate that **forest biomass** entering the PEFC RED III **system** as input complies with the **RED III sustainability criteria** using one of the following options:

a) The **forest biomass** comes from an area for which there is a risk assessment at national or subnational level that is recognised by PEFC, this is known as **Level A** risk assessment.

Note: **Level A** risk assessments recognised by PEFC are published on the PEFC website.

b) The **forest biomass** comes from an area for which there is a **Level A** risk assessment at national or subnational level conducted by **recognised voluntary schemes** or **recognised national systems** under the same scope as the PEFC system; or,

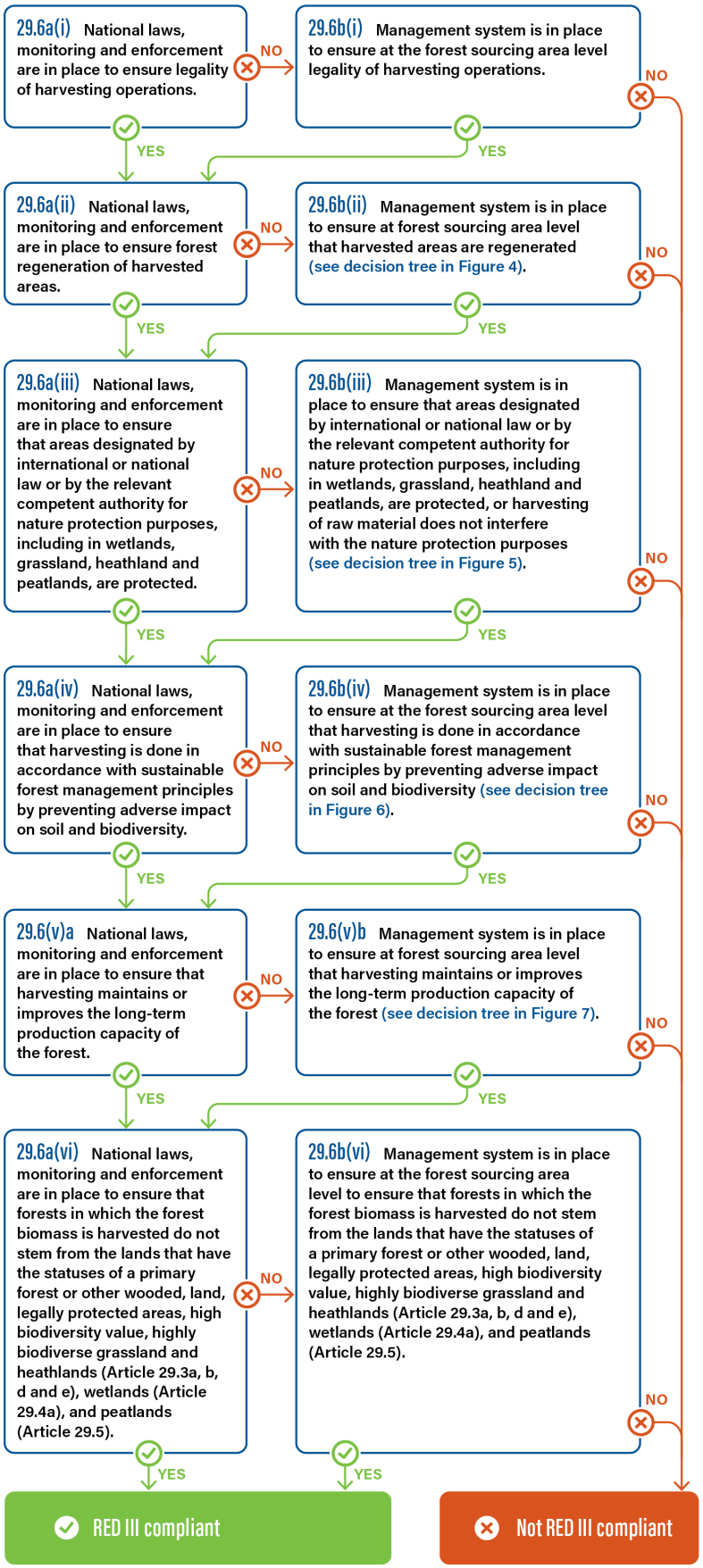
c) Collecting and evaluating evidence of compliance of the **forest biomass** with **Level B** at sourcing area level.

4.4.1.3 If there is a **Level A** risk assessment in place covering the area from which the **forest biomass** is sourced, and the findings of the risk assessment show full compliance with the **RED III sustainability criteria**, the **organisation** acting as the **first gathering point** can accept the material as RED III compliant (after having implemented the PEFC DDS or the PEFC EUDR DDS and resulted in negligible risk, as per 4.3).

4.4.1.4 The **organisation** acting as the **first gathering point** shall require the supplier of **forest biomass** to provide a self-declaration. The self-declaration shall include a statement that the **forest biomass** complies with the **RED III sustainability criteria** and include the country of origin.

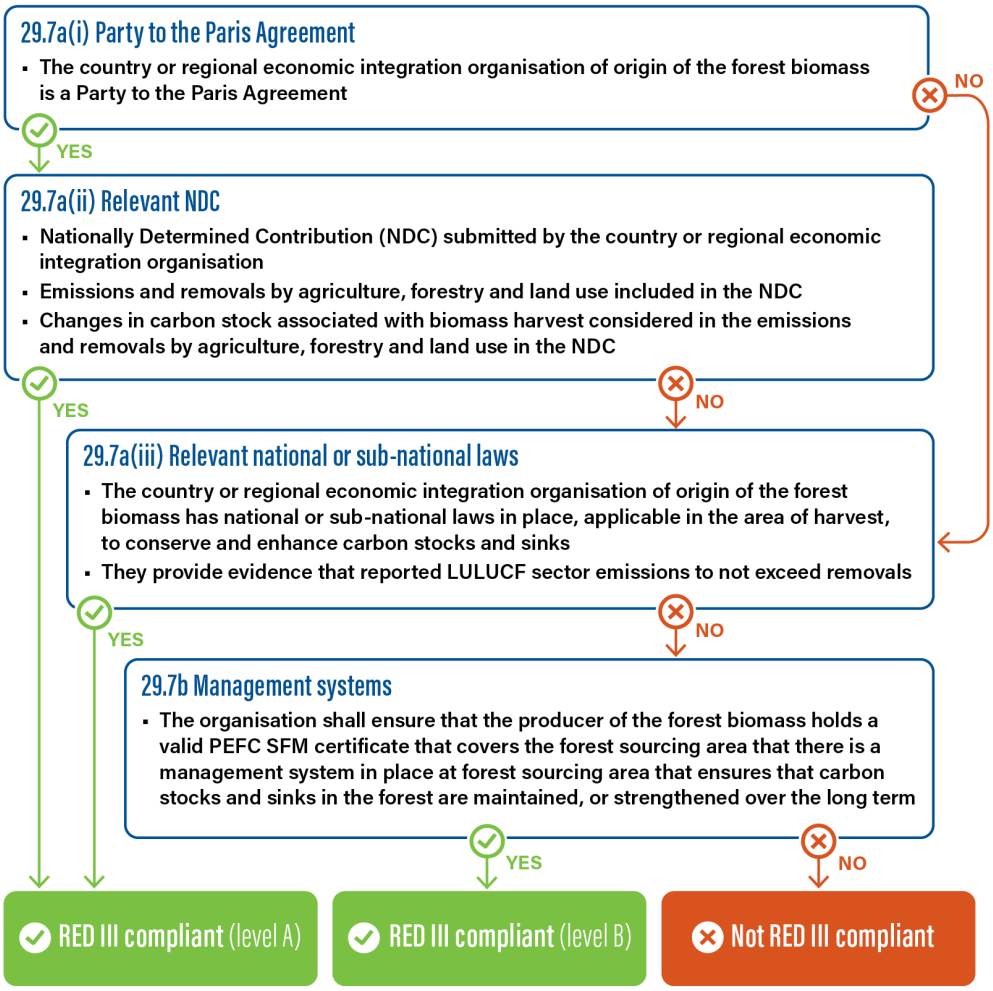
4.4.1.5 Where the **Level A** evidence on compliance criteria does not exist for all or some of the **RED III sustainability criteria**, the **organisation** acting as the **first gathering point** of **forest biomass** shall assess **Level B** evidence for compliance with the relevant **RED III sustainability criteria**. The requirements for **Level B** evidence are included in chapter 6.

Figure 1: Stepwise approach for demonstrating compliance with the harvesting criteria



Source: Based on REDII BIO study, page 16

Figure 2: Stepwise approach to demonstrate compliance with the LULUCF criteria



Source: RED II BIO study, page 41

4.4.1.6 The **organisation** acting as the **first gathering point** shall require from the supplier of **forest biomass** a self-declaration that includes:

a) Confirmation that the **forest biomass** is produced in a forest that is covered by a valid PEFC SFM certificate, if **Level B** is applies.

b) Confirmation that the **forest biomass** is produced in an area that complies with the corresponding requirements of the RED III and chapter 6 of PEFC ST 5002, if **Level B** applies.

c) A commitment to accept **second-party audits** and **third-party audits**, in case there is a substantiated concern or a suspicion that the **forest biomass** may not be compliant with the **RED III sustainability criteria**; and,

d) A commitment to cooperate with the European Commission and the competent authorities of the EU Member States, including granting access to them when requested, as well as making available to the European Commission and the competent authorities of the EU Member States, all information needed to fulfil their tasks under RED III.

Note: In addition to this self-declaration, the **organisation** acting as the **first gathering point** needs to make sure to receive any other evidence and information from the supplier of **forest biomass** needed to assess compliance at **sourcing area** through **Level B.** The evidence required is outlined in chapter 6.

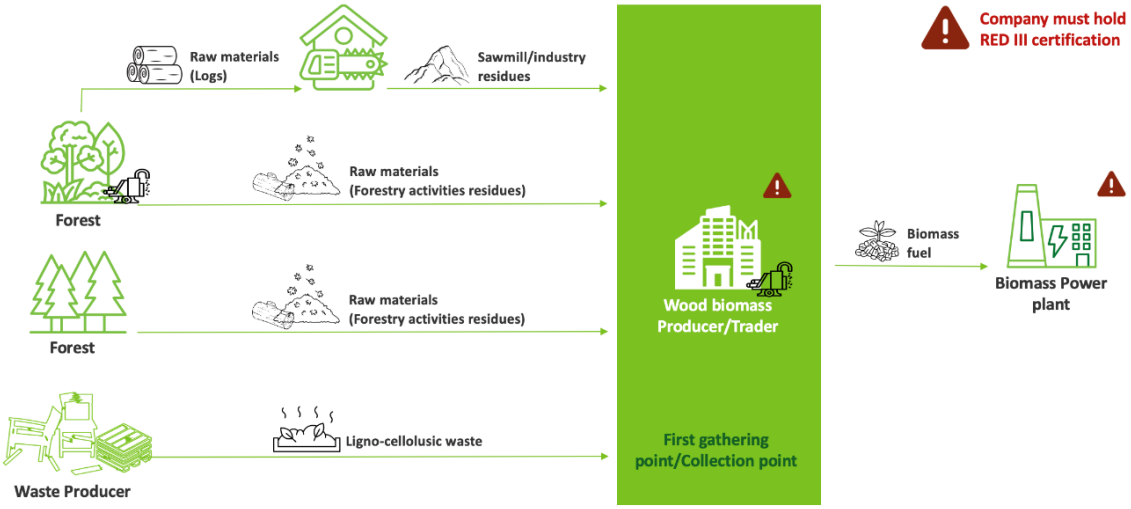
4.4.2 Identification of inputs at the collection point of waste and residues

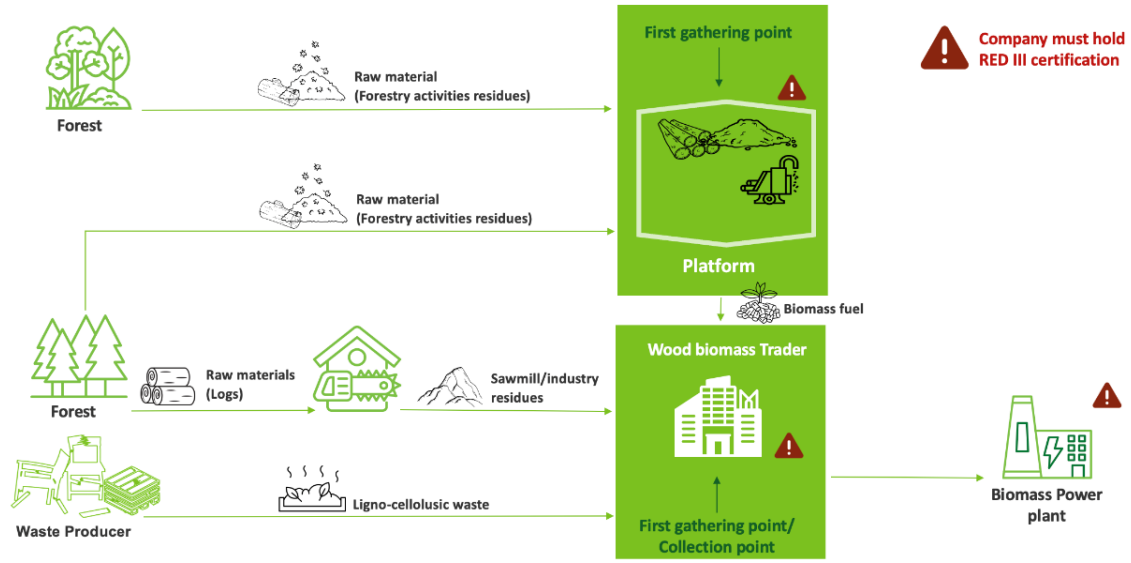
4.4.2.1 The collection point of **waste** and **residues** shall consider the **waste** and **residues** as RED III compliant, provided that:

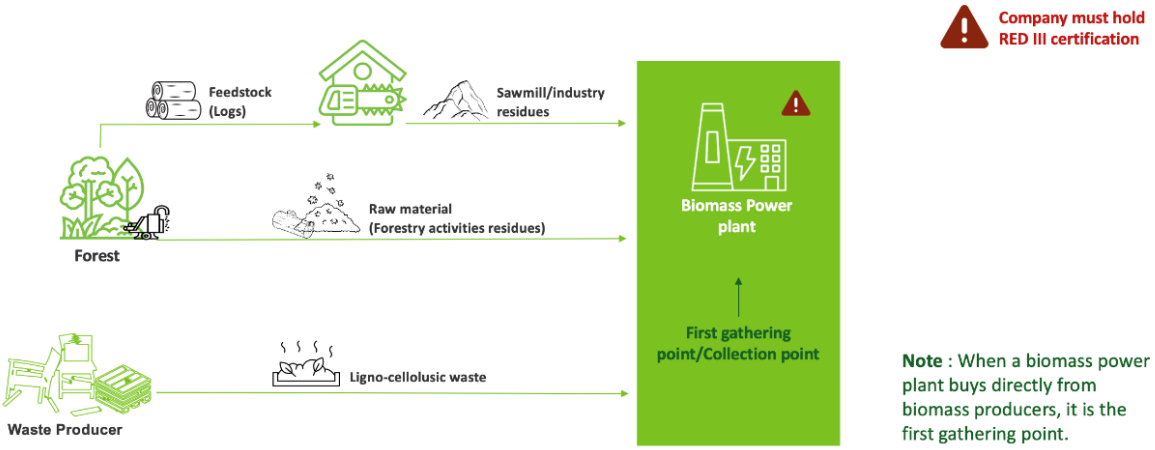
a) The procured **waste** and/or **residue** is delivered by a producer of **waste** and/or **residues** that is meeting the requirements described in chapter 5, and evidence of this by **first party auditing**; or,

b) The procured **waste** and/or **residue** is delivered by a producer of the **waste** and/or **residue** that is certified by this scheme or another **recognised voluntary scheme** or a **recognised national system**.

Figure 3: Examples of an organisation acting as first gathering point, and input material that may be received.







4.4.3 Identification of inputs delivered under a valid declaration of compliance with the RED III sustainability criteria

4.4.3.1 The **organisation** can consider input material as RED III compliant when it is delivered under a valid RED III compliant declaration by a supplier with:

a) a valid PEFC **RED III certificate** stating conformity with PEFC ST 5002

b) a valid PEFC **RED III certificate** stating conformity with another **recognised voluntary scheme**

c) a document stating conformity with a **recognised national system.**

Note: **Recognised voluntary schemes** and **recognised national systems** can be checked on the European Commission's webpage.

4.4.3.2 When implementing 4.4.3.1.a), the **organisation** shall verify on the PEFC website that the PEFC RED III certified supplier passing on a RED III Declaration holds a valid PEFC recognised chain of custody certificate that includes PEFC ST 5002 under its scope.

4.4.3.3 If material is certified against another **recognised voluntary scheme** or **recognised national system** (4.4.3.1.b or c), the **organisation** shall also verify the validity of the suppliers' certificate and the applicable declaration. If the material has been certified as **waste** and/or **residue** according to the requirements of the **recognised voluntary scheme** or **recognised national system**, this information shall be made clear.

4.4.4 Information requirements to accept input material under a RED III product group as RED III compliant

4.4.4.1 For each delivery of material to be used as input for a **RED III product group**, the **organisation** shall obtain from the supplier a declaration that includes all the relevant information to prove the compliance of the procured material with the RED III sustainability and GHG criteria (RED III sustainability characteristics), as applicable:

a) the organisation's name as the customer (buyer) of the delivery

b) supplier identification

c) name of the **recognised voluntary scheme** or **recognised national scheme**

d) proof of sustainability number (RED III related certificate code)

e) type of **biomass** or **biomass fuels**, including **waste** and **residues**

f) quantity of products (if biomass volume, stating clearly in what units and on what basis, e.g., moisture content)

g) identification of the date of delivery, delivery period, or accounting period

h) country of origin of the raw material (this is the country in which the original material, **residue** or **waste** is harvested or produced, not where e.g., pellets or briquettes are produced)

i) country of fuel production

j) declaration from the supplier that the raw material, intermediary product, or fuel complies with the sustainability requirements in Article 29(6) to (7) of RED III, e.g.: a valid RED III compliant declaration or claim

k) accurate data on all relevant elements of the GHG emissions calculations, as per chapter 7

l) information on whether support has been provided for the production of that consignment, and if so, the type of support.

4.4.5 Information to be provided for output material which is declared as RED III compliant

4.4.5.1 When delivering material as RED III compliant under the PEFC scheme, the **organisation** shall provide their RED III certified clients with a declaration that includes all the information that the RED III certified client may need for the implementation of their RED III certification, including as a minimum:

a) identification of the client **organisation** receiving the material

b) identification of the **organisation** as the RED III supplier

c) description of the physical product

d) volume of RED III compliant output product

e) RED III sustainability characteristics, as applicable

f) date when the declaration is made.

Note: A template for the declaration of RED III compliance can be found in Appendix 1.

4.4.5.2 Each transfer of RED III sustainability characteristics shall be accompanied by a physical transfer of material.

4.5 Mass balance system

4.5.1 General

4.5.1.1 The **mass balance system** is the specific chain of custody method that **organisations** certified against PEFC ST 5002 shall use to track RED III compliant input material and make RED III compliant declarations for output material under the PEFC scheme.

***Note*:** The **mass balance system** does not need to be integrated into the existing chain of custody methods. It can be implemented separately. However, the **organisation** may decide to integrate it into their existing chain of custody methods. In that case, they need to make sure that they comply with the requirements of PEFC ST 5002.

4.5.1.2 The **organisation** shall operate the **mass balance system** at a level where different supplies of **forest biomass** and/or **ligno-cellulosic material** from **wastes** and **residues** could normally be in contact, such as in a container, processing or logistical facility, infrastructure or **site** (defined as a geographical location with precise boundaries within which products can be mixed).

4.5.1.3 The **organisation** shall implement the **mass balance system** and track their inputs and outputs individually at each physical **site** they operate.

Note: The **mass balance system** does not allow cross-site product groups or mass balance accounts.

4.5.1.4 If more than one legal entity operates on a **site**, each legal entity shall operate its own **mass balance system**.

4.5.1.5 The **organisation** shall implement the **mass balance system** for specific **RED III product groups** of output material. An independent **mass balance system** shall be implemented for each product group.

4.5.1.6 The **organisation** shall only use the following material as RED III compliant input for a **RED III product group**:

a) **Forest biomass** from an area covered by a **Level A** risk assessment that demonstrates full compliance with the **RED III sustainability criteria**. In addition, the material shall have gone through a PEFC DDS (either the PEFC DDS or the PEFC EUDR DDS) and resulted in negligible risk of coming from controversial sources.

Note: For material delivered under a valid X% PEFC certified, 100% PEFC Origin or PEFC controlled sources claim from a supplier that holds a valid PEFC chain of custody certificate, or material that is declared as RED III compliant by a supplier with a valid PEFC **RED III certificate**, the risk can automatically be considered as negligible, provided that there are not substantiated concerns or complaints. See 4.3.

b) PEFC certified biomass material for which additional **Level B** evidence was provided from the supplier to demonstrate compliance with the **RED III sustainability criteria**. For that purpose, the producer of **forest biomass** shall hold a recognised PEFC SFM certificate. The **organisation** shall require the PEFC supplier to provide evidence as per the corresponding requirements under 6.2 and 6.3 of PEFC ST 5002 and commit to **second and third-party auditing**.

Note: A recognised PEFC SFM certificate is a valid accredited forest management certificate issued by a PEFC notified **certification body** against a forest management system/standard that is endorsed by PEFC.

c) **Forest biomass** supplied by an **organisation** holding a valid certificate from another **recognised voluntary scheme** or **recognised national system** with a valid RED III compliant claim from the corresponding scheme or system. In addition, the material shall have gone through a PEFC DDS (either the PEFC DDS or the PEFC EUDR DDS) and resulted in negligible risk of coming from controversial sources.

Note: For material delivered under a valid X% PEFC certified, 100% PEFC Origin or PEFC controlled sources claim from a supplier that holds a valid PEFC chain of custody certificate, or material that is declared as RED III compliant by a supplier with a valid PEFC **RED III certificate**, the risk can automatically be considered as negligible, provided that there are not substantiated concerns of complaints. See 4.3.

d) **Ligno-cellulosic material** originating in processing residues from forest-related industries.

