



Netherlands Enterprise Agency

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

*Commissioned by the Ministry of Economic Affairs and Climate Policy  
January 2022 version*

*>> Sustainable, Agricultural, Innovative  
and International Enterprise*



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# 1 Introduction

## 1.1 Purpose of the verification protocol

### **Solid biomass sustainability requirements**

Within the framework of the Dutch Energy Agreement, sustainability criteria have been formulated for the categories<sup>1</sup> of new and existing co-firing and co-gasification of biomass in coal-fired power plants ( $\geq 100$  MW) and large-scale heat projects where steam is generated from the burning of wood pellets ( $\geq 5$  MW), wood pellet burners for industrial purposes ( $\geq 5$  MW and  $\leq 100$  MW) and wood pellet boilers for district heating ( $\geq 10$  MWth), supported by means of an SDE subsidy. These criteria are included in the Regulation on the conformity assessment of solid biomass for energy applications. In this Regulation, the verification protocol also receives a formal designation from the Dutch Minister of Economic Affairs and Climate Policy and the State Secretary for Infrastructure and Water Management. In addition to this, the stipulations set out in the Decree and the General Implementing Regulations for Stimulating Sustainable Energy Production and Climate Transition apply.

The sustainability criteria that energy producers must meet in order to be eligible for the SDE subsidy for the production of renewable electricity and heat have been integrated into this verification protocol. The Dutch regulations associated with the SDE scheme were amended in 2021, so that these sustainability requirements now also align with the RED II requirements.

It is key to note that this verification protocol is exclusively concerned with facilities operating on wood pellets and with co-firing and co-gasification in coal-fired power plants. A different verification protocol is available for other facilities that operate on biomass fuels or liquid biomass and for which SDE subsidy is received pursuant to a decision dated after the publication date of the RED II, 21 December 2018. These facilities are required to comply with the 'Verification Protocol for Sustainable Biomass which must comply with the RED II requirements for the purposes of the SDE scheme' (*Verificatieprotocol duurzaamheid biomassa die voor SDE moet voldoen aan de REDII eisen*).

**Table 1** Overview of the SDE categories covered by each Verification Protocol

<b>Verification Protocol for Sustainable Solid Biomass which must comply with the Regulation on the Conformity Assessment of Solid Biomass for Energy Applications for the purposes of the SDE scheme</b>	
	<b>Category of facility*</b>
Renewable electricity and renewable heat	Co-firing and co-gasification of biomass in coal-fired power stations ( $\geq 100$ MW)
	Wood pellet-fired steam boiler ( $\geq 5$ MW)
	Wood pellet burner ( $\geq 5$ MW up to 100 MW)
	Wood pellet boilers for district heating $\geq 10$ MWth

<sup>1</sup> References to SDE in this Verification Protocol must be read to include both SDE+ and SDE++.

### Verification Protocol for Sustainable Biomass which must comply with the RED II requirements for the purposes of the SDE scheme

	Category of facility*
Renewable gas	All-purpose fermentation
	Manure mono-fermentation > 400 kW
	All-purpose fermentation, service life extension
	Improved sludge fermentation in sewage treatment plants
	Existing sludge fermentation in sewage treatment plants
	Gasification of biomass
	Biomass gasification using grade B wood

### Verification Protocol for Sustainable Biomass which must comply with the RED II requirements for the purposes of the SDE scheme

Renewable heat	All-purpose fermentation
	All-purpose fermentation, service life extension
	Manure mono-fermentation > 400 kW
	Improved sludge fermentation in sewage treatment plants
Renewable electricity and renewable heat	All-purpose fermentation
	All-purpose fermentation, service life extension
	Manure mono-fermentation > 400 kW
	Improved sludge fermentation in sewage treatment plants
Renewable heat or renewable electricity and renewable heat	Improved sludge fermentation in sewage treatment plants
	Liquid biomass boilers $\geq 0.5$ MW and $\leq 100$ MWe
	Solid or liquid biomass boiler $\geq 5$ MW
	Grade B wood boilers $\geq 5$ MW
	Solid or liquid biomass boiler $\geq 5$ MW, service life extension

\*The exact labelling of the categories is governed by the designation regulation for the year in which subsidy was granted. This protocol therefore applies only in respect of the first 4 SDE categories from Table 1.

#### **Demonstrating compliance with sustainability criteria for pellet-fired plants**

Based on this verification protocol, Dutch energy producers in possession of an SDE decision for one of the first 4 SDE categories listed in Table 1 will need to demonstrate, on an annual basis and by means of a conformity year statement, that the solid biomass they use for energy production complies with the sustainability criteria.

Certificates originating from approved voluntary certification schemes can be used for this purpose. When biomass is not certified for all sustainability criteria, verification of compliance with the sustainability criteria can be used for the remaining requirements, based on this verification protocol. If the energy producer chooses not to use certified biomass, the producer can have the biomass verified for all requirements.

The conformity year statement is based on verification statements and certificates for the individual consignments over a calendar year. Approved certificates, verification statements and the conformity year statement are always issued by an approved Conformity Assessment Body, recognized by the Dutch Minister.

#### **Users of this verification protocol**

- Energy producers (EPs) receiving SDE subsidy can use this protocol to make arrangements in their biomass supply chain to meet the sustainability requirements. Furthermore, by means of independent verification based on this protocol, EPs can demonstrate compliance with the sustainability criteria of the solid biomass they used for energy production in their plants.

- This protocol is also aimed at the auditors of approved Conformity Assessment Bodies conducting verification and compliance under the verification protocol.
- Economic operators in the solid biomass supply chain of EPs receiving SDE subsidy are encouraged to use this protocol to prepare for independent verification.

#### ***Approved certification schemes and approved Conformity Assessment Bodies***

Under the Decree on the conformity assessment of solid biomass for energy applications, the Minister of Economic Affairs and Climate Policy may issue approval for a certification scheme or a part thereof. The scheme may be used to demonstrate (parts of) the requirements. An up-to-date list of certification schemes and the requirements for which the relevant schemes have been approved is available on [www.rvo.nl/duurzaamheidseisen](http://www.rvo.nl/duurzaamheidseisen). On the basis of this same Decree, the Minister may also recognise Conformity Assessment Bodies for the relevant schemes and this verification protocol. A list of approved Conformity Assessment Bodies is also available on [www.rvo.nl/duurzaamheidseisen](http://www.rvo.nl/duurzaamheidseisen).

#### ***Effective date of the Verification Protocol version January 2022***

Verification of individual biomass consignments that have transferred legal ownership after 31 December 2021 must be performed with this new version of the Verification Protocol for Sustainable Biomass that must comply with the requirements in the Regulation on the conformity assessment of solid biomass for energy applications for the purposes of the SDE scheme – version January 2022. The verification of the conformity year statement over all consignments in 2021, which takes place in the beginning of 2022, must be based on the January 2021 version of the Verification Protocol.

#### ***Document history***

Verification Protocol for Sustainable Solid Biomass for Energy Applications, version December 2017

Verification Protocol for Sustainable Solid Biomass for Energy Applications, version January 2020

Verification Protocol for Sustainable Solid Biomass for Energy Applications, version January 2021

At the time this verification protocol was finalised, a number of the proposed amendments to the Regulation on the conformity assessment and the General Implementing Regulations had not been formally adopted and published yet. Any modifications to these amendments will be subsequently applied to this Verification Protocol.

## **1.2 Application**

#### ***Economic operators in the verification protocol***

This protocol applies to the first 4 SDE categories listed in Table 1. The EPs must demonstrate the sustainability of all solid biomass used for energy production in their facility for which they receive SDE subsidy. Note that, in order for the EPs to prove compliance, all economic operators in the upstream biomass supply chain must also demonstrate compliance (see Chapter 2). This verification protocol can be used for this purpose. This concerns economic operators not only in the Netherlands but all over the world. Approved Conformity Assessment Bodies can use this verification protocol when conducting their verification and issuing their statements.

#### ***Types of biomass covered by the protocol***

The verification protocol covers the following categories of solid biomass that can qualify for subsidy:

##### ***Category 1: Woody biomass from Forest Management Units (FMU)***

This includes branches, tops, trees and primary felling residues sourced directly from forests. This shall also include unused wood that has the same composition as wood growing in the forest and that has not been mixed with or contaminated by foreign materials or substances.

##### ***Category 2: Woody biomass from small Forest Management Units (FMU <500 hectares)***

This includes branches, tops, trees and primary felling residues sourced directly from forests of less than 500 ha. This shall also include unused wood that has the same composition as wood growing in the forest

and that has not been mixed with or contaminated by foreign materials or substances. Category 2 biomass is distinguished from Category 1 biomass based on the size of the Forest Management Units. Biomass from FMUs smaller than 500 hectares can also be submitted as Category 1 biomass, in which case the sustainability criteria for Category 1 biomass shall apply.

**Category 3: Residues from nature and landscape management**

These are biomass residues (branches, tops, trees) produced in the course of managing urban and rural green spaces and nature areas, other than forests designated for the preservation, restoration or enhancement of specific natural, recreational or aesthetic functions. These also include biomass residues produced during routine maintenance of public green spaces and parks.

**Category 4: Agricultural residues**

This concerns biomass consisting of residues obtained directly from agricultural business. Short rotation crops are excluded, with the exception of the residues thereof.

**Category 5: Biogenic residues and waste flows**

These are waste flows and residues from the agro-food and timber industry (secondary residual flows) and tertiary residual flows such as waste wood.

**Guidance on the determination of the size of an FMU in order to distinguish between a category 1 and 2 FMU**

Management in the context of the FMU definition cannot be seen as separate from a management plan. According to the requirements under Principle 10 (P10) of the 'Regulation on conformity assessment solid biomass for energy applications', all forests should be managed according to a management plan. Essential elements of this forest management plan are for example long term goals, planning and monitoring and a clear description of the state of the FMU. The geographical borders in the documented management plan are therefore an important indicator when determining the size of the FMU.

**Category 2 FMU**

Historically, the intention of the Dutch sustainability system for solid biomass, to be eligible for an SDE subsidy, is that forests must be certified at the FMU level (FSC or equivalent). For the many private small forest owners, who are predominantly not yet certified, a growth path has been developed to stimulate the certification of this group. A transition period, which applies until 2023, has been designed to give these small-scale forest owners the possibility to demonstrate compliance with the SDE requirements firstly through the RBA at the pellet mill. This gives these small-scale forest owners time to eventually certify at the FMU level. From this historical background, it is clear that this transition period is not intended for owners of larger forests and/or for owners of forests that have already been certified for FMUs of a size larger than 500 hectares.

## 1.3 Normative references/relevant documents

The following documents are relevant for the application of this protocol. Where there is reference to dated documents, only the cited version is applicable. Where there is reference to undated documents, the most recent version of the referred document (including regulations) is applicable.

- NEN-EN-ISO 19011, Guidelines for auditing of management systems;
- NEN-EN-ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories;
- NEN-EN-ISO/IEC 17065, Requirements for certification bodies certifying products, processes and services;
- NEN-EN-ISO/IEC 17020:2012, Conformity assessment – Requirements for the operation of various types of bodies performing inspection;
- NTA 8003:2017; Classification of biomass for energy applications;
- Decree for the conformity assessment of solid biomass for energy applications (*Besluit conformiteitsbeoordeling vaste biomassa voor energietoepassingen*);
- Regulation for the conformity assessment of solid biomass for energy applications (*Regeling conformiteitsbeoordeling vaste biomassa voor energietoepassingen*);

- Decree for Stimulating Sustainable Energy Production (\*);
- Regulations designating Sustainable Energy Production categories (\*);
- General Implementing Regulations for Stimulating Sustainable Energy Production (\*);
- BioGrace-II, the GHG calculation tool;
- Chain of Custody Guidelines;
- Guidance on the classification of biomass;
- Guidance for the use of pellet certification within SDE+.

\*For the most recent documents, see: <https://www.rvo.nl/subsidie-en-financieringswijzer/stimulering-duurzame-energieproductie-sde/wet-en-regelgeving-stimulering-duurzame-energieproductie>

## 2 Verification basics

### 2.1 Participants in the verification process

The verification process follows the supply chain of the biomass. All economic operators and relevant subcontractors in the solid biomass supply chain must undergo third-party verification in order to demonstrate that the supplied biomass meets the requirements of this protocol.

The independent third party is an auditor from an approved Conformity Assessment Body (CAB).

Based on a risk assessment, the auditor of this CAB decides whether any affiliated subcontractors must also be audited. The economic operators in the biomass supply chain are shown in Figures 1 and 2.

In this protocol, an economic operator is defined as a legal entity that legally owns (see box) the biomass. Where economic operators hire subcontractors for work relating to the biomass, responsibility for their compliance with the requirements rests with the economic operator. More details about the various economic operators and relevant subcontractors involved in handling biomass are included in Table 2. Any economic operator can supply biomass to the next economic operator in the supply chain with its own verification statement. This verification statement provides the buyer of the biomass with proof that the seller of the biomass supplies biomass that is compliant with the sustainability requirements. However, verification statements do not have to physically accompany the biomass consignments in each step in the supply chain. It is also possible to have a Conformity Assessment Body issue a verification statement for each economic operator at the end of the year, covering all biomass consignments supplied by that economic operator in that year.

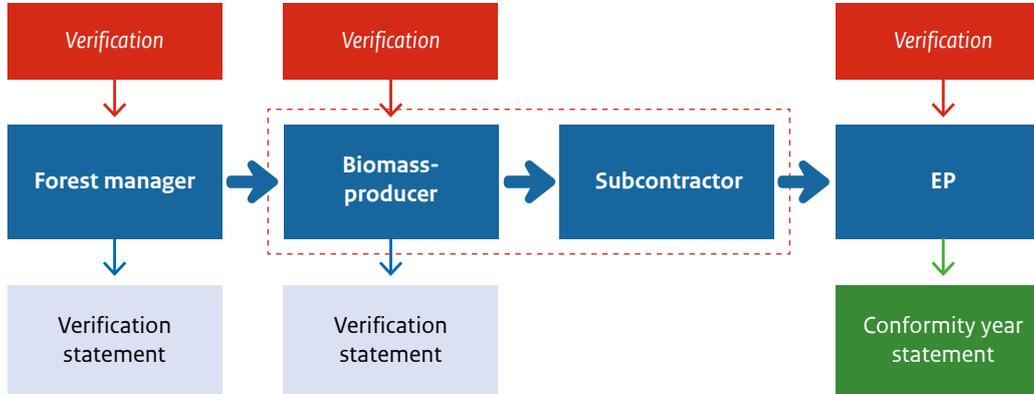
At the end of each calendar year, the EP that has received the subsidy in the previous year must demonstrate that all the biomass used for energy production in that year met the sustainability criteria.

For this purpose, an accredited Conformity Assessment Body must issue a conformity year statement to the EP. For the conformity year statement, the EP needs verification statements and/or certificates for all biomass that has been supplied in that calendar year and that is eligible to be subsidised. A format for the reporting on the sustainability that the conformity year statement relates to is available on [www.rvo.nl/duurzaamheidseisen](http://www.rvo.nl/duurzaamheidseisen)

#### **What is legal ownership?**

The term legal ownership is defined in Section 1 of Book 5 of the Dutch Civil Code (BW). The transfer of legal ownership of moveable goods (in this case the consignment of biomass) shall take place by way of consignment under a valid title, carried out by the party authorised to dispose of the goods (Section 84 of Book 3 of the BW). The 'valid title' will generally be the purchase agreement. However, the transfer of the legal ownership of the consignment of biomass is not yet completed simply by conclusion of the purchase. It also requires the selling party to supply the consignment of biomass to the purchasing party. Supply or delivery in this case means 'acquisition of ownership'. The physical location of the consignment of biomass is in principle not relevant in this regard. The time and manner of delivery must be laid down in the purchase agreement. From the moment of delivery, the purchasing party shall be free to dispose of the consignment of biomass (given that legal transfer of ownership is also a consequence of the delivery) and is also responsible for the biomass and shall bear the risks thereof (including for damage resulting from loss, etc.).

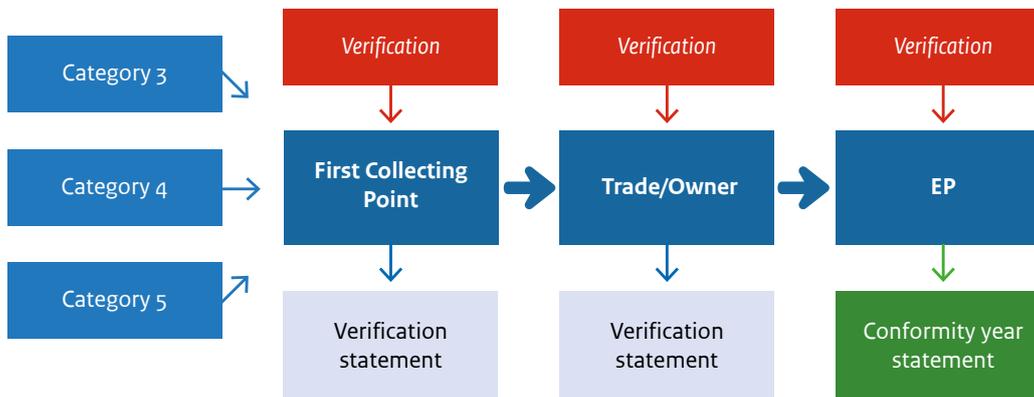
**Figure 1** Verification of the Category 1 and 2 solid biomass supply chain



Forest managers, biomass producers, subcontractors and energy producers are possible actors in the Categories 1 and 2 solid biomass supply chain and are subject to verification (see Figure 1). Only economic operators who have legal ownership of the biomass issue verification statements. This means that subcontractors' activities performed on behalf of economic operators in the supply chain are part of the verification at the contracting economic operator concerned. Subcontractors do not receive verification statements themselves.

Economic operators supplying Category 3, 4 or 5 biomass (referred to as Points of Origin, PO) are not subject to verification, but may be selectively audited during verification of the First Collection Point (FCP), depending on identified risks (see Figure 2).

**Figure 2** Verification of the Category 3, 4 and 5 solid biomass supply chain



**Table 2** Parties in the solid biomass supply chain

<b>Economic operator</b> Any company or organisation (legal entity) that handles (e.g. trades, stores, processes) sustainable solid biomass and has ownership of the biomass.	<b>Subject to verification</b>
<b>Forest manager</b> The owner, concessionaire or person who is otherwise legally responsible for the management and exploitation of a Forest Management Unit, being one or more forest stands containing natural forest, planted forest or other types of forest that are managed as a single unit, in accordance with a forest management plan as referred to in criterion 10.2.	Yes*
<b>First Collecting Point (FCP)</b> FCPs are economic operators that collect or receive Category 3, 4 or 5 biomass directly from the point of origin. FCPs trade, distribute or further process the collected biomass. FCPs are responsible for the correct documentation of the categories and quantities of biomass collected. In many cases, the FCP will be a pellet producer.	Yes
<b>Biomass producer</b> Legal entity that collects and processes biogenic raw material into solid biomass usable for EPs. This is usually the pellet mill. For Category 1 and 2, biomass producers are economic operators that collect or receive biomass directly from FMUs. Biomass producers trade, distribute or further process the collected biomass.	Yes
<b>Point of Origin (PO)</b> POs are economic operators where Category 3, 4 or 5 biomass occurs or is generated. POs are not subject to verification, but may be audited during the FCP verification, based on identified risks.	No
<b>Subcontractor</b> Company or organisation that has a contract with an economic operator for services or activities, such as harvesting, transport or storage. The subcontractor has no ownership of the biomass and is therefore not formally considered an economic operator in this protocol. A subcontractor can be audited during the verification of the hiring economic operator, based on identified risks.	No
<b>Energy producer (EP)</b> The subsidy recipient that runs a facility where sustainable solid biomass is processed into renewable electricity and/or renewable heat.	Yes**

\*During the statutory growth path period (until 2022), forest units smaller than 500 ha may also allow verification at the biomass producer to take place using the risk-based approach (see Chapter 8).

