# Scheme principles for the production of biomass, biofuels, bioliquids and biomass fuels

## Version EU 08

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# 1 Introduction

In order to meet the targets, set by the European Union (EU) to reduce greenhouse gas emissions by at least 55 % by 2030 compared to 1990 levels, the aim is to promote renewable energy sources and thus the use of biomass for energy as well as liquid or gaseous renewable fuels of non-biogenic origin. With Revised Directive (EU) 2018/2001, the European Union has established sustainability requirements for biofuels, bioliquids and biomass fuels produced from biomass.

These apply to companies along the entire production, processing and supply chain. All economic operators engaged in the production and supply of biomass (for the energy sector) must have pledged to comply with an approved certification scheme. **REDcert EU is this type of certification scheme.**

# 2 Scope of application

The requirements criteria for the production of sustainable biomass, biofuels, bioliquids and biomass fuels outlined in this document apply to all farms producing agricultural biomass, first gathering points, suppliers and interfaces that supply sustainably produced biomass to the REDcert-EU scheme (i.e. to scheme participants) in accordance with Revised Directive (EU) 2018/2001.

The production of sustainable forest biomass in accordance with Article 29(6) and 29(7) of Revised Directive (EU) 2018/2001 cannot be certified under the REDcert-EU scheme. However, economic operators producing biofuels, bioliquids or biomass fuels may use forest biomass provided that it has been certified in accordance with a voluntary scheme officially recognised by the European Commission covering the requirements set out in Article 29(6) and 29(7). In addition, the voluntary scheme must ensure that, where the requirements set out in Article 29(6)(a)(vi) and (vii) are not met, the requirements set out in Article 29(3) to 29(5) are applied to the harvesting of forest biomass. One such voluntary scheme is the SURE-EU scheme, which covers the relevant requirements for the production of sustainable forest biomass.

Economic operators using forest biomass for the production of biofuels, bioliquids or biomass fuels (e.g. biomass-to-liquid via Fischer-Tropsch) must fulfil additional requirements, which are specified in Chapter 8.

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The neutral inspection of farms includes all of the requirements identified below in this document.

All relevant REDcert-EU documents as well as Revised Directive (EU) 2018/2001 apply to the scope of this scheme.

# 3 Definitions

In order to establish a common understanding of the terms and definitions used in these scheme principles, please refer to the REDcert-EU document "*Definitions in the REDcertEU scheme*".

# 4 Requirements for sustainable agricultural biomass production

The requirements criteria related to land set forth in Revised Directive (EU) 2018/2001 (Article 29 of Revised Directive (EU) 2018/2001) are designed to ensure that no new land designated for the protection of natural habitats or containing significant carbon stocks is converted for cultivating biomass for energy use.

## 4.1 Land with high biodiversity value[1]

Biofuels, bioliquids and biomass fuels may not be made from agricultural biomass obtained from land with high biodiversity value, namely land that had one of the following statuses in or after 1st January 2008, whether or not the land continues to have that status.

### 4.1.1 Primary forests, other wooded land and old growth forest

Primary forests and other wooded land are forests where native tree species grow and there is no clearly visible indication of human activity and ecological processes are not significantly disturbed; and old growth forests as defined in the country where the forest

[1] Revised Directive (EU) 2018/2001 Article 29 (3)

is located. In absence of a definition in the country the following should apply: A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes.[2]

Native tree species are tree species which have evolved in the same area, region or biotope where the forest stand is growing and are adapted to the specific ecological conditions predominant at the time of the establishment of the stand.

Native tree species do not include

- tree species introduced into areas by humans where they never would have grown without human intervention and
- tree species and/or cultivated species that would not have grown in these places or under these climate conditions without human intervention even if these places and/or climate conditions are still within the wider geographic growing range.

Clearly visible indications of human activity are

- economic use (e.g. wood harvest, forest clearance, land-use change)
- heavily fragmented by infrastructure e.g. streets, power lines and
- disturbances of the natural biodiversity (e.g. significant presence of non-native plants and animal species)

Activities performed by indigenous populations and other traditional sections of the population whose livelihoods depend on the use of forest products who have a minor impact on the forested land (e.g. collection of wood and non-wood products, use of a small number of trees and small-scale clearance as part of traditional systems of use) are not considered clearly visible indications of human activity as long as the impact