Note 1: Both PEFC ST 2002 and PEFC ST 5002 require the implementation of due diligence system implementation DDS for **residues** resulting from primary production processes such as sawmilling **residues** (sawdust, chips, bark, etc.). Thus, **residues** from primary production processes shall go through either PEFC DDS or PEFC EUDR DDS and result in negligible risk prior to being classified as RED III compliant. See also requirement 4.3.2.

Note 2: Ligno-cellolusic material derived from TOF, which originates from activities that are subject to RED III requirements for agricultural biomass are excluded from the PEFC RED III certification scope on this standard. For clarification, RED III defines agricultural biomass as any biomass produced from agriculture. Ligno-cellulosic TOF material from urban areas, or from areas where the TOF are not the main objective of an agricultural production and is not classified by RED III as agricultural biomass (e.g., road edges or trees between agricultural fields), are considered as primary processing residues for RED III purposes, and have the same treatment as ligno-celllosic material originating in forest-related industries. TOF primary processing residues are not subject to RED III sustainability criteria, but to GHG calculations criteria.

e) Ligno-cellulosic **wastes**

Note 1: For material delivered under a valid X% PEFC certified, 100% PEFC Origin or PEFC controlled sources claim from a supplier that holds a valid PEFC chain of custody certificate, or material that is declared as RED III compliant by a supplier with a valid PEFC **RED III certificate**, the risk can automatically be considered as negligible, provided that there are not substantiated concerns or complaints. See 4.3.

Note 2: Material that is not RED III compliant may be included in a PEFC RED III product group, whenever it is PEFC controlled sources (have gone through the PEFC DDS or the PEFC EUDR DDS and results in negligible risk) and complies with any other applicable requirements on this standard.

4.5.1.7 The **organisation** may establish **RED III product groups** for **forest biomass**, **ligno-cellulosic material** from **waste** and **residues**, or **biomass fuels** with differing RED III **sustainability and GHG emissions saving characteristics**, provided they have similar physical or chemical characteristics, heating values and/or conversion factors.

4.5.1.8 The **organisation** can establish **RED III product groups** for **forest biomass**, **ligno-cellulosic material** from **waste** and **residues**, or **biomass fuels** with differing energy content for the purposes of further processing, provided that the size of supplies is adjusted according to their energy content. This can be done as a weighted average.

Example: Supplies A: 1000 Tons of woodchips; energy content 4500Kwh/tons

Supplies B: 500 Tons of woodchips; energy content 6000Kwh/tons

OUTPUT*: 1500 Tons of woodchips; energy content 5000Kwh/tons

***** *Assumption of simple mixing, no transformation, therefore no conversion factor*

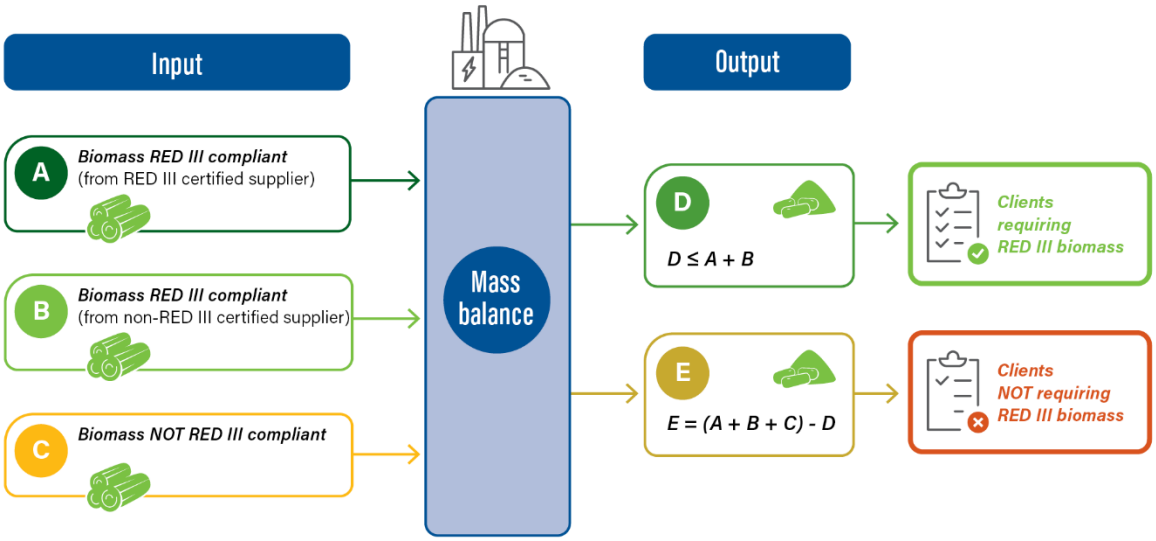
4.5.1.9 The **organisation** shall keep at **RED III product group** level information on RED III **sustainability and GHG emissions saving characteristics** and sizes of the supplies.

4.5.1.10 The amount of input material entering a **RED III product group** shall be equivalent to the amount of output material withdrawn from the **RED III product group** for the given mass balance timeframe. Equally, the RED III sustainability characteristics recorded for the input material entering a **RED III product group**, in the same quantities, shall be equivalent to the RED III sustainability characteristics declared for the output material, for the given mass balance timeframe.

Note 1: For RED III purposes, the amount of RED III compliant material accumulated shall correspond to the RED III compliant output material plus the amount of material in storage.

***Note 2*:** If a supply of **forest biomass**, **ligno-cellulosic material** from **residues** or **waste**, or **biomass fuel** has already been taken into account in the calculation of the share of renewable energy, no further sustainability claims shall be issued for the supply.

Figure 4: Example of the RED III mass balance system



A: *Biomass certified RED III & PEFC controlled sources or PEFC Certified*

B: *Biomass not RED III certified (but from an area covered by a risk analysis) & PEFC controlled sources or PEFC Certified*

C: *Biomass not RED III certified (from an area not covered by a risk analysis) & PEFC controlled sources or PEFC Certified*

4.5.1.11 When **forest biomass**, **ligno-cellulosic material** from **residues** or **waste**, or **biomass fuel** is delivered to an **organisation** that is not participating in a **recognised voluntary scheme** or **recognised national scheme**, the 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.

Example: Company "A" buys 1000 tons of *RED III compliant* forest chips wood which are then mixed on its platform. Company "A" then resells 400 tons of forest chips wood *RED III compliant* (RED III applicable) to a biomass heating plant and 500 tons to a chipboard factory (RED III not applicable). At the end of the mass balance timeframe, the quantity of *RED III compliance – PEFC* available in the mass balance and in the stock will be 100 tonnes.

4.5.1.12 Where a delivery of **biomass fuel** is used to comply with an obligation placed on a biomass fuel supplier by an EU Member State, the **organisation** shall withdraw the delivery from the mixture of the mass balance.

4.5.1.13 The **sustainability and GHG emissions saving characteristics** of a delivery of **forest biomass**, **ligno-cellulosic material** from **residues** or **waste**, or **biomass fuel** shall be considered as a set. Where deliveries are withdrawn from a mixture, any of the sets of sustainability characteristics may be assigned to them 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.

4.5.1.14 Where relevant for transparency reasons, 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. See also 4.4.3.1.

4.5.1.15 For the **mass balance system,** the **organisation** shall establish a timeframe of a maximum of 3 months. **Organisations** acting as the **first gathering point** sourcing only **forest biomass** may extend the timeframe up to 12 months.

Example: A company (e.g., pellet plant) sourcing both **forest biomass** (e.g., forest residues) and **residues** from wood processing, shall implement a mass balance schedule which does not exceed 3 months.

4.5.1.16 The start and end of the mass balance timeframe shall be aligned with the calendar year or, where applicable, the four quarters of the calendar year. As an alternative to the calendar year, **organisations** may also use the economic year that they use for bookkeeping purposes, provided that the choice is clearly indicated and applied consistently. At the end of the mass balance timeframe, the sustainability data carried forward should be equivalent to the physical stock in the container, processing or logistical facility, transmission and distribution infrastructure or **site**.

4.5.1.17 For an **organisation** undergoing initial RED III certification under the PEFC scheme, **forest biomass** received no more than 12 months before the **initial audit** can be considered as input material for the **RED III product group** in the **mass balance system**, and no more than 3 months for **ligno-cellulosic material** from **waste** and **residues**, provided that:

a) the **forest biomass or the ligno-cellulosic material from waste and residues** was not processed

b) conformity with the RED III sustainability characteristics and related requirements is fully documented, and

c) if **residues** or **waste**, a self-declaration of the waste/residue producer was submitted, including all the information required under 5.2.3.

4.5.1.18 The application of the **mass balance system** to different types of **forest biomass**, **ligno-cellulosic material** from **residues** or **waste**, and/or fuels must not lead to or risk leading to a situation where the rules set out in Article 26 and 27 of the RED III that apply for determining the contribution of biofuels, bioliquids and **biomass fuels** towards the targets for renewable energy are not correctly applied or circumvented.

4.5.1.19 The **organisation** shall calculate conversion factors as the ratio of biomass input to biomass output after a conversion process or after natural leakage (e.g., during storage or transport).

4.5.1.20 Conversion factors shall be calculated based on the organisation's data and updated at least annually. The **organisation** shall keep records of the conversion factor(s), including:

a) to which input product it refers

b) to which output product it refers

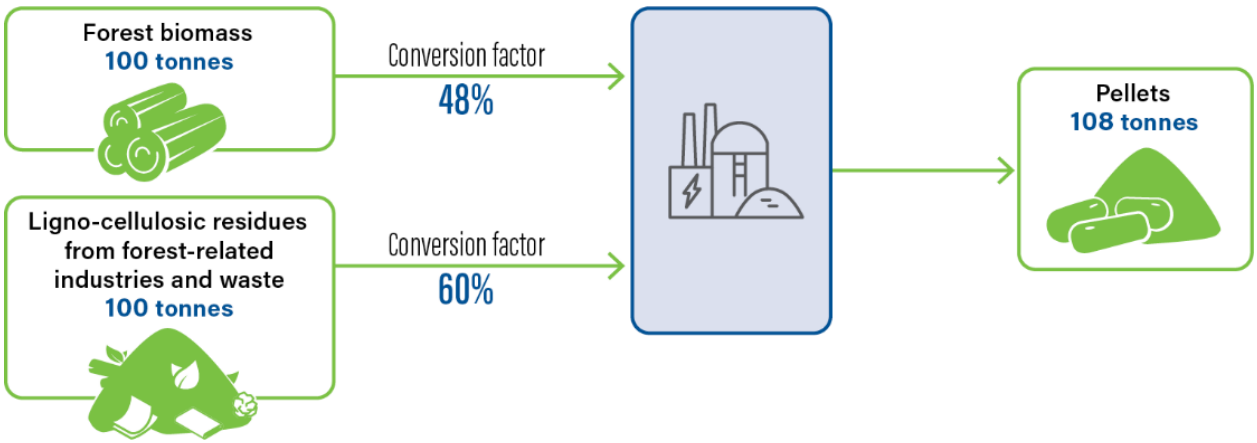
c) the units in which the conversion factor is expressed

d) the value of the actual conversion factor

e) dates when the specific conversion factor is valid; and

f) any calculations and supporting documentation that determines the conversion factor.

Figure 5: Example of conversion factor calculation of the mass of the input and the output



Note: The conversion factor is the remaining part of the input unit after the loss of the part that goes to losses during a transformation process. In this example, it is indicated that with 100 tons of logs, we obtain 48 tons of pellets. This means that there were 52 tons of losses.

4.5.1.21 If supplies with different GHG values are combined, the **organisation** shall assign the highest GHG value to the combined output supply.

Figure 6: Example of the GHG value used for the combined output supply when supplies with different GHG value are combined

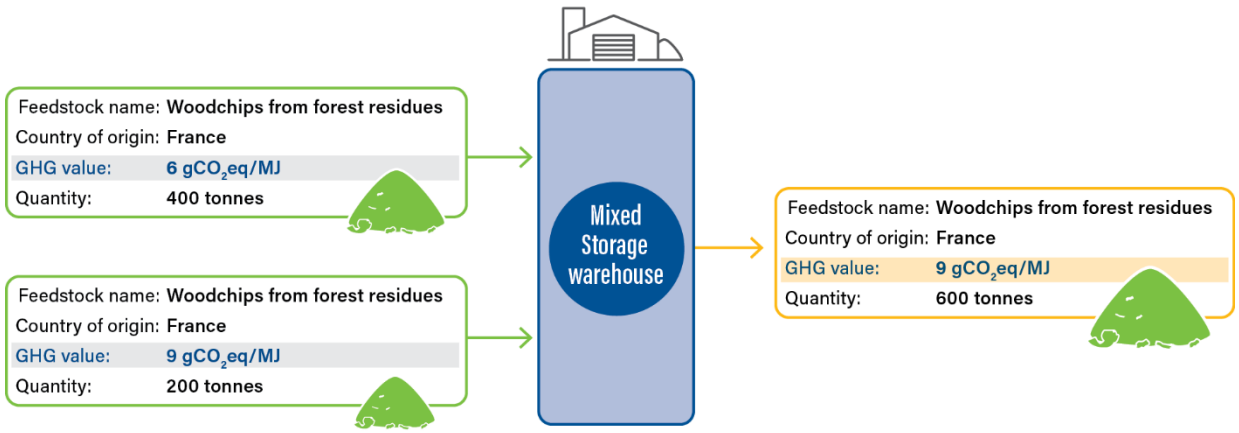
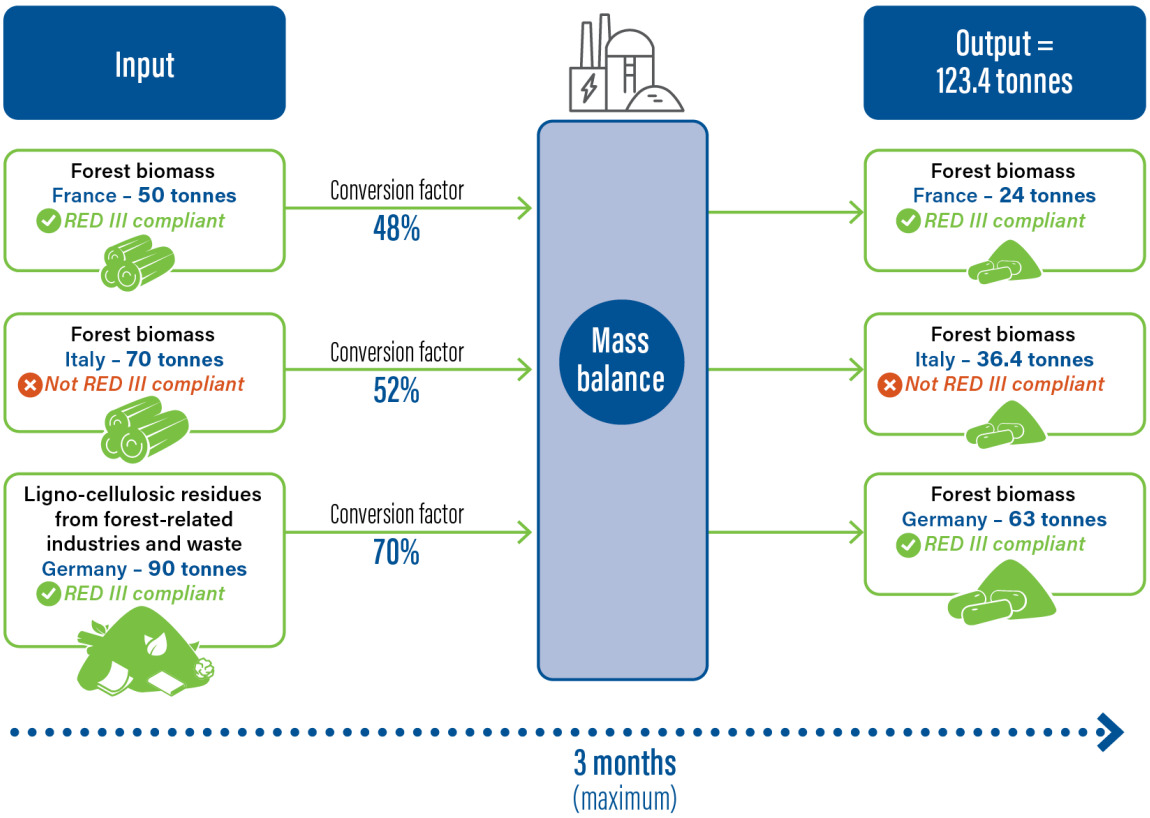


Figure 7: Example of an organisation's mass balance with the maximum timeframe when the input materials are mixed



4.6 Physical separation

4.6.1 General

4.6.1.1 When there is no mix of input material with different RED III sustainability characteristics, the **organisation** may implement physical separation.

Note: RED III sustainability characteristics include, e.g., the type of feedstock or biomass, the origin of the biomass, whether they are certified or not; or the GHG characteristics or values associated with the biomass.

4.6.1.2 The **organisation** shall ensure that different materials with varying sustainability and/or energy data shall be kept physically separate and identifiable.

Figure 8: Example of the physical separation method for materials with varying sustainability characteristics

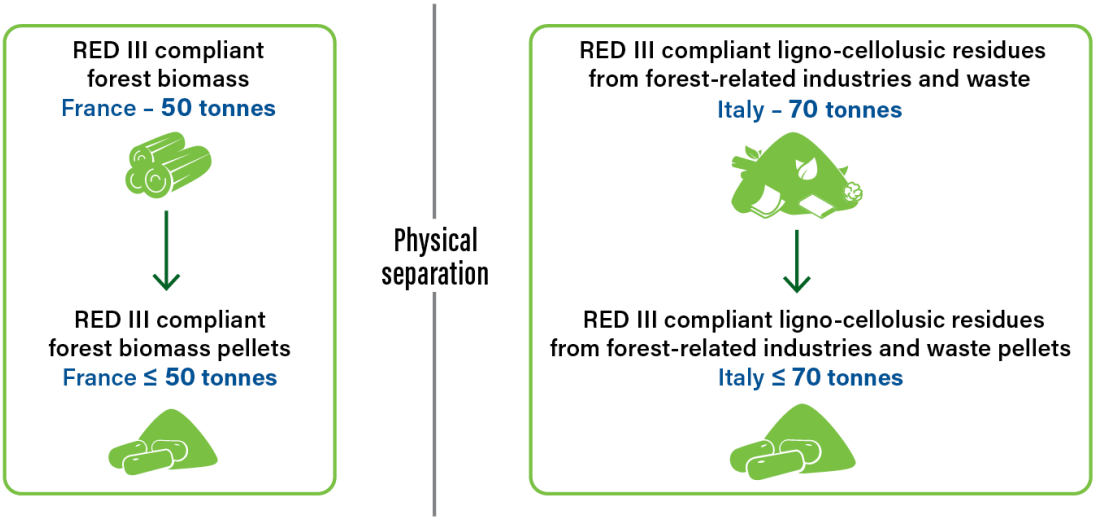
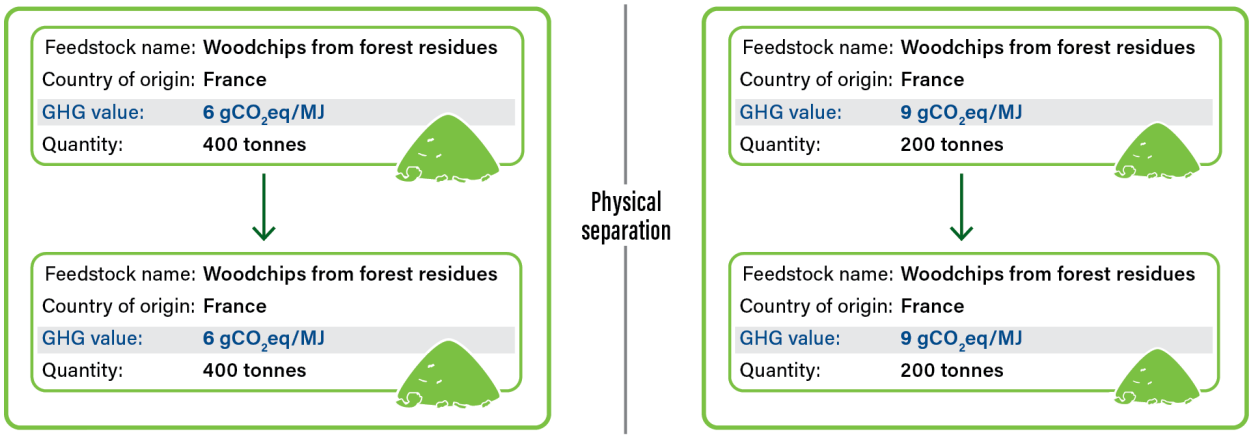


Figure 9: Example of the physical separation



5. Additional requirements for organisations supplying ligno-cellulosic material from residues and/or waste

5.1 General

5.1.1 The **organisation** that operates as the collection point of **waste** and **residues** shall:

a) Automatically consider materials listed in Annex IV of the IR 2022/996 as **waste** and **residues** regardless of their country of origin.

b) For raw materials not listed in Annex IV of the IR 2022/996 and sourced in the EU, review legislation of the EU Member State in which the **raw material** has been generated and processed and apply relevant legislation to determine whether it is a **waste** or **residues**.

c) In all other cases, determine the classification of the **raw material** (i.e., whether it meets the definition of **waste** and **residues)**.

d) Keep documented information for a minimum of 5 years, or longer where it is required by the relevant national authority, as evidence of the biomass compliance with the definition and requirements for the **waste** and **residues**.

Note 1: For the purposes of PEFC ST 5002 and Directive (EU) 2018/2001, **residues** that are directly generated by forestry are not considered as "**waste** and **residues**". This **biomass** shall be treated as "**forest biomass**".

Note 2: Concerning the **ligno-cellulosic material** covered by the scope of PEFC ST 5002, Annex IV of the IR considers as the **waste** and **residues** (see 5.1.1b) the following material: "damaged trees" and "recycled/waste wood".

Note 3: Also, national legislation of a non-EU state can be applied for determinations of the **waste** and **residues** (see 5.1.1b) where the national legislation is aligned with the EU legislation.