\*\* For the EP, this is the conformity year statement.

## 2.2 Biomass sustainability requirements

The Verification Protocol is classified according to the five themes used in the Regulation on the conformity assessment of solid biomass for energy applications:

1. requirements for greenhouse gas (GHG) emission savings and calculation;
2. requirements for soil management when using residues from nature and landscape management and agriculture;
3. carbon and land use change requirements;
4. Sustainable Forest Management (SFM) requirements;
5. requirements relating to the Chain of Custody.

The requirements are divided into 13 Principles as reflected in Table 3 below.

**Table 3** Economic operators and biomass categories to which the requirements apply:

Principle		Requirements applying to:	
		Economic operator	Biomass Category (page 5)
<b>Requirements for greenhouse gas (GHG) emission savings and calculation</b>			
Principle 1:	The use of biomass shall lead to a substantial reduction in greenhouse gas emissions calculated across the entire chain in comparison to the use of fossil fuels.	EP	All categories
<b>Requirements for soil management when using residues from nature and landscape management and agriculture</b>			
Principle 2:	Soil quality shall be maintained and where possible improved.	FCP	3 & 4
<b>Carbon and land use change requirements*</b>			
Principle 3:	Production of raw biomass does not result in the destruction of carbon sinks.	All FMUs	1 & 2
Principle 4:	The use of biomass does not result in long-term carbon debt.	All FMUs	1 & 2
Principle 5:	Biomass production does not result in Indirect Land Use Change (ILUC).	All FMUs	1
<b>Requirements relating to the Chain of Custody.</b>			
Principle 6:	Relevant international, national, regional and local legislation and regulations are complied with.	All FMUs	1 & 2
Principle 7:	Biodiversity is maintained and where possible enhanced.	All FMUs	1 & 2
Principle 8:	The regulating effect and the quality, health and vitality of the forest are maintained and where possible enhanced.	All FMUs	1 & 2
Principle 9:	The production capacity for wood products and relevant non-timber forest products is maintained in order to safeguard the future of the forests.	All FMUs	1 & 2
Principle 10:	Sustainable forest management is achieved through a management system.	All FMUs	1 & 2
Principle 11**:	Forest management by a group offers sufficient safeguards for sustainable forest management.	All FMUs	1 & 2
<b>Requirements relating to the Chain of Custody</b>			
Principle 12:	A chain of custody system is in place for the biomass, covering the entire chain from the first actor to the energy producer, that links the source to the material used in the product or product group and provides the greenhouse gas emission data of each individual link.	All economic operators	All categories
Principle 13**:	In case of a group management system for the Chain of Custody, the same requirements shall apply to the group as a whole as to individual businesses.	All economic operators	All categories

\* Forest units must comply with principles 3 to 5, however verification may take place at the next link in the chain of custody (please see Chapter 5).

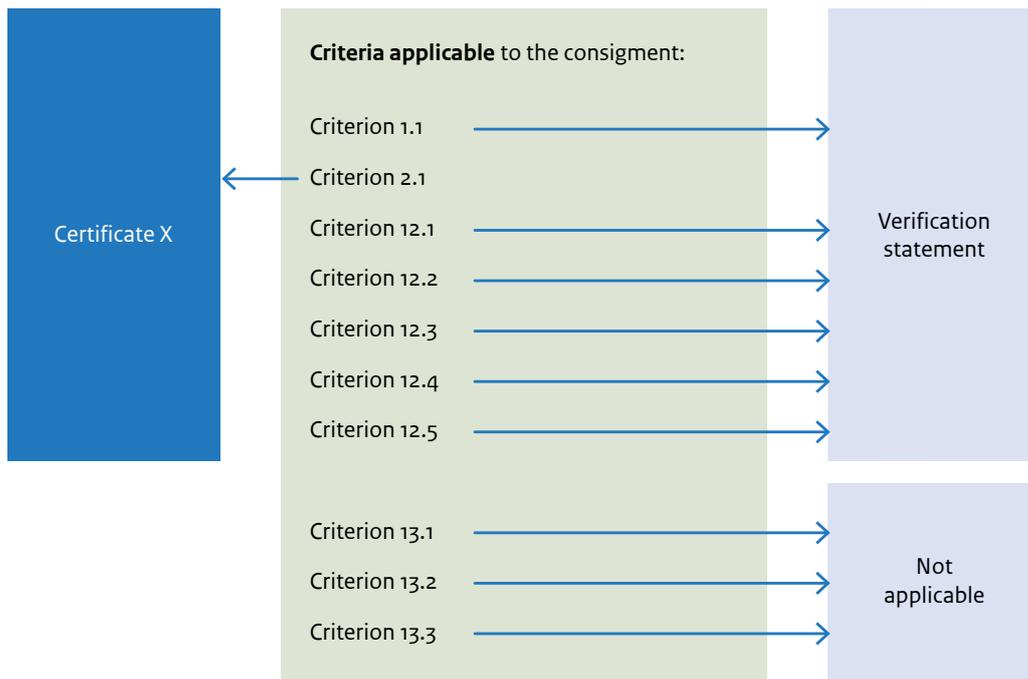
\*\*The requirements under P11 and P13 are only relevant if group certification is applied by the forest owner or forest manager (P11) or in the Chain of Custody (P13). If group certification is not applied, the sustainability of biomass can be demonstrated without compliance with the requirements under P11 and P13.

The requirements above (principles) are outlined in detail in Chapters 3, 4, 5, 6 and 7, which specify the various criteria and underpinning indicators of these principles. An economic operator is considered to be in compliance with a principle and the corresponding criteria once compliance with all applicable underlying indicators has been demonstrated. As outlined in Section 9.2.2 of this protocol, a strategic risk assessment is part of every verification process. The key objective is to identify the compliance aspects that require more attention during the verification process. The scale and intensity of the forest management activities will impact the risk of non-compliance with the criteria and indicators

### 2.3 Verification in conjunction with certificates

In addition to verification statements, under this verification protocol, economic operators can also make use of certificates to demonstrate that the biomass meets the sustainability requirements. The assessment of these certificates and determining their scope falls beyond the scope of the verification protocol. In practice, however, it is quite possible for economic operators to use the verification protocol in conjunction with certificates. The reason for this is that certification schemes do not always cover all sustainability requirements. In such cases, economic operators can ensure compliance with the missing requirements by way of a verification statement. The verification statement would then only relate to the part of the sustainability requirements not covered by the certificate. An overview of approved certification schemes and the scope of these schemes is available on [Sustainability criteria for solid biomass under the SDE+/SDE++-scheme | RVO.nl](#). When determining the scope of the verification, in the case of partial verification, checks must be made to ascertain which requirements have already been covered by certificates. This is not an assessment of the content, and the verification statement will make no ruling on compliance with the section of the requirements that is guaranteed by certificates. When issuing the conformity year statement to the EP, an assessment will be carried out for each underlying consignment in order to ascertain whether the correct verification statements and/or approved certificates have been issued for all the requirements. In addition, the conformity year assessment will verify whether the EP has complied with a number of specific requirements (also see Section 2.6 on the conformity year statement).

**Figure 3** The combination of the scopes of the certificates and verification statements present covers all the requirements for the biomass consignment. An example for a consignment of Category 3 biomass.

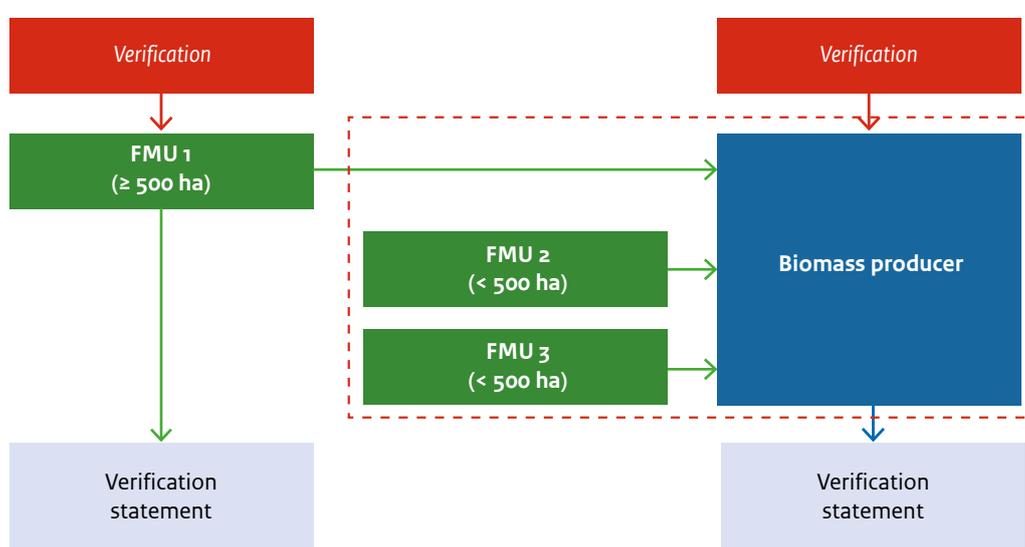


Please note that, if 12.2 and/or 12.4 and/or 12.5 take place by verification, then 12.5 must also take place by that same verification.

## 2.4 Compliance with Sustainable Forest Management criteria using a Risk Based Approach

According to the Regulation, the verification of the sustainability of the biomass must eventually take place at FMU level. However, for small forest units (< 500 ha), the Regulation contains a growth path for verification or certification (see Table 3 for more detailed information). This means that these FMUs in the EP's growth period do not need to be subjected to verification at the level of the FMU; verification may also take place at the sourcing area level. As such, the Chain of Custody starts with the biomass producer that can demonstrate compliance with the requirements for Sustainable Forest Management, based on a risk-based approach (RBA) (see Figure 4).

**Figure 4** Verification of compliance with the requirements for Sustainable Forest Management, based on a Risk Based Approach at the biomass producer



The biomass producer will need to produce sufficient evidence to demonstrate that the initial or residual risk level is 'low' for each SFM criterion. For each criterion with a higher risk level in the relevant point of origin, mitigation measures must be implemented. These measures must be effective and be monitored by the biomass producer in such a way that the risk of non-compliance is reduced to a 'low' level. The requirements for demonstrating compliance using a Risk Based Approach are set out in Chapter 8.

The period in which compliance with the SFM criteria can be demonstrated for Category 2 biomass using an RBA depends on the first year in which the EP receives SDE subsidy. Energy producers that started after 2017 may use this approach up to 2022, but not beyond 2022.

The RBA may also be used to demonstrate compliance with the criteria for controlled biomass. Controlled biomass is Category 1 or Category 2 biomass that meets a narrower set of requirements. Section 2.5 provides further details on this.

## 2.5 30% controlled or RED II biomass

The General Implementing Regulations for Stimulating Sustainable Energy Production stipulate that, in order to be eligible for SDE subsidy, the percentage of biomass from forests that meets a narrower set of requirements cannot exceed 30%.

Depending on whether the plant is covered by the implementation of RED II (in terms of the date of the SDE application and the plant size), this set is made up of the requirements in the former 12.6 criterion (as set out in [Government Gazette 2017, 70368](#)) or all the applicable requirements pursuant to RED II.

The diagram in Table 4 illustrates the plants in which controlled biomass (as defined in the former 12.6 criterion) can be used and those in which RED II compliant biomass can be used, up to a maximum of 30% of the total amount of biomass used.

**Table 4** Decisions in scope for controlled biomass or RED II compliant biomass.

	Application for decision dated prior to 21 December 2018	Application for decision dated 21 December 2018 or later
Input capacity ≥ 20 MW	Controlled biomass as defined in former criterion 12.6	RED II compliant biomass
Input capacity < 20 MW	Controlled biomass as defined in former criterion 12.6	Controlled biomass as defined in former criterion 12.6

### 2.5.1 Controlled biomass

The former Requirement 12.6 in Annex B of the Regulation on the conformity assessment of solid biomass for energy applications ([Government Gazette 2017, 70368](#)) defines controlled biomass as Category 1 or 2 biomass that only meets Requirements 1.1, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 7.1 and 7.3 of the Regulation and for which the biomass producer is the first link in the Chain of Custody. Following implementation of RED II, this set of requirements was incorporated into the General Implementing Regulations for Stimulating Sustainable Energy Production. Chapter 7 of this Verification Protocol provides the mixing rules under which controlled biomass can be used for verification under this protocol.

### 2.5.2 RED II compliant biomass

The 30% of RED II compliant biomass is also subject to the requirement that the biomass must originate from forest, as defined in RED II, and cannot be woody residues from the timber industry. In new, larger plants, up to 30% of forest biomass that meets all of the relevant RED II requirements can be used. Chapter 7 provides the mixing rules under which RED II compliant biomass can be included in the verification of the conformity year statement at the EP. Only Section 7.5 in Chapter 7 is relevant for RED II compliant biomass, and this section also applies exclusively in relation to the EP.

With regard to the plants listed in Table 4, sustainability can only be demonstrated using RED II certification. This biomass is not subject to the requirement to use the Dutch approved version of the scheme, nor the requirement to use Conformity Assessment Bodies holding Dutch accreditation. The total tonnes of RED II certified biomass used, as defined in Article 29(1) of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, cannot amount to more than 30% of the tonnes of Category 1 and 2 biomass used.

### 2.5.3 Using RED II claims for the 30%

To be able to use 30% RED II biomass in a plant, it is necessary to demonstrate that the biomass meets the criteria in Article 29 RED II. This means consignments of biomass must be delivered with Proof of Sustainability (PoS) issued under an EC accredited scheme ([Voluntary schemes | Energy \(europa.eu\)](#)) by a party certified in accordance with the same scheme. The EP is also required to hold certification in accordance with this scheme. Where an SDE plant is covered under this protocol, verification of conformity with RED II is not permitted.

The verifier responsible for the conformity year statement will assess whether the feedstock listed on the certificate can in fact be classified as Category 1 or 2.

#### 2.5.4 RED II claim for liquid biomass

The General Implementing Regulations for Stimulating Sustainable Energy Production do not rule out the use of liquid biomass in co-firing and co-gasification plants. This is already being done to a limited extent. European regulations (RED II) do not permit the use of a specific national framework for liquid biomass. Therefore, the sustainability of liquid biomass must be demonstrated in accordance with a European sustainability system. This requires the provision of Proof of Sustainability (PoS) issued under an EC approved scheme ([Voluntary schemes | Energy \(europa.eu\)](#)) by a party certified in accordance with the same scheme. The EP is also required to hold certification in accordance with this scheme. The verifier must assess whether the feedstock listed on the certificate has in fact been correctly classified. In the case of liquid biomass, no biomass category needs to be established. Liquid biomass is, by definition, not woody biomass and therefore does not impact on the restrictions set with regard to those categories.

#### Approval of RED II schemes

The approval of RED II schemes by the European Commission is subject to delays, meaning approved schemes will not be available in time (1 January 2022). There will be an announcement on [www.rvo.nl/duurzaamheidseisen](http://www.rvo.nl/duurzaamheidseisen) to confirm what provisional proof of the sustainability of RED II biomass will be accepted in anticipation of final decisions by the EC.

## 2.6 Verification statements

### 2.6.1 Responsibility of economic operators

Each economic operator in the sustainable biomass supply chain is responsible for implementation of the requirements of this protocol, as well as for the completeness and correctness of the information relevant to the verification. The economic operator must check and confirm whether its processes and documentation are in compliance with the requirements before supplying biomass to the next economic operator. As the party with a legal obligation under the Regulation, the EP is expected to have processes in place (e.g. contractual agreements, supplier evaluations) to ensure compliance with the requirements of this protocol within the entire sustainable biomass supply chain.

### 2.6.2 Responsibility of Conformity Assessment Bodies

Conformity Assessment Bodies issue a verification statement based on a successful audit of an economic operator. They have been authorised by the Minister of Economic Affairs and Climate Policy to do so. A list of approved Conformity Assessment Bodies is also available on <https://english.rvo.nl/subsidies>. The Conformity Assessment Body keeps a register of all issued verification statements and conformity year statements, containing the following information:

- unique number of the issued statement;
- date of the statement;
- name and address of the economic operator the statement was issued for;
- name and address of the recipient of the biomass.

### 2.6.3 The verification process

Economic operators up to the EP can demonstrate compliance with the requirements of this protocol through a verification process. This is conducted by way of post-delivery verification. In verifying compliance, it is checked whether the quantities of biomass that have already been supplied (or received and processed by an EP) meet the requirements of this protocol. The verification process assumes:

- an economic operator that has supplied to the next economic operator (buyer/receiver) during a certain period of time, and the available information on the sustainability of the supplied biomass.

Supplied biomass must comply with the principles, criteria and indicators in this protocol to which the verification statement relates. The combination of the scopes of the various certificates and the statement should encompass the entire scope of the relevant biomass category in the consignment. A successful verification results in a verification statement for each customer to which the economic operator supplies biomass.

#### 2.6.4 Purpose of the verification statement

The verification statement confirms that a consignment of biomass supplied by an economic operator was produced in accordance with (part of) the sustainability requirements. Insofar as the information relates to the emissions reduction calculation, the statement confirms that the necessary information that has gone through the Chain of Custody is correct. After all, the requirement as outlined in Criterion 1.1 is verified at the EP, but can only be assessed there if the correct information is passed on through the entire Chain of Custody. A verification statement is issued for a specific period for each economic operator that is part of the Chain of Custody of a delivery.

#### 2.6.5 General requirements

A verification statement for a consignment of biomass can only be issued for a single geographical site of an economic operator in the Chain of Custody (i.e. an FMU, a processing unit or the EP) or for a group of FMUs. The verification statement reflects the quantity and the sustainability characteristics of the supplied biomass. Given that the statement is issued as proof of a sustainable consignment to the next link, a separate statement is issued for each economic operator in the Chain of Custody receiving biomass.

Each economic operator supplying biomass submits a copy of the verification statement to the economic operator receiving the biomass, as proof that the supplied quantity of biomass complies with the requirements of this protocol to which the statement relates.

If the scope of this verification comprises Criterion 12.2 and/or 12.4 and/or 12.6, then 12.5 must also be included in the verification.

#### 2.6.6 The verification statement

Each verification statement must contain at least the following information:

##### **General**

- name and address of the economic operator that has asked for the verification statement;
- legal framework and requirements (this protocol) the verification is based on;
- specification of the claims of the approved certificates that are present for the consignment of biomass, including a list of the criteria for which the relevant certification schemes have been approved, in accordance with the results published regarding the approval of the schemes;
- the scope of this verification statement. These are the additional requirements that apply to this consignment of biomass. These must be listed at the level of the criteria;
- description of the verification activities, including, when applicable, justification of remote audits due to COVID-19;
- quantities (in tonnes) of the biomass supplied;
- an assessment of the application of the criteria as defined in the scope of this verification statement. If these criteria have been met, a positive statement may be issued;
- a specification or list of the criteria covered by the certificates and the criteria for which a positive statement was issued, collectively covering all applicable requirements for this consignment;
- name and address of the recipient of the biomass;
- a unique code with the following format: AAA-VXXXXX-20zz:
  - AAA is a letter code provided by the Netherlands Enterprise Agency, referring to the issuing Conformity Assessment Body;
  - V indicates the type of statement: verification statement;
  - XXXXX is a unique sequence number for each verification statement;
  - 20zz is the year in which the verification statement was issued;
- date of issue of the verification statement;
- Name and signature of the Conformity Assessment Body.<sup>2</sup>

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<sup>2</sup> 2 or the digital equivalent.

### **Sustainability characteristics**

- biomass Category (1, 2, 3, 4 or 5);
- for Categories 1 and 2: does the consignment qualify as controlled biomass (yes/no);
- for Category 2, has the RBA been used (yes/no);
- country of origin of the biomass (country of the FMU or PO the biomass originated from);
- GHG emission (in g CO<sub>2</sub>-eq/MJ energy carrier) and/or information enabling the use of default values further down the chain. This information must be sufficient to enable selection of the correct category in RED II Annex VI C and D for deliveries to the EP (MJ on lowest heating value).

### **2.6.7 Splitting of verification statements**

Splitting of a statement may be requested if the biomass covered by the verification is delivered to two or more different buyers after declaration Splitting is allowed under the following conditions:

- Verification statements based on this protocol can only be split by the Conformity Assessment Body that issued the original statement.
- The statement to be split shall be handed in to the conformity assessment body and cannot be used again.
- The Conformity Assessment Body will subsequently issue one or more statements for an amount of biomass not exceeding the total amount on the original statement.
- The sustainability characteristics stated on the original statement will be allocated to the new statements, in order to comply with mass balance requirements and the emission reduction calculation rules.
- New statements issued after splitting will state that they originate from a split, together with the unique identification code of the original statement.
- The split must be traceable in the mass balance and in the GHG balance.

## **2.7 Conformity year statements**

### **2.7.1 Responsibilities and the verification process**

The responsibilities of economic operators (in this case, the EPs) and the Conformity Assessment Bodies with regard to a conformity year statement are equivalent to those for a verification statement as outlined in Section 2.5.1 and 2.5.2.

The verification process in the case of a conformity year statement relates to:

- the consignments of sustainable biomass received during a year by an EP receiving SDE subsidy and processed into renewable electricity and possibly renewable heat, and the available information on the sustainability of the received biomass. The received sustainable biomass must comply with the principles, criteria (in the case of verification statements) and indicators in this protocol, including the requirements for GHG emission savings, mixing (mass balance) and the entire Chain of Custody. In addition, the EP must meet the requirements for the use of controlled biomass and Category 2 biomass of which the Chain of Custody starts with the biomass producer.
- In addition, the auditor also determines whether the five categories have been applied correctly. When verifying these claims, the auditor may use the reports that have been drawn up by an accountant for the company under the Dutch Guarantee of Origin regulations. In these statements, the biomass is specified by NTA 8003 coding. The auditor will include this information in their assessment of whether the EP has applied the categories correctly, but is not required to evaluate the NTA 8003 coding itself. A positive verification results in a conformity year statement.

### **2.7.2 Purpose of the conformity year statement**

A conformity year statement allows an EP to provide proof that all the necessary verification statements and certificates are present for all consignments of solid biomass for which the SDE subsidy was received in a calendar year. In this way, the conformity year statement indicates that the information submitted by the EP in the annual report to the Netherlands Enterprise Agency is supported by the required documentary proof. No further substantive assessment is carried out on the documentation required, except with regard to Criterion 1.1 regarding greenhouse gas emission savings. Assessment in this regard takes place at the EP, based on the information from the CoC and the EP, both per consignment and for joint consignments. In

addition, the conformity year statement, where applicable, assesses the reported share of controlled biomass and assesses whether the use of the RBA for Category 2 biomass complies with the growth path of the relevant energy company.

The template for the conformity year statement that energy producers are required to submit to the Netherlands Enterprise Agency (including the list of consignments covered by the statement) is available at [rvo.nl/duurzaamheidseisen](https://rvo.nl/duurzaamheidseisen).

### 2.7.3 General requirements

A conformity year statement can only be issued for an EP receiving SDE subsidy. The EP must submit the conformity year statement to the Netherlands Enterprise Agency, along with the list of sustainable biomass consignments. The conformity year statement is drawn up using the mass balance determined no later than 31 December of the relevant calendar year. The statement allows the EP to prove that the biomass that was used for energy production for which subsidy was received in the relevant year met the sustainability requirements of the scheme. Given that the actual biomass fired each year is usually not perfectly equal to the incoming consignments at the EP, the auditor will have to translate the delivery documentation present into biomass used.

### 2.7.4 The conformity year statement

Each conformity year statement must contain at least the following information:

#### **General**

- name of the EP and address of the installation verified for the conformity year statement;
- legal framework and requirements (this protocol) the conformity year statement was based on;
- calendar year covered by the conformity year statement;
- description of the verification activities carried out by the Conformity Assessment Body;
- a list of all consignments for the biomass used in a calendar year, and a statement from the Conformity Assessment Body confirming that the biomass used by the EP and the sustainability characteristics of the biomass have been reported to the Netherlands Enterprise Agency correctly and meet the requirements of this protocol;
- a unique code with the following format: AAA-CXXXXX-20zz:
  - AAA is a letter code provided by the Netherlands Enterprise Agency, referring to the issuing Conformity Assessment Body;
  - C indicates the type of statement, namely a conformity year statement;
  - XXXXX is a unique sequence number for each conformity year statement;
  - 20zz is the year in which the conformity year statement was issued;
- for each consignment, the NTA 8003 code that was used in the reports drawn up by an accountant for the EP under the Guarantee of Origin regulations (for biorefinery residues, see 2.6.6.);
- date of issue of the conformity year statement;
- name and signature of the Conformity Assessment Body.

#### **Sustainability characteristics for each consignment:**

- quantities (in tonnes) of the biomass supplied;
- biomass Category (1, 2, 3, 4 or 5);
- for Categories 1 and 2: does the consignment qualify as controlled biomass (yes/no);
- for Category 2, has the RBA been used (yes/no);
- country of origin of the biomass (country of the FMU or PO the biomass originated from);
- GHG emission of the biomass (default or calculated values). Calculated values are reflected in g CO<sub>2</sub>/MJ (electricity) or MJ (heat);
- an indication of whether, and if so which, approved certification schemes were used (see 2.6.5);
- if an RED II scheme for forest biomass is applied: that the biomass is Category 1 or 2 and that the correct information has been supplied and the information linked to the correct consignments;
- if an RED II scheme for liquid biomass is applied: that the correct information has been supplied and has been linked to the correct consignments;
- an indication of whether verification statements were used, including the criteria they covered;

- a statement indicating that the combination of the scopes of all the certificates and verification statements present for the consignment, as mentioned in the foregoing, covers all the applicable requirements for this category of biomass.

***Sustainability characteristics for the year:***

- Average emission reduction in % compared to the given reference (only for facilities that were put into operation prior to 1 January 2021 and not for RED II biomass);
- beyond 2022: an indication that no certification claims for biomass in Category 2 were used based on the RBA and that verification was similarly not carried out using the RBA;
- used controlled biomass in Categories 1 and 2 as a % of the total Category 1 and 2 material; this percentage of controlled biomass should not exceed 30%;<sup>3</sup>
- conformity assessment of all consignments through certification and verification is carried out by recognised conformity assessment bodies. Biomass with an RED II claim does not require this;
- throughout the complete chain of custody, only approved certifications scheme versions have been used. Biomass with an RED II claim does not require this;
- used RED II compliant biomass from Category 1 and Category 2 as a % of the total Category 1 and 2 material; this percentage of biomass should not exceed 30%.<sup>4</sup>

**2.7.5 Sustainability information of certificates**

***Category 1 and 2: biomass from forests***

When drafting the conformity year statement, it should still be clear which claim covered the forest management requirements of the biomass consignment. This means that, at the end of the chain of custody, it should still be clear how the forest was certified, even if the other links in the chain have transferred the biomass consignment under another approved scheme certificate that changed the name of the claim on the biomass.

***Determining the category***

In addition, at the end of the chain of custody, there should be certainty regarding the category of biomass (1 or 2). Certificates from certification schemes that have been approved for 12.4 ensure that the certified parties are able to effectively make that determination and as such need only to provide an indication of the category without all the underlying information. If the certificate has not been approved for 12.4, sufficient information is required to travel through the chain to enable verification by the conformity assessment body checking the conformity year statement at the EP. Another way to do this is for the party at the point of origin to draft a verification statement and send it along the chain. For more information, please see the Guidance on the Classification of Biomass: <https://english.rvo.nl/subsidies-programmes/sde/sustainability-criteria>

Where an RED II scheme is applied, sufficient information must be available to determine whether the biomass is Category 1 or 2. In the case of liquid biomass, the category does not need to be determined.

***Certification scheme updates***

The Decree on the conformity assessment of solid biomass for energy applications includes a strict definition of an approved certification scheme. This is regarded as a fixed set of certification scheme documents (hereinafter referred to as a certification scheme version) on which the assessment of the scheme is based and which has been included in the approval decision to the certification scheme holders. All decisions, including the approved certification scheme versions, are available on the Netherlands Enterprise Agency website and have been published in the Government Gazette.

Newer certification scheme versions (for example, if a scheme has updated one or more document versions) have not been formally assessed and approved and, as such, cannot be used by economic operators in the biomass chain to demonstrate the sustainability of solid biomass for the SDE grant. This applies to every document included in the approval decision. This means that any modified document will result in a new

<sup>3</sup> Table 4 lists the decisions in scope for controlled biomass.

<sup>4</sup> Table 4 lists the decisions in scope for RED II compliant biomass.

certification scheme version. Each new scheme version needs approval in order for the scheme to be used to prove conformity to the sustainability requirements.

Where the approval concerns an international meta scheme, this principle applies to the documents at meta scheme level. Each new underlying country scheme that is added on this basis and becomes applicable can be considered a new scheme approval for certified economic operators in the relevant country.

#### **2.7.6 Demonstrating sustainability for biorefinery residues**

If an EP wishes to make use of the option to use more than 15% other residues under the exception provided by the General Implementing Regulations for biorefinery residues (NTA 8003:2017 code 595), the sustainability of the biomass that is entered as input at the refinery must be demonstrated in accordance with Section 2.7.4 above. The conformity assessment body drafting the conformity year statement will verify this at the biorefinery. The EP will be responsible for making the relevant arrangements.

The biomass is generated at the refinery as a residue. For that reason, the greenhouse gas calculation begins immediately after the creation of this residue, and the biorefinery process need not be taken into account in the calculation.

## 3 Requirements for total GHG savings

The requirements in this chapter apply to energy producers (EP) that process biomass into renewable electricity and/or heat. An economic operator complies with the principle and the related criterion when compliance with all applicable underlying indicators is demonstrated.

### 3.1 Criteria and indicators for Principle 1

**Principle 1:** The use of biomass leads to a substantial reduction in greenhouse gas emissions calculated across the entire chain in comparison with the use of fossil fuels

**C1.1a** The reduction in CO<sub>2</sub>-eq emissions is calculated to be a minimum of 70% per year on average based on the EU reference value. The average emissions shall have a maximum of 56 g CO<sub>2</sub>-eq/MJ for electricity and 24 g CO<sub>2</sub>-eq/MJ for heat. The calculated maximum CO<sub>2</sub>-eq emission levels are based on the method and reference values for fossil fuels in Annex VI.B of Directive (EU) 2018/2001.

**c.1.1b** No consignment of biomass shall result in emissions above 74 g CO<sub>2</sub>-eq/MJ for electricity and 32 g CO<sub>2</sub>-eq/MJ for heat. Where an installation has been put into operation on or after 1 January 2021, or will be put into operation by 31 December 2025 at the latest, the envisaged reduction per consignment must be at least 70%. For facilities becoming operational from 1 January 2026, the envisaged reduction is a minimum of 80%. The calculated maximum CO<sub>2</sub>-eq emissions levels are based on the method and reference values for fossil fuels in Annex VI.B of Directive (EU) 2018/2001.

The provisions of criterion 1.1b do not apply to production facilities with a nominal thermal input capacity of less than 20 MW overall.

Indicators	
1.1.1	The EP shall calculate, using BioGrace-II, the total GHG emissions in gram CO <sub>2</sub> -eq of biomass processed into renewable electricity and/or heat, based on: default values in RED II Annex VI; or calculated values using the latest version of the BioGrace-II calculation (or, with valid justification, an equivalent tool that follows the calculation methodology in RED II Annex VI*); or a combination of calculated values and disaggregated default values where appropriate. The requirements on mixing in the chapter on mass balancing apply. The EP shall register all relevant data.
1.1.2	In relation to criterion 1.1a, the calculated reduction of CO <sub>2</sub> -eq emissions over an average of one year shall be a maximum of 56 g CO <sub>2</sub> -eq/MJ for electricity and 24 g CO <sub>2</sub> -eq/MJ for heat. Emission reductions shall be calculated using BioGrace-II.
1.1.3	In relation to criterion 1.1b, no consignment of biomass shall result in emissions above 74 g CO <sub>2</sub> -eq/MJ for electricity and 32 g CO <sub>2</sub> -eq/MJ for heat. Where a facility has been put into operation on or after 1 January 2021, or will be put into operation by 31 December 2025 at the latest, the envisaged reduction per consignment must be at least 70%. For facilities becoming operational from 1 January 2026, the envisaged reduction is a minimum of 80%.

\* In 2020, the BioGrace-II tool was updated from version 3 to 4. Because approved certification schemes that work with BioGrace-II are transitioning in 2021, both version 3 and 4 can be used for emission calculations for consignments on the conformity year statement for 2021. Both versions can be used for certification and verification purposes

Criteria 1.1a and 1.1b as a table

	Facility operational prior to 1 January 2021	Facility operational after 1 January and by no later than 31 December 2025	Facility operational after 1 January 2026
<b>Minimum average reduction in CO<sub>2</sub>-eq emissions over one year</b>	Reduction of at least 70% compared to the reference values for fossil sources	N/A	N/A
<b>Maximum average CO<sub>2</sub>-eq emissions over one year</b>	56 g CO <sub>2</sub> -eq/MJ for electricity; 24 g CO <sub>2</sub> -eq/MJ for heat.	N/A	N/A
<b>Maximum CO<sub>2</sub>-eq emissions per consignment</b>	74 g CO <sub>2</sub> -eq/MJ for electricity; 32 g CO <sub>2</sub> -eq/MJ for heat.	a reduction of at least 70% compared to the reference values for fossil sources	a reduction of at least 80% compared to the reference values for fossil sources

## 4 Sustainability requirements for residues from nature and landscape management and agriculture

The Sustainable requirements in this chapter apply to First Collection Points that collect residues from nature and landscape management (Category 3 biomass) and agriculture (Category 4 biomass). An economic operator complies with the principle and the related criterion when compliance with all applicable underlying indicators is demonstrated.

A Strategic Risk Assessment (SRA) shall be part of any verification, as outlined in Section 9.2.2 of this protocol. The primary objective is the identification of the compliance aspects that more or less require attention during the verification process. The scale and intensity of the activities producing Category 3 and 4 material will influence the risks of non-compliance with criteria and indicators in this protocol, as well as the measures required to be taken by the economic operators. Examples include the risk of erosion or the importance of the nutrient balance for the different types of soil concerned.

### 4.1 Criteria and indicators for Principle 2

**Principle 2:** Soil quality shall be maintained and where possible improved.

**C2.1** Best practices are applied for the maintenance or improvement of the soil and soil quality in relation to production or the management objectives as these have been included in a management plan.

Indicators	
2.1.1	The First Collection Point (FCP) shall demonstrate that the supplying Point of Origin (PO) has a policy or a plan for maintaining (and where possible improving) soil quality, based on local best practices. If relevant, this plan shall include: <ol style="list-style-type: none"><li>1. key objectives of soil management;</li><li>2. measures to prevent erosion;</li><li>3. maintenance of the soil nutrient balance (nitrogen, phosphorus, potassium);</li><li>4. maintenance of soil organic matter and soil fertility, structure and salinity.</li></ol>
2.1.2	The FCP shall hold relevant information (e.g. reports from the PO, audit reports, monitoring data) to demonstrate that the plan or policy has been implemented.

# 5 Carbon and land use change requirements

The criteria and indicators for carbon and land use change in this chapter apply to biomass from Categories 1 and 2 (C5.1 applies only to Category 1). An economic operator meets the principles and related criteria when conformity with all applicable underlying indicators is demonstrated.

First link in conformity assessment Principles 3, 4 and 5.

It has been concluded that the contents of the requirements of Principles 3 to 5 are logically assessed at regional level. This means that the forest must be in compliance, but that demonstration may take place at the next link in the chain. As such, in practice, the biomass producer is often the first link in the chain of custody at which conformity assessment for Principles 3 to 5 will take place.

## 5.1 Criteria and indicators for Principles 3-5

**Principle 3:** Production of raw biomass does not result in the destruction of carbon sinks.

**C3.1** Biomass is not sourced from permanently drained land that was classified as peatland on 1 January 2008, unless it can be demonstrated that the production and harvesting of the biomass does not result in water depletion of a previously undrained soil.

Indicators	
3.1.1	The economic operator shall demonstrate that the biomass is not sourced from permanently drained land that was classified as peatland on 1 January 2008, unless Indicator 3.1.2 applies.
3.1.2	If Indicator 3.1.1 cannot be fulfilled, the economic operator shall demonstrate that the production and harvesting of the biomass does not result in water depletion of a previously undrained soil.

### Explanatory notes

Comparing two or more types of relevant information (e.g. area photographs, satellite images, land register documents/certificates, online maps/databases, site surveys, NGO reports, forest management plans) for the situation before and after 1 January 2008 is considered an appropriate method for providing clear and sufficient evidence.

If only one type of relevant information is available to compare the situation before and after 1 January 2008, additional evidence is required that may consist of:

- Environmental Impact Assessments of expansions since 1 January 2008 (showing no conversion of peatland) conducted with appropriate assessment tools. Appropriate assessment tools are e.g. databases like the Harmonized World Soil Database;
- reports of consultation with relevant stakeholders (State Environmental Agency, local community, NGOs) confirming that no conversion of wetland into a dryer ecosystem occurred after 1 January 2008.

**C3.2 Biomass is not sourced from land that was converted from a wetland to an alternative, dryer ecosystem after 1 January 2008.**

Indicator	
3.2.1	The economic operator shall demonstrate that the biomass is not sourced from land that was converted from wetland to an alternative (dryer) ecosystem after 1 January 2008.

**Explanatory notes**

Comparing two or more types of relevant information (e.g. area photographs, satellite images, land register documents/certificates, online maps/databases, site surveys, NGO reports, forest management plans) for the situation before and after 1 January 2008 is considered an appropriate method for providing clear and sufficient evidence.