5.1.2 The **biomass** shall not be considered as **waste** and **residues** where they, or the process for their production, have been deliberately modified for the purpose of declaring those materials as **wastes** and **residues**.

5.2 Management of the waste and residues supplies

5.2.1 The **organisation** that operates as the collection point of **waste** and **residues** shall conduct a group audit programme of the suppliers based on second party auditing of **waste** and **residues**, to verify the origin of the **waste** and **residues**, production volumes and compliance with the definitions and requirements for **waste** and **residues** defined in the Directive (EU) 2023/2413 and PEFC ST 5002.

5.2.2 The audit programme shall include, as a minimum:

a) The establishment of a management system for the verification and monitoring of suppliers (producers) of **waste** and **residues** and supplies.

b) Verification and processing of the waste and residues supplies.

c) Conduction of audits of suppliers (producers) of **waste** and **residues**.

5.2.3 As part of the management system mentioned in 5.2.2, the **organisation** that operates as the collection point of **waste** and **residues** shall:

a) Determine the roles and responsibilities of any personnel involved in the management of the **waste** and **residues**, including the role of the certification manager within the audit programme, as well as determine and follow up on the key roles and responsibilities at the supplier level.

b) Set up procedures for monitoring the supplier's compliance with RED III requirements, identifying any **nonconformities**, and implementing preventive and corrective actions as appropriate.

Example: If the **organisation** that operates as the collection point of **waste** and **residues** identifies non-compliant **waste** or **residues**, the procedure shall allow the **organisation** to request that purchase documents be corrected or to temporarily stop sourcing from the suppliers until the problem is solved or permanently.

c) Define the evidence and implement the necessary actions and record-keeping procedures that each supplier (producer) of **waste** and **residues** must follow to ensure that the **waste** and **residues** supplied comply with RED III requirements.

d) Obtain from each supplier of **waste** and **residues,** and verify the following information relating to the procured **waste** and **residues**:

   i. name and address of the supplier

   ii. type of supplier (e.g., producer of **waste**, producer of **residues** from primary processing industry, etc.)

   iii. type of **biomass** supplied (e.g., sawdust, bark, etc.)

   iv. volume of **waste** and **residues** generated monthly or annually

e) Obtain from each supplier of **waste** and **residues** a self-declaration where the supplier commits to:

   i. comply with any applicable RED III requirements

   ii. deliver only **waste** and **residues** that meet the requirements and definitions of the Directive (EU) 2018/2001 and PEFC ST 5002

   iii. implement any measures and procedures to allow the **organisation** acting as the collection point to conduct the second-party audit programme

   iv. implement any preventive or corrective actions, as requested by the **organisation**

   v. keep and provide access to production records relating to its production, including volumes of procured raw material, type and volume of produced products, type and volume of generated **waste** and **residues**, sales volumes for **waste** and **residues** or agreements for disposal of **wastes**; and

   vi. retain documentary evidence that the **waste** and **residues** supplied comply with RED III requirement. Different types of evidence shall be retained for inspection by the **certification body**, including samples, pictures, quality analysis reports, invoices, delivery notes and/or shipping documents, depending on the feedstock concerned.

   vii. accept to receive remote and, where necessary, on-site audits, to verify the compliance of the **waste** and **residues** with RED III requirements

f) Define audit procedures, including suppliers' audits, covering both on-site and remote audits, and conditions when it is necessary to conduct on-site audits of suppliers to verify the compliance of **waste** and **residues** with RED III requirements. The frequency and intensity of the auditing procedure shall be based on a risk analysis that covers at least:

   i. type of **wastes** and **residues**

   ii. processes in which the **wastes** and **residues** have been generated

   iii. volume of generated **wastes** and **residues**

   iv. uncertainty in the classification of **biomass** as **wastes** and **residues**

   v. risk of mixing of **waste** and **residues** with another type of **biomass**

5.2.4 As part of the verification and processing of **waste** and **residues**, the **organisation** that operates as the collection point of **waste** and **residues** shall:

a) Conduct a visual inspection of every supplied **waste** and **residues** to verify information provided by the supplier.

b) Classify the **biomass** as either **waste** or **residues**.

c) Keep documented information (records) providing evidence of compliance with the requirements defined in 5.1.1, including where appropriate material samples, photos, quality analysis reports, invoices, delivery notes and/or shipping documents, etc.

Note: 5.2.4 a and c are not required for supplies of **waste** from private households.

5.2.5 In cases where adequate evidence for the classification of **waste** and **residues** is not available at the point of receipt (e.g., it is impossible to verify whether wood chips belong to primary or processing residues category), the **organisation** that operates as the collection point shall conduct an on-site audit of the supplier, as described in 5.2.7.

5.2.6 In cases where the material received does not comply with purchase specifications and/or the quantities stated on the invoices are incorrect, the **organisation** that operates as the collection point shall require the supplier to take immediate corrective actions, as required in clause 5.2.3.b and 5.2.3.e.iv. These actions shall be recorded and communicated to the **certification body** during the annual audit.

5.2.7 As part of the conduction of audits of suppliers (producers) of **waste** and **residues**, the **organisation** that operates as the collection point of **waste** and **residues** shall:

a) Cover suppliers (producers) of **waste** and **residues** during the annual internal audits of their organisation's management system.

b) The audit of the suppliers can happen remotely or on-site, depending on the level of risks and type of **waste** and **residues** supplied. Where verification and processing upon receipt of the waste and residues supplies were not sufficient, audits shall take place on-site.

c) The **organisation** may contract another external, suitably qualified party to operate the supplier audit.

d) Where the supplier for which an on-site audit is needed sells **waste** or **residues** that were previously collected, classified, and traded by other companies or **sites**, the complete supply chain of these **waste** and **residues** shall be verified back to the point where the classification can be demonstrated through objective evidence.

e) When necessary to ensure compliance of the suppliers and the supplies with RED III requirements, the organisation shall conduct audits of the suppliers in between annual audits.

f) At least, a sample consisting of a number of suppliers equivalent to the square root of the total number of suppliers shall be audited on-site once a year. That number shall be increased in the event of a higher level of risk. The sample shall be representative of the whole group and determined using a combination of risk and random selection. Random selection shall represent at least 25 % of the sample. The suppliers selected for the audit shall vary from year to year.

g) For any **nonconformities** identified during the audit to suppliers, the **organisation** shall:

i. determine the root cause of the **nonconformity**

ii. develop a corrective action plan to address the identified cause

iii. specify a timeframe for completion

iv. assign responsibilities for the implementation of the action plan

v. follow-up implementation of the actions by the supplier

5.2.8 If the supplier fails to implement the necessary actions, the **organisation** that operates as the collection point of **waste** and **residues** shall stop sourcing material from the supplier until the problem is solved.

6. Requirements for the evaluation of Level B evidence for forest biomass

6.1 General requirements

6.1.1 The **organisation** acting as the **first gathering point** of **forest biomass** shall evaluate the compliance of the **forest biomass** with the **RED III sustainability criteria** at the sourcing area level **(Level B)**, as per Article 29 (6 b, 7b) of Directive (EU) 2023/2413, where the **Level A** national or sub-national risk assessment does not demonstrate compliance with some or all of the **RED III sustainability criteria**.

6.1.2 The **organisation** acting as the **initial gathering point** of **forest biomass** shall establish a management system for the **sourcing area** that ensures compliance with the **RED III sustainability criteria**. The management system shall ensure, through contractual or other enforceable means, that the producer or producers of **forest biomass** within their **sourcing area**:

a) hold a recognised PEFC SFM certificate

b) provide information necessary to evaluate **Level B** evidence, and

c) accept **second-party** and **third-party audits** for the assurance of compliance with the **RED III sustainability criteria**, and in case of substantiated concerns of non-compliance with the **RED III sustainability criteria**.

d) commitment to collaborate with the European Commission and the competent authorities of the EU Member States when requested, including granting access to their facilities.

6.2 Requirements for compliance with the RED III sustainability criteria of the harvesting operations at the sourcing area (Level B), as per Article 29 (6 b) of the RED III Directive

6.2.1 General

6.2.1.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer accurate, up-to-date, and verifiable evidence of the spatial boundaries of the **sourcing area** using geographical coordinates or parcels.

6.2.2 Legality of harvesting operations

6.2.2.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence that shows compliance of harvesting with Regulation (EU) No 995/2010 of the European Parliament and of the Council (usually known as: EUTR), as per this PEFC ST 5002.

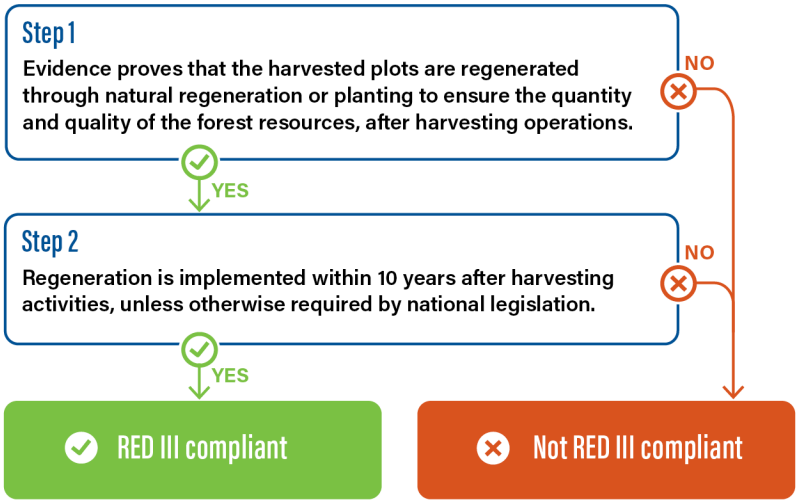
Note: Regulation (EU) No 995/2010 (EUTR) has been repealed by Regulation (EU) 2023/1115 (EUDR). Transition from EUTR to EUDR shall follow the transition period defined in the EUDR.

6.2.3 Forest regeneration of harvested areas

6.2.3.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence (e.g., forest management plans, operational protocols, environmental impact assessments, and results of relevant compliance audits and inspections) to ensure that the harvested plots are regenerated in an appropriate manner after harvesting operations.

6.2.3.2 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that regeneration is implemented within 10 years after harvesting activities, unless otherwise required by national legislation.

***Figure 10:** Stepwise approach for demonstrating compliance with the forest regeneration of harvested area criterion*



Note: Appendix 4 includes an informative checklist where **organisations** can find examples of information sources to implement the requirements.

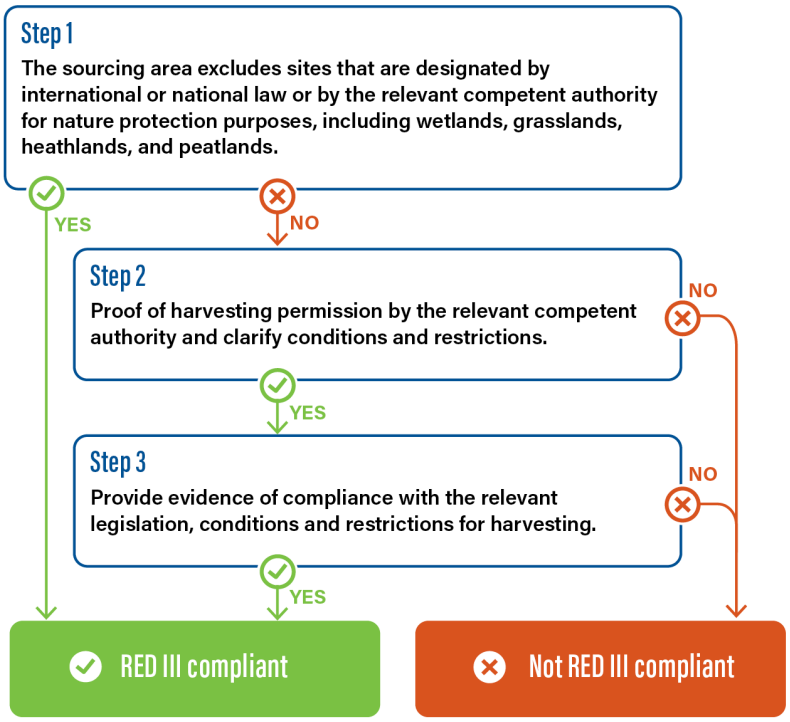
6.2.4 Protection of areas designated for nature conservation purposes

6.2.4.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that inventory, mapping, and planning of forest resources and harvesting operations identify, protect, conserve, or set aside with the aim of preserving biodiversity and preventing habitat destruction areas designated for nature protection purposes, including in **wetlands**, **grasslands**, **heathlands** and peatlands, by international or national law, or by the relevant competent authority.

Note: Harvesting in those areas is not generally prohibited. Where forestry operations have proven documentation on meeting all the requirements to maintain conservation purposes, harvesting could be legitimised.

6.2.4.2 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure, in the case of timber harvesting on these lands, that they have a harvesting permit issued by the relevant competent authority (e.g., in the management plan) and evidence of compliance with the relevant legislation described in operational reports or harvesting protocols (e.g., in the timber sale contract) and the result of relevant compliance audits and inspections (e.g., PEFC SFM audit report).

Figure 11: Stepwise approach for compliance with the area designated for natural conservation purpose criterion



Source: Based on REDIIBIO study, page 31

Note: Appendix 4 includes an informative checklist where **organisations** can find examples of information sources to implement the requirements.

6.2.5 Maintenance of soil quality and biodiversity

6.2.5.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence that harvesting is carried out considering maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact. This also requires that soil types are checked, sensitive areas in terms of soil quality and biodiversity are identified, and potential risks with forest biomass harvesting are assessed in advance.

Note 1: This can be done, e.g., on the basis of soil maps, soil sensitivity maps, or through the provision of detailed field inventory data.

Note 2: Biodiversity also includes habitat features.

6.2.5.2 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that no primary forest, old-growth forest or areas designated by international or national law or relevant competent authority for nature protection, including **wetlands**, **grasslands**, **heathlands** and peatlands are degraded to or replaced by forest plantations.

Note: See also requirement 6.2.5.3, where it says that large clear-cuts shall be minimised and are in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located except in cases where it is temporarily justified due to documented forest pests, storms, or other **natural disturbances**.

6.2.5.3 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that large clear-cuts shall be minimised and are in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, except in cases where it is temporarily justified due to documented forest pests, storms, or other **natural disturbances**.

6.2.5.4 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that **forest biomass** harvesting in poor or vulnerable soils does not happen, unless in compliance with 6.2.5.5.

Note: Vulnerable soils can be identified on FAO/UNESCO Soil Map of the World 34, Harmonized World Soil Database – FAO 35, and national or regional soil maps.

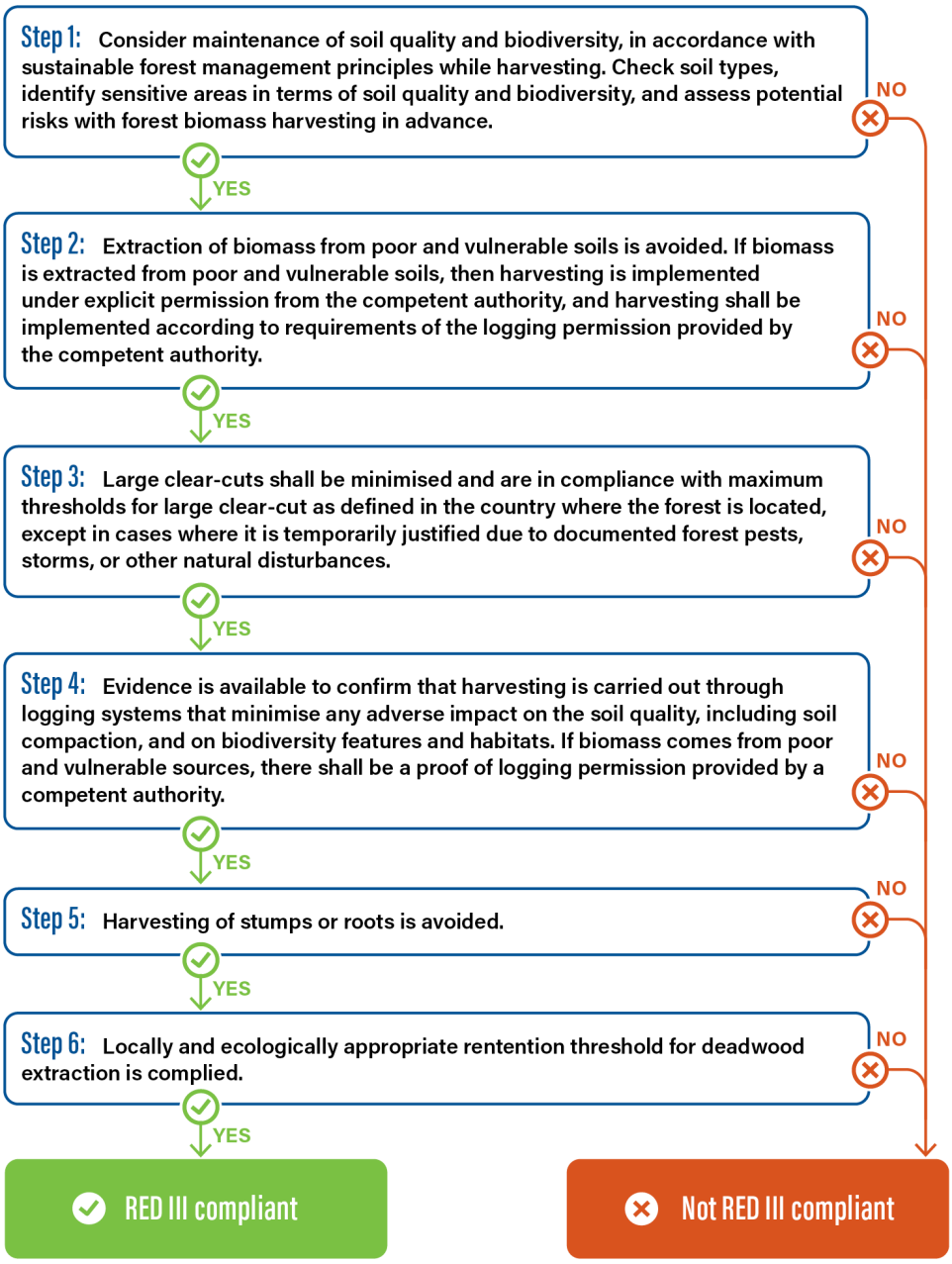
6.2.5.5 **Forest biomass** may be exceptionally extracted from poor and vulnerable soils under explicit permission from the competent authority. If **biomass** comes from poor or vulnerable sources, harvesting shall be implemented according to the requirements of logging permission provided by a competent authority.

6.2.5.6 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that harvesting is carried out through logging systems that minimise any adverse impact on soil quality**,** including soil compaction, and on biodiversity features and habitats.

6.2.5.7 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that harvesting of **stumps and roots** is avoided.

6.2.5.8 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that harvesting is carried out in compliance with locally and ecologically appropriate retention threshold for deadwood extraction.

Figure 12: Stepwise approach for compliance with the maintenance of soil quality and biodiversity criterion



Note: Appendix 4 includes an informative checklist where **organisations** can find examples of information sources to implement the requirements.

6.2.6 Harvesting maintains or improves the long-term production capacity of forests

6.2.6.1 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer of the **sourcing area** evidence that management plans include a description of the forest management unit, long-term objectives, and the average annual allowable cut, including its justification, and approximated annual increment to ensure sustainable harvest levels of the **sourcing area**.

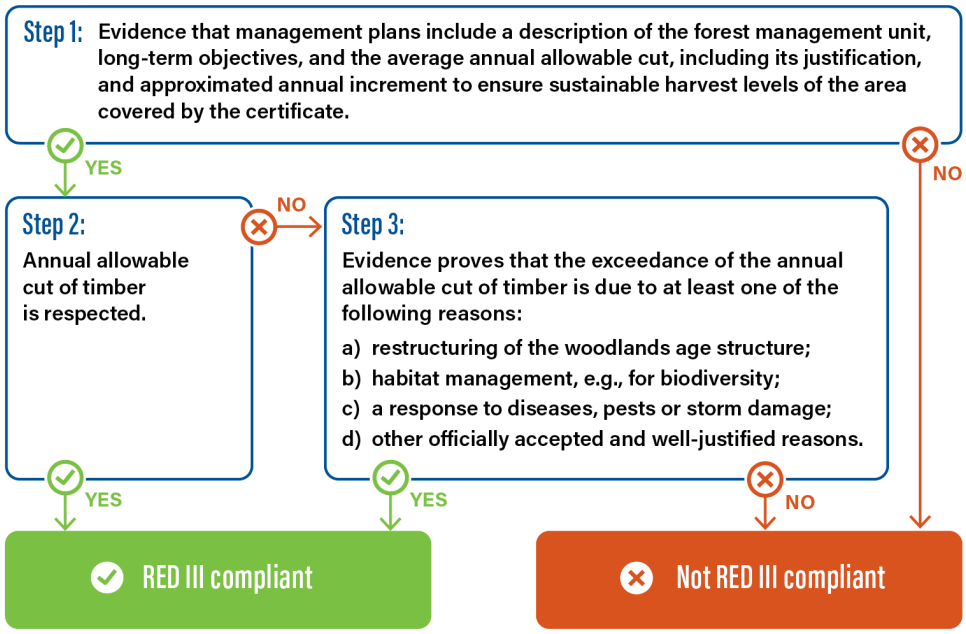
6.2.6.2 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that the annual allowable cut of timber is not exceeded, except when there is proven evidence on:

a) restructuring of the age structure

b) habitat management, e.g., for biodiversity

c) as a response to diseases, pests, storms, or other officially accepted and well-justified reasons, e.g., **natural disturbances**

Figure 13: Stepwise approach for compliance with harvesting maintains or improves the long-term production capacity of forests criterion



Source: Based on REDIIBIO study, page 37

Note: Appendix 4 includes an informative checklist where **organisations** can find examples of information sources to implement the requirements.

6.2.7 Land with a high biodiversity value not allowing production of forest biomass

6.2.7.1 The **organisation** acting as the **first gathering point** shall not source by any circumstances forest biomass from primary forest or old growth forests,

Note: Primary forests and old growth forests are defined by Article 29(3)(a) of RED III as 'no-go' areas, which should be interpreted as an absolute prohibition to harvest in these areas. The references in Article 29(6)(a)(iv) and Article 29(6)(b)(iv) to those areas should be read in conjunction with Article 29(3)(a). The references in Article 29(6)(a)(iv) and Article 29(6)(b)(iv) should be considered as a description of sustainable harvesting practices. They should not be interpreted as an exception to the specific – and absolute – rule that forest (and agricultural) biomass should not be sourced from these areas. (*Source:* Communication from the European Commission to RED II recognised schemes on the *Note for the attention of the EU-recognised voluntary schemes* under the subject: *Alignment of the scheme documentation with the new requirements in the amended Directive (EU) 2018/2001 ('RED III')* on the 12 November 2024).

6.2.7.2 The organisation acting as the first gathering point shall obtain from the PEFC SFM certified biomass producer of the sourcing area evidence that **forest biomass** does not originate in land that had, in or after January 2008, status of:

a) **primary forests** and other wooded land of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed;

b) **old-growth forests**;

c) **highly biodiverse forest and other wooded land** unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

d) **highly biodiverse grassland**; and

e) **heathland**.

6.2.7.3 Identification and evaluation of the **highly biodiverse grassland** (6.2.7.2.d) shall include:

a) evidence that the land is or has been **highly biodiverse grassland** at any time since January 2008. This includes information from national cadastre, forest management plans, satellite images of the respective area; information from national competent authorities, etc.;

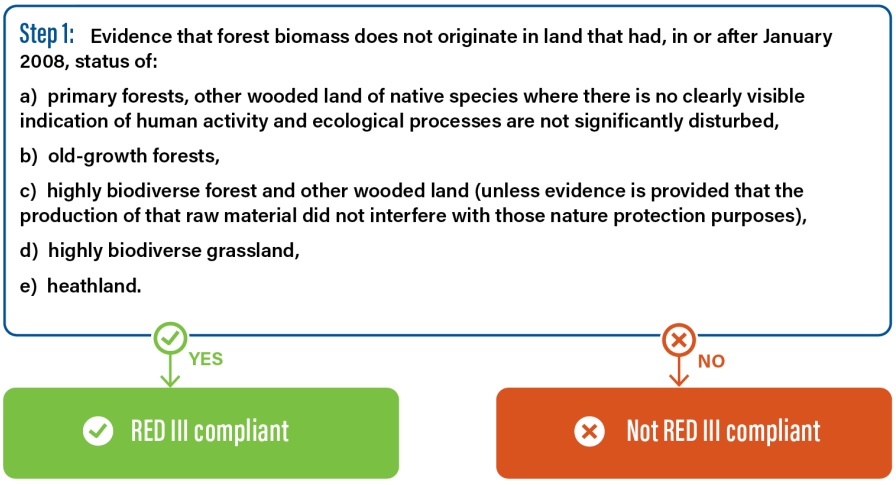
b) evidence that **grassland** maintains or would maintain in the absence of human interventions, the natural species composition and ecological characteristics and processes. Where that is the case, the land shall be considered as being or having been natural, highly biodiverse land. Where **grassland** has already been converted to forests, and it is not possible to assess the characteristics of the land itself through information available from the national competent authorities or satellite imagery, such land shall be considered as not having been **highly biodiverse grassland** at moment of conversion;

c) production of **forest biomass** shall only be allowed where:

i. evidence exists that harvesting of **forest biomass** is necessary to preserve the status of the **grassland** as **highly biodiverse grassland** and that current management practices do not present risk of causing biodiversity decline of the **grassland**; or

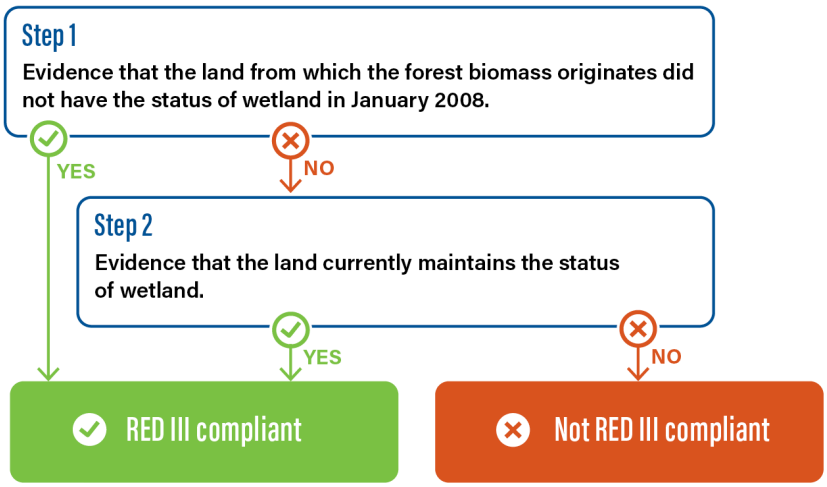
ii. the relevant competent authority or designated agency has granted permission to harvest the **forest biomass** in order to preserve the **highly biodiverse grassland** status.

Figure 14: Stepwise approach for compliance with land with a high biodiversity value not allowing production of forest biomass



6.2.7.4 PEFC SFM certified organisations shall provide to the first gathering point evidence that **forest biomass** does not originate in land that had, in January 2008, status of **wetlands** and no longer has that status.

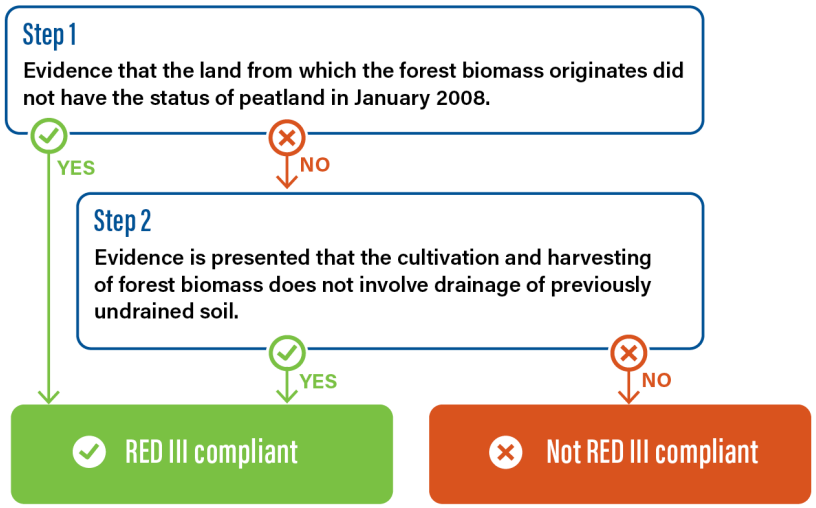
Figure 15: Stepwise approach for compliance with wetland with a high biodiversity value not allowing production of forest biomass



6.2.7.5 PEFC SFM certified organisations shall provide to the first gathering point evidence that **forest biomass** does not originate in land that had, in January 2008, the status of peatland unless evidence is presented that the cultivation and harvesting of **forest biomass** does not involve drainage of previously undrained soil.

Note: Peatland that was partially drained in January 2008, a subsequent deeper drainage, affecting soil that was not fully drained, would constitute a breach of the requirement.

Figure 16: ***Stepwise approach for compliance with peatland with a high biodiversity value not allowing production of forest biomass***



6.3 Requirements for compliance with the RED III sustainability criteria for carbon stocks and sinks levels at a certified area (LULUCF), as per Article 29 (7 b) of the RED III Directive[1]

6.3.1 General

6.3.1.1 The **organisation** acting as the **first gathering point** of the **forest biomass** shall gather from the supplier of **forest biomass** evidence that the management system maintains or strengthens **carbon stocks**, and that sink levels in the forest are maintained or strengthened, both over the long term. Such management systems shall include information from (forward-looking) planning and periodic monitoring of the development of forests and their **carbon stocks** and **sinks**.

6.3.1.2 The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that the following steps are followed at the **sourcing area** to comply with the **RED III sustainability criteria** for **carbon stocks** and **sinks**:

a) defining the **sourcing area**

b) defining the relevant **carbon pools**

c) determining a historical reference period

d) quantifying **carbon stocks** and **sinks** of the certified area for the historical reference period

e) defining the length of the future long-term period

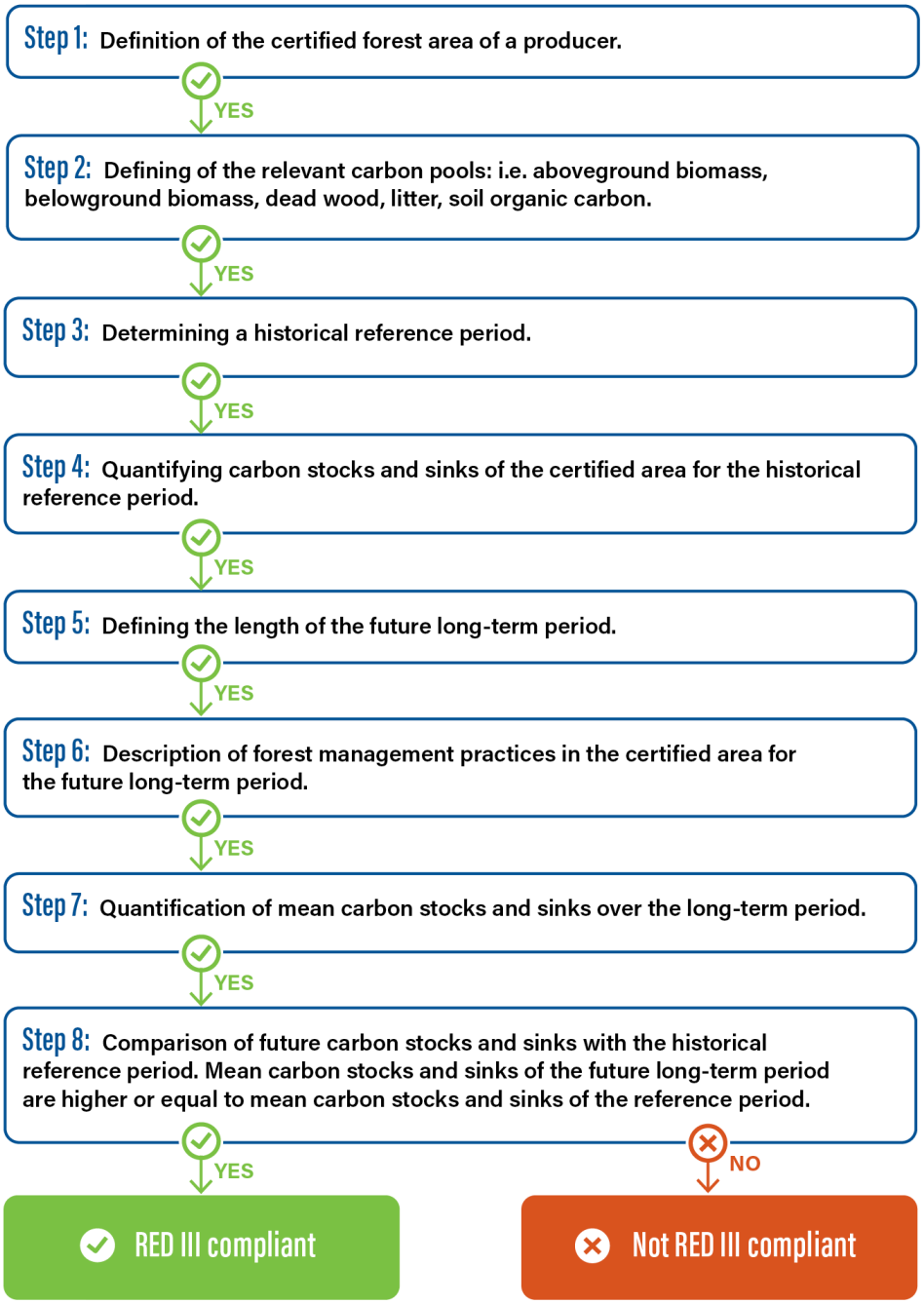
f) description of forest management practices in the certified area for the future long-term period

g) quantification of mean **carbon stocks** and **sinks** over the future long-term period

h) comparison of future **carbon stocks** and **sinks** with the historical reference period

[1] This chapter was developed based on, and reproduces closely, the REDIIBIO report.

Figure 17: The following figure describes the steps:



Source: REDIIBIO study, page 34

Note 1: The approach builds on existing methods for which tools and data can be used that are freely available from public sources. However, it is considered that knowledge of calculations on forest **carbon stocks** and **sinks** is needed to be able to provide evidence for compliance. Furthermore, the approach described below requires **organisations** to obtain evidence from the PEFC SFM certified biomass producer to ensure that the forest management will result in equal or higher **carbon stocks** in the long-term period.

Note 2: Methodologies to assess **carbon stocks** and **sinks** in forests already exist and could be adapted by an **organisation** to provide evidence of compliance with the **LULUCF criteria at sourcing area level**. Such methodologies are used for national level reporting and assessments to UNFCCC (see IPCC supporting documents) under the LULUCF Regulation (see supporting documents by Grassi et al. (Grassi, G., Pilli, R., House, J., Federici, S., Kurz, W.A., 2018. Science-based approach for credible accounting of mitigation in managed forests. Carbon Balance and Management 13, 8.) and Forsell et al. (Forsell, N., Korosuo, A., Federici, S., Gusti, M., Cristóbal, J.J.R., Rüter, S., Jiménez, B.S., Dore, C., Brajterman, O., Gardiner, J., 2018. Guidance on developing and reporting Forest Reference Levels in accordance with Regulation (EU) 2018/841) European Commission Directorate-General for Climate Action, Brussels.) and by voluntary carbon standards for certifying carbon emissions reductions through AFOLU activities at the landscape or stand level. These methodologies serve as a useful starting point for developing approaches to demonstrate compliance with the LULUCF sub-criterion, but they need to be adapted as they have not been designed for demonstrating compliance with RED III. This chapter is built on these existing methodologies.

6.3.2 Definition of the sourcing area

6.3.2.1 In the case of **Level B** evaluation, the **sourcing area** comprises the sum of the PEFC certified areas where **forest biomass** is produced and for which compliance with RED III requirements needs to be demonstrated.

Note: When a **sourcing area** does not cover an entire certified area, RED III requirements are to be implemented only for forest units within the certified area that is included in the **sourcing area**, and where **forest biomass** for which compliance with the **RED III sustainability criteria** shall be demonstrated.

6.3.2.2 The **sourcing area** shall be a geographically explicit forest area belonging to a single country or a region, depending on which level forest legislation is regulated. The definition of **sourcing area** shall allow identification of the origin of **forest biomass** through a map, typically defined based on administrative boundaries. Where the **organisation** procures **forest biomass** from more countries or regions with different sets of legislation, then its supply base shall consist of several **sourcing areas**.

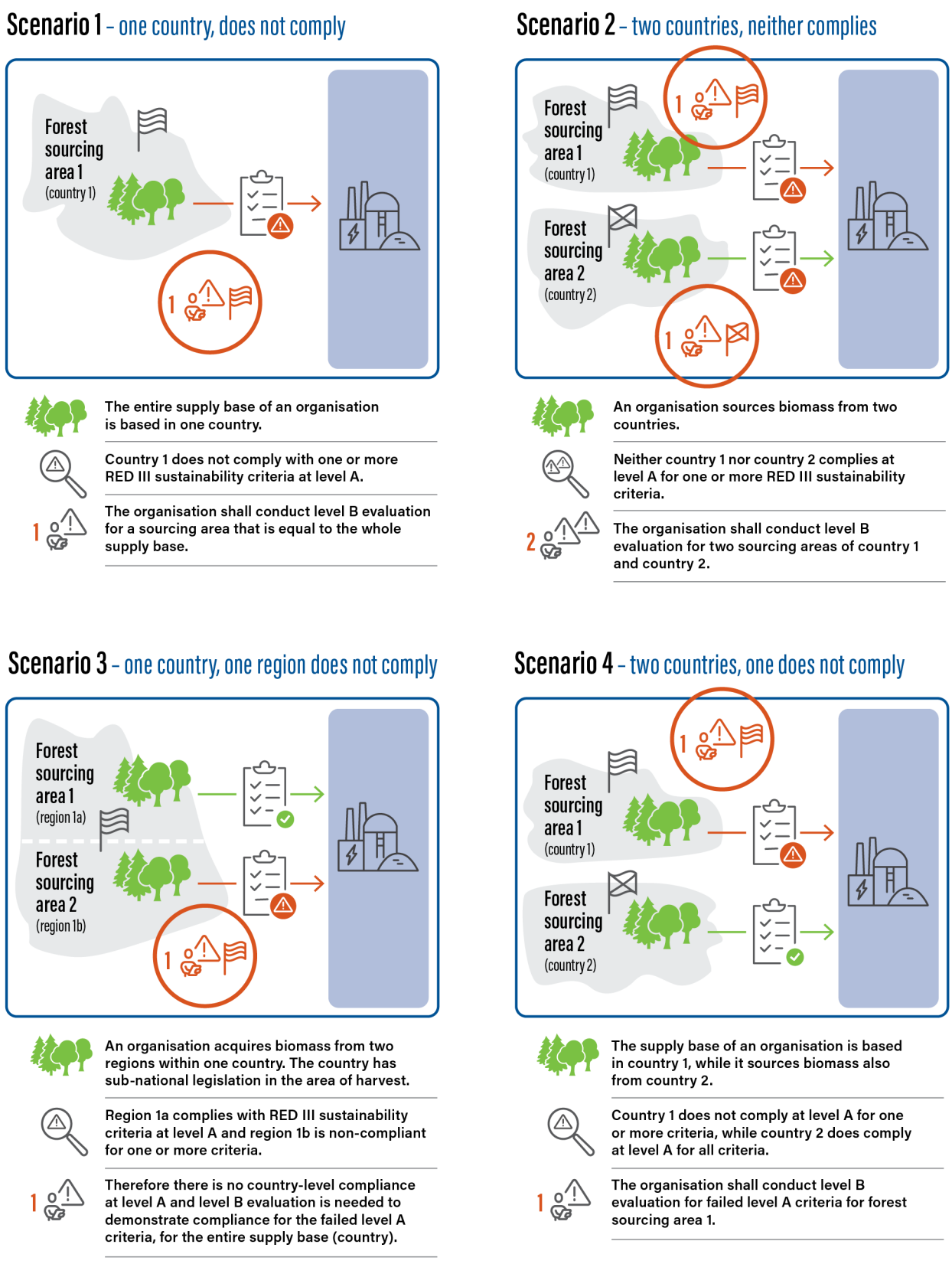
6.3.2.3 The sourcing area definition shall support the collection of reliable and independent information, in case of **Level B** evaluation produced by forest management authorities or those directly responsible for forest management. The compliance evaluation shall be conducted for a geographically explicit area having sufficiently homogenous conditions and common forest management practices that ensure the implementation of sustainable management in the **sourcing area** during the assessment period.

Note: Spatial boundaries do not need to be a continuous, unfragmented patch of land but may comprise several unconnected areas.

6.3.2.4 The identification of the **sourcing area** shall clearly differentiate between the **sourcing area** for which **Level A** evidence is applied and for which **Level B** evaluation is required.

Note: The location of the **organisation** does not affect the compliance requirements – it can be located within a **sourcing area** or outside the **sourcing areas**.

Figure 18: Examples of sourcing areas



Source: REDIIBIO study, page 9 and 10

6.3.3 Defining of the relevant carbon pools

6.3.3.1 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence to ensure maintenance or increasing carbon stock and sink levels at the certified forest area level without specifying which **carbon pools** to consider.

6.3.3.2 As **carbon stocks** and **sinks** in forests may include multiple pools, the **organisation** acting as the **first gathering point** may accept evidence from the PEFC SFM certified biomass producer that the producer follows good practices, such as considering all the **carbon pools** in forests, as specified by UNFCCC, which includes:

a) aboveground **biomass**

b) belowground **biomass**

c) litter

d) **deadwood**

e) soil (mineral and organic soils)

Note: These pools also encompass the **carbon pools** considered relevant by the LULUCF Regulation (EU 2018/841, Annex 1, Section B), except the Harvested Wood Products pool. The Harvested Wood Products pool can be excluded because it is not a forest **carbon pool**.

6.3.4 Determining a historical reference period

6.3.4.1 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence of use of the average **carbon stocks** and **sinks** over a reference period that will serve as a benchmark against which maintenance or strengthening of **carbon stocks** and **sinks** of a certified area will be compared.

Note: RED III does not specify a historical year or period that can serve as a reference to compare the future development of **carbon stocks** and **sinks** in the certified area.

6.3.4.2 The **organisation,** acting as the **first gathering point,** may allow the PEFC SFM certified biomass producer to use a fixed period to avoid the effects of biomass harvest progressively lowering **carbon stocks** and **sinks**. The selected reference period should reflect representative **carbon stocks** and **sinks** in the supply area (i.e., is consistent with any broader historical data used as evidence). In line with the reference period used in the LULUCF Regulation (EU 2018/841), the **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence that the biomass focus on the period 2000-2009. Another period of similar length and as close as possible to 2000-2009 may be accepted to facilitate the use of forest inventory data or to mitigate the impact of annual disturbance or any eventual stochastic events on the levels of **carbon stocks** and **sinks** in the certified area.

6.3.4.3 The **organisation,** acting as the **first gathering point,** shall require the PEFC SFM certified biomass producer to justify the definition of their reference period.

Note: The **organisation,** acting as the **first gathering point,** should consider that the PEFC SFM certified biomass producer should avoid using short periods (or a single year) as reference periods in which significant **natural disturbance** occurred as they may strongly disrupt forest **carbon stocks** and especially **sinks**.

6.3.5 Quantifying carbon stocks and sinks of the certified area for the historical reference period

6.3.5.1 The **organisation,** acting as the **first gathering point,** shall require the PEFC SFM certified biomass producer to collect and provide relevant and sufficient data to estimate mean values for **carbon stocks** and **sinks** of the certified area during the historical reference period as reference values for a compliance check.