If only one type of relevant information is available to compare the situation before and after 1 January 2008, additional evidence is required that may consist of:

- Environmental Impact Assessments of expansions since 1 January 2008 (showing no conversion of wetland), conducted with appropriate assessment tools. Appropriate assessment tools are e.g. databases like RAMSAR Convention, Modis Land Cover Database and the World Intact Forest Landscape Database;
- reports of consultation with relevant stakeholders (State Environmental Agency, local community, NGOs) confirming that no conversion of wetland into a dryer ecosystem occurred after 1 January 2008.

**C3.3 Biomass is not sourced from wood plantations that were created by means of conversion of natural forests after 31 December 1997, unless the forest manager is not directly or indirectly responsible for the conversion. Biomass originating from wood plantations that were created after 1997 by means of conversion of degraded natural forests or degraded land is exempt from this requirement on condition that this is ecologically and economically justified and that the forest manager is not directly or indirectly responsible for the degradation.**

Indicator	
3.3.1	If biomass originates from wood plantations where conversion has taken place of natural forests, the economic operator shall demonstrate whether this conversion occurred before 31 December 1997.
3.3.2	If biomass originates from wood plantations where conversion of natural forests has taken place after 31 December 1997, the economic operator shall demonstrate that: <ul style="list-style-type: none"> <li>• the forest manager that harvested the biomass was not directly or indirectly responsible for the conversion, or;</li> <li>• the conversion took place in natural forests that, at the time of conversion, were in a degraded state or of which the soil had degraded, and where the conversion was carried out in an ecologically and economically justifiable manner.</li> </ul>

**Explanatory notes**

- Enrichment planting after clear-cutting within an FMU could be part of sustainable management of natural forests, depending on the scale and intensity of the forest management. This is not considered a conversion of the natural forest into a wood plantation.
- Comparing two or more types of relevant information (e.g. area photographs, satellite images, land register documents/certificates, online maps/databases, site surveys, NGO reports, FMPs) of the situation before and after 31 January 1997 is considered an appropriate method for providing clear and sufficient evidence. In the event that only one type of relevant information is available for the situation before and after 31 December 1997, additional proof is required that may consist of relevant environmental impact reports or reports of consultations with relevant stakeholders that confirm that the requirement has been met.

**Principle 4:** The use of biomass does not result in long-term carbon debt.

**C4.1** The Forest Management Unit where the wood is sourced is managed with the aim of retaining or increasing carbon stocks in the medium or long term.

Indicator	
4.1.1	The economic operator shall provide clear and sufficient evidence that the harvesting rates and methods ensure that carbon stocks, in terms of tree stands or other carbon proxies, are maintained or increased in the medium or long term.

**Explanatory notes**

*Proof may be submitted in the form of a forest management plan or similar documentary proof. This plan shall outline the current carbon stocks in the vegetation of the FMU above ground, as well as the desired development of these carbon stocks. The plan shall focus specifically on the envisaged harvest volumes and the impact of this harvest and of the regrowth on the carbon stocks in the mid to long term. The duration of a mid to long term will depend inter alia on the type of forest, the growth rate and the type of forest management.*

**C4.2** Biomass is not sourced from stumps unless these stumps had to be removed from the site for other reasons than wood or biomass production.

Indicators	
4.2.1	The biomass producer shall demonstrate that the risk of accepting or accidentally accepting unregistered wood or biomass from trunks received from its suppliers can be considered low.
4.2.2	The biomass producer shall register all wood or biomass received from stumps.
4.2.3	In the event stumps are removed and used for biomass, the biomass producer shall demonstrate that these stumps had to be removed from the site for other reasons than wood or biomass production (e.g. road construction).

**C4.3** On average, less than half the volume of the annual round wood harvest from forests is processed as biomass for energy generation. Round wood from thinning or from production forests with a rotation period of 40 years or less is exempt from this requirement.

Indicators	
4.3.1	The biomass producer shall have relevant information available showing that less than 50% of annual harvested round wood (excluding thinning) in its sourcing area is used for production of biomass products for energy generation. Round wood from production forests with a rotation period of 40 years or less is exempt from this criterion. Relevant information in this regard is any government report, NGO report, local economy statistics or similar information reflecting the allocation of biomass coming from the sourcing area.
4.3.2	In the absence of initial biomass allocation information (as indicated in 4.1.1), the economic operator shall provide clear and sufficient evidence (e.g. total harvested and supplied wood and volumes supplied to pellet mills) that less than 50% of annual harvested round wood (except thinning wood) is sold to pellet mills. Round wood from production forests with a rotation period of 40 years or less is exempt from this criterion.

**Principle 5:** Biomass production does not result in Indirect Land Use Change (ILUC).

**C5.1** Biomass sourced from bioenergy plantation systems that were planted after 1 January 2008 have a demonstrably low ILUC risk. Biomass from Forest Management Units smaller than 500 hectares is exempt from this requirement.

### **Explanatory notes**

*The planting systems relate to tree types such as willow, poplar, eucalyptus, acacia and short rotation coppice, where the new crop grows from the stumps of previously harvested stems and/or sprouts, with rotations typically between two and ten years, or systems of short rotation forest plantations using tree species that are harvested within 20 years or less.*

*In the GLOBIOM study<sup>5</sup> (2015) commissioned by the European Commission, it is demonstrated that in case of new biomass energy plantation systems (with a short rotation time):*

- land conversion due to new energy plantations does not lead to displacement of food production (in particular because it takes place on abandoned land and other natural land);*
- overall, no CO<sub>2</sub> emissions take place, but CO<sub>2</sub> sequestration (i.e. negative ILUC emissions due to large carbon storage in biomass) does.*

*Even if new biomass energy production systems are partly established on land used as cropland until the date of conversion, no CO<sub>2</sub> emissions take place overall (comparable with the scenario of perennial crops in the GLOBIOM study). The ILUC impact because of the use of (partly) agricultural land leads to a displacement of food/feed production. However, this emission effect is more than offset by the sequestration of carbon in biomass and soil through energy wood production.*

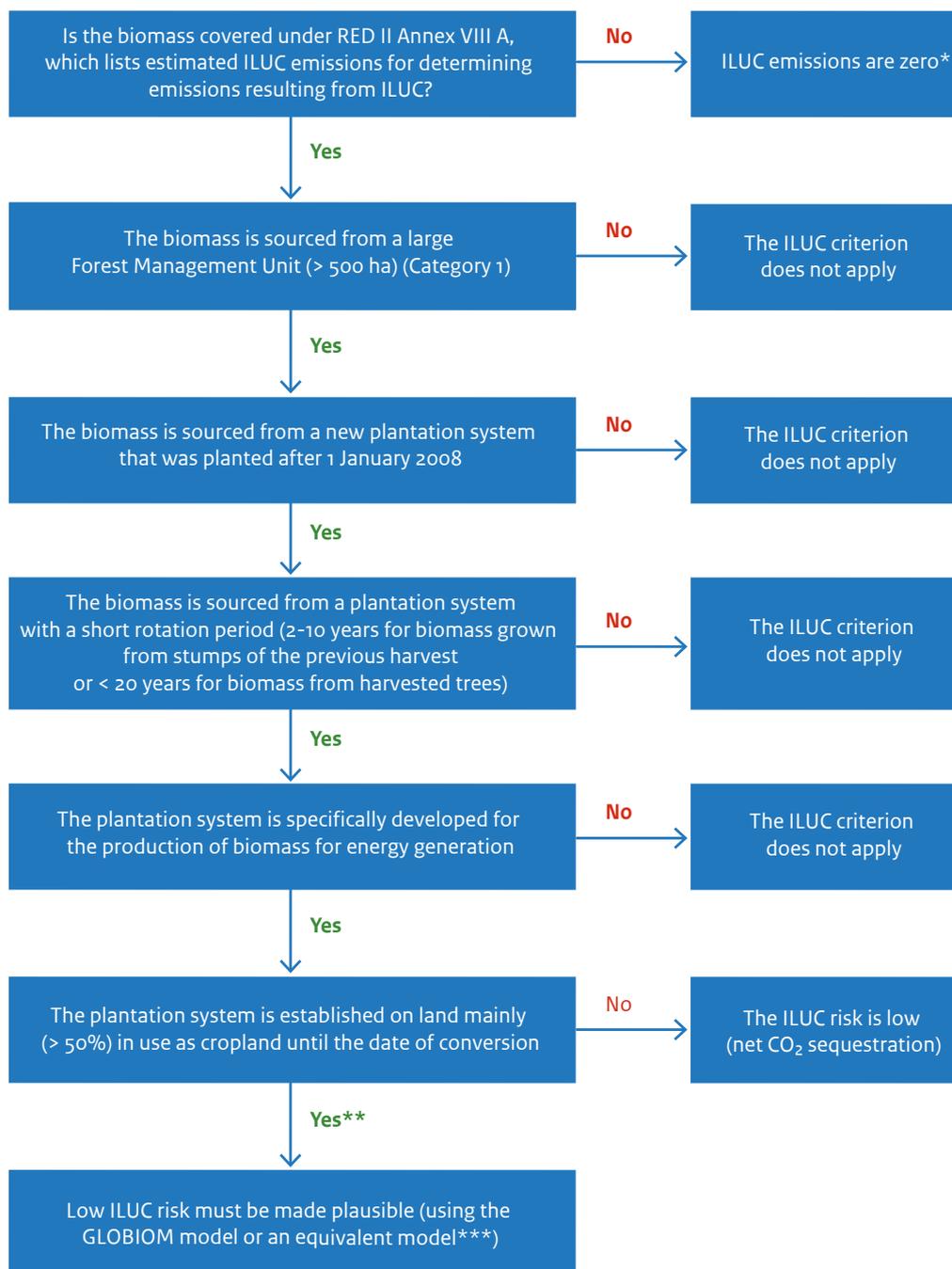
*The GLOBIOM study is taken as a basis for assessing the ILUC risk of biomass, as elaborated in the decision tree below.*

*More detailed information on this approach can be found in Appendix 1.*

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<sup>5</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/Final%20Report\\_GLOBIOM\\_publication.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/Final%20Report_GLOBIOM_publication.pdf)

### ILUC criterion decision tree



\* In accordance with RED II Annex VIII, ILUC emissions are taken to be zero for feedstocks not listed in Part A of Annex VIII. Part A references the categories of cereal and other starch-rich crops, sugars and oil crops

\*\* There is a risk that a possible increase in CO<sub>2</sub>-emissions cannot be fully compensated by carbon sequestration in plantations (net ILUC emission), but this risk is expected to be low.

\*\*\* The GLOBIOM model builds on the LIBB method mentioned in the explanatory notes to the criterion.

## 6 Sustainable Forest Management (SFM) requirements

The Sustainable Forest Management (SFM) criteria and indicators in this chapter apply to Category 1 and 2 biomass. In case of Category 2 biomass, FMUs and biomass producers may (temporarily) use an RBA to demonstrate compliance with the SFM requirements at the level of the sourcing area. If indicators cannot be used for the risk assessment, other means of verification may be used. This shall be made transparent to the Conformity Assessment Body during the verification process (see Section 8.3.1 of this protocol).

An economic operator meets the principles and related criteria when conformity with all applicable underlying indicators is demonstrated. A Strategic Risk Assessment (SRA) shall be part of any verification, as outlined in Section 9.2.2 of this protocol. The primary objective is the identification of the compliance aspects that require more attention during the verification process. The scale and intensity of the forest management will influence the risk of non-compliance with the criteria and the indicators of this protocol or the required measures to be taken by the economic operator. Aspects of scale and intensity of the forest management are relevant for such activities as the identification, monitoring and protection of locations with a high conservation value (C7.1), protection of endangered species (C7.2) and the management plans and systems in place for forest management (C10.1, C10.2, C10.3 and C10.5).

### 6.1 Criteria and indicators for Principles 6-11

**Principle 6:** Relevant international, national, regional and local laws and regulations are complied with.

**C6.1** The forest manager holds the legal right to use the forest.

Indicator	
6.1.1	Documentation demonstrating legal rights to manage the land as forests and manage and utilise its forest resources (e.g. registrations in the land register, licenses, permits), including associated maps (where applicable), shall be provided.

#### **Explanatory notes**

*Legal rights comprise at a minimum:*

- land tenure and management rights;
- concession licenses;
- harvesting permits;
- legally required licenses for the exploitation, payment and claims related to ecosystem services.

**C6.2** The forest manager complies with all obligations to pay taxes and royalties.

Indicator	
6.2.1	Clear and sufficient evidence (statement from tax authorities, auditor's statement, payment receipts) that all taxes and royalties related to forest management are paid correctly (timely and in full) shall be provided.

#### **Explanatory notes**

*This includes all legally required taxes/royalties, such as:*

- forest harvesting fees, such as royalties, stumpage fees and other volume-based fees. These payments must be based on correct classification of quantities, qualities and species;

- sales taxes that apply to wood being sold, including sale of wood as growing forest (standing stock sale);
- income and profit taxes related to profit derived from the sale of forest products and harvesting activities.

**C6.3**                    **Anti-corruption legislation is complied with. If no anti-corruption legislation exists, the forest manager shall take alternative anti-corruption measures proportionate to the scale and intensity of the management activities and the risk of corruption.**

Indicators	
6.3.1	The economic operator is aware of any applicable anti-corruption laws and regulations and has a system in place to monitor its performance against these.
6.3.2	In countries with a Corruption Perception Index (CPI) lower than 50 and where anti-corruption laws and regulations do not exist or are ineffective, the economic operator shall ensure that staff whose roles carry a higher level of risk in the area of ethical business practice (e.g. sales, harvesting, logistics, dealing with local officials) are trained on what action to take in the event of an issue arising in their area.
6.3.3	In countries with a Corruption Perception Index (CPI) lower than 50 and where anti-corruption laws and regulations do not exist or are ineffective, the economic operator shall have a transparent and effective system in place for confidentially reporting and dealing with unethical business practices without fear of reprisals towards the reporting party.

**Principle 7:**    **Biodiversity is maintained and where possible enhanced.**

**C7.1**                    **Sites with a high conservation value and representative areas of native ecosystems that are found in the Forest Management Unit have been identified and are protected and where possible enhanced. The sites may contain one or more of the following values: diversity of species, ecosystems and habitats, ecosystem services, ecosystems at landscape level and cultural values.**

Indicators	
7.1.1	Documentation has shown that a process has been followed for the Forest Management Unit regarding the identification, protection and monitoring of sites with a high conservation value. This process shall contain at least the following elements: <ul style="list-style-type: none"> <li>• identification of sites with a high conservation value: locations of sites with a high conservation value shall be established. This is done using relevant regional scientific information, nationally and/or internationally recognised databases, environmental impact reports and information submitted by interested and affected stakeholders. Involvement of the local inhabitants or indigenous people is a condition for establishing cultural values;</li> <li>• development and implementation of measures to protect sites with a high conservation value: potential threats with regard to the identified sites with a high conservation value shall be established. Effective measures shall be developed and implemented to protect and/or reinforce the sites with a high conservation value. In the development of the measures, the stakeholders affected shall be proactively involved, with interested stakeholders involved on request;</li> <li>• monitoring and feedback: within the framework of the forest management plan, there shall be an effective programme aimed at monitoring the status of the sites with a high conservation value and the effectiveness of the measures that have been taken. If necessary, the conservation measures shall be modified. A key part of the monitoring process is the proactive involvement of affected stakeholders and the involvement of interested stakeholders at their request.</li> </ul>

Indicators	
7.1.2	Sites that, after the completion of the process, have been identified as sites with a high conservation value shall contain at least one of the following values: diversity of species: concentrations of biological diversity, including indigenous species and rare or endangered species that are of importance at global, regional or national level; ecosystems and habitats: rare or endangered ecosystems, habitats or refuges; ecosystem services: basic ecosystem services in critical situations, such as the protection of important water sources and control of the erosion of vulnerable soils and slopes; ecosystems at landscape level: whole forest landscapes or other large intact ecosystems or mosaics of ecosystems on landscape level that are of importance on a global, regional or national level because they contain viable populations of the majority of the natural species in natural patterns with regard to distribution and numbers; cultural values: areas or means of living that are of global or national cultural, archaeological or historical importance and/or fundamental to the traditional cultures or beliefs of the local population or indigenous people.
7.1.3	Local communities must be involved in the establishment and evaluation of strategies and actions to maintain and/or enhance the sites of high conservation value if they were consulted to help identify these sites.

**C7.2 Measures have been taken to protect endangered plant and animal species and, if applicable, to increase the populations and enhance the habitats of these species.**

Indicators	
7.2.1	Threatened and endangered species and their habitats (e.g. nesting and feeding areas) that are present or are likely to be present within the FMU are identified based on 'best available information' known to and observed by the economic operator and based on what could be learnt from neighbours and other local stakeholders.
7.2.2	In the presence of threatened and endangered species within the FMU, appropriate forest management practices to protect or maintain the presence of threatened or endangered species and their habitats within the FMU have been defined and implemented. Appropriate forest management practices include, but are not limited to: conservation zones (or protected areas). The size and location of the conservation zones conform to national and local legislation and shall be sufficient to guarantee the continuing presence of the identified species. Conservation zones have been identified and marked on maps and, where necessary, on the ground, in a way that is visible when entering the zone; and reduced harvesting methods to protect nesting and breeding sites.

**Explanatory notes**

*Conservation zones are not necessarily forestland. They may include wetlands and open space and may have dual purposes.*

**C7.3 The conversion of forests within the Forest Management Unit to other forms of land use, including wood plantations, is not permitted unless:**

- the area concerned is small, no greater than 5% of the area of the Forest Management Unit on the benchmark date of 1 January 2008, it clearly leads to long-term advantages for nature conservation and there is no damage or threat of damage to sites with a high conservation value.**

Indicators	
7.3.1	Any parts of the FMU that are scheduled for conversion from natural or semi-natural forest to plantation or any other kind of non-forest land use have been clearly identified and documented.
7.3.2	The areas scheduled for conversion shall total less than 5% of the total area of the FMU as of 1 January 2008.
7.3.3	The areas scheduled for conversion do not damage or threaten any site of high conservation value.

### Explanatory notes

Clear long-term advantages for nature conservation means that the conversion fits in a long-term forest management plan and the related forest management measures. If, for example, the conversion is part of the construction of a road, this road is beneficial for nature conservation and the construction complies with all requirements, then the conversion is compliant with C7.3. The requirements of C7.3 refer to conversion within an FMU to other types of land use, including wood plantations. Beside this, biomass from wood plantations that were created by conversion of natural or semi-natural forests after 31 December 1997 is not accepted according to C3.3.

**C7.4** In the case of wood plantations, there is a preference for native species, and a relevant percentage of the wood plantation area must be able to revert to natural forest at a later stage.

Indicators	
7.4.1	In the case of wood plantations, it is demonstrated through documented trials that the selection of species for planting is based on their overall suitability for the site and their appropriateness to the management objectives.
7.4.2	Any choice to use exotic species and genotypes must be clearly justified.
7.4.3	Representative samples of existing natural ecosystems, which shall cover at least 5% of the area of the FMU, are managed so as to retain them or restore them to their natural state, based on the identification of key biological areas and consultation of stakeholders, local government and scientific authorities.