Note: Data on **carbon stocks** and **sinks** in the certified area may be obtained from (repeated) forest inventories or forest management plans, provided they are transparent, accurate and reliable. If there are no existing data on **carbon stocks** and **sinks** in the certified area, PEFC SFM certified **organisations** can estimate the mean **carbon stocks** and **sinks** of the certified area for the historical reference period, for example, by applying forest carbon calculators or models (see Appendix 6, Table 9). Data (tree species, growing stock, age structure, increment rate, etc.) to be used in these tools can be obtained from historical forest management plans or inventories conducted in the certified area. Additional data (e.g., basic wood density, carbon content, factors to estimate whole-tree **biomass**) may be needed to provide necessary information on all the relevant **carbon pools** (see step 6.3.3).

6.3.5.2 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence that should provide or estimate reference values for all relevant **carbon pools** individually. When estimating historical **carbon stocks** and **sinks**, it is recommended to further stratify the certified area in homogenous units.

Note 1: When stratifying the certified area, PEFC SFM certified biomass producers can consider some of the following factors:

a) Administrative/legal conditions:
   i. An administrative region where the certified level is located (e.g., region, province, municipality)
   ii. Ownership type (e.g., private, public)

b) Biophysical conditions:
   i. Topography
   ii. Site conditions (e.g., forest site index)

c) Forest characteristics:
   i. Tree species composition
   ii. Forest management regime

Note 2: If the PEFC SFM certified biomass producer is unable to quantify one of the above-mentioned pools (e.g., litter or soil carbon, see step 6.3.3), it is recommended that a justification is provided explaining why the pool cannot be quantified (e.g., absence of data on the litter or soil **carbon pools**) and why omitting the pool does not affect compliance with the requirement to maintain or strengthen **carbon stocks** in the long term.

6.3.6 Defining the length of the future long-term period

6.3.6.1 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence that the producer conducts a compliance check for a long-term period. This period shall be, as a minimum, 30 years.

Note: To define the period to be considered, the size of the certified area is relevant. In a small certified area, it can be expected that a long period needs to be considered for demonstrating that **carbon stocks** and **sinks** are maintained or strengthened, while for a larger area, a shorter period may suffice. Two main issues influence the methodological decisions of the proposed stepwise approach:

a) According to RED III, Article 29, the **sustainability and GHG emissions saving characteristics** criteria apply only to **installations** producing electricity, heating, cooling, and fuels with a total rated thermal input equal to or exceeding 20 MW in the case of solid **biomass fuels** and in the **installations** with a total rated thermal input equal or exceeding 2MW in the case of gaseous **biomass fuels**. The forest-**sourcing areas** of such **installations** are considered to comprise a large area, covering multiple forest stands and age classes. Accordingly, **carbon stocks** and **sinks** of such areas can be maintained or strengthened over a time period shorter than the average rotation period of a single forest stand. The certified area is not necessarily related to a continuous, unfragmented patch of land, but may comprise several mutually unconnected areas.

b) The temporal boundaries of the compliance check are recommended to be set to a period of at least 30 years, in line with Article 15 of EU Regulation 2018/1999. This Regulation requests EU Member States to submit long-term strategies for GHG emissions reduction with a perspective of at least 30 years. Defining the temporal boundaries as at least 30 years ensures that **organisations** and EU member states are subject to a similar level of stringency.

6.3.7 Describing forest management practices in the sourcing area for the future long-term period

6.3.7.1 The **organisation,** acting as the **first gathering point,** shall obtain from PEFC SFM certified biomass producer a description of the forest management practices that can be implemented in the long term to prove that **carbon stocks** and **sinks** are strengthened or maintained over a long-term period (recommended 30 years, see 6.3.6).

6.3.7.2 Information on future forest management may be derived from existing forest management plans or other verifiable evidence. The future forest management practices must, at minimum, comply with legal requirements that are valid in a certified area.

Note: When describing the future forest management practices in the **sourcing area**, the following factors could be considered that may affect the development and calculation of forest carbon balances and sinks in subsequent steps:

a) annual harvest level

b) tree species composition

c) forest reproductive material used (provenance)

d) thinning intensity and frequency

e) cutting regime (e.g., even-aged clearcutting, shelterwood, group or tree selection, coppice)

f) other management decisions (e.g., fertilisation, drainage, herbicide and pesticide application, etc.)

g) average minimum and maximum rotation length

Potential data sources for these factors are listed in Appendix 6, Table 10

6.3.8 Quantifying mean carbon stocks and sinks over the future long-term period

6.3.8.1 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence that the producer develops a projection of the development of **carbon stocks** and **sinks** in the certified area, based on forest growth and planned management practices, to assess how **carbon stocks** and **sinks** will develop over the long term.

6.3.8.2 When developing those projections, the **organisation** acting as the **first gathering point** shall require the PEFC SFM certified biomass producer to avoid assumptions on the effects of the future impact of policies and markets as much as possible.

Note: PEFC SFM certified **organisations** can apply forest carbon calculators and models (for an overview of potential tools, see Appendix 6, Table 9) as a basis for these calculations. Such tools will require information on future forest management practices (see 6.3.7), forest structure (e.g., tree species, growing stock, age structure) and growth (increment), as well as additional data (e.g., basic wood density, carbon content, factors to estimate whole-tree **biomass**).

6.3.8.3 The **organisation,** acting as the **first gathering point,** shall require the PEFC SFM certified biomass producer to stratify the certified area in homogenous units to improve the accuracy of the estimates according to the recommendations provided in 6.3.5.

6.3.8.4 The **organisation,** acting as the **first gathering point,** shall require that the PEFC SFM certified biomass producer shall use the same **carbon pools** (see 6.3.3), data and methods for estimating **carbon stocks** and **sinks** in the reference period to ensure comparability of the estimates. The future and historically oriented estimates shall be methodologically and quantitatively comparable.

6.3.8.5 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer a justification for why a **carbon pool** cannot be quantified (e.g., absence of data on the litter or soil **carbon pools**) in a case when they are not able to quantify any of the abovementioned pools (e.g., litter or soil carbon, see 6.3.3)

6.3.8.6 The **organisation,** acting as the **first gathering point,** shall require the PEFC SFM certified biomass producer to consider relevant secondary data and information to explain how **forest biomass** removals are expected to affect these **carbon pools** in the long term at the certified area.

6.3.8.7 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence that documents the temporal development of all **carbon pools** to facilitate the comparison with results obtained from monitoring, as a basis for verifying compliance under RED III Article 30.

6.3.9 Comparing future carbon stocks and sinks with the historical reference period

6.3.9.1 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence to prove compliance with the carbon stock and sink level criterion (LULUCF criterion) by comparing both the mean **carbon stocks** and **sinks** for the future long-term period (6.3.8) with the **carbon stocks** and sinks of the reference period (6.3.5). If the mean **carbon stocks** and **sinks** of a long-term period **sinks** are higher or equal to the mean **carbon stocks** and **sinks** of a reference period, the evidence is compliant with the LULUCF criteria.

6.3.9.2 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM certified biomass producer evidence on the use of a monitoring and verification system of the actual development of **carbon stocks** and **sinks** to support documentation of compliance. The monitoring activities shall verify estimates of future **carbon stocks** and **sinks** as estimated by carbon models. This monitoring shall consider uncertainties, non-permanence, and time dynamics.

Note: Actual forest developments might differ from the modelled development, for example, as a result of changes in forest management objectives and practices or **natural disturbances**.

6.3.9.3 The **organisation,** acting as the **first gathering point,** shall obtain from the PEFC SFM biomass producer evidence to ensure that the producer adapts its forest management when there are deviations between the projected and actual development of **carbon stocks** and **sinks** due to **natural disturbances**. Management plans need to consider such circumstances and be flexible enough to respond. Assessments of likely disturbances shall be an integral part of the plan.

Note: Some tree species may be negatively affected by climate change through changes in productivity or **natural disturbances**, which could negatively impact the development of their carbon stock and sink levels over the long term. A change of tree species (or provenance) or another change in the management of the future stand to anticipate or adapt to new conditions may result in a (temporary) decrease in **carbon stocks** and **sinks** in the short term with the aim to maintain or strengthen **carbon stocks** and **sinks** in the long term. It may be necessary to allow for a temporary reduction of **carbon stocks** and **sinks** if this will result in maintaining or strengthening **carbon stocks** and **sinks** in the long term. At the certified area level, **carbon stocks** and **sinks** levels in the forest are considered to be maintained or strengthened over the long term if forest management will be continued or improved on the basis of regionally adopted specific site-suitable practices under current and future conditions.

7. GHG calculations requirements

7.1 General

7.1.1 According to Article 29(10) of the RED III Directive, the **organisation** shall obtain from the use of biomass fuels the following GHG emission savings:

a) for electricity, heating and cooling production from biomass fuels used in installations that started operating after 20 November 2023, at least 80 %

b) for electricity, heating and cooling production from biomass fuels used in installations with a total rated thermal input equal to or exceeding 10 MW that started operating between 1 January 2021 and 20 November 2023, at least 70 % until 31 December 2029, and at least 80 % from 1 January 2030

c) for electricity, heating and cooling production from biomass fuels used in installations with a total rated thermal input equal to or exceeding 10 MW that started operating before 1 January 2021, at least 80 % after they have been operating for 15 years, at the earliest from 1 January 2026 and at the latest from 31 December 2029.

7.1.2 To demonstrate compliance with Article 29(10) of the RED III Directive through the PEFC scheme as per 7.1.1, the **organisation** shall calculate their GHG emissions savings in compliance with this chapter.

7.1.3 The **organisation** actually converting **forest biomass** and **ligno-cellulosic material** from **waste** and **residues** into electricity, heat or cooling shall calculate the GHG emissions savings from the use of **forest biomass** and **ligno-cellulosic material** from **waste** and **residues**. The previous **organisations** on the supply chain shall provide any information required to calculate those emission savings, as per ST 5002.

7.1.4 The **organisation** shall calculate the GHG emissions saving from the use of **biomass fuels** in one of the following ways:

a) Where a **default value** for GHG emissions saving for the production pathway is laid down in Part A of Annex VI of RED III Directive for biomass fuels where the e_l value for those biomass fuels calculated in accordance with point 7 of Part B of Annex VI of RED III Directive is equal to or less than zero, by using that **default value**.

Note 1: Point 7 of part B of Annex VI of RED III Directive refers to emissions from land-use change. e_l (annualised emissions from carbon stock changes caused by land-use change) will be less or equal to zero whenever the biomass comes from **forestry residues**, processing **residues** originating in forest-related industries and/or **wastes**. If the **organisation** is sourcing other than biomass from **forestry residues**, processing **residues** originating in forest-related industries and/or **wastes**, the **organisation** will have to calculate the e_l according to section 7.4 of this chapter. If, according to this calculation, the **organisation** can demonstrate that e_l is less or equal to zero, the **organisation** can use the **default values** defined on Part A of Annex VI of RED III Directive.

Note 2: **Default values** are displayed on Appendix 2 and 3 of ST 5002, based on Annex VI of the RED III Directive. Concretely, Part A of Annex VI is included in Appendix 2.

Note 3: **Default values** listed in Annex VI of RED III Directive can only be applied if the process technology and feedstock used for the production of the fuel match their description and scope, and the transport distance. For example, they cannot use the **default value** "Woodchips from short rotation coppice (Poplar – Fertilised)" if their wood chips do not exactly match this description and if it is not in their scope. In case specific technologies are set out, the **default values** can only be used if those technologies were actually applied.

Note 4: **Default values** have been calculated as average GHG emissions resulted from specific **forest biomass** used by the application of pre-determined factors.

Note 5: Point 7 of part B of Annex VI of RED III Directive refers to emissions from land-use change.

b) By using an **actual value** calculated in accordance with the methodology described from part 7.2 until 7.13 of this document, based on part B of Annex VI of RED III Directive or;

Note 1: **Actual value** is the result of the calculation of the GHG emissions savings for some or all of the steps of a specific biomass fuel production process, calculated in accordance with the methodology in Part B of Annex VI of the RED III Directive.

Note 2: Information on actual GHG emissions has to be provided for all relevant elements of the GHG emission calculation formula. 'Relevant' refers in this context to elements for which reporting is obligatory (e.g., e_l in case of land use change), all elements for which **actual values** should be used instead of disaggregated **default values** and all elements related to emission savings (if applicable). 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.

Note 3: **Actual values** can only be calculated when all relevant information is available and transmitted through the chain of custody:

i. **Actual values** of emissions from cultivation can only be determined at the origin of the chain of custody.

ii. **Actual values** of emissions from transport can only be determined if emissions of all transport steps are recorded and transmitted through the chain of custody.

iii. **Actual values** of emissions from processing can only be determined if emissions of all processing steps are recorded and transmitted through the chain of custody.

Note 4: Standard calculation values published in Annex IX of the Implementing Regulation 2022/996 shall be applied whenever available.

c) By using a value calculated as the sum of the factors of the formulas referred to in point 1 of Part B of Annex VI of RED III Directive, where disaggregated **default values** in Part C of Annex VI of RED III Directive may be used for some factors, and **actual values**, calculated in accordance with the methodology laid down in Part B of Annex VI of RED III Directive, are used for all other factors.

Note 1: This means than implementing the formula as per 7.2.1, the **organisation** can combine the use of **default values**, when appropriate, and **actual values** for some of the elements of the formula, following the calculations established in this chapter.

Note 2: The Disaggregated **default values** listed in Annex VI of RED III Directive can only be applied if the process technology and feedstock used for the production of the fuel match their description and scope, and the transport distance. In case specific technologies are set out, the disaggregated **default values** can only be used if those technologies were applied.

Note 3: Disaggregated **default values** can only be applied if the e_l value for those **biomass fuels** calculated in accordance with point 7 of Part B of Annex VI of RED III Directive is equal or less than zero.

Note 4: Disaggregated values can only be applied to certain elements in the supply chain: e_{ec}, e_p, e_{td} and e_u.

7.1.5 The **organisation** shall only declare actual GHG values after the certification body has verified its capability to conduct actual value calculations.

7.1.6 The **organisation** conducting the GHG calculations shall receive from the supply chain all information that is relevant for establishing compliance with the EU sustainability criteria for **biomass fuel** and the GHG emissions information.

Note: When **default values** are used, information on GHG emissions should only be reported for final **biomass fuels** and can be reported as an aggregate. If relevant, both, the process technology and the raw material used need to be specified

7.1.7 The information shall include accurate data on all relevant elements of the emission calculation formula.

7.1.8 The **organisation** shall report GHG emissions using appropriate units. These are:

a) g CO_2eq/dry-ton for raw materials and intermediary products

b) g CO_2eq/MJ of final energy commodity (electricity or heat) for electricity and heating produced from biomass products

7.1.9 If an **organisation** acting as electricity, heat and cooling producers has decided to use **actual values** (7.1.3.b) or a combination of disaggregated **default values** and **actual values** (7.1.3.c), the **organisation** shall collect all the necessary information from upstream suppliers in order to calculate them.

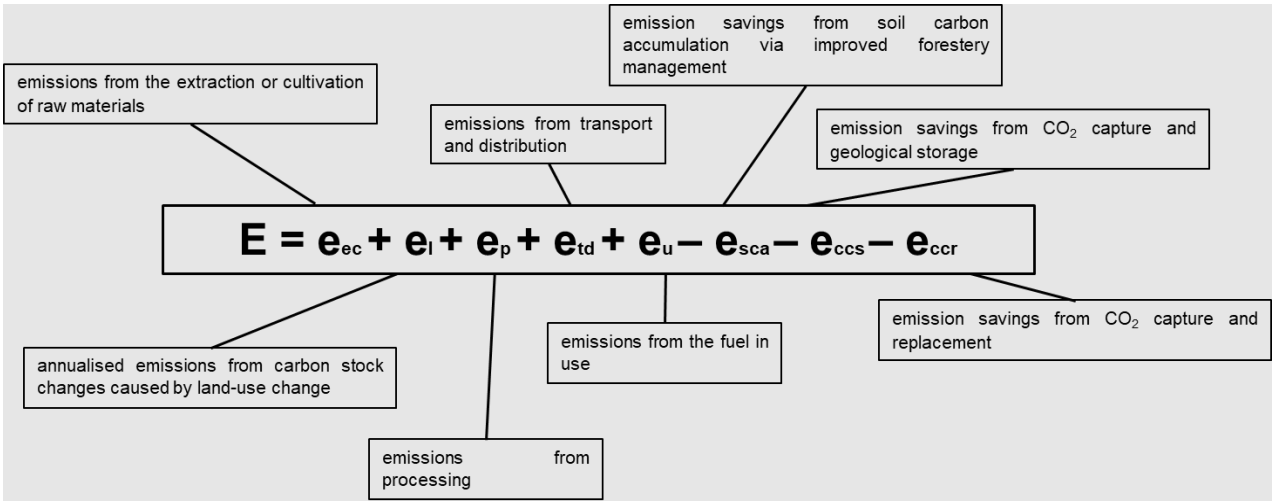
7.1.10 To calculate the saving emissions based on **actual values** (7.1.3.b) or a combination of disaggregated **default values** and **actual values** (7.1.3.c), the **organisation** shall:

a) calculate GHGs from the production and use of **biomass fuels** before conversion into electricity, heating, and cooling (E).

b) calculate GHGs from the use of **biomass fuels** in producing electricity, heating and cooling, including the energy conversion to electricity and/or heat or cooling produced (EC_{el} and/or EC_h).

7.2 GHGs from the production and use of biomass fuels before conversion into electricity, heating and cooling (E)

7.2.1 The **organisation** shall calculate GHG emissions from the production and use of **biomass fuels** before conversion into electricity, heating and cooling:



7.2.2 Emissions from the manufacture of machinery and equipment shall not be taken into account.

7.2.3 "E" shall be expressed in terms of grams of CO_2 equivalent per MJ of **biomass fuel**, g CO_2eq/MJ.

7.2.4 The greenhouse gasses (GHG) shall cover: CO_2, N_2O and CH_4. For the purpose of calculating CO_2 equivalence, these gases are associated with the following values:

Greenhouse Gas	CO_2 Equivalence
CO_2	1
N_2O	298
CH_4	25

7.3 Emissions for forest based raw material extraction or cultivation (e_{ec})

7.3.1 When an **organisation** intends on using **default values** for the calculation of e_{ec}, the **organisation** shall refer to Part C of Annex VI of REDIII (also listed in appendix 3 of this document).

7.3.2 When using **actual values**, the **organisation** shall calculate the emissions from the wood extraction or cultivation of raw materials (e_{ec}), including emissions from: the extraction, harvesting or cultivation process itself; the collection, drying and storage of raw materials; **waste** and leakages; the production of chemicals or products used in extraction or cultivation.

7.3.3 Capture of CO_2 in the cultivation of raw materials shall be excluded.

Note 1: Refer to 7.1.4(c) for specific requirements on the application of **default values**.

Note 2: Slash (e.g., branches lefts on the ground after logging) is equal to 0 up to the process of collection.

7.3.4 As indicated in point 5 of part B of Annex VI of RED III Directive, as an alternative to using **actual values**, the **organisation** may derive estimates of emissions from cultivation and harvesting of **forest biomass** from the use of averages for cultivation and harvesting emissions calculated for geographical areas at national level.

7.4 Emissions for land use change (e_l)

7.4.1 In the case of land-use changes (converted areas) that took place on or after the cut-off date of 1 January 2008 and on which cultivation is permitted under Article 29 of Directive (EU) 2023/2413, the **organisation** shall calculate the accumulated GHG emissions resulting from the land-use changes (e_l) and added to the other emission values.

7.4.2 No conversion of **grassland** to forestland after 2008 is permitted under the scheme.

Note: The term "land use changes" refers to changes among the six land categories recognised by the Intergovernmental Panel on Climate Change (IPCC) (forest land, **grassland**, cropland, **wetlands**, settlements and other land).

7.4.3 Cropland and perennial cropland shall be regarded as one land use.

Note: Perennial crops are defined as multi-annual crops, the stem of which is usually not annually harvested, such as short rotation coppice and oil palm.

7.4.4 If evidence is provided that the cropland was categorised as "cropland" on 1 January 2008, or the forestry as "forest" on the cut-off date 1 January 2008, and no change in land use took place after the cut-off date 1 January 2008, e_l equals "0.

7.4.5 GHG emissions from changes in **carbon stocks** resulting from land-use change (e_l) are to be calculated in accordance with the RED III Directive and Commission Decision 2010/335/EU of 10 June 2010.

7.4.6 According to the RED III Directive (Annex VI. Part B. No9), e_l shall be calculated by dividing total emissions equally over 20 years. For the calculation of those emissions, the following rule shall be applied:

$$e_l = (CS_R - CS_A) \times 3.664 \times \frac{1}{20} \times \frac{1}{P}$$

where

e_l= annualised GHG emissions from carbon stock change due to land-use change (measured as mass of CO2-equivalent per unit biomass fuel energy).

CS_R= **carbon stock** per unit area associated with the reference land use (measured as mass (tonnes) of carbon per unit area, including both soil and vegetation). The reference land use shall be the land use in January 2008 or 20 years before the raw material was obtained, whichever was the later.

CS_A= the **carbon stock** per unit area associated with the actual land use (measured as mass (tonnes) of carbon per unit area, including both soil and vegetation). In cases where the **carbon stock** accumulates over more than one year, the value attributed to CSA shall be the estimated stock per unit area after 20 years or when the crop reaches maturity, whichever the earlier.

P= the productivity of the crop (measured as biomass fuel energy per unit area per year).

7.4.7 The **organisation** can attribute a bonus (eB) of 29 g CO_2eq/MJ **biomass fuel** if **biomass** is obtained from restored degraded land, if evidence is provided that the land:

a) was not in use for agriculture in January 2008 or any other activity; and

b) is severely degraded land, including land that was formerly in agricultural use.

Note: 'Severely degraded land' means land that, for a significant period of time, has either been significantly salinated or presented significantly low organic matter content and has been severely eroded.

7.4.8 The bonus of 29 g CO_2eq/MJ shall apply for a period of up to 20 years from the date of conversion of the land to agricultural use, provided that a steady increase in **carbon stocks** as well as a sizable reduction in erosion phenomena for land falling under b is ensured.

7.4.9 In accordance with point 10 of Part C of Annex V to RED III Directive, Commission Decision 2010/335/EU, which provides guidelines for the calculation of land **carbon stocks** in relation to this Directive, shall serve as the basis for the calculation of land **carbon stocks**.

Note 1: Commission Decision 2010/335/EU provides guidelines for the calculation of land **carbon stocks** in relation to this Directive, drawing on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories – volume 4, and in accordance with Regulations (EU) No 525/2013 and (EU) 2018/841.

Note 2: Commission Decision 2010/335/EU of 10 June 2010 is due for review (as set out in Annex V, part C, point 10, Annex VI, part B, point 10). Any changes will be implemented by PEFC with immediate effect.

7.5 Emissions for processing (e_p)

7.5.1 Emissions from processing, e_p, shall include emissions from:

a) the processing itself

b) from **waste** and leakages

c) the production of chemicals or products used in processing, including the CO2 emissions corresponding to the carbon contents of fossil inputs, whether or not actually combusted in the process.

7.5.2 Emissions arising from chemicals and energy that are also indirectly linked to the production of **biomass fuels** must be included. Emissions from processing include emissions from drying intermediate products and materials, where appropriate.

7.5.3 When calculating emissions for processing (e_p) with **default values**, the **organisation** shall refer to Part C of Annex VI of REDIII, which proposes **default values** for e_p (also listed in appendix 3 of this document).

7.5.4 When calculating emissions for processing (e_p) with **actual values**, the following formula can be applied, which applies to one processing step at a time:

$$e_p{}' \left[\frac{kgCO_2eq}{Kg}\right] = \frac{EM_{electricity}\left[\frac{kgCO_2eq}{year}\right] + EM_{heat}\left[\frac{kgCO_2eq}{year}\right] + EM_{inputs\ production}\left[\frac{kgCO_2eq}{year}\right] + EM_{wastewater}\left[\frac{kgCO_2eq}{year}\right]}{yield_{dry\ feedstock_a}\left[\frac{Kg_{dry\ feedstock\ a}}{year}\right]}$$

Emissions for processing (e_p) with actual values is specified in mass units in relation to the dry matter content of the main product (kgCO2eq/kg dry).

Note: Formula components in detail:

$$EM_{electricity}\left[\frac{kgCO_2eq}{year}\right] = electricity\ consumption\left[\frac{kWh}{year}\right] \times Ef_{electricity}\left[\frac{kgCO_2eq}{kWh}\right]$$

$$EM_{heat}\left[\frac{kgCO_2eq}{year}\right] = fuel\ consumption\left[\frac{kg}{year}\right] \times Ef_{fuel}\left[\frac{kgCO_2eq}{kg}\right]$$

$$EM_{inputs\ production}\left[\frac{kgCO_2eq}{year}\right] = inputs\ production\left[\frac{kg}{year}\right] \times Ef_{inputs\ production}\left[\frac{kgCO_2eq}{kg}\right]$$

$$EM_{wastewater}\left[\frac{kgCO_2eq}{year}\right] = wastewater\left[\frac{l}{year}\right] \times Ef_{wastewater}\left[\frac{kgCO_2eq}{l}\right]$$

$$Yield_{feedstock}\left[\frac{kg_{yield}}{year}\right] = yield\ of\ the\ feedstock\ in\ kg\ per\ year$$

The annual yield of the feedstock relates to the dry matter content.

7.5.5 To calculate the GHG emissions from processing (ep), the following data at a minimum must be collected on **site**, i.e., the respective values are taken from, e.g., company documents:

a) electricity consumption [kWh/year] – annual total electricity consumption

b) heat generation – type of fuel/combustible used to produce steam (e.g., heating oil, gas, agricultural crop residues)

c) fuel consumption [kg/year] – total annual consumption of fuel for heat production, e.g., heating oil [kg], gas [kg], bagasse [kg]

d) production of inputs [kg/year] – quantity of chemicals or additional products (inputs) used in processing

e) wastewater quantity [l/year] – quantity of wastewater per year

f) yield main product [kg/year] – annual harvest of the main product

7.5.6 Input data for calculating the processing emissions in the production chain must be measured or based on technical specifications of the processing plant. If the range of emissions for a group of processing plants (which the respective plant belongs to) is known, the most conservative emission value (highest) for this group is to be used. Actual emission values for processing can only be determined if all of the information about emissions relevant to the inter-face is recorded and consistently passed along through the production chain. Other emissions from processing have to be added to ep.

7.5.7 The values (emission factors, calorific values, etc.) shall be taken from Annex IX of the IR 2022/996 to calculate e_p.

Note: In case Annex IX of the IR 2022/996 does not include the necessary values, a scientific literature source or scientifically recognised database (e.g., ECOINVENT database) can be used. The source must be cited for values taken from scientific literature sources or scientifically recognised databases. If there are different values, the most conservative value is to be used.

7.5.8 In accounting for the consumption of electricity not produced within the fuel production plant, the greenhouse gas emissions intensity of the production and distribution of that electricity shall be assumed to be equal to the average emission intensity of the production and distribution of electricity in a defined region (i.e., national level). The emission factors set out in Annex IX of the IR 2022/996 shall be applied if available.

7.6 Emissions from transport and distribution (e_{td})

7.6.1 Emissions from transport and distribution (e_{td}) shall include emissions from the transport of raw and semi-finished materials and from the storage and distribution of finished materials. Emissions from transport and distribution to be taken into account under e_{ec} shall not be covered by this point.

Note: This means, for example, that the machines used to conduct the harvesting operations are not included in this point.

7.6.2 The **organisation** undertaking this type of freight transport must then calculate the GHG emissions for their vehicle fleet and can rely on the following formula:

$$e_{td}\left[\frac{gCO_2eq}{MJ}\right] = \frac{\left(e\left[\frac{gCO_2eq}{MJ}\right] \times t\left[\frac{MJ}{t.km}\right] \times d[km] \times p\right)}{w\left[\frac{MJ}{t}\right]}$$

where

e is emissions coefficient (g CO2eq /MJ) depends on the type of fuel used (fuel oil, diesel, natural gas, etc.)

t is transport efficiencies depends on the type of vehicle and material transported (MJ/t.km)

d is the weighted average distance (km)

p is the backhaul factor of the vehicle (between 0.5 and 1)

w is the weighted biomass LHV (MJ/t)

Note: Emissions coefficient and transport efficiencies can be found in the Annex IX of the IR.

7.7 Emissions from the fuel in use (e_u)

7.7.1 Emissions of CO_2 from fuel in use (e_u) shall be taken to be zero for **biomass fuels**.

7.7.2 Emissions of non-CO_2 GHG (CH_4 and N_2O) from the fuel in use shall be included in the e_u factor (detailed in the Annex VI part C of RED III Directive).

7.8 Emissions savings from soil carbon accumulation via improved management (e_{sca})

7.8.1 Emission savings from soil carbon accumulation via improved management (e_{sca}) shall be taken to be zero because e_{sca} is not within the scope of the PEFC scheme.

7.9 Emissions savings from CO_2 capture and geological storage (e_{ccs})

7.9.1 Emission savings from CO_2 capture and geological storage (e_{ccs}) that have not already been accounted for in e_p, shall be limited to emissions avoided through the capture and storage of emitted CO_2 directly related to the extraction, transport, processing and distribution of **biomass fuel** if stored in compliance with Directive 2009/31/EC. (RED III Directive - Annex VI, Part B. No14)

7.9.2 Emission savings from CO_2 capture and geological storage (e_{ccs}) may only be taken into account where there is valid evidence that CO_2 was effectively captured and safely stored. The **organisation** shall make sure that the storage facility is in good condition and without leakages. (RED III Directive, Annex VI, Part B. No14). Where a third party carries out the transport or geological storage, the **organisation** may provide the proof of storage through the relevant contracts with and invoices of that third party (Article 20 of the IR 2022/996).

7.9.3 The emission saved must relate directly to the production of the biofuel they are attributed to. It means that all biofuels originating from the same process would need to be treated equally. If the CO_2 is not captured continuously, it might be appropriate to deviate from this approach and to attribute different amounts of savings to biofuel obtained from the same process. However, in no case a higher amount of savings should be allocated to a given batch of biofuel than the average amount of CO_2 captured per MJ of biofuel in a hypothetical process where the entire CO_2 stemming from the production process is captured. Capturing and processing of CO_2 has its own GHG emission footprint. Those emissions have to be taken into account in the calculation applying the appropriate emission factors for the energy consumed and the inputs used for capturing and processing of CO_2.

7.9.4 To verify that the capturing of CO_2 is used in commercial products and services to replace fossil-derived CO_2, it would suffice to check that the CO_2 was sold to an **organisation** that can be expected to have an economical meaningful use for the CO_2. Then, the buyer should provide information on how the CO_2 that is replaced was generated previously and declare, in writing, that due to the replacement, emissions are avoided.

Note 1: It would be for the auditor to decide case by case whether the requirements of the Renewable Energy Directive are met, including that emissions are actually avoided.

Note 2: Until further notice it is not required to conduct audits on the premises of the buyer as the buyer of the CO_2 is not part of the chain of custody related to the biofuel production, unless there is reasonable suspicion that the written declaration contains false information.

7.9.5 By default, the emission savings from CO_2 capture and geological storage e_{ccs} is set to 0.

7.9.6 The following formula shall be used to calculate e_{ccs}:

$$e_{ccs}\left[\frac{gCO_2eq}{MJ_{fuel}}\right] = \frac{produced\ quantity\ of\ CO_2[t] - energy\ used[MWh] \times EF\left[t\frac{CO_2eq}{MWh}\right] - auxiliary\ materials\ used[t] \times EF\left[t\frac{CO_2eq}{t}\right]}{produced\ quantity\ of\ fuel\ [t]\ \times lower\ heating\ value\ fuel\left[\frac{GJ}{t}\right]}$$

7.10 Emissions savings from CO_2 capture and replacement (e_{ccr})

7.10.1 Emission savings from CO_2 capture and replacement (e_{ccr}) shall be related directly to the production of **biomass fuel** they are attributed to, and shall be limited to emissions avoided through the capture of CO_2 of which the carbon originates from **biomass** and which is used to replace fossil-derived CO_2 in the production of commercial products and services. (RED III - Annex VI, Part B. No15)

7.10.2 By default, the emission savings from CO_2 capture and replacement e_{ccr} is set to 0.

7.10.3 If e_{ccr} is calculated, the auditors shall verify that its estimate is limited to the emissions avoided through the capture of CO_2 of which the carbon originates from **biomass** and which is used to replace fossil-derived CO_2. It requires the following information:

a) the purpose for which the captured CO_2 is used

b) the origin of the CO_2 that is replaced *

c) the origin of the CO_2 that is captured

d) information on emissions due to capturing and processing of CO_2

Note: ***Organisations** using captured CO_2 may state how the CO_2 that is replaced was generated previously and declare, in writing, that due to the replacement emissions are avoided. It is to be considered sufficient to verify compliance with the requirements of Directive (EU) 2018/2011 and the avoidance of emissions.

7.10.4 E_{ccr} shall be related directly to the production of **biomass fuel** they are attributed to, and shall be limited to emissions avoided through the capture of CO_2 of which the carbon originates from **biomass**, and which is used to replace fossil-derived CO_2 in production of commercial products and services before 1 January 2036.

7.10.5 The following formula shall be used to calculate e_{ccr}:

$$e_{ccr}\left[\frac{gCO_2eq}{MJ_{fuel}}\right] = \frac{produced\ quantity\ of\ CO_2[t] - energy\ used[MWh] \times EF\left[t\frac{CO_2eq}{MWh}\right] - auxiliary\ materials\ used[t] \times EF\left[t\frac{CO_2eq}{t}\right]}{produced\ quantity\ of\ fuel\ [t]\ \times lower\ heating\ value\ fuel\left[\frac{GJ}{t}\right]}$$

7.10.6 The emission saved must relate directly to the production of the biofuel they are attributed to. It means that all biofuels originating from the same process would need to be treated equally. If the CO_2 is not captured continuously, it might be appropriate to deviate from this approach and to attribute different amounts of savings to biofuel obtained from the same process. The **organisation** shall not allocate a higher amount of savings to a given batch of biofuel than the average amount of CO_2 captured per MJ of biofuel in a hypothetical process where the entire CO_2 stemming from the production process is captured. Capturing and processing of CO_2 has its own GHG emission footprint. Those emissions have to be taken into account in the calculation applying the appropriate emission factors for the energy consumed and the inputs used for capturing and processing of CO_2.

7.11 Allocation emissions

7.11.1 When processing intermediate products, the **organisation** shall apply the following formula to emissions from cultivation:

$$e_{ec}intermediate\ product_a\left[\frac{gCO_2eq}{Kg_{dry}}\right] = e_{ec}feedstock_a\left[\frac{gCO_2eq}{Kg_{dry}}\right] \times feedstock\ factor_a \times allocation\ factor\ intermediate\ product_a$$

where

$$Allocation\ factor\ intermediate\ product_a = \left[\frac{energy\ in\ intermediate\ product_a}{energy\ in\ intermediate\ product\ and\ coproducts}\right]$$

$$Feedstock\ factor_a = \left[ratio\ of\ kg_{dry\ feedstock} required\ to\ make\ 1kg_{dry\ intermediate\ product}\right]$$

where

Energy in co-product [MJ] = yield $_{coproduct}$ [kg_{dry}] x lower calorific value $_{coproduct}$ [MJ/kg]

Energy in intermediate product [MJ] = yield $_{intermediate\ product}$ [kg_{dry}] x lower calorific value $_{intermediate\ product}$ [MJ/kg]

Note: The energy is determined using the lower calorific value and the yield. The lower calorific value used in applying this rule must be that of the entire (co-) product (not the value for only the dry part of it). In many cases, however, notably in relation to nearly-dry products, the latter could give a result that is an adequate approximation. Because heat does not have a lower calorific value, no emissions can be allocated to it on this basis.

7.11.2 As mentioned in requirement 7.1.7, raw materials and interim products, information on GHG emissions has to be provided in the unit g CO_2eq /dry-ton feedstock or g CO_2eq /dry-ton intermediary product, respectively. To receive information on emissions per dry-ton feedstock the following formula has to be applied:

$$e_{ec}feedstock_a\left[\frac{gCO_2eq}{t_{dry}}\right] = \frac{e_{ec}feedstockt_a\left[\frac{gCO_2eq}{t_{moist}}\right]}{(1 - moisture\ content)}$$

Note: The moisture content is based on the delivery details. If it is missing or not known, it is based on the maximum value allowed in the supply contract.

7.11.3 At the last processing step, the **organisation** shall convert the emission estimate into the unit CO_2eq /MJ of final biofuel. GHG emissions from the extraction or cultivation of raw materials e_{ec} are expressed in unit g CO_2eq /dry-ton of feedstock, the conversion to grams of CO_2 equivalent per MJ of fuel, g CO_2eq /MJ, shall be calculated as follows:

$$e_{ec}fuel_a\left[\frac{gCO_2eq}{MJ_{fuel}}\right] = \frac{e_{ec}feedstock_a\left[\frac{gCO_2eq}{t_{dry}}\right]}{LHV_a\left[\frac{MJ_{feedstock}}{t_{dry\ feedstock}}\right]} \times fuel\ feedstock\ factor_a \times allocation\ factor\ fuel_a$$

where

$$Allocation\ factor\ fuel_a = \left[\frac{Energy\ in\ fuel}{Energy\ fuel + Energy\ in\ coproducts}\right]$$

$$Fuel\ feedstock\ factor_a = [Ratio\ of\ MJ\ feedstock\ required\ to\ make\ 1\ MJ\ fuel]$$

where

Energy in fuel [MJ] = yield $_{fuel}$ [kg$_{dry}$] x lower calorific value $_{main\ product}$ [MJ/kg]

Energy in co-product [MJ] = yield $_{coproduct}$ [kg$_{dry}$] x lower calorific value $_{coproduct}$ [MJ/kg]

Note 1: For the calculation of the feedstock factor, LHV values per dry ton should be applied while for the calculation of the allocation factor LHV values for wet **biomass** need to be used as this approach was also applied for the calculation of the **default values**.

7.11.4 The **organisation** shall also adjust the values for e_p, e_{td} and e_l. In case of e_p and e_{td}, the emissions from the relevant processing step must be added. Whenever **actual values** are calculated at each step of the chain of custody, the additional emissions from transport and/or processing shall be added to e_p and/or e_{td}, respectively. Whenever a processing step yields co-products, emissions shall be allocated as set out in the GHG emission calculation methodology.

7.11.5 Where a biomass fuel production process produces, in combination, the fuel for which emissions are being calculated and one or more other products ('co-products'), greenhouse gas emissions shall be divided between the fuel or its intermediate product and the co-products in proportion to their energy content (determined by lower heating value in the case of co-products other than electricity and heat). The greenhouse gas intensity of excess useful heat or excess electricity is the same as the greenhouse gas intensity of heat or electricity delivered to the biomass fuel production process and is determined from calculating the greenhouse gas intensity of all inputs and emissions, including the feedstock and CH_4 and N_2O emissions, to and from the cogeneration unit, boiler or other apparatus delivering heat or electricity to the biomass fuel production process. In the case of cogeneration of electricity and heat, the calculation is performed following point 7.12.2.

Allocation of GHG emissions shall take place at every processing step in the supply chain where a co- product(s) is produced. The GHG emissions up to this processing step shall be distributed to the main product and the co-product proportional to their energy content and weight. GHG emissions downstream of the processing step (e.g., further downstream processing or transport & distribution) shall not be included in the allocation, as these emissions are not related to the co-product.

Note: An intermediate product is a product that is part of the process. A co-product is another product or products generated as final products, but not the primary final product.

7.11.6 The allocation shall include the emissions e_{ec} + e_l + e_{sca} + those fractions of e_p, e_{td}, e_{ccs} and e_{ccr} that take place up to and including the process step at which a co-product is produced. If any allocation to co-products has taken place at an earlier process step in the life-cycle, the fraction of those emissions assigned in the last such process step to the intermediate fuel product shall be used for those purposes instead of the total of those emissions. **Wastes and residues** including all **wastes and residues** included in Annex IX of RED III shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials irrespectively of whether they are processed to interim products before being transformed into the final product.

7.11.7 When heating and cooling are co-generated with electricity, emissions shall be allocated between heat and electricity, irrespective if the heat is used for actual heating purposes or for cooling. This means that the GHG emissions must be separately allocated respectively. to electricity and heat according to plant resp. electrical efficiency (ηel) and heat efficiency (ηh) on the basis of exergy. This leads to "Saving Equation" (part. 7.13) expressing those respective allocated GHG emissions for electricity ECel and heat ECh.

Note: The useful part of the heat is found by multiplying its energy content with the Carnot efficiency, Ch, as follows mentioned in the part 7.12.2.

7.12 Calculation of GHG emissions from the production of heat and/or electricity from biomass fuels

7.12.1 GHG emissions from heating or electricity, produced from **biomass fuels**, EC, shall be expressed in terms of grams of CO_2 equivalent per MJ of final energy commodity (heat or electricity), g CO_2eq/MJ.

7.12.2 GHG emissions from the use of **biomass fuels** in producing electricity, heating and cooling, including the energy conversion to electricity and/or heat or cooling produced, shall be calculated as follows:

a) For energy **installations** delivering only heat:

$$EC_h = \frac{E}{n_h}$$

b) For energy **installations** delivering only electricity:

$$EC_{el} = \frac{E}{n_{el}}$$

c) For the electricity or mechanical energy coming from energy **installations** delivering useful heat together with electricity and/or mechanical energy:

$$EC_{el} = \frac{E}{n_{el}}\left(\frac{C_{el} \times n_{el}}{C_{el} \times n_{el} + C_h \times n_h}\right)$$

where

$EC_{h,el}$= Total greenhouse gas emissions from the final energy commodity.

E= Total greenhouse gas emissions of the fuel before end-conversion.

n_{el} = The electrical efficiency, defined as the annual electricity produced divided by the annual energy input, based on its energy content.

n_h = The heat efficiency, defined as the annual useful heat output divided by the annual energy input, based on its energy content.

d) For the useful heat coming from energy **installations** delivering heat together with electricity and/or mechanical energy:

$$EC_h = \frac{E}{n_h}\left(\frac{C_h \times n_h}{C_{el} \times n_{el} + C_h \times n_h}\right)$$

where

$EC_{h,el}$= Total greenhouse gas emissions from the final energy commodity.

E = Total greenhouse gas emissions of the fuel before end-conversion.

n_{el}= The electrical efficiency, defined as the annual electricity produced divided by the annual energy input, based on its energy content.

n_h= The heat efficiency, defined as the annual useful heat output divided by the annual energy input, based on its energy content.

C_{el}= Fraction of exergy in the electricity, and/or mechanical energy, set to 100 % (C_{el} = 1).

C_h= Carnot efficiency (fraction of exergy in the useful heat).

Where a cogeneration unit – providing heat and/or electricity to a biomass fuel production process for which emissions are being calculated – produces excess electricity and/or excess useful heat, the greenhouse gas emissions shall be divided between the electricity and the useful heat according to the temperature of the heat (which reflects the usefulness (utility) of the heat). The useful part of the heat is found by multiplying its energy content with the Carnot efficiency, C_h, calculated as follows:

$$C_h = \frac{T_h - T_0}{T_h}$$

where

T_h = Temperature, measured in absolute temperature (kelvin) of the useful heat at point of delivery.

T_0 = Temperature of surroundings, set at 273,15 kelvin (equal to 0 °C).

If the excess heat is exported for heating of buildings, at a temperature below 150 °C (423,15 kelvin), C_h can alternatively be defined as follows:

C_h = Carnot efficiency in heat at 150 °C (423,15 kelvin), which is: 0,3546

Note: For the purposes of that calculation, the following definitions apply:

e) cogeneration' shall mean the simultaneous generation in one process of thermal energy and electricity and/or mechanical energy;

f) useful heat' shall mean heat generated to satisfy an economical justifiable demand for heat, for heating or cooling purposes;

g) economically justifiable demand' shall mean the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions.