**C7.5** Exploitation of non-timber forest products, including products from hunting and fishing, is regulated, monitored and controlled to safeguard the maintenance of the biodiversity in the forests.

Indicators	
7.5.1	The forest manager identifies and complies with all legal requirements applicable to the management and/or collection of the non-timber forest products in question, including CITES.

**Principle 8:** The regulating effect and the quality, health and vitality of the forest are maintained and where possible enhanced.

**C8.1** The soil quality of the forest management unit is maintained and if necessary improved, with special attention to coasts, riverbanks, erosion-sensitive areas and sloping landscapes.

Indicators	
8.1.1	Specific measures have been taken to maintain and if necessary improve the soil within the FMU in terms of structure, fertility and biological activity. As a minimum, site preparation and harvesting methods within the FMU shall have been designed to minimise soil compaction and maximise the retention of nutrients on-site.
8.1.2	All forestry operations within the FMU with a potential negative environmental impact, with an emphasis on watershed protection (e.g. coasts, riverbanks), areas susceptible to erosion and slopes are accompanied by appropriate control systems and procedures. Control systems are based on national or regional best practices with regard to erosion and sediment control, minimisation of forest damage during harvesting, road construction and other mechanic disturbances that may arise under specific weather conditions (all-weather harvesting vs dry weather harvesting).

**C8.2 The water balance and quality of both groundwater and surface water in the Forest Management Unit and downstream (outside the Forest Management Unit) shall be at least maintained and where necessary improved.**

Indicators	
8.2.1	Forest operations within the FMU should not negatively impact the local hydrology of natural water courses, water bodies, riparian zones and their connections.
8.2.2	All forestry operations within the FMU with a potential negative environmental impact shall be accompanied by appropriate control systems and procedures with regard to protection of water resources both within and downstream from the FMU, based on national and regional best practices.

**C8.3 Important ecological cycles present in the Forest Management Unit are preserved, including carbon and nutrient cycles.**

Indicators	
8.3.1	Site preparation and harvesting methods have been designed to minimise soil compaction and maximise the retention of nutrients on-site.
8.3.2	There is evidence that specific measures have been taken to ensure that sensitive areas are sufficiently protected from erosion or fire.

**C8.4 Unnecessary damage to ecosystems is prevented by applying Reduced Impact Logging and the most suitable road construction methods and techniques for local conditions.**

Indicators	
8.4.1	There is evidence that the most suitable logging (Reduced Impact Logging (RIL)) and road construction methods and techniques are used in the Forest Management Unit to prevent unnecessary damage to ecosystems. This may include the use of RIL techniques, adapted to the site-specific characteristics within the FMU.
8.4.2	Harvest planning and harvest operations are carried out in accordance with national or sub-national (e.g. State) best practice guidelines.

**C8.5 If fires are used to achieve forest management objectives, such as regeneration of specific tree species, then adequate control measures have been taken.**

Indicator	
8.5.1	Where fires are used to achieve forest management objectives, such as regeneration of specific tree species, adequate control systems and procedures shall be in place, including fire control and safety precautions.

**C8.6 The forest management measures are designed to prevent and control diseases and pests where these form a threat to natural capital.**

Indicators	
8.6.1	The forest manager has identified pests and diseases that are present and that potentially threaten the natural stock within the FMU.
8.6.2	Where applicable, the forest manager has procedures in place to prevent and control potential and existing pests and diseases that have been identified (e.g. by applying Integrated Pest Management (IPM)).

**C8.7 The use of chemicals is only permitted if ecological processes and the optimal deployment of sustainable alternatives prove insufficient. Pesticides classified as type 1A and 1B by the World Health Organisation and chlorinated hydrocarbons are not permitted.**

Indicators	
8.7.1	The forest manager shall not use or store any of the WHO Type 1A and 1B pesticides and chlorinated hydrocarbons.
8.7.2	Where chemicals are used, an up-to-date list is kept of all pesticides used in the FMU.
8.7.3	Where chemicals are used, all staff and contractors involved in their use have received training in handling, application and storage procedures.
8.7.4	Where chemicals are used, safe transport, storage, handling, application and emergency procedures have been implemented.

**C8.8 The accumulation of inorganic waste and litter is prevented, or such waste and litter is collected, stored in approved areas and disposed of responsibly.**

Indicators	
8.8.1	There is a documented system in place for collecting and storing inorganic waste and litter safely, and for safe transportation for disposal.
8.8.2	There shall be no evidence that the forest manager's waste products are disposed of other than at the listed sites or in any manner other than according to environmentally appropriate and safe methods and applicable legal requirements.
8.8.3	All staff and contractors involved in the use of chemicals, fuel and oil have received training and materials for controlling and cleaning up chemicals, fuel and oil in the case of accidental spillage.

**Principle 9: The production capacity for wood products and relevant non-timber forest products is maintained in order to safeguard the future of the forests.**

**C9.1 The production capacity of all forest types represented in the Forest Management Unit is maintained.**

Indicators	
9.1.1	There is a clear methodology to determine the Annual Allowable Cut (AAC) or harvest per forest type.
9.1.2	The allowable harvest level is based on conservative, well-documented and most current estimates of growth and yield in order to not jeopardise the forest's productive potential in the medium to long term.
9.1.3	There are clear, accurate and up-to-date records of harvest volumes for all commercial timber species, and of the commercial harvest of any NTFPs.

**C9.2 The Forest Management Unit is sufficiently protected against all forms of illegal exploitation of timber and non-timber forest products, including hunting and fishing, illegal establishment of settlements, illegal land use, illegally initiated fires and any other illegal activities.**

Indicators	
9.2.1	The boundaries of the FMU have been clearly marked and mapped.
9.2.2	Concrete measures are taken to prevent illegal harvesting, including of products of hunting and fishing, settlement, illegal land-use, illegal fires and any other unauthorised activities within the FMU.

### Explanatory notes

Depending on the size of the forest area and on the risk of illegal activity occurring, such measures may include:

- forest roads with gates and/or controlled access to areas of high risk;
- forest roads that are physically closed off after harvesting;
- forest roads that are patrolled to detect and prevent illegal access to the forest;
- personnel and resources that have been assigned to detect and control illegal activities promptly.

Indicators	
9.2.3	Appropriate measures are taken when illegal activities are detected.

### Explanatory notes

Depending on the nature of the activity, such measures may include:

- reporting the activity to an appropriate authority;
- disciplinary action or fines in the case that staff were involved;
- working with the appropriate authorities, always within the law, to control the unauthorised activity;
- taking legal action (e.g. prosecution), if necessary.

**Principle 10:** Sustainable Forest Management is achieved through a management system.

**C10.1** The forest management system is designed to achieve the objectives of a forest management plan and covers the inventory, analysis, planning, implementation, monitoring, evaluation and adjustment cycle.

Indicators	
10.1.1	Policies and operational management objectives shall exist for the FMU and shall at least meet national and regional legal requirements.
10.1.2	Depending on the scale and intensity of the forest management, a management plan and/or supporting documents shall exist for the FMU. This management plan shall include the long-term management objectives and a description of the inventory, planning, monitoring and evaluation cycle. An Environmental Impact Assessment is part of the planning.

**C10.2** A forest management plan is drawn up that at least includes:

- a description of the current condition of the Forest Management Unit;
- long-term goals for the ecological functions of the Forest Management Unit;
- the average annual allowable cut per forest type and, if applicable,
- the annual allowable harvest of non-timber forest products based on reliable and current data;
- budget planning for the implementation of the forest management plan.

Indicator	
10.2.1	A forest management plan includes the long-term management objectives for the FMU, with due regard for ecological (species, ecosystems, functions) aspects. The forest management plan shall contain at least the following information: a description of the inventory and analysis, planning, implementation, monitoring, evaluation and review cycle; a description of the current state of the FMU; longer-term objectives aimed at ecological functions; the average annual harvest permitted per forest type and, if applicable, the annual exploitation of non-timber forest products permissible, calculated on the basis of reliable and up-to-date data.

**C10.3 Essential elements for the management of the forest are indicated on maps.**

Indicators	
10.3.1	There are appropriate maps of the forest resource base, indicating protected areas, planned management and land ownership.
10.3.2	Before the commencement of harvesting and road construction, clear and accessible maps shall be made available describing the forest resource base and the boundaries of the FMU, including sites with special ecological, archaeological or cultural values, sites reserved for wildlife and sites where harvesting takes place.

**C10.4 The implementation of the forest management plan is periodically monitored and the ecological effects of the forest management are evaluated.**

Indicators	
10.4.1	Procedures for collecting the monitoring data have been clearly documented and are consistent and replicable over time to allow comparison and assessment of change.
10.4.2	The frequency, intensity and expense of the monitoring activities are defined and are appropriate to the scale, intensity and risks of the forest operations, as well as to the relative complexity and fragility of the resources under management. Monitoring shall at least include the following information in order to facilitate evaluation: <ul style="list-style-type: none"><li>• data collected during surveys before and after harvesting and the generic inventories in order to identify and describe key changes in forest flora over time;</li><li>• data on the presence of key fauna species within the FMU, sufficiently so to allow identification and description of significant changes in the population over time;</li><li>• data aimed at demonstrating the conservation of high protection values and representative sites of forest types within the FMU.</li></ul>

**C10.5 The forest management plan is implemented by professional office and field staff, whose expertise and knowledge is maintained by means of an effective and regular training programme**

Indicators	
10.5.1	Competence/training requirements for all employees are identified, and necessary (periodic) training is provided to ensure employees are sufficiently qualified and trained to perform their tasks.
10.5.2	Appropriate employee qualification is available.
10.5.3	Safeguards and verification procedures are in place to ensure that contractors are qualified for the activities they conduct within the FMU.

**Principle 11: Forest management by a group offers sufficient safeguards for sustainable forest management.**

**C11.1 A group is led and supervised by a legal entity.**

Indicators	
11.1.1	The group or regional association shall be led and supervised by an independent legal entity or by a person acting as a legal entity.
11.1.2	The entity shall meet all statutory requirements, such as registrations and the paying of taxes.
11.1.3	The division of responsibility between the entity and the members of the group in relation to sustainable forest management and the requirements of this protocol has been clearly laid down.

**C11.2** A group shall meet the requirements for Sustainable Forest Management. The separate forest management activities of the individual members of the group shall also meet these requirements, if applicable for the management of the forest concerned.

Indicators	
11.2.1	The group or the regional association shall have procedures in place for the membership of the group, in which the requirements of this protocol have been incorporated in relation to the scale and complexity of the group, containing, for example: the organisational structure; the responsibilities of the entity and the members with corresponding activities; rules regarding membership of the group; rules regarding suspending or revoking membership; complaints procedures for group members; procedures for taking corrective measures following an internal request or a request from the Conformity Assessment Body, including deadlines and consequences if the measures are not complied with.
11.2.2	The status of the FMUs in the relevant region shall be outlined in a forest management plan or a similar document.

# 7 Traceability and Chain of Custody requirements

## 7.1 Introduction

The traceability and Chain of Custody requirements in this chapter ensure that the physical flow of biomass can be traced back throughout the supply chain. This also ensures that sustainability characteristics can be assigned to individual consignments of biomass and that the quantity of biomass withdrawn from any link in the supply chain does not exceed the quantity of biomass supplied. This guarantees the integrity of verification and conformity year statements. The term “consignment” refers to a specific quantity of biomass with the same sustainability characteristics. For all consignments, it is required that the origin is traceable.

Economic operators that are subject to verification are required to have processes in place to ensure that evidence of the sustainability characteristics of received and supplied biomass is documented, managed and forwarded through the supply chain. At the first link in the chain, information on the origin of the biomass shall be present in order to allow the category and corresponding sustainability requirements to be determined, making it possible for the EP that receives subsidy as the last link in the chain to demonstrate that the consignments of biomass that have been processed into renewable electricity and possibly heat meet the requirements of the SDE+ Scheme.

The requirements in the SDE+ Scheme related to the Chain of Custody are transformed into an integral approach in this chapter. The criteria are included in 7.2, but have not been elaborated into individual indicators, as they can frequently not be considered independently from one another. Requirements 12.2 and/or 12.4 and/or 12.6, for example, cannot be met without requirement 12.5 being met for the same verification. Experience in the field has shown that it makes more sense to look at these criteria collectively and transform them into general requirements for traceability and Chain of Custody. This has been done in the rest of this chapter.

## 7.2 Criteria for the Chain of Custody as defined in the Regulation

The Chain of Custody requirements for all links in the supply chain are outlined in the Regulation on the conformity assessment of solid biomass for energy applications under Principles P12 and P13. Six requirements were included in the Regulation under Principle 12. Principle 13 sets out further requirements for supply chain management carried out by a group or regional association. The Regulation uses the term chain of custody system to refer to the Chain of Custody.

<b>P12</b>	<b>A chain of custody system is in place for the biomass, covering the entire chain from the first actor to the energy producer, that links the source to the material used in the product or product group and provides greenhouse gas emission data of each individual link.</b>
	C12.1 Each link in the chain of custody bears final responsibility and has a quality management system in place that provides safeguards for compliance with the requirements of the chain of custody system.
	C12.2 Each link in the chain of custody has the relevant greenhouse gas emissions information for its own organisation, which has been obtained using the methodology reference values provided for fossil fuels in Annex VI.B of Directive (EU) 2018/2001.
	C12.3 Each link in the chain of custody keeps all necessary documentation for demonstrating compliance with the applicable sustainability requirements available for a minimum of five years.
	C12.4 Each link in the chain of custody registers for all incoming or outgoing consignments the quantities and the required sustainability information under these regulations. The verification protocol will specify the required sustainability information.

**Explanatory note to 12.4**

Sustainability information as referred to in 12.4 shall at least include:

- the correctly established biomass category or information that allows the biomass category to be clearly determined;
- for Category 2 biomass: whether sustainability has been demonstrated at the sourcing area or at the level of the forest manager;
- for biomass Categories 1 and 2: whether this is a case of controlled biomass;
- country of origin of the feedstock;
- the kind of GHG emission value that is being used: (a) a total default value, (b) an actual value or (c) a combination of disaggregated default values and actual values;
- if actual values are being used: the GHG emission in g CO<sub>2</sub>-equivalent per MJ or tonne of biomass produced;
- the certification scheme, including the claim on the biomass consignment (including all additional verification statements that have been used to demonstrate conformity with requirements under P2-P11);
- the certification scheme, including the claim on the biomass consignment (including all additional verification statements that have been used to demonstrate conformity with the CoC requirements under P12-P13).

C12.5	Each link in the chain of custody applies a mass balance in case of mixing or splitting of materials with different sustainability characteristics. For the mixing, the following applies: The method shall be applied at least at the level of a location. The organisation defines a period with a maximum of a year, during which incoming and outgoing consignments are measured, and shall report the results. All sustainability characteristics of mixed biomass output can be traced back to the characteristics and quantities of the incoming consignments, taking account of the applicable conversion factors.
<b>P13</b>	<b>In case of a group management system for the chain of custody, the same requirements shall apply to the group as a whole as to individual businesses.</b>
C13.1	A group is led by a legal entity that is responsible for the group as a whole. This entity uses a management system as well as technical and human resources that enable it to supervise the participating locations within the scope of the system. The entity conducts an annual audit of a sample of the affiliated group members.
C13.2	The group applies the requirements as described in 12.1 through 12.5*. Furthermore, each group member individually meets these requirements insofar as applicable to their own activities.
C13.3	The group leader uses a registration system to record: <ul style="list-style-type: none"> <li>• the names and addresses of the group members;</li> <li>• a declaration submitted by each member in which they declare that they meet chain of custody system requirements;</li> <li>• the incoming and outgoing consignments of each individual group member.</li> </ul>

\* Installations for which the application for decision predates 21 December 2018 shall also be subject to the former 12.6 requirement. See Section 7.2.1.

**7.2.1 Controlled biomass – Guidance on the former requirement 12.6.**

c12.6	When being mixed with other consignments, Category 1 and 2 consignments that only comply with requirements 1.1, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 7.1 and 7.3 are designated as controlled biomass on the mass balance. For controlled biomass, the biomass producer is the first link in the Chain of Custody and the source is the Forest Management Unit or a defined supply area.
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The former requirement 12.6 exclusively applies to installations with an application for an SDE decision predating 21 December 2018. This requirement concerns a combination of two requirements. The first part relates to a definition of ‘controlled biomass’ that must be defined and verified at the source. As such, this part is not a chain criterion.

The second part does, however, constitute a chain criterion. These two elements require two individual assessments:

- a. Safeguarding the controlled biomass. Does the controlled biomass comply with the defined set of requirements?
- b. Chain of Custody management for controlled biomass. Does the chain of custody handle the controlled biomass correctly?

The practical impact of this split is elaborated below.

#### ***Re A) Safeguarding the controlled biomass***

The first part of C12.6 relates to the definition of controlled biomass and is made up of three components:

1. Category 1 and 2 consignments that only comply with requirements 1.1, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 7.1, and 7.3;
2. the biomass producer is the first link in the chain of custody;
3. the source is the Forest Management Unit or defined supply area.

#### *Practical application*

- Verification and determination that biomass from an FMU (or defined supply area) complies with part 1 and, as such, may be referred to as controlled biomass is only relevant to the biomass producer, not to the rest of the Chain of Custody.
- The Dutch definition of controlled biomass does not need to coincide with the requirements that certification schemes apply to biomass with a 'controlled' claim. In practice, these certification schemes will have to have their 'controlled' claim approved to demonstrate use of Dutch controlled biomass.
- In the event that a 'controlled' claim of a certification scheme does not cover all the requirements above, the other requirements may be guaranteed through verification. The approach as outlined in Section 2.3 of the Verification Protocol for the combination of certification and verification to ensure sustainability also applies to any 'controlled biomass' claim. Incidentally, this only applies to point 1), where multiple requirements are assessed.

#### ***Re B) Chain of Custody management for controlled biomass***

In regard to the above, requirement 12.6 states the following: when being mixed with other consignments, controlled biomass is distinguished on the mass balance.

For economic operators after the biomass producer, it is only this part of the requirement that is relevant. The SDE scheme, after all, restricts the amount of controlled biomass that may be used by the EP with the subsidy. For that reason, this information must be distributed across the Chain of Custody. In the event that controlled biomass enters the Chain of Custody, this must be distinguished on the mass balance.

As such, information on the use of controlled biomass qualifies as relevant sustainability information as defined in 12.4.

Controlled biomass is a specialisation of Category 1 and 2 materials. All supply chain management requirements that apply to Category 1 and 2 also apply to controlled biomass.

#### *Systems/chains without controlled biomass*

If a statement relates to a group of consignments that do not contain any controlled biomass, requirement 12.6 will not apply and as such does not require verification. In that case, verification of principle 12 without requirement 12.6 is possible.

### 7.2.2 Determining the first link in the Chain of Custody.

A definition of the first link in the chain of custody and the source is given in the 'Regulation on the conformity assessment of solid biomass for energy applications', namely:

Category of solid biomass	Source	First link in Chain of Custody system
1. Woody biomass from Forest Management Units	Forest Management Unit (FMU)	Forest manager
2. Woody biomass from small Forest Management Units (FMU <500 hectares)	Forest Management Unit or sourcing area of which the Forest Management Unit forms a part.	Forest manager or biomass producer
3. Residues from nature and landscape management	Sourcing area	FCP
4. Agricultural residues	Sourcing area	FCP
5. Biogenic residues and waste flows	Company that generates the residual product	FCP

### 7.2.3 Mixing with RED II compliant biomass at the energy producer

With regard to the 30% RED II compliant biomass, the Chain of Custody requirements under RED II will be safeguarded in the chain by means of the approved European certification scheme. Only the conformity year statement for the energy producer is still subject to a number of requirements under this protocol. These are the requirements in 7.5 in relation to the GHG information and calculations.