7.13 Calculations of GHG emissions saving from biomass fuels compared to fossil fuels

7.13.1 The **organisation** shall calculate "GHG emissions savings from heat and cooling, and electricity being generated from **biomass fuels" as follows:**

$$Saving = \left(ECF_{h\&c,el} - \frac{ECB_{h\&c,el}}{ECF_{h\&c,el}} \right)$$

where

$ECB_{h\&c,el}$ = total emissions from the heat or electricity

$ECF_{h\&c,el}$ = total emissions from the fossil fuel comparator for useful heat or electricity

Note: The value for the reference fossil fuel ECF(el) may be different:

a) For **biomass fuels** used for the production of electricity, $EC_{F(el)}$ = 183 g CO_2eq/MJ electricity or $EC_{F(el)}$ = 212 g CO_2eq/MJ electricity for the outermost regions.

b) For **biomass fuels** used for the production of useful heat, as well as for the production of heating and/or cooling, $EC_{F(h)}$ = 80 g CO_2eq/MJ heat.

c) For **biomass fuels** used for the production of useful heat, in which a direct physical substitution of coal can be demonstrated, $EC_{F(h)}$ = 124 g CO_2eq/MJ heat.

Appendix 1 (informative): RED III compliant - PEFC Declaration template

This document is to be sent to customers concerned by the RED III Directive

SUPPLIER		
1	Name of supplier	
2	Address	
3	Company registration number	
4	PEFC COC RED III code	

CLIENT		
5	Customer name and address	
6	Delivery period	from dd/mm/YYYY to dd/mm/YYYY

INFORMATION TO CERTIFY SUSTAINABILITY and GHG[1] calculation data of COMPANY'S DELIVERIES
one attestation per customer, and per type of biomass meeting the same criteria

7. TYPE, NATURE, AND QUANTITY OF BIOMASS FEEDSTOCK (the batch must be homogenous)							
	7.1 Type of biomass feedstock			7.2 Quantity (tons)	7.3 Quantity in percentage[2]	7.4 Country of origin[3]	7.5 Transportation distance (between 1 km and 500 km, between 500 km and 2500 km, between 2 500km and 10000km or > 10000 km)
Forest biomass	**Forest biomass**		…%				
Related products of processing industries	Ligno-cellulosic primary processing residues (eligible TOF)						
	Ligno-cellulosic primary processing residues (residues from sawmill)		…%				
	Ligno-cellulosic secondary processing residues		…%				
Waste	Ligno-cellulosic Waste		…%				

8. Type of biomass fuel	Wood chips				
	Wood pellets or briquettes				
	Other				
9.	Total quantity delivered				I__I__I__I__I__I__I__I Tons delivered
10.	of which quantity « **RED III compliant – PEFC** »				I__I__I__I__I__I__I__I Tons delivered

1/ GHG: Greenhouse Gas

2/ Specify the % in case of feedstock mixed to produce biomass fuel

3/ Country in which the wood has been harvested or where the residue or waste has been produced

SIGNATURE and DATE

Appendix 2 (normative): Typical and default values of greenhouse gas emissions savings for biomass fuels if produced with no net-carbon emissions from land-use change

Table 3: Typical and default values of greenhouse gas emissions savings for biomass fuels if produced with no net-carbon emissions from land-use change – wood chips

WOODCHIPS			
Biomass fuel production system	**Transport distance**	**Greenhouse gas emissions savings – default value**	
		Heat	**Electricity**
Woodchips from forest residues	1 to 500 km	91 %	87 %
	500 to 2500 km	87 %	81 %
	2500 to 10000 km	78 %	67 %
	Above 10000 km	60 %	41 %
Woodchips from short rotation coppice (Eucalyptus)	2500 to 10000 km	73 %	60 %
Woodchips from short rotation coppice (Poplar – Fertilised)	1 to 500 km	87 %	81 %
	500 to 2500 km	84 %	76 %
	2500 to 10000 km	74 %	62 %
	Above 10000 km	57 %	35 %
Woodchips from short rotation coppice (Poplar – No fertilisation)	1 to 500 km	90 %	85 %
	500 to 2500 km	86 %	79 %
	2500 to 10000 km	77 %	65 %
	Above 10000 km	59 %	39 %
Woodchips from stemwood	1 to 500 km	92 %	88 %
	500 to 2500 km	88 %	82 %
	2500 to 10000 km	79 %	68 %
	Above 10000 km	61 %	42 %
Woodchips from industry residues	1 to 500 km	93 %	90 %
	500 to 2500 km	90 %	85 %
	2500 to 10000 km	80 %	71 %
	Above 10000 km	63 %	44 %

Table 4: Typical and default values of greenhouse gas emissions savings for biomass fuels if produced with no net-carbon emissions from land-use change – wood pellets

WOOD PELLETS (*1)				
Biomass fuel production system		**Transport distance**	**Greenhouse gas emissions savings – default value**	
			Heat	**Electricity**
Wood briquettes or pellets from forest residues	Case 1	1 to 500 km	49 %	24 %
		500 to 2500 km	49 %	25 %
		2500 to 10000 km	47 %	21 %
		Above 10 000 km	40 %	11 %
	Case 2a	1 to 500 km	72 %	59 %
		500 to 2 500 km	72 %	59 %
		2500 to 10000 km	70 %	55 %
		Above 10000 km	63 %	45 %
	Case 3a	1 to 500 km	90 %	85 %
		500 to 2500 km	90 %	86 %
		2500 to 10000 km	88 %	81 %
		Above 10000 km	81 %	72 %
Wood briquettes or pellets from short rotation coppice (Eucalyptus)	Case 1	2500 to 10000 km	43 %	15 %
	Case 2a	2500 to 10000 km	66 %	49 %
	Case 3a	2500 to 10000 km	83 %	75 %
Wood briquettes or pellets from short rotation coppice (Poplar – Fertilised)	Case 1	1 to 500 km	46 %	20 %
		500 to 10000 km	44 %	16 %
		Above 10000 km	37 %	7 %
	Case 2a	1 to 500 km	69 %	54 %
		500 to 10000 km	67 %	50 %
		Above 10000 km	60 %	41 %
	Case 3a	1 to 500 km	87 %	81 %
		500 to 10000 km	84 %	77 %
		Above 10000 km	78 %	67 %

Wood briquettes or pellets from short rotation coppice (Poplar – No fertilisation)	Case 1	1 to 500 km	48 %	23 %
		500 to 10000 km	46 %	20 %
		Above 10000 km	40 %	10 %
	Case 2a	1 to 500 km	72 %	58 %
		500 to 10000 km	69 %	54 %
		Above 10000 km	63 %	45 %
	Case 3a	1 to 500 km	90 %	85 %
		500 to 10000 km	87 %	81 %
		Above 10000 km	81 %	71 %
Stemwood	Case 1	1 to 500 km	49 %	24 %
		500 to 2500 km	49 %	25 %
		2500 to 10000 km	47 %	21 %
		Above 10000 km	40 %	11 %
	Case 2a	1 to 500 km	73 %	60 %
		500 to 2500 km	73 %	60 %
		2500 to 10000 km	70 %	56 %
		Above 10000 km	64 %	46 %
	Case 3a	1 to 500 km	91 %	86 %
		500 to 2500 km	91 %	87 %
		2500 to 10000 km	88 %	83 %
		Above 10000 km	82 %	73 %
Wood briquettes or pellets from wood industry residues	Case 1	1 to 500 km	69 %	55 %
		500 to 2500 km	70 %	55 %
		2500 to 10000 km	67 %	51 %
		Above 10000 km	61 %	42 %
	Case 2a	1 to 500 km	84 %	76 %
		500 to 2500 km	84 %	77 %
		2500 to 10000 km	82 %	73 %
		Above 10000 km	75 %	63 %
	Case 3a	1 to 500 km	94 %	91 %
		500 to 2500 km	94 %	92 %
		2500 to 10000 km	92 %	88 %
		Above 10000 km	85 %	78 %

Source: REDIII - Annex VI, Part A. Version: 21.12.2018.

Note 1: Case 1 refers to processes in which a natural gas boiler is used to provide the process heat to the pellet mill. Electricity for the pellet mill is supplied from the grid;

Case 2a refers to processes in which a woodchips boiler, fed with pre-dried chips, is used to provide process heat. Electricity for the pellet mill is supplied from the grid;

Case 3a refers to processes in which a CHP, fed with pre-dried woodchips, is used to provide electricity and heat to the pellet mill.

Note 2: If the later **organisation** uses a forest and tree-based biomass fuel mix, it will need to calculate the consignment basis to complete the GHG emission savings of its **installation**, according to the requirements on Chapter 4.

Appendix 3 (normative): Disaggregated default values for biomass fuels

Table 5: Disaggregated default values for biomass fuels – Woodchips

WOODCHIPS						
Biomass fuel production system	Transport distance	Greenhouse gas emissions – default value (g CO_2eq/MJ)				
		Cultivation	Cultivation	Processing	Transport	Non-CO_2 emissions from the fuel in use
Wood chips from forest residues	1 to 500 km	0,0	0,0	1,9	3,6	0,5
	500 to 2500 km	0,0	0,0	1,9	6,2	0,5
	2500 to 10000 km	0,0	0,0	1,9	12,6	0,5
	Above 10000 km	0,0	0,0	1,9	24,6	0,5
Wood chips from SRC (Eucalyptus)	2500 to 10000 km	4,4	4,4	0,0	13,2	0,5
Wood chips from SRC (Poplar – fertilised)	1 to 500 km	3,9	3,9	0,0	4,2	0,5
	500 to 2500 km	3,9	3,9	0,0	6,8	0,5
	2500 to 10000 km	3,9	3,9	0,0	13,2	0,5
	Above 10000 km	3,9	3,9	0,0	25,2	0,5
Wood chips from SRC (Poplar – Not fertilised)	1 to 500 km	2,2	2,2	0,0	4,2	0,5
	500 to 2500 km	2,2	2,2	0,0	6,8	0,5
	2500 to 10000 km	2,2	2,2	0,0	13,2	0,5
	Above 10000 km	2,2	2,2	0,0	25,2	0,5
Wood chips from stemwood	1 to 500 km	1,1	1,1	0,4	3,6	0,5
	500 to 2500 km	1,1	1,1	0,4	6,2	0,5
	2500 to 10000 km	1,1	1,1	0,4	12,6	0,5
	Above 10000 km	1,1	1,1	0,4	24,6	0,5
Wood chips from wood industry residues	1 to 500 km	0,0	0,0	0,4	3,6	0,5
	500 to 2500 km	0,0	0,0	0,4	6,2	0,5
	2500 to 10000 km	0,0	0,0	0,4	12,6	0,5
	Above 10000 km	0,0	0,0	0,4	24,6	0,5

Table 6: Disaggregated default values for biomass fuels – Woods Pellets

WOODS PELLETS							
Biomass fuel production system	Transport distance	Greenhouse gas emissions – default value (g CO_2eq/MJ)					
		Cultiva-tion	Process-ing	Cultiva-tion	Processing	Transport & distribution	Non-CO_2 emissions from the fuel in use
Wood briquettes or pellets from forest residues (case 1)	1 to 500 km	0,0	25,8	0,0	30,9	3,5	0,3
	500 to 2500 km	0,0	25,8	0,0	30,9	3,3	0,3
	2500 to 10000 km	0,0	25,8	0,0	30,9	5,2	0,3
	Above 10000 km	0,0	25,8	0,0	30,9	9,5	0,3
Wood briquettes or pellets from forest residues (case 2a)	1 to 500 km	0,0	12,5	0,0	15,0	3,6	0,3
	500 to 2500 km	0,0	12,5	0,0	15,0	3,5	0,3
	2500 to 10000 km	0,0	12,5	0,0	15,0	5,3	0,3
	Above 10000 km	0,0	12,5	0,0	15,0	9,8	0,3
Wood briquettes or pellets from forest residues (case 3a)	1 to 500 km	0,0	2,4	0,0	2,8	3,6	0,3
	500 to 2500 km	0,0	2,4	0,0	2,8	3,5	0,3
	2500 to 10000 km	0,0	2,4	0,0	2,8	5,3	0,3
	Above 10000 km	0,0	2,4	0,0	2,8	9,8	0,3
Wood briquettes from short rotation coppice (Eucalyptus – case 1)	2 500 to 10000 km	3,9	24,5	3,9	29,4	5,2	0,3

Wood briquettes from short rotation coppice (Eucalyptus – case 2a)	2500 to 10000 km	5,0	10,6	5,0	12,7	5,3	0,3
Wood briquettes from short rotation coppice (Eucalyptus – case 3a)	2500 to 10000 km	5,3	0,3	5,3	0,4	5,3	0,3
Wood briquettes from short rotation coppice (Poplar – Fertilised – case 1)	1 to 500 km	3,4	24,5	3,4	29,4	3,5	0,3
	500 to 10000 km	3,4	24,5	3,4	29,4	5,2	0,3
	Above 10000 km	3,4	24,5	3,4	29,4	9,5	0,3
Wood briquettes from short rotation coppice (Poplar – Fertilised – case 2a)	1 to 500 km	4,4	10,6	4,4	12,7	3,6	0,3
	500 to 10000 km	4,4	10,6	4,4	12,7	5,3	0,3
	Above 10000 km	4,4	10,6	4,4	12,7	9,8	0,3
Wood briquettes from short rotation coppice (Poplar – Fertilised – case 3a)	1 to 500 km	4,6	0,3	4,6	0,4	3,6	0,3
	500 to 10000 km	4,6	0,3	4,6	0,4	5,3	0,3
	Above 10000 km	4,6	0,3	4,6	0,4	9,8	0,3
Wood briquettes from short rotation coppice (Poplar – no fertilisation – case 1)	1 to 500 km	2,0	24,5	2,0	29,4	3,5	0,3
	500 to 2500 km	2,0	24,5	2,0	29,4	5,2	0,3
	2500 to 10000 km	2,0	24,5	2,0	29,4	9,5	0,3
Wood briquettes	1 to 500 km	2,5	10,6	2,5	12,7	3,6	0,3

from short rotation coppice (Poplar – no fertilisation – case 2a)	500 to 10000 km	2,5	10,6	2,5	12,7	5,3	0,3
	Above 10000 km	2,5	10,6	2,5	12,7	9,8	0,3
Wood briquettes from short rotation coppice (Poplar – no fertilisation– case 3a)	1 to 500 km	2,6	0,3	2,6	0,4	3,6	0,3
	500 to 10000 km	2,6	0,3	2,6	0,4	5,3	0,3
	Above 10000 km	2,6	0,3	2,6	0,4	9,8	0,3
Wood briquettes or pellets from stemwood (case 1)	1 to 500 km	1,1	24,8	1,1	29,8	3,5	0,3
	500 to 2500 km	1,1	24,8	1,1	29,8	3,3	0,3
	2500 to 10000 km	1,1	24,8	1,1	29,8	5,2	0,3
	Above 10000 km	1,1	24,8	1,1	29,8	9,5	0,3
Wood briquettes or pellets from stemwood (case 2a)	1 to 500 km	1,4	11,0	1,4	13,2	3,6	0,3
	500 to 2500 km	1,4	11,0	1,4	13,2	3,5	0,3
	2500 to 10000 km	1,4	11,0	1,4	13,2	5,3	0,3
	Above 10000 km	1,4	11,0	1,4	13,2	9,8	0,3
Wood briquettes or pellets from stemwood (case 3a)	1 to 500 km	1,4	0,8	1,4	0,9	3,6	0,3
	500 to 2500 km	1,4	0,8	1,4	0,9	3,5	0,3
	2500 to 10000 km	1,4	0,8	1,4	0,9	5,3	0,3
	Above 10000 km	1,4	0,8	1,4	0,9	9,8	0,3
Wood briquettes or pellets from wood	1 to 500 km	0,0	14,3	0,0	17,2	3,3	0,3
	500 to 2500 km	0,0	14,3	0,0	17,2	3,2	0,3

industry residues (case 1)	2500 to 10000 km	0,0	14,3	0,0	17,2	5,0	0,3
	Above 10000 km	0,0	14,3	0,0	17,2	9,2	0,3
Wood briquettes or pellets from wood industry residues (case 2a)	1 to 500 km	0,0	6,0	0,0	7,2	3,4	0,3
	500 to 2500 km	0,0	6,0	0,0	7,2	3,3	0,3
	2500 to 10000 km	0,0	6,0	0,0	7,2	5,1	0,3
	Above 10000 km	0,0	6,0	0,0	7,2	9,3	0,3
Wood briquettes or pellets from wood industry residues (case 3a)	1 to 500 km	0,0	0,2	0,0	0,3	3,4	0,3
	500 to 2500 km	0,0	0,2	0,0	0,3	3,3	0,3
	2500 to 10000 km	0,0	0,2	0,0	0,3	5,1	0,3
	Above 10000 km	0,0	0,2	0,0	0,3	9,3	0,3

Source: REDIII - Annex VI, Part C. Version: 21.12.2018.

Appendix 4 (informative): Sources of information

This appendix is intended to provide an overview of the information for compliance with the harvesting criteria at the forest certified area level.

Table 7: Overview of the information and its sources for compliance with harvesting criteria at the forest sourcing area level

Criteria	Indicator	Sources of information
Forest regeneration	Certified area	Forest management plans
Forest regeneration	Type of harvesting operations from which **forest biomass** results (final felling, selective logging, thinnings, etc.) Quality and quantity of next generation forest resources	Forest management plans Records or reports on forest regeneration
Protected area	Presence of designated areas for nature protection, including **wetlands** and peatlands	IUCN maintains the World Database on Protected Areas (WDPA) Other international networks of designated areas e.g., the UNESCO Biosphere Reserves
Protected area	Permissions for biomass removal in the protected areas	Harvesting permission issued by the relevant competent authority Alternatively, proof of compliance with relevant legislation is provided through operational reports/harvest protocols
Protected area	Implementation of plans/measures in the protected areas	Operational reports describe compliance measures undertaken in the respective areas, obtained via field-inspections with an agent of the relevant competent authority, or The confirmations are implemented by second or third party and thereafter endorsed by the competent authority. Second party audits will require field-inspections whenever the evidence provided is not sufficient to ensure compliance with the RED III sustainability criteria. As part of the third party, the external auditor may conduct a field visit in a sample basis, and whenever the auditor considers that the evidence provided is not sufficient.

Soil quality and biodiversity	Biomass includes stumps or roots	Operational post-harvest reports confirm that stumps or roots were not harvested in the certified area
Soil quality and biodiversity	Existence of poor or vulnerable soils in the forest certified area	FAO/UNESCO Soil Map of the World Harmonized World Soil Database – FAO National or regional soil maps Identification of poor or vulnerable soils in forest management plans
Soil quality and biodiversity	Harvesting on poor or vulnerable soils is implemented according to requirements of logging permission	Post-harvest report issued or approved by the competent authority
Soil quality and biodiversity	Impacts on soil quality are minimised during and after harvesting	Forest management plans/operational reports/harvest protocols could include a "checklist" for the assessment of potential impacts as well as an assessment of measures to minimise such at operational level Operational reports created during or after harvest show proof that precautionary measures have been implemented regarding soil protection and include dated and geo-tagged pictures before-and after- the intervention or written description of impacts on logging trails and damages on the remaining stand Operational reports/harvest protocols confirm that local best practice guidelines or relevant legislation regarding soil protection during harvesting operations are complied with (i.e. chosen harvesting system is justified in respect of soil type and slope)
Soil quality and biodiversity	Biodiversity and habitat features are assessed and specified	Forest management plans Operational reports Pre-harvest inventory Regional biodiversity assessments
Soil quality and biodiversity	Required or recommended amounts of deadwood are known	Applicable legislation or regulation Regionally applicable best practices

		Scientific recommendations
Soil quality and biodiversity	Deadwood amounts are according to requirements or best practice recommendation	Harvesting protocols Operational reports Pre-harvest inventory Post-harvest assessments
Soil quality and biodiversity	Preventive and protective measures are taken to protect biodiversity during harvesting operations	Harvesting protocols Operational reports Post-harvest assessments
Long-term production capacity	Sustainable harvest levels on forest available for wood supply	Regional data for net annual increment is published by national or regional forest inventories but can also be calculated on the basis of forest growth models specifically for the forest certified area Regional data for annual harvested timber amounts can be obtained from national or regional forest inventories, or from forest authorities
Long-term production capacity	Harvest amounts does not exceed net annual increments	Permits or documents including reports of the relevant competent forest authority Specific permits issued by the relevant competent authority allow these temporally higher harvest levels, for one of the reasons as indicated in 6.2.5.2
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of **primary forests** in or after January 2008. **Forest biomass** not originating in the **primary forests** or in forests that has been converted from the **primary forests** in or after 2008.	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves; a national database of **primary forests** National database of protected areas including Natura 2000.
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of other wooded land of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed, in or after January 2008. **Forest biomass** not originating in the other wood land or in a	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves National database of protected areas including Natura 2000.

	land that has been converted from the other wooded land in or after 2008.	
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of **old-growth forests** in or after January 2008. **Forest biomass** not originating in the **old-growth forests** or in a land that has been converted from the **old-growth forests** in or after 2008.	National database of **old-growth forests** Forest inventory and forest management plan National database of protected areas including Natura 2000.
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of **highly biodiverse forest and other wooded land**, in or after January 2008. **Forest biomass** not originating in **highly biodiverse forest and other wooded land** unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves National database of protected areas including Natura 2000. Forest inventory and forest management plan
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of **highly biodiverse grassland**, in or after January 2008. **Forest biomass** not originating in land that has been converted from the **highly biodiverse grassland** in or after 2008.	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves National database of protected areas including Natura 2000.
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of **heathland**, in or after January 2008. Forest **biomass** not originating in **heathland** or in land that have been converted from the **heathland** in or after 2008.	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves National database of protected areas including Natura 2000.
Land with a high biodiversity value not allowing production of **forest biomass**	Presence of wetlands, in January 2008. **Forest biomass** not originating in land that has been converted from **wetlands** in or after 2008 and the land does not have the same status as it had in January 2008.	IUCN maintains the World Database on Protected Areas (WDPA); Other international networks of designated areas e.g., the UNESCO Biosphere Reserves Areas registered according to the Ramsar Convention. National database of protected areas including Natura 2000.
Land with a high biodiversity value not	Presence of peatland in January 2008.	IUCN maintains the World Database on Protected Areas (WDPA);

allowing production of **forest biomass**	Forest **biomass** not originating in land that was peatland in January 2008, unless evidence is presented that the cultivation and harvesting of **forest biomass** does not involve drainage of previously undrained soil.	Other international networks of designated areas e.g., the UNESCO Biosphere Reserves Areas registered according to the Ramsar Convention. National database of protected areas including Natura 2000.