## 7.3 Biomass supply information

This section describes requirements for economic operators in the chain that are subject to verification. These requirements shall be used to ensure compliance with the criteria and will safeguard, in each step of the Chain of Custody, the availability of the information required for the verification statements.

### 7.3.1 Supply chain and biomass information (applies to all economic operators subject to verification)

Economic operators that are subject to verification shall establish and maintain records necessary to provide evidence of compliance with the requirements of this protocol.

- The first link in the Chain of Custody shall have information available on the origin of the biomass (the source), on the basis of which the categories and sustainability characteristics may be determined (see also Table 2).
- The subsequent links shall ensure that this information is passed on with the consignments through the chain up to the energy producers, in accordance with the Chain of Custody requirements.
- Upon verification at the end of the chain, the auditor shall establish whether the five categories have been applied correctly. When verifying these claims, the auditor may use the reports that have been drawn up by an accountant for the company under the Dutch Guarantee of Origin regulations. In these statements, the biomass is specified by NTA 8003 coding. The auditor will include this information in their assessment of whether the EP has applied the categories correctly, but is not required to evaluate the NTA 8003 coding itself.

All economic operators in the chain subject to verification shall therefore have the following up-to-date applicable information available for all consignments of biomass that pass through the CoC and are included in the conformity year statement by the EP:

- information that demonstrates to which category the biomass being verified belongs;
- for controlled biomass:
  - for the biomass producer, information that demonstrates that the requirements for controlled biomass have been met;
- for other economic operators, information regarding Category 1 and 2 biomass that shows which consignments consist of controlled biomass;

- country of origin (source) of the biomass subject to verification;
- for the application of the RBA for Category 2 biomass:
  - for the biomass producer, risk assessment records from the sourcing area demonstrating that supplying Forest Management Units meet the requirements in Chapters 4 and 5;
  - for the other economic operators, information that demonstrates for which consignments of Category 2 biomass sustainability has been demonstrated with the RBA;
- for First Collection Points (FCPs), in case of Category 3 and 4 biomass, information that shows that the Points of Origin from which the FCPs receive Category 3 and 4 biomass meet the criteria and indicators of Principle 2;
- for FCPs, in case of Category 5 biomass, information that shows that the Points of Origin from which the FCPs receive Category 5 biomass are in fact the economic operators that generate the Category 5 biomass;
- GHG emissions information of biomass as needed by the EP to determine the GHG emissions of the biomass at the end of the supply chain. In the case of individual GHG calculations, the GHG calculation itself as well as the input data used for the calculation must be available (see 7.5.1);
- a list with names and addresses of suppliers and recipients of sustainable or controlled biomass;
- information regarding the claims of approved schemes for biomass supplied and/or approved certificates of the relevant economic operator;
- if applicable, the verification statements corresponding to the supplied biomass;
- contracts with relevant subcontractors/service providers and all suppliers and recipients of biomass;
- weighbridge tickets, bills of lading or other documentation for all incoming and outgoing biomass; mass balance calculations.

Economic operators shall keep all above documentary evidence and all records to demonstrate compliance available for a minimum period of five years.

### **7.3.2 Use of verification statements and delivery documents (applies to economic operators subject to verification up to and including the EP)**

Economic operators up to the EP that are subject to verification shall provide their recipients of consignments of biomass under verification with all the necessary sustainability information of the supplied biomass through a verification statement. The verification statement must contain the information as indicated in 2.5. Claims that are transferred via certification schemes fall beyond the scope of these statements.

Economic operators may also aggregate a number of deliveries of consignments under one contract in one verification statement. In this case, the whole delivery period shall be stated on the verification statement.

### **7.3.3 Timely issuing of verification statements (applies to economic operators subject to verification up to and including the EP)**

The timely issuing and receipt of the sustainability characteristics of a consignment is crucial for documentation, for calculating the mass balance and for verification by the Conformity Assessment Body. For this reason, verification statements or delivery documents that contain information for the drawing up of a verification statement should follow the physical delivery of the biomass as soon as possible. Economic operators shall provide the recipient of biomass with a copy of the verification statement no later than 15 days following the date of issue by the Conformity Assessment Body.

### **7.3.4 Check verification statements (applies to economic operators subject to verification up to and including EP, except FMUs)**

The recipient of the sustainable biomass shall check whether all the information required by this protocol is both available and consistent in the verification statement as handed over by the supplying economic operator. Verification statements that are obviously lacking information or contain inconsistent information should not be accepted by the recipient.

## 7.4 Mass balance

The mass balance method (requirements included under Criterion C12.5) allows consignments of biomass (which may have different sustainability characteristics) and controlled biomass to be physically mixed within internal company processes. Within the mass balance period, consignments of sustainable biomass with the same sustainability characteristics (raw material, biomass category, country of origin, GHG emissions, etc.) can be arbitrarily merged or split within the bookkeeping, as long as the total amount does not exceed the quantity credit. This section describes the requirements for economic operators under verification that apply a mass balance for mixing of consignments with different sustainability characteristics.

### 7.4.1 Mass balance calculation method (applies to economic operators subject to verification up to and including the EP, except FMUs)

When consignments of biomass with different (or limited or no) sustainability characteristics are mixed, the separate sizes and sustainability characteristics of each consignment remain assigned to the mixture. If a mixture is split up, any consignment taken out of the mixture may be assigned any of the sets of sustainability characteristics (accompanied with sizes), as long as the combination of all consignments taken out of the mixture has the same sizes for each of the sets of sustainability characteristics that were in the mixture. It is necessary for appropriate arrangements to be in place to ensure that the mass balance is respected. The amount of compliant biomass going out of a mixture shall be equal to the amount of compliant material going into the mixture, provided that corresponding conversion values have been applied in case of processing or disposal.

The mass balance is calculated using the information in the delivery documentation and shall (if necessary) be corrected after a biomass inventory and receipt of verification statements (or equivalent underlying documentation) from suppliers. A mass balance calculation is required for each geographical site (location).

### 7.4.2 Mass balance calculation period and credits (applies to economic operators subject to verification up to and including the EP, except FMUs)

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

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

## 7.5 GHG information & calculation

All economic operators up to the EP must have sufficient and valid GHG information available of the biomass up to that point in the supply chain and must provide this information to the next biomass recipient. There are four options for GHG information to be provided to the sustainable biomass recipient:

- a. use of (disaggregated) default values (as reflected in RED II Annex VI);
- b. use of actual values (individually calculated values), including information that enables the recipient or ultimate recipient to determine the correct values and/or category (RED II Annex VI);
- c. use of a combination of (disaggregated) default values and actual values (in accordance with the BioGrace-II calculation rules), including information that enables the recipient or ultimate recipient to determine the correct values and/ or category (RED II Annex VI);
- d. information that enables the recipient to determine the correct values and/or category (RED II Annex VI C and D). (For example, a trader can provide information on transport distance with which the EP can calculate the actual GHG value.)

### 7.5.1 Use of total or disaggregated default values

In all cases, the most recent version of the default values should be used. If the total default value is applied, the supplying economic operator shall state 'Use of total default value' on its verification statement (or equivalent delivery documents), combined with the following information:

- biomass energy carrier (RED II Annex VI D);
- biomass type (feedstock in RED II Annex VI D);
- transport distance (km) up to the site of the economic operator from which the biomass was dispatched; and
- the configuration of the pellet mill, to enable the selection of the correct default value (if applicable).

In the case of a verification statement (or equivalent delivery document) for a consignment to an economic operator earlier in the chain than the EP where default values are used, the term cumulative value should be used. The foregoing information must also be included in this case.

When a disaggregated default value is applied for a certain element in the supply chain (extraction/cultivation, processing and transport and distribution), the supplying economic operator shall state "Use of disaggregated default value" for that particular element on its verification statement, combined with the following information:

- biomass energy carrier (RED II Annex VI C);
- biomass type (feedstock in RED II Annex VI C);
- transport distance (km) up to the site of the economic operator from which the biomass was dispatched (if a disaggregated default for transport and distribution is used); and
- the configuration of the pellet mill, to enable the selection of the correct default value (if applicable).

If the actual data do not enable a choice of the right default value (RED II Annex VI C and D), the most conservative value shall be taken, e.g. the value for the largest transport distance and/or a configuration using a natural gas boiler.

### 7.5.2 Use of actual (individually calculated) values

Individually calculated GHG values, or 'actual values', are calculated based on the calculation methodology laid down in RED II Annex VI B. The BioGrace-II tool or another comparable calculation tool should be used to calculate actual values, provided the calculation method in RED II Annex VI B is applied. The calculation rules laid down in BioGrace II are compulsory.

Emission Factors and Lower Heating Value (when not available from BioGrace-II) shall be gathered from official sources. The Lower Heating Value can also be measured through laboratory analyses by an ISO 17025 accredited laboratory.

Economic operators performing an actual GHG calculation must state the calculated GHG values for their product in the verification statement in kg CO<sub>2</sub>-EQ/tonne or in CO<sub>2</sub>-EQ/MJ of sustainable product. Information on actual GHG emission values must be provided for all relevant elements of the GHG emission calculation formula. This means that it may be necessary to report separately on emissions from extraction/cultivation, processing, and transport and distribution. Alternatively, the economic operator can provide the actual information as input to enable the biomass recipient to calculate the actual GHG values or determine the defaults.

BioGrace-II stipulates that, if actual values are used for one parameter in a step, then actual values must be used for all other parameters in that step as well, including the parameters of the other steps within the same part of the bioenergy production chain (extraction/cultivation, processing, or transport and distribution).

When using actual values, the BioGrace-II rules shall be followed.

The calculation is conducted for a full 12-month period and must be as up to date as possible. As an alternative, it must cover the previous calendar or financial year. The relevant period for data gathering and thus for the calculation of GHG emissions must be transparently indicated in the calculation.

## 7.6 Management system requirements

Economic operators including the EP shall have a management system to prove they can comply with the Chain of Custody requirements.

### 7.6.1 Procedures and instructions

The economic operator shall have documented and implemented procedures containing at least the following elements:

- description of internal material flows;
- organisational structure, responsibilities and authorities with respect to traceability and Chain of Custody;
- procedures for complying with the traceability and Chain of Custody requirements of this protocol;
- in the event of engagement of sub-contractors, the economic operator shall ensure that these parties meet all applicable requirements.

### 7.6.2 Qualified employees

The management of the economic operator shall identify and nominate competent employees who have key tasks with respect to implementation and maintenance of the traceability and Chain of Custody requirements of this protocol. Those key tasks include:

- sourcing, first gathering/collecting or registration of incoming sustainable products and evaluation of the quantity of sustainable products and related sustainability characteristics;
- processing of sustainable biomass and/or evaluation of the portion of sustainability characteristics;
- delivery, storage, sales and distribution of sustainable products and evaluation of the quantity of sustainable products and related sustainability characteristics;
- calculation of GHG emissions and saving;
- issuing of verification statements;
- planning and/or execution of internal audits.

The economic operator shall ensure that all employees charged with above tasks have received appropriate training and/or instruction, and keep records of provided trainings and instructions.

### 7.6.3 Technical equipment

The economic operator shall identify, provide and maintain technical facilities that are required to ensure that the traceability and Chain of Custody requirements of this protocol are met. The quantities of delivered biomass shall be determined using measuring devices and methods that comply with relevant (local) regulatory requirements.

### 7.6.4 Internal audits

The economic operator shall conduct internal audits at least once a year covering all the relevant requirements of this protocol and establish corrective and preventive measures if required.

## 8 The risk based approach

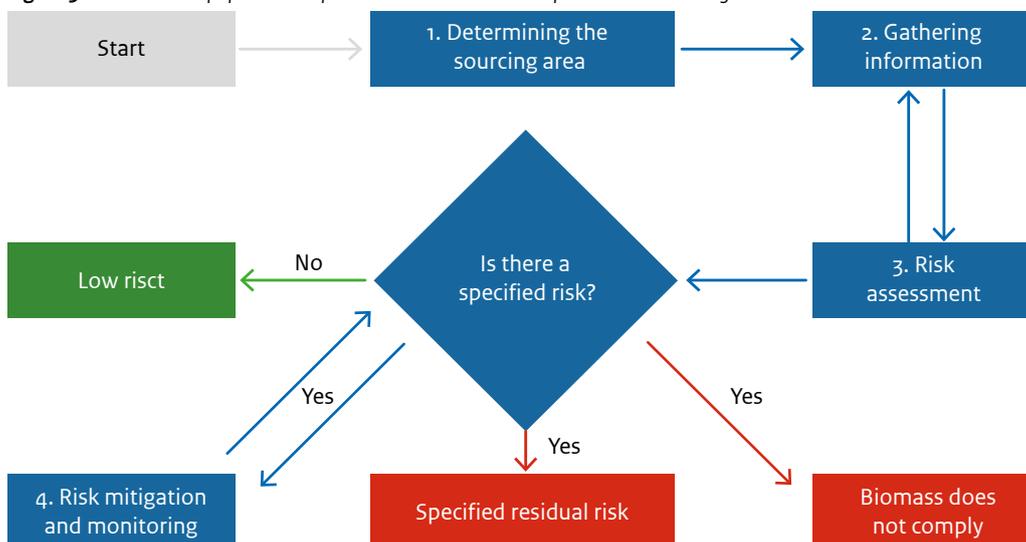
The requirements in this chapter apply to biomass producers that wish to demonstrate compliance with applicable requirements in Chapter 6 through the Risk Based Approach (RBA). By following the procedures in this Chapter, small-scale FMUs (< 500 ha) in a defined sourcing area do not need to undergo individual verification in order to demonstrate compliance with the SFM criteria. The biomass producer (usually a pellet mill) shall have evidence available to demonstrate that, for each of the SFM criteria, the (mitigated residual) risk level is 'low'. The RBA can also be used for demonstrating compliance with the controlled biomass criteria.

During verification, the biomass producer shows the Conformity Assessment Body (CAB) that the RBA was conducted in accordance with the requirements in this chapter, that all required information is available, that the boundaries of the sourcing area are clear and applied accurately and that the mitigation measures are adequate and effective. As part of the verification, the CAB needs to consult relevant stakeholders. Which stakeholders are to be consulted depends on the information in the risk assessment and is up to the professional judgement of the verification team. When applying an RBA for small FMUs, the biomass producer must keep an administration in which the FMUs from which biomass is sourced are registered, showing that they each cover less than 500 ha.

The RBA can be performed by the biomass producer, or by another organisation on behalf of the biomass producer, and may cover the supply bases of several biomass producers together, resulting in a risk assessment for the sourcing area. In any case, the biomass producer must demonstrate that its supply base was fully covered by the RBA for the chosen scope of the statement and that the RBA was performed in a manner as indicated in this chapter. Additionally, the biomass producer must supply the Conformity Assessment Body with the requested information on how the RBA was performed. The RBA involves the following process steps:

- determination of the sourcing area;
- gathering of information in relation to the SFM requirements in Chapter 6<sup>6</sup>;
- risk assessment;
- establishment and regular monitoring of measures to prevent the sourcing of biomass with a specified risk (mitigation measures);
- regular monitoring of the risk assessment and the mitigation measures put in place.

**Figure 5** Successive steps for biomass producers to demonstrate compliance with SFM using



<sup>6</sup> When carrying out a risk assessment for controlled biomass, the criteria for controlled biomass apply.

## 8.1 Determination of sourcing areas

The biomass producer shall identify one or more homogeneous areas (sourcing areas) from which to source biomass. These sourcing areas can be determined both on a geographical scale (e.g. states, counties, provinces) and on a functional scale (forest type, ownership, scope of management, type/quality of forest). In any case, consistent legislation and the SFM requirements in Chapter 6 play a key role in determining the homogeneity of a sourcing area.

The boundaries of an area shall be clearly identified on maps and in other relevant documentation. Boundaries may be described as a reference to the existing administrative or environmental divisions, whilst functional scale can refer to characteristics that determine the functional scale, e.g. plantations vs natural forests.

## 8.2 Gathering information

The biomass producer shall gather information on identified areas that is relevant for a risk analysis with respect to the SFM requirements.

### 8.2.1 Documents

Gathering relevant documentation, such as laws and regulations, government statistics, NGO reports, expert studies and maps, is part of the information gathering exercise. The biomass producer assesses the relevance and reliability of the information using objective criteria, such as date of publication, reliability and independence of the source (academic institutions, international agencies, NGOs and government bodies), methodology, etc.

Data sources shall be referenced so that they can be verified by the Conformity Assessment Body and other external parties.

### 8.2.2 Consultation of stakeholders and experts

The outcomes of consultations with stakeholders and experts are an important source of information for the risk assessment.

A stakeholder is any individual or group that has an interest in any decision or activity (e.g. logging, forest management) of an organisation (the biomass producer or FMU involved). Examples of stakeholders are NGOs, local residents or communities, workers or unions, local or regional government, companies and company associations and contractors. While collecting information, the biomass producer must establish and implement effective procedures for the involvement of stakeholders for the defined sourcing area, as well as relevant requirements for sustainable forest management that ensure that the rights and opinions of these stakeholders in relation to their interests are taken into account when assessing the risks.

The procedures shall at least include:

- responsibilities for the stakeholder consultation process;
- description of the various stages in the consultation process;
- identification of the stakeholders to be involved;
- a proactive approach of stakeholders, who must be given sufficient time to respond (at least one month);
- consultation of qualified and independent experts where specialised knowledge is required.

The biomass producer shall keep the reports and the contributions and comments from stakeholders and experts, including reactions and measures taken in response.

The biomass producer shall make the results of the RBA (risk assessment and mitigating measures taken) publicly available as part of the stakeholder consultation.

## 8.3 Risk assessment

### 8.3.1 Risk assessment methods

The biomass producer shall conduct a risk assessment for each identified sourcing area (Step 1), based on information gathered (Step 2).

The risk of non-compliance shall be assessed for each SFM criterion in Chapter 6, using adequate risk analysis methods. If possible, the underlying indicators in this protocol should be used. Where indicators are not suitable for a risk assessment in respect of a sourcing area (e.g. indicators can only be used at an FMU level), other means of verification are allowed, provided that this is properly substantiated by the biomass producer for the assessment by the Conformity Assessment Body.

Using a list of the qualifications of the persons involved, the biomass producer shall demonstrate that the persons performing the risk analyses are qualified (through training and experience) to perform risk analyses tailored to the complexity of the processes and information being assessed, and the country or sourcing area under assessment. A peer review by experts can provide additional assurance as to the quality of the risk assessment.

### 8.3.2 Risk assessment

The risk of non-compliance for each SFM criterion is expressed as 'specified risk' or 'low risk', based on the information analysed and application of the indicators set out in this protocol. For each SFM criterion, the rationale for risk designation shall be provided in relation to the information used. A 'low risk' is identified when there are clear indications that the chance of non-compliance with the relevant sustainability criterion in combination with the consequences is small and the risk analysis has yielded no information that leads to a 'specified risk' designation. A 'specified risk' is identified when there is not enough information for the risk assessment to establish whether the risk is low or when the mitigating measures are not sufficiently effective in reducing the chance that identified risks materialise or in reducing the consequences of such risks. In case of doubts, a precautionary approach shall be applied.

## 8.4 Risk mitigation and measures

For a sourcing area designated as a 'specified risk' with regard to SFM criteria, mitigating measures must be defined in order to reduce the risk level to 'low risk'. Mitigation measures can comprise additional information gathering (e.g. through on-site verification by the biomass producer), reduction of the sourcing area by excluding risk areas or other appropriate measures. In the event that the risk of non-compliance for one or more SFM criteria remains a 'specified risk' even after the introduction of mitigation measures, biomass from that sourcing area cannot be classified as sustainable.

## 8.5 Regular monitoring of the risk assessment

The biomass producer shall conduct a review of the risk assessment and the mitigation measures at least once per year, and in the event of any relevant developments in the sourcing area from which biomass is sourced and/or relevant changes in the information gathered for a particular sourcing area or criterion.

### **Final remark**

Certification schemes that apply for approval for their risk-based approaches on the approval application form are asked to outline how these five steps are to be implemented. Final approval will always relate to the approach as a whole. As such, a certification scheme cannot receive approval for a component of the risk-based approach. Consequently, partial verification in addition to certification is not relevant in this regard.

## 9 Verification procedures

### 9.1 Introduction

In addition to competent auditors, clear requirements on how to conduct verification audits are key factors for ensuring the integrity, reliability, credibility and high quality of verification. Furthermore, they facilitate a consistent verification of the requirements laid down in the Regulation.

The verification requirements specified in this chapter describe the aspects to be considered and the procedures to be followed when conducting verification audits.

An economic operator seeking verification leading to a verification statement or a conformity year statement must already be in possession of the biomass and, if it is not the first link in the Chain of Custody, must be in possession of one or more verification statements/certificates from its suppliers for that biomass. The verification process consists of four key steps, as described below in Figure 6.

**Figure 6** The verification process



Verification to demonstrate conformity with the sustainability requirements for solid biomass per definition always takes place post-fact. Nevertheless, energy companies may wish to have more security regarding the expected conformity with the requirements prior to the purchase of biomass. They are free to commission a Conformity Assessment Body to carry out an investigation within the envisaged Chain of Custody. However, this does release the auditors from their duty to carry out a full investigation. If verifications are later conducted by the same Conformity Assessment Bodies as those that conducted the investigation, independent assessment must be safeguarded.

## 9.2 Planning and risk assessment

The first step in the verification process is to determine the verification scope, understand the engagement risk and identify the verification activities that are likely to be required in order to provide verification conclusions.

### 9.2.1 Understanding the scope and the biomass supply chain

The Conformity Assessment Body shall engage with the economic operator in order to gain an understanding of the latter's activities, certifications and supply chains, for example by reviewing the company's Chain of Custody mapping. It is here that the scope of the verification is established. It is only on the basis of this scope that a competent team of auditors can be put together (please see Chapter 10). This engagement logically takes place before entering into a contract for the verification.

### 9.2.2 Strategic Risk Assessment

A risk assessment must be carried out for every verification. Verification bodies therefore shall adopt and apply methodologies for Strategic Risk Assessment (SRA). An SRA is a systematic and continual process for assessing significant risks of non-compliance with the requirements of this protocol. The main objective of the SRA is to identify which compliance aspects need to be given more attention during verification and what verification activities are likely to be required.

*The SRA shall take the following verified information into consideration:*

- a. country of verification;
- b. product types and categories of biomass being processed;
- c. national and local legislation and status of enforcement;
- d. the economic operator's supply chain (type and amount of suppliers/sustainable biomass received) and operations (including detailed information about the forest areas/geo-coordinates);
- e. certifications;
- f. expected quantities (amount of sustainable biomass consignments) to be verified;
- g. issued statements for the economic operator under verification and received verification statements from suppliers.

*In case of verification of FMUs and biomass producers:*

- h. scale: large ( $\geq 500$  ha) or small ( $< 500$  ha) and, where relevant, information regarding the sourcing area;
- i. intensity of the (expected) forest management activities;
- j. information from reliable sources for the evaluation of risks of non-compliance with the SFM criteria.  
The scale and intensity of the forest management might also influence the risk of non-compliance or the required actions from a forest manager or an economic operator. Aspects of scale, intensity and risks of non-compliance (SIR) are relevant for, among other things, activities with regard to identifying, monitoring and protecting areas with high conservation value and endangered species and the scope of the existing forest management plans and systems in place. Reliable sources can be Country Risk Assessments, the Corruption Perception Index, impact studies and forest management practices in the area;
- k. the risk assessment for the sourcing area (where the supply areas of biomass producers are located);
- l. use of actual (calculated) GHG values or default values;
- m. presence of reports from previous audits.

The strategic risk assessment may be conducted based on a desk audit and shall be conducted by auditors/experts proficient in such risk assessments in the relevant context. The Conformity Assessment Body shall document the results of the SRA and the information (including sources) the SRA was based on.

## 9.3 Verification strategy development

The second step in the verification process is the design of the verification strategy. This involves auditors (1) mapping out the risk of errors in the compliance evidence and claims from the economic operator (control risks) and (2) developing a verification plan based on the control risks identified.

### 9.3.1 Maturity of the control framework/mapping control risks

Based on the results of the SRA, auditors will obtain an understanding of the nature and extent of the economic operator's control framework for compliance evidence. Where controls are in place, auditors shall develop procedures to test the effectiveness of these controls. Where information is being provided but no controls are in place, auditors shall develop procedures for substantive testing to determine the reliability and accuracy of this information.

There are three main categories for the control measures with regard to the economic operator's information:

#### 1. Internal control mechanisms

Economic operators are required to have an internal audit process in place for reviewing and challenging the consistency of compliance-related processes and controls relating to the requirements of this protocol. This process may focus on just the economic operator's internal systems and processes, or it may extend to supply chain audits. Auditors shall develop testing procedures to assess the reliance that can be placed on the output of internal controls (e.g. audit reports). Where such internal control mechanisms are mature and functioning effectively, auditors may be able to place a significant degree of reliance on the output of these controls. However, where such systems are relatively immature or are not functioning effectively, auditors will be unable to rely on the output and will have to undertake substantive testing (sampling) in order to obtain sufficient appropriate evidence.

#### 2. Documentation to support compliance evidence

Documentation to support claims of the economic operator, such as declarations from suppliers or requirements written into suppliers' contracts, is a form of control over compliance evidence that is used by many economic operators. Auditors need to understand the availability of this documentation and develop procedures to assess the reliability of such documentation and determine whether it provides sufficient appropriate evidence to support the information being provided, or whether further substantive testing is required.

#### 3. External control mechanisms

The third category of controls that economic operators may have over compliance evidence information is external assurance. External assurance may be provided in the form of certificates on sustainability or Chain of Custody standards or in the form of previous audits or other third-party audits of aspects of the requirements of this protocol. Auditors should not seek to duplicate other forms of external assurance that an economic operator has in place and should instead develop procedures that enable them to test whether the third-party assurance can be relied upon and for which of the requirements it can be relied upon (e.g. review of external audit reports to ensure there are no outstanding issues, review of available benchmarks with this protocol).

Insight into the economic operator's control framework and control risks may be obtained through a desk review, but is preferably acquired on-site or through a combination of an on-site audit and a desk review.

Due to COVID-19, on-site verification audits may have to be performed remotely. For the time being, this is only allowed until 31 December 2022 and only in the following situations:

- CABs determine there is a health risk as a result of COVID-19 involved in implementing an on-site audit; or
- auditors are prevented from conducting an on-site audit due to travel restrictions, because of COVID-19.

The verifying CAB shall retain appropriate records of the decisions taken and their justification on this topic (including evidence). This information shall be passed on to the energy producer and shall be checked by the CAB that performs the conformity year statement audit. The information shall be available upon request of the Netherlands Enterprise Agency or the Dutch supervisor NEa.

### 9.3.2 Verification plan and assurance level

The reliance that auditors place on existing controls over compliance information needs to be considered in light of the materiality of that information and the results of the SRA.

It is up to the professional assessment and discretion of an auditor to determine whether a control may be regarded as reliable. This assessment will be provided following an evaluation of the evidence of a control being effective. Based on the results of the SRA and the mapped control risks, the auditors shall set up a verification plan. It is expected that substantive procedures should be undertaken on the provided compliance evidence information and quantities and characteristics of sustainable biomass, as well as controls testing. However, the SRA and the mapped control risks guide the verification strategy.

The execution stage has to be conducted on-site at the location(s) of the economic operator, although particular aspects of a verification (e.g. verification of a greenhouse gas calculation methodology) can be based on a desk audit. Compliance with the SFM criteria may be verified based on a desk review by using appropriate tools providing at least the same level of assurance as an on-site audit. For example, the analysis of land use change after 2008 for a specific area may be conducted on-site, or by using tools that may provide an even more reliable level of assurance than an on-site audit, or through a combination of an on-site audit and a desk audit.

#### 9.3.2.1 Assurance level

The CAB must establish at least a 'reasonable assurance level' when conducting a verification audit leading to a verification statement. A 'reasonable assurance level' requires evidence gathering activities that enable a CAB to issue a positive statement regarding compliance with the requirements imposed.

The materiality limit to be applied by a CAB is set at 2%. A materiality limit is defined as 'a quantitative threshold above which inaccuracies, either separately or in combination with other inaccuracies, are viewed by the verifier as significant'.

A material deviation is defined as an inaccuracy which, either separately or in combination with other inaccuracies, exceeds the materiality limit imposed.

#### 9.3.2.2 Acceptance of material deviations during a full audit

The aspects listed under 2.6 and 2.7 in this protocol will always be audited in full by the CAB. In line with the materiality limit stated previously, material deviations found during a full audit can be accepted up to a maximum of 2% of the total quantity (in tonnes) of biomass used during the period that is being verified.

In other words, accredited sustainability certificates or verification of individual consignments are permitted to be missing or incomplete for no more than 2% of the total volume of biomass.

#### Example 1 for a full audit

- The incoming biomass amounts to a total of 100,000 tonnes.
- The full audit reveals that two consignments of 1,500 tonnes of biomass each do not meet the imposed requirements (e.g. due to a lack of proof of certification).
- The non-compliant biomass therefore comes to a total of 3,000 tonnes, equivalent to 3% of the total volume.

It must therefore be concluded that the applicable requirements have not been met.

#### *Example 2 for a full audit*

- The incoming biomass amounts to a total of 100,000 tonnes.
- The full audit reveals that two consignments of 750 tonnes do not meet the imposed requirements (e.g. due to a lack of proof of certification).
- The non-compliant biomass comes to a total of 1,500 tonnes, which is equivalent to 1.5% of the total volume.
- It must therefore be concluded that the applicable requirements have been met.

#### **9.3.2.3 Verification plan**

The verification plan shall be forwarded to the economic operator prior to the execution stage and shall contain at least:

- verification objectives and scope;
- name, role and responsibilities of the verification team members;
- language of the audit and any translator requirement if necessary;
- sites to visit;
- a verification programme describing the nature and scope of the verification activities, as well as the time and manner in which these activities are to be carried out (e.g. documents to review, staff to interview, stakeholders to consult and methods of consultation).

## **9.4 Execution**

The third phase is the execution of the verification activities. This will include:

- testing controls for compliance information and performing substantive testing of the reliability of information provided where controls have not been developed or are not functioning correctly;
- reviewing/testing available compliance evidence.
- The auditor will document evidence found during the verification process and identify any material gaps/nonconformities.

### **9.4.1 Quality and nature of the evidence**

Auditors are required to obtain sufficient appropriate compliance evidence upon which to base their conclusions. Sufficiency refers to the quantity of evidence needed to reach a conclusion. Appropriateness denotes the relevance and reliability of this evidence. Auditors must use their professional judgement and exercise professional scepticism when evaluating the quantity and quality of evidence, and thus its sufficiency and appropriateness, to support the verification findings. Evidence will be assessed based on its nature and source.

Some sources are more reliable than others:

- Audit evidence from independent external sources (e.g. an external auditor or research body) is more reliable than that generated internally by the economic operator or its suppliers.
- Evidence in the form of physical (visual) verification is more reliable than documentary or oral representations.
- Evidence in the form of documents and written representations is more reliable than oral representations.
- Evidence is more persuasive when items from different sources or of a different nature are consistent.

## 9.5 Conclusion and reporting

In the final phase of the verification process, the auditor will discuss with the economic operator any corrections/adjustments (including time frame) that may be necessary in order to issue a statement. The Conformity Assessment Body shall also appoint an independent person who will be charged with reviewing all information and results related to the verification. This person may not have been involved in the verification process. Recommendations issuing from this review must be documented, and the findings must be taken into account in the final assessment of the verification. The auditor may also conclude that consignments of biomass cannot be verified as conforming to the requirements of this protocol. In the event that compliance with all requirements is demonstrated, the Conformity Assessment Body shall issue a statement and a more detailed verification report to the management of the economic operator. The statement and the verification report shall be issued to the economic operator within two (2) weeks (ten working days) after completing the verification audit. The Conformity Assessment Body shall only send a copy of the issued statement to the Netherlands Enterprise Agency if the latter requests this. In the case of a conformity year statement, this shall be annexed to the report requested by Netherlands Enterprise Agency for the SDE subsidy.

As a minimum, the following information shall be included in the verification report:

- name and address of the economic operator;
- scope of verification;
- audit date and report date;
- names of auditors;
- result of the verification audit;
- volume of biomass verified and supply period;
- strengths and weaknesses in the economic operator's processes for collecting and collating compliance evidence information, and recommendations for improvements to these processes.

# 10 Requirements for Conformity Assessment Bodies

## 10.1 General requirements for Conformity Assessment Bodies

Conformity Assessment Bodies conducting verifications under the Regulation using this protocol are required to hold accreditation from the Dutch Accreditation Council (RVA) for ISO/IEC 17065, 'Conformity assessment – Requirements for bodies certifying products, processes and services', for the scope of this protocol.

Conformity Assessment Bodies must be accredited for one or more of the following five fields of application:

Verification statements

1. Sustainable Forest Management (extraction/cultivation of Category 1 and 2 biomass);
2. Chain of Custody for Category 1 and 2 biomass (treatment of Category 1 and 2 biomass up to the EP);
3. Chain of Custody for Category 3 and 4 biomass including Criterion 2.1 for the quality of the soil (origin and treatment of the Category 3 and 4 biomass up to the EP);
4. Chain of Custody for Category 5 biomass (treatment of Category 5 biomass up to the EP).

Conformity year statement

5. Reporting on sustainability for consignments to the EP and conversion into renewable electricity and/or heat from biomass of all categories.

Conformity Assessment Bodies conducting verification for biomass producers (Category 2) (where compliance with SFM criteria is demonstrated via the RBA) need to be accredited for both the scope under 1 (Forest Management) and the scope under 2.

## 10.2 Competence requirements for auditors

Auditors conducting verifications using this protocol must have the appropriate experience, skills and qualifications to evaluate all aspects of the criteria and indicators, with due regard for the scale and complexity of the site to be assessed and the country/region where the verification will be conducted. Key considerations for the selection of auditors include their experience, knowledge and competences in relation to risk assessment, Chain of Custody (mass balance and data processing), GHG verification, Sustainable Forest Management and environmental issues.

The Conformity Assessment Body shall guarantee that the scope is represented in the skills and qualifications of the auditors on the team. If the required qualifications turn out to be insufficient for verification, the audit team shall be expanded until it meets all the required qualifications during the verification. The following competence requirements apply to auditors conducting verifications using this protocol.

### 10.2.1 General competence requirements

A verification team shall consist of a lead auditor and, where necessary, a suitable number of assessors or technical experts for a specific scope and the regions involved.

Regardless of their specific field of work, all auditors have to meet the following general audit requirements:

- at least five years of general work experience and at least two years of work experience in a relevant field;
- at least 40 hours of audit training (e.g. according to ISO 19011);
- at least 20 days of audit completed in a relevant area within the last consecutive 2 years, as an audit team leader or auditor as part of an audit team (not as a trainee). This could include audits for RED II approved certification schemes or entry certifications for the Energy for Transport Register (*Register Energie voor Vervoer*, REV);
- demonstrable knowledge of this protocol and the underlying statutory framework.

### 10.2.2 Conducting a risk analysis

The audit team must consist of auditors who have the knowledge and competences required to conduct professional risk analyses tailored to the complexity of the processes and information being assessed and the country/area where the verification is conducted and who are able to define the focal points and intensity of the verification process on that basis.

### 10.2.3 Auditing Sustainable Forest Management

To conduct verifications in forests, the team consists of auditors with demonstrable knowledge of forestry and Sustainable Forest Management (SFM). The team must demonstrably be competent enough to assess the forest management of a location on a scale and with a complexity similar to the one where verification is to take place. For example, for the assessment of a large Forest Management Unit ( $\geq 500$  hectares), the audit team will consist of auditors who have personal experience conducting audits of large FMUs or who have worked as paid consultants regarding SFM for these types of forests, and in comparable regions.

Their knowledge of SFM shall at least include knowledge of:

- areas with high conservation values;
- involvement of stakeholders when assessing SFM;
- forest ecology (natural or planted forest);
- the management of rare or endangered species that are likely to be present in the forest area;
- key environmental impacts of forest management on the water or soil;
- impact of forest management on the climate (such as ILUC and carbon debt).

### 10.2.4 Auditing the Chain of Custody and GHG information

The audit team shall consist of members with demonstrable knowledge of:

the method and traceability of the mass balance;

greenhouse gases (e.g. ISO 14064, PAS 2050, Greenhouse Gas Protocol, voluntary regulations under the Renewable Energy Directive);

accounting and verification with regard to greenhouse gases;

technical knowledge of the processes at the site(s) of the economic operator being verified.

### 10.2.5 Auditing EPs (conformity year statement)

Auditors conducting a verification at EPs (conformity year statement) must:

- have successfully completed in-house or external training in carrying out verifications in accordance with this protocol\*;
- have gained work experience in the past two years with schemes or protocols based on ISAE3000 or similar, either as an audit team leader or as an auditor as part of an audit team (not as a trainee);
- have demonstrable technical and other knowledge of the processes at the site(s) of the energy producer;
- have demonstrable knowledge of the record-keeping requirements imposed on energy producers under the SDE scheme (such as the mass balance of consignments, energy production and energy supply). This must be demonstrated in the form of proof of relevant in-house or external training\*;
- have demonstrable knowledge of the scopes of the approved certification schemes associated with this protocol and the corresponding mass balance.

\*In-house or external training is required to acquire and maintain relevant knowledge. This training must cover various relevant verification topics as outlined above. If desired, the various topics can be combined in one and the same training course. The length of the initial training course must be at least one day. A follow-up training course must be completed each year before verifications are carried out. Alternatively, an in-house harmonisation meeting must be attended, with participation by all auditors involved in the verification of conformity year statements.

### 10.3 Internal reviewer competences

The knowledge and skills of the internal reviewer shall be comparable to those of the principal auditors. In addition, it is vital that the internal reviewer is aware of the impact of the statement in terms of the funds that are involved with the subsidy being granted and the impact on the climate and the environment.