Appendix 5 (informative): Gap analysis between the PEFC Benchmark standard PEFC ST 1003, Sustainable Forest Management, and the additional SFM requirements to be implemented for Level B evidence

The following table maps the requirements from the PEFC Benchmark Standard PEFC ST 1003, Sustainable Forest Management, with the interpretations issued to those requirements to align with RED III requirements, which **organisations** acting as the **first gathering point** shall require PEFC SFM certified **forest biomass** producers to implement and provide the required information, to assess compliance with RED III requirements at **Level B**. The additional SFM requirements are already specified under 6.2, and this table is just for information purposes The following table is to be used together with Appendix 4 which outlines sources of information used in conformity evaluation.

Table 8: Gap analysis between the requirements from the PEFC Benchmark Standard PEFC ST 1003, Sustainable Forest Management, and the additional SFM requirements to be implemented for Level B evidence

Requirement of PEFC ST 1003:2018	Interpretation and add-on for RED III compliance	RED III requirement (as of RED III Directive 2023/2413)
General requirements		
	6.2.1.1 PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point accurate, up-to-date, and verifiable evidence of the spatial boundaries of the certified area by means of geographical coordinates or parcels.	(a) The spatial boundaries of the sourcing area for which compliance needs to be demonstrated, and on which management systems referred to in point (b) apply, including by means of geographical coordinates or parcels.
Legality of harvest operations *"(i) the legality of harvesting operations"*		
6.3.1.1 The standard requires that the organisation shall identify and have access to the legislation applicable to its forest management and determine how these compliance obligations apply to the organisation. ***Note:*** For a country which has signed a FLEGT Voluntary Partnership Agreement (VPA) between the European Union and the producing country, the "legislation applicable to forest management" is defined by the VPA agreement. **6.3.1.2** The standard requires that the organisation shall comply with applicable local, national and	**6.2.2.1** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point any evidence as requested by the organisation certified against PEFC ST 5002 to prove compliance of harvesting with Regulation (EU) No 995/2010 of the European Parliament and of the Council (usually known as: EUTR) ***Note:*** Regulation (EU) No 995/2010 (EUTR) has been repealed by Regulation (EU)	Management systems applicable to the sourcing area ensuring: (i) the legality of harvesting operations, which shall be proven by providing evidence of the compliance of harvesting with the due diligence system defined in Article 6 of Regulation (EU) No 995/2010 of the European Parliament and of the Council.

international legislation on forest management, including but not limited to forest management practices; nature and environmental protection; protected and endangered species; property, tenure and land-use rights for indigenous peoples, local communities or other affected stakeholders; health, labour and safety issues; anti-corruption, trade, customs and the payment of applicable royalties and taxes.	2023/1115 (EUDR). Transition from EUTR to EUDR shall follow the transition period defined in the EUDR.	
6.3.1.4 The standard requires that measures shall be implemented to address protection of the forest from unauthorised activities such as illegal logging, illegal land use, illegally initiated fires, and other illegal activities.		
Forest regeneration of harvested areas *"(III) forest regeneration of harvested areas"*		
8.4.4 The standard requires that successful regeneration shall be ensured through natural regeneration or planting that is adequate to ensure the quantity and quality of the forest resources.	**6.2.3.1** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence (e.g., forest management plans, operational protocols, environmental impact assessments, and results of relevant compliance audits and inspections) after harvesting operations to ensure that the harvested plots are regenerated in an appropriate manner after harvesting operations. **6.2.3.2** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence that regeneration is implemented within 10 years after harvesting activities, unless otherwise required by national legislation.	(III) that forest regeneration is carried out in a manner that at least maintains the quality and quantity of the harvested forest areas, which may be proven by providing evidence of the establishment of a new forest in the same area within a maximum of ten years after the harvesting.

Areas designated for nature conservation purposes are not negatively affected *"(IIIi)that areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in wetlands and peatlands, are protected unless evidence is provided that the harvesting of that raw material does not interfere with those nature protection purposes"*		
8.4.2 The standard requires that inventory, mapping and planning of forest resources shall identify, protect, conserve or set aside ecologically important forest areas. ***Note:*** This does not prohibit forest management activities that do not damage the important ecologic values of those biotopes.	**6.2.4.1** PEFC SFM certified organisations shall provide the organisation acting as the first gathering point with evidence to ensure that inventory, mapping, and planning of forest resources and harvesting operations identify, protect, conserve, or set aside with the aim of preserving biodiversity and preventing habitat destruction areas designated by international or national law, or by the relevant competent authority, for nature protection purposes, including in **wetlands**, **grasslands, heathlands** and peatlands. ***Note:*** Harvesting in those areas is not generally prohibited. Where forestry operations have proven documentation on meeting all the requirements to maintain conservation purposes, harvesting could be legitimised. **6.2.4.2** PEFC SFM certified organisations shall, in the case of timber harvesting on these lands, provide to the organisation acting as the first gathering point the a harvesting permit issued by the relevant competent authority (e.g., in the management plan) and evidence of compliance with the relevant legislation described in operational reports or harvesting protocols (e.g., in the timber sale contract) and the result	(IIIi) that **forest biomass** does not originate from areas designated by international or national law or by relevant competent authority for nature protection, including in wetlands and peatlands, unless there is evidence that the harvesting of the raw material does not interfere with the protection objectives of the designated areas. […]

	of relevant compliance audits and inspections (e.g., PEFC SFM audit report).	
Maintenance of soil quality and of biodiversity *"(iv) that harvesting is carried out considering the maintenance of soil quality and biodiversity with the aim of minimising negative impacts"*		
8.4.1 The standard requires that management planning shall aim to maintain, conserve or enhance biodiversity on landscape, ecosystem, species and genetic levels. **8.4.10** The standard requires that tending and harvesting operations shall be conducted in a way that does not cause lasting damage to ecosystems. Wherever possible, practical measures shall be taken to maintain or improve biological diversity. **8.5.3** The standard requires that special care shall be given to forestry operations on sensitive soils and erosion-prone areas as well as in areas where operations might lead to excessive erosion of soil into watercourses. Techniques applied and the machinery used shall be suitable for such areas. Special measures shall be taken to minimise the pressure of animal populations on these areas. **8.3.3** The standard requires that management, harvesting and regeneration operations shall be carried out at a time, and in a way, that does not reduce the productive capacity of the site, for example by avoiding damage to soil and retained stands and trees.	**6.2.5.1** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence that harvesting is carried out considering maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact. This also requires that soil types are checked, identification of sensitive areas in terms of soil quality and biodiversity and assessment of potential risks with **forest biomass** harvesting in advance. ***Note 1*:** This can be done, e.g., on the basis of soil maps, soil sensitivity maps, or through the provision of detailed field inventory data. Note 2: Biodiversity also includes habitat features.6.2.5.3 Large clear-cuts shall be minimised and are in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, except in cases where it is temporarily justified due to documented forest pests, storms or other natural disturbances.	(iv) that forest harvesting is carried out in a way that aims at least at preventing negative impacts on soil quality and biodiversity. This may be proven by providing evidence that the relevant risks associated with the harvesting of **forest biomass** for energy production have been identified in advance; and that, appropriate mitigation actions have been implemented such as the following:

8.1.4 The standard requires that **forest conversion to agricultural use** shall not occur. **8.1.5** The standard requires that forest conversion to other land use shall not occur unless in justified circumstances where the conversion: a) is in compliance with national and regional policy and legislation applicable for land use and forest management and is a result of national or regional land-use planning governed by a governmental or other official authority including consultation with affected stakeholders; and b) entails a small proportion (no greater than 5 %) of forest type within the certified area; and c) does not have negative impacts on ecologically important forest areas, culturally and socially d) significant areas, or other protected areas; and e) does not destroy areas of significantly high carbon stock; and f) contributes to long-term conservation, economic, and social benefits. **8.1.6** The standard requires that human-induced **forest degradation** shall not occur. ***Note 1:*** **Plantation forests** established by converting **primary forests** or **naturally regenerating forests** after 31 December 2010 are not eligible for certification. ***Note 2:*** **Planted forests** established by converting **primary forests** after 31 December 2010 are not eligible for certification. ***Note 3:*** This requirement is not applicable for **plantation forests**	**6.2.5.1** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence that harvesting is carried out considering maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact. This also requires that soil types are checked, sensitive areas in terms of soil quality and biodiversity are identified, and potential risks with **forest biomass** harvesting are assessed in advance. ***Note 1:*** This can be done, e.g., on the basis of soil maps, soil sensitivity maps, or through the provision of detailed field inventory data. ***Note 2:*** Biodiversity also includes habitat features. **6.2.5.2** The **organisation** acting as the **first gathering point** shall obtain from the PEFC SFM certified biomass producer evidence to ensure that no **primary forest**, **old-growth forest** or areas designated by international or national law or relevant competent authority for nature protection, including **wetlands**, **grasslands**, **heathlands** and peatlands are degraded to or replaced by forest plantations. ***Note***: See also requirement 6.2.5.3, where it says that large clear-cuts shall be minimised and are in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located	(1) **primary forests** and areas protected under 1 (b) (IIIi) are not degraded to or replaced by forest plantation;

established for protection or ecosystem restoration, as well as **forests** established through planting or seeding which at stand maturity resemble or will resemble **naturally regenerating forests**. ***Note 4:*** Incorporation of the definition into regional, national or subnational standards may consider the context of national forestry terminology and legal requirements. This can result in system-specific clarifications and guidance, as long as this delivers at minimum an equivalent outcome to the intended outcome of the definition.	except in cases where it is temporarily justified due to documented forest pests, storms, or other natural disturbances.	
	6.2.5.7 PEFC SFM certified organisations shall provide to the **organisation** acting as the **first gathering point** evidence that harvesting **of stumps or roots** is avoided.	(2) harvesting of stumps and roots is avoided;
8.5.3 The standard requires that special care shall be given to forestry operations on sensitive soils and erosion-prone areas as well as in areas where operations might lead to excessive erosion of soil into watercourses. Techniques applied and the machinery used shall be suitable for such areas. Special measures shall be taken to minimise the pressure of animal populations on these areas.	**6.2.5.4** PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence that they do not conduct **forest biomass** harvesting in poor or vulnerable soils, unless in compliance with 6.2.5.5. ***Note:*** Vulnerable soils can be identified on FAO/UNESCO Soil Map of the World 34, Harmonized World Soil Database – FAO 35, and national or regional soil maps. **6.2.5.5 Forest biomass** may be exceptionally extracted from poor and vulnerable soils under explicit permission from the competent authority. If biomass comes from poor or vulnerable sources, harvesting shall be implemented according to the requirements of logging	(3) no harvesting is carried out on vulnerable soils;

	permission provided by a competent authority.	
8.2.4 The standard requires that appropriate forest management practices such as reforestation and afforestation with tree species and provenances that are suited to the site conditions or the use of tending, harvesting and transport techniques that minimise tree and/or soil damages shall be applied.	6.2.5.6 PEFC SFM certified organisations shall provide to the organisation acting as the first gathering point evidence that harvesting is carried out through logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats**6.2.5.1** PEFC SFM certified organisations shall provide to the organisations acting as first gathering point evidence that harvesting is carried out considering maintenance of soil quality and biodiversity, in accordance with sustainable forest management principles, with the aim of preventing any adverse impact. This also requires that soil types checks, identification of sensitive areas in terms of soil quality and biodiversity and assessment of potential risks with **forest biomass** harvesting in advance. ***Note 1:*** This can be done, e.g., on the basis of soil maps, soil sensitivity maps by the organisation or supplier, or through the provision of detailed field inventory data. ***Note 2:*** Biodiversity also includes habitat features.	(4) that harvesting is carried out in compliance with requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats
8.4.13 The standard requires that standing and fallen deadwood, hollow trees, old groves and rare tree species shall be left in quantities and distribution necessary to safeguard biological diversity, taking into account the potential effect on the	**6.2.5.8** PEFC SFM certified organisations shall provide to the first gathering point evidence to ensure that harvesting is carried out in compliance with locally and ecologically appropriate	(6) locally and ecologically appropriate retention thresholds for deadwood extraction; and

health and stability of forests and on surrounding ecosystems.	retention threshold for deadwood extraction.	
	6.2.5.3 Large clear-cuts shall be minimised and are in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, except in cases where it is temporarily justified due to documented forest pests, storms or other natural disturbances.	(7) large clear-cuts are minimised and harvesting is carried out in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, except in cases where it is temporarily justified due to documented forest pests, storms or other natural disturbances.
Harvesting maintains or improves the long-term production capacity of forests *"(v) that harvesting maintains or improves the long-term production capacity of the forest."*		
6.2.3 The standard requires that management plans shall include at least a description of the current forest management unit, long-term objectives, and the average annual allowable cut, including its justification.	**6.2.6.1** PEFC SFM certified organisations shall provide to the organisation acting as first gathering point evidence that management plans include a description of the forest management unit, long-term objectives, and the average annual allowable cut, including its justification, and approximated annual increment to ensure sustainable harvest levels of the sourcing area covered by the certificate. **6.2.6.2** PEFC SFM certified organisations shall provide to the organisation acting as first gathering point evidence that they do not exceed the annual allowable cut of timber, except there is proven evidence on: - restructuring of the age structure - habitat management, e.g., for biodiversity - as a response to diseases, pests, storm or other officially accepted and well-justified	(v) the harvest maintains or improves the forest's long-term production capacity. This may be proven by providing evidence that the annual fellings do not exceed the net annual increment in the relevant sourcing area on average within the ten-year period prior to the harvesting intervention, unless different amounts are duly justified to enhance the future production capacity of the forest; or because of documented forest pests, storms or other natural disturbance. That may be proven by using public or private forest inventory data.

	reasons, e.g., natural disturbances	
Land with a high biodiversity value not allowing production of forest biomass *"that forests in which the **forest biomass** is harvested do not stem from the lands that have the statuses referred to in paragraph 3, points (a), (b), (d) and (e), paragraph 4, point (a), and paragraph 5, respectively under the same conditions of determination of the status of land specified in those paragraphs"*		
8.4.2 The standard requires that inventory, mapping and planning of forest resources shall identify, protect, conserve or set aside ecologically important forest areas. ***Note:*** This does not prohibit forest management activities that do not damage the important ecologic values of those biotopes. **3.7 Ecologically important forest areas** Forest areas: a) Containing protected, rare, sensitive, or representative forest ecosystems; b) Containing significant concentrations of endemic species and habitats of threatened species, as defined in recognised reference lists; c) Containing endangered or protected genetic in situ resources; d) Contributing to globally, regionally, and nationally significant large landscapes with natural distribution and abundance of naturally occurring species. **8.1.7** The standard requires that afforestation of ecologically important non-forest ecosystems shall not occur unless in justified circumstances… **3.8 Ecologically important non-forest areas** Non-forest areas: a) Containing protected, rare, sensitive, or representative non-forest ecosystems; b) Containing significant concentrations of endemic species and habitats of threatened species,	**6.2.7.1** PEFC SFM certified organisations shall provide to the first gathering point evidence that **forest biomass** does not originate in land that had, in or after January 2008, status of: a) **primary forests** and other wooded land of native species where there is no clearly visible indication of human activity and ecological processes are not significantly disturbed; b) **highly biodiverse forest and other wooded land** unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes; c) **old-growth forests**; d) forests converted from **highly biodiverse grassland**; e) **heathland**. **6.2.7.2** Identification and evaluation of the **highly biodiverse grassland** (6.2.7.1 d) shall include: a) evidence that the land is or has been **highly biodiverse grassland** at any time since January 2008. This includes information from national cadastre, forest management plans, satellite images of the respective area; information from national competent authorities;	Where the conditions set out in [Article 29] paragraph 6, points (a)(vi) and (vii), are not met, the first subparagraph of this paragraph [Article 29 (3), "land with high biodiversity value"], with the exception of point (c), also applies to biofuels, bioliquids and biomass fuels produced from **forest biomass**. Where the conditions set out in [Article 29] paragraph 6, points (a)(vi) and (vii), are not met, the first subparagraph of this paragraph, with the exception of points (b) and (c) [Article 29 (4), "prohibition of origin in wetlands"], and the second subparagraph of this paragraph [prohibition does not apply if the wetlands are not converted to other land] also apply to biofuels, bioliquids and biomass fuels produced from **forest biomass**. Where the conditions set out in paragraph 6, points (a)(vi) and (vii), are not met, this paragraph [Article 29 (5), also applies to biofuels, bioliquids and biomass fuels produced from **forest biomass** unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.

as defined in recognised reference lists; c) Containing endangered or protected genetic in situ resources; d) Contributing to globally, regionally, and nationally significant large landscapes with natural distribution and abundance of naturally occurring species. **8.1.6** The standard requires that human-induced forest degradation shall not occur. Note 1: Plantation forests established by converting **primary forests** or naturally regenerating forests after 31 December 2010 are not eligible for certification. Note 2: Planted forests established by converting **primary forests** after 31 December 2010 are not eligible for certification. Note 3: This requirement is not applicable for plantation forests established for protection or ecosystem restoration, as well as forests established through planting or seeding which at stand maturity resemble or will resemble naturally regenerating forests **8.5.2** The standard requires that areas that fulfil specific and recognised protective functions for society shall be mapped, and forest management plans and operations shall ensure the maintenance or enhancement of these functions. **8.5.3** The standard requires that special care shall be given to forestry operations in forest areas with water protection functions to avoid adverse effects on the quality and quantity of water resources. Inappropriate use of chemicals or other harmful substances or inappropriate silvicultural practices influencing water quality in a harmful way shall be avoided. Downstream water balance and water quality shall not be significantly affected by the operations.	b) evidence that **grassland** maintains or would maintained in the absence of human interventions, the natural species composition and ecological characteristics and processes. Where that is the case, the land shall be considered as being, or having been, natural, highly biodiverse land. Where **grassland** has already been converted to forests and it is not possible to assess the characteristics of the land itself through information available from the national competent authorities or satellite imagery, such land shall be considered as not having been **highly biodiverse grassland** at moment of conversion; c) production of **forest biomass** shall only be allowed where: - evidence exists that harvesting of **forest biomass** is necessary to preserve the status of the **grassland** as **highly biodiverse grassland** and that current management practices do not present risk of causing biodiversity decline of the **grassland**; or - the relevant competent authority or designated agency has granted permission to harvest the **forest biomass** in order to preserve the **highly biodiverse grassland** status. **6.2.7.3** PEFC SFM certified organisations shall provide to the first gathering point evidence that **forest biomass** does not originate in land that had, in January	

	2008 status, of wetlands and no longer has that status. **6.2.7.4** PEFC SFM certified organisations shall provide to the first gathering point evidence that **forest biomass** does not originate in land that had, in January 2008, status of peatland unless evidence is presented that the cultivation and harvesting of **forest biomass** does not involve drainage of previously undrained soil. **Note**: Peatland that was partially drained in January 2008, a subsequent deeper drainage, affecting soil that was not fully drained, would constitute a breach of the requirement.	

Appendix 6 (informative): Sources of information and tools

This appendix is intended to provide an overview of sources of information and tools to demonstrate compliance with the LULUCF criteria at the forest certified area level.

Table 9: Checklist of possible tools to demonstrate LULUCF criteria compliance at forest sourcing area level

Name of tool	Description	Reference	URL
CO2FIX	Stand level simulation model, which quantifies the C stocks and fluxes in the aboveground biomass, belowground **forest biomass**, soil organic matter and the wood products chain	• Masera et al. (2003)[1] • Schelhaas et al. (2004)[2]	http://dataservices.efi.int/casfor/models.htm
CBM-CFS3	Stand- and landscape-level modelling framework that simulates the dynamics of all forest carbon stocks required under the Kyoto Protocol (aboveground biomass, belowground biomass, litter, deadwood and soil organic carbon)	• Kull et al. (2016)[3] • Kurz et al. (2009)[4]	https://www.nrcan.gc.ca/climate-change/climate-change-impacts-forests/carbon-accounting/carbon-budget-model/13107
YASSO soil carbon model	Dynamic model of the cycling of organic carbon in soil. Yasso calculates the amount of soil organic carbon, changes in the amount of soil organic carbon and heterotrophic soil respiration	• Liski et al. (2005)[5]	https://en.ilmatieteenlaitos.fi/yasso
CASMOFOR	Tool to assess the amount of carbon sequestered in a forest system (aboveground biomass, belowground biomass, litter, deadwood and soil organic carbon)	• Somogyi (2019)[6]	http://www.scientia.hu/casmofor/index.php
FORMIND	Individual tree-based vegetation model that simulates the growth of forests on the hectare scale. It allows to explore forest dynamics and forest structure	1.Köhler and Huth (1998)[7]	http://formind.org/model/

Source: REDIIBIO study, page 51

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6. Somogyi, Z. 2019. CASMOFOR version 6.1. NARIC Forest Research Institute, Budapest.
7. The effect of tree species grouping in tropical rain forest modelling – Simulation with the individual based model FORMIND. Köhler and Huth, Ecological Modelling 1998 Peter Köhler, Andreas Huth. http://www.sciencedirect.com/science/article/pII/S0304380098000660

Table 10: Potential data sources to demonstrate LULUCF criteria compliance at forest certified area level

Variable affecting carbon stock and sinks in forests	Potential source of information
Tree species composition	• Forest inventories • Forest management plan
Age structure	• Forest inventories • Forest management plan
Forest reproductive material used (provenance)	• Forest management plan
Growth rate of the selected tree species and forest reproductive material used	• Forest inventories • National or regional yield tables • Producer of seedlings or seeds used for regeneration
Basic wood density	• IPCC 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol
Carbon content	• IPCC 2013 Revised Supplementary Methods and Good Practice Arising from the Kyoto Protocol
Whole-tree biomass in relation growing stock volume	• IPCC 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol

	• National GHG inventory report to UNFCCC • FAO method collection, see http://www.fao.org/3/w4095e/w4095e06.htm • Scientific literature
Thinning intensity and frequency	• Forest management plan • Forest management recommendations applicable to the forest certified level
Rotation length	• Forest management plan • Forest management recommendations • Empirical historic data for the certified area on rotation cycles applied
Cutting regime	• Forest management plan • Forest management recommendations
Other management decisions	• Forest management plan • Forest management recommendations

Source: REDIIBIO study, page 52

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