## 11 List of definitions

<b>Supply area</b>	The whole of the individual Forest Management Units for which management plans exist and from which biomass is taken to supply the pellet mill.
<b>Non-timber forest products</b>	All forest products other than wood, including materials harvested from trees.
<b>Audit</b>	Systematic, documented process for obtaining records, statements of facts or other relevant information and assessing them objectively to determine the extent to which specified requirements are fulfilled (adapted from ISO 17000).
<b>Auditor (inspector, verifier, assessor)</b>	Person appointed by a conformity assessment body to conduct an audit.
<b>Stakeholders (interested parties)</b>	Any person, group of persons or entity who or which has established it has an interest in the activities of the FMU, or who or which is known to have this. This could be an NGO, trade union, government or representative of a certification scheme, for example.
<b>Stakeholders (affected parties)</b>	<p>Any person, group of persons or entity who or which is or probably will be affected by activities being carried out in an FMU.</p> <p>This could be local residents, the local population, indigenous people, downstream landowners, owners of land rights or user rights and organisations acting on behalf of the affected stakeholders.</p> <p>In the verification protocol, the term stakeholder is also used for the term interested/affected party.</p>
<b>Endangered species</b>	Plant and animal species that are at least classified as 'threatened' in the international Red List of the IUCN and in the IUCN's guidelines for the regional application of the Red List.
<b>Co-gasification</b>	Method where a separate gasifier is used to convert biomass into a flammable gas mixture of carbon monoxide and hydrogen. This gas mixture is then blown into the plant and burned. Co-gasification is possible in coal-fired power plants as well as in gas-fired power plants.
<b>Biodiversity</b>	The variability among living organisms from all sources, including diversity within species, between species and of ecosystems.
<b>Biogenic raw material</b>	Materials of biological or organic origin, as defined in the biomass categories.

<b>BioGrace II tool</b>	The 'BioGrace-II GHG calculation tool' can be found on <a href="http://www.BioGrace.net">www.BioGrace.net</a> . It includes an Excel calculator tool, calculation rules, a methodological background document, a list of additional standard conversion values and a user manual. When using the Excel tool, the user is required to apply the calculation rules.
<b>Biomass</b>	The biodegradable fraction of products, waste and residues from agriculture (including vegetable and animal substances), forestry, fishery and aquaculture and related processing industries, as well as biodegradable fractions of industrial and domestic waste.
<b>Biomass producer</b>	A legal entity that collects and processes biogenic raw material into solid biomass for use by an energy producer.
<b>Forest</b>	Land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of over 10%, or with trees able to reach these thresholds in situ, not including land that is predominately under urban or agricultural use.
<b>Forest management</b>	Planning and operational activities aimed at the management and use of forests and other forested areas in order to achieve predefined economic, social, cultural or environmental objectives.
<b>Forest manager</b>	The owner, concessionaire or person who is otherwise legally responsible for the management and exploitation of a Forest Management Unit.
<b>Forest Management Unit (FMU)</b>	One or more forest stands containing natural forest, planted forest or another type of forest that are managed as a single unit in accordance with a forest management plan as referred to in Criterion 10.2. FMUs produce Category 1 or 2 biomass.
<b>Certification</b>	Conformity assessment, conducted by a Conformity Assessment Body according to the applicable certification standard, and the related conformity assessment statement.
<b>Certification scheme</b>	Document describing how the conformity assessment process is to be performed.
<b>Chain of Custody (CoC)</b>	A set of rules, procedures and documents (demonstrably at company level) that are used to provide a link between the source of a material and the point in the chain where a claim is made on the characteristics of that material. This is also referred to as a Chain of Custody system.

<b>Chemicals</b>	Substances that are potentially hazardous to health and/or the environment and/or that might cause material damage.
<b>Conformity assessment body</b>	A body that issues verification and/or conformity year statements based on this verification protocol.
<b>Conformity year statement</b>	Conformity assessment statement to be issued by the Conformity Assessment Body, reporting on the findings of the assessment carried out by the it at the energy producer. The statement serves to substantiate the annual sustainability report provided by the SDE subsidy recipient to the Netherlands Enterprise Agency.
<b>Thinnings</b>	The selective or systematic harvesting of trees from a more or less uniformly aged forest with the aim of increasing the health and growth – including the stem diameter – of the remaining forest stand.
<b>Forest degradation</b>	Long-term degradation of the natural capital of a forest.
<b>Soil degradation</b>	Changes in the soil quality which reduce the capacity of the ecosystem to deliver goods and services.
<b>Sustainable biomass</b>	Biomass that complies with all applicable criteria according to the protocol.
<b>Ecological functions</b>	The functions that the forest fulfils and that are linked to ecology, including climate regulation, erosion control, soil formation, water retention, carbon storage, water purification, pollination and the development and maintenance of biological diversity.
<b>Ecological cycles</b>	Natural processes in which elements that occur in various forms are constantly interchanged between distinct compartments of the ecosystem, including nutrient, carbon and aquatic cycles.
<b>First Collection Point (FCP)</b>	The first legal owner of the material subsequent to the company where a solid biomass residual flow was created.
<b>Energy producer (EP)</b>	Economic operator receiving subsidy for running a facility where sustainable solid biomass is processed into renewable electricity and/or renewable heat.
<b>Energy plantation systems</b>	Plantation systems that are developed specifically for the production of biomass for energy generation, whereby very fast-growing tree species are planted in dense plantations and harvested in short rotation periods.

<b>Controlled biomass</b>	Biomass Category 1 or 2 (woody, from forest) that meets Criteria 1.1, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 7.1 and 7.3. For controlled biomass, compliance can be proven by the economic operator purchasing the biomass from the FMU using a risk-based approach.
<b>Group</b>	Legal entity involving several forest management enterprises that cooperate in a certain area, or companies that work together in a certain segment of the Chain of Custody system.
<b>Habitat</b>	An area or type of area where an organism or population occurs naturally.
<b>Trader/Warehouse operator</b>	Economic operator that trades and/or stores one of the biomass categories, without any processing.
<b>Renewable energy</b>	Energy from renewable non-fossil sources, such as wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, gas from sewage treatment and biogas.
<b>(Timber) harvest</b>	The volume (including bark) of all trees, living or dead, with a diameter of more than 10 cm at breast height (DBH > 10 cm), that is harvested in a forest or forested area. This includes all harvested trees.
<b>Wood plantation</b>	A forest consisting of one or more tree species of a uniform age class, exotic or native species, established through planting and/or seeding at a regular distance for the purposes of wood production.
<b>Indigenous peoples</b>	<p>People and groups of people that can be identified or characterised as follows:</p> <ul style="list-style-type: none"> <li>- self-identification as an indigenous person at the individual level and acceptance by the community as a member as the key characteristic;</li> <li>- historical continuity with pre-colonial and/or pre-settler societies;</li> <li>- strong link to a certain territory and surrounding natural resources;</li> <li>- distinct social, economic or political systems;</li> <li>- distinct language, culture and beliefs;</li> <li>- form non-dominant groups within society;</li> <li>- resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities.</li> </ul> <p>Source: FSC-STD-01-002, adapted from <i>the United Nations Permanent Forum on Indigenous Issues, 'Who are Indigenous Peoples' fact sheet, October 2007; United Nations Development Group, 'Guidelines on Indigenous Peoples' Issues', 2009, from the United Nations Declaration on the Rights of Indigenous Peoples, 13 September 2007.</i></p>

<b>Annual allowable cut</b>	The average volume of wood that is allowed to be harvested annually within a predefined area, expressed in cubic metres of wood per year. Also abbreviated to AAC.
<b>Legal user right</b>	The right granted by a government authority or legally authorised body or person to carry out forestry activities in a certain area.
<b>Industrial boiler steam from wood pellets</b>	The production of renewable steam generated by means of burning wood pellets, in a boiler with a capacity of $\geq 5$ MW.
<b>Consignment</b>	An amount of biomass used for energy production with identical physical and sustainability characteristics. It is possible for one consignment to consist of several shipments or truck loads, as long as all physical and sustainability characteristics are the same.
<b>Location</b>	A geographical unit of an economic operator or a combination of units situated in a place that is geographically separated from other units of the same economic operator.
<b>Economic operator</b>	Any company or organisation (legal entity) that handles (e.g. harvests, transports, trades, stores, processes) and holds legal ownership of the sustainable biomass.
<b>Mass balance</b>	The mass balance is the Chain of Custody system under which the sustainability characteristics remain assigned to consignments of biomass on a bookkeeping basis while the physical mixing of biomass with different sustainability characteristics is allowed.
<b>Materiality</b>	The concept of materiality recognises that some matters, either individually or in the aggregate, are important for an accurate representation of total supplied quantity of biomass. A materiality limit is a quantitative threshold above which inaccuracies, either separately or in combination with other inaccuracies, are viewed by the verifier as significant.
<b>Co-firing</b>	Method in which a part of the (ground to grid) coals for the production of electricity and/or heat is substituted by biomass. The biomass is inserted into the incinerator of the coal plant together with the coal. The proportionate share of the caloric value of the biomass can be counted as renewable energy.
<b>Environmental Impact Assessment (EIA)</b>	Systematic process to evaluate the potential impact on the environment of proposed projects, to evaluate alternative approaches and to develop and include suitable measures for prevention, mitigation, management and monitoring.

<b>Mitigation measures</b>	Actions taken in order to decrease the probability of occurrence or the negative impacts, or both, related to a risk to an acceptable level as described in this verification protocol.
<b>Nature conservation area</b>	An area under legal protection, with little to no human inhabitants or influences of human behaviour, which has been designated because of its special nature qualities or potential.
<b>Natural forest</b>	Forest that has a natural origin and is developed naturally with many of the original characteristics and key elements of native ecosystems.
<b>Natural capital</b>	The stock of all natural renewable and non-renewable resources, such as air, minerals and plant and/or animal species, which together provide the supplies required to support the prosperity and welfare of humans.
<b>Sourcing area</b>	A 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.
<b>Local population</b>	A community of any size in or nearby the FMU. This includes anyone who, because of their proximity, has a significant impact on the economy or the environment of the FMU, or whose economy, rights or living environment are significantly influenced by management activities in the FMU.
<b>Point of Origin (PO)</b>	Economic operators where Category 3, 4 or 5 biomass occurs or is generated (first economic operator in the supply chain of Category 3, 4 and 5 biomass). POs are not subject to verification, but may be audited during the FCP verification based on identified risks.
<b>Reduced Impact Logging (RIL)</b>	Harvesting techniques and methods developed to minimise undue damage to the forest, environment and the wood to be harvested, as well as encourage safe working conditions.

<b>Residual flows or residues</b>	<p>Biomass generated in the production of other (main) products or biomass that falls free in a process other than a production process. Distinction is made between primary, secondary and tertiary residual flows.</p> <p>The primary residual flow concerns parts of plants that are left behind on the field or in the forest after the harvest.</p> <p>The secondary residual flow concerns all forms of biomass that remain behind in a production process, such as wood waste and sawdust in a sawmill.</p> <p>Tertiary residual flows concern biomass products that are usually interpreted as waste materials, such as organic waste from fruits, vegetables and gardens, waste wood and other post-consumer material.</p>
<b>Residues from nature and landscape management</b>	Residues from management of urban green spaces, landscapes or nature other than forests, aiming at the preservation, recovery or strengthening of specific natural, recreational or landscape functions. This also includes biomass residual products from the regular maintenance of public green areas and parks.
<b>Risk</b>	The likelihood that something will occur that has an effect on objectives. This is measured as a combination of the probability that the event will occur and the seriousness of its consequences (risk = probability x effect).
<b>Risk Based Approach (RBA)</b>	Approach that includes measures and procedures to minimise the risk of sourcing material from unsustainable sources. The RBA contains an assessment of the risk of non-compliance for a specific sourcing area, followed by the definition of mitigation measures to qualify identified specified risks as low.
<b>Round wood</b>	Unprocessed wood from a tree trunk.
<b>Rotation period of a production forest</b>	Period between the planting and the harvesting and/or subsequent logging of a forest stand, taking the optimal current growth into account.
<b>Stakeholder</b>	See interested/affected party.
<b>Strategic Risk Assessment (SRA)</b>	A systematic and continuous process of assessing significant risks of non-compliance with the requirements of this protocol, which is part of each verification. The main objective of the SRA is to identify which compliance aspects need to be given more attention during the verification and what verification activities are likely to be required (information source for the verification strategy).

<b>Stump</b>	The part of the tree that remains attached to the roots after felling.
<b>Areas with High Conservation Value (HCV)</b>	<p>Areas that contain one or more of the following values:</p> <ol style="list-style-type: none"> <li>1. diversity of species. Concentrations of biological diversity, including indigenous species and endangered species that are of importance on a global, regional or national level;</li> <li>2. ecosystems and habitats. Rare or endangered ecosystems or habitats;</li> <li>3. ecosystem services. Basic ecosystem services in critical situations, such as protection of important water sources and control of erosion of vulnerable soils and slopes;</li> <li>4. ecosystems at landscape level. Intact forest landscapes or other major intact ecosystems, or mosaics of ecosystems at landscape level that are important at global, regional or national level. They contain viable populations of the vast majority of the naturally occurring species in natural patterns with regard to distribution and numbers;</li> <li>5. cultural values. Areas or means of living that are of global or national cultural, archaeological or historical importance and/or fundamental to traditional cultures/beliefs of local populations or indigenous peoples.</li> </ol>
<b>Peatland</b>	Areas with soil containing at least a 40 cm deep continuous layer of peaty material in the top 80 cm of the soil.
<b>Verification</b>	Compliance (conformity) assessment, conducted by a Conformity Assessment Body according to the applicable verification protocol and the underlying regulatory requirements.
<b>Verification statement</b>	Statement of conformity (compliance) of supplied biomass, issued by an accredited and recognised Conformity Assessment Body for an economic operator up to the energy producer.
<b>Processing Unit (PU)</b>	Economic operator that converts received biomass by changing its physical and/or chemical properties (e.g. pellet mills).
<b>Wetlands</b>	Land that is permanently or for a large part of the year covered or saturated with water.

# Appendix 1

## The relevance of the ILUC sustainability criterion to the co-firing and co-gasification of solid biomass (informative)

In accordance with Annex VIII of Directive (EU) 2018/2001, it is assumed that assessment of the ILUC effect is based on GHG emissions resulting from land use changes.

**Principle 5:** Biomass production shall not result in Indirect Land Use Change (ILUC).

**Criterion 5.1** Biomass sourced from new bioenergy plantation systems that were planted after 1 January 2008 must have a demonstrably low ILUC risk.

### **Explanatory notes:**

*Small Category 2 Forest Management Units (FMUs) are exempted from this requirement.*

*ILUC risks must be identified on the basis of the LIIB method and requirements (LIIB = Low Indirect Impact Biofuels) or an equivalent method. This method is reviewed every three years if there is cause to do so, and adapted if an improved method has become available.*

*In this connection, ‘new bioenergy cultivation plantation systems’ are defined as:*

*“A plantation system that is developed for the production of biomass for energy generation, whereby fast-growing tree species (e.g. willow, poplar, eucalyptus and acacia) are planted in dense plantations and harvested in short rotation periods. These systems also include: (i) short rotation coppicing, whereby the new crop grows from the stumps of previously harvested stems and/or sprouts with rotations between two and ten years, and (ii) short rotation forest plantations using tree species that are harvested within 20 years or less.”*

Pursuant to the sustainability criteria, this means that the ILUC criterion applies exclusively to biomass from new Category 1 bioenergy plantation systems with a maximum rotation period of 20 years. This period is in line with the definition used by the JRC in the study entitled ‘Solid and gaseous bioenergy pathways’ that it conducted on behalf of the European Commission (update 2015; p. 79, [see here](#)).

Greenhouse gas emissions from land conversion largely occur immediately after the land conversion. Model studies commissioned by the EC apply the rule that emissions which occur immediately after conversion are distributed over a 20-year period, in line with the 20-year distribution period laid down in the EU Renewable Energy Directive (2009/28/EC) for direct land-use changes.<sup>7</sup>

Other emissions continue across a more prolonged period, such as methane emissions caused by draining peatland, which may continue for up to 70 years after conversion. In the model studies, these emissions are taken into account for a 20-year period. This means that, even though these emissions will have been largely amortised after 20 years, emission effects will continue to occur. This is important, given the fact that fossil emissions do not decline over time.

<sup>7</sup> Directive 2009/28/EC, Annex V, Part C, point 7.

The ILUC quantification study conducted by Ecofys, IIASA and E4tech on behalf of the European Commission ('GLOBIOM') includes a model for new bioenergy plantation systems with short rotation plantation wood. The reference year for this study (2008) coincides with the reference year used in the sustainability criteria for solid biomass.

The outcomes for this scenario reveal that land conversion for new energy plantations occurs mainly on abandoned land and other natural land, without any displacement of food production. In addition, substantial negative ILUC emissions occur, particularly due to significant carbon storage in biomass (also underground). This results in a net emission effect of minus 29 grams of CO<sub>2</sub>/MJ biofuel, which is positive for the greenhouse gas balance of woody energy crops. Woody energy crops used for co-firing and co-gasification can also be expected to result in negative net emissions.

This outcome applies to woody energy crops with a rotation of 10 to a maximum of 20 years; with rotation periods in excess of that, short rotation coppicing is much less efficient in terms of carbon storage. As such, woody energy crops serve as a major carbon sink. This results mainly from the high carbon storage in woody energy crops from short rotation coppicing. (The GLOBIOM study referred to above defines short rotation coppicing and presents the model outcomes.)

The net outcome (negative ILUC emissions) is positive as regards the greenhouse gas balance, but there is an ILUC effect because part of the land used is agricultural land, resulting in displacement of food/feed production to other locations. However, this emission effect is amply compensated through carbon storage in biomass and in the soil via woody energy crops production.

The GLOBIOM study presents the outcomes for the situation within the EU, but these are comparable to the expected outcomes for biomass from outside the EU (e.g. North America), [personal comments from Daan Peters, Ecofys, and Hugo Valin, IIASA].

In the most extreme case in which new short rotation bioenergy plantation systems are located on 100% agricultural land (in North America or elsewhere), this will result in higher LUC emission values. At the same time, however, the negative emissions due to carbon storage will be realised. On balance, this will probably still lead to negative net emission values and therefore to a positive effect on the greenhouse gas balance (comparable to the scenario for perennial crops in de GLOBIOM study), but less so than in the current modelled scenario, in which by far the majority of land-use changes occurred on abandoned agricultural land or marginal land (determined by selecting plots in modelling based on lowest conversion values) [personal comments from Hugo Valin, IIASA].

The explanatory notes to the sustainability criteria state that ILUC risks must be determined on the basis of the LIIB method and requirements (LIIB = Low Indirect Impact Biofuels) or an equivalent method.

LIIB and GLOBIOM are compatible methods. While GLOBIOM involves modelling at the global level, the LIIB method can be used at the regional level. The LIIB method affords better insight into the presence or absence of ILUC (Go/No go); however, unlike GLOBIOM, it does not quantify emission levels. The LIIB method is only relevant in cases where there is an actual risk of ILUC, i.e. with positive ILUC emissions (net CO<sub>2</sub> emissions).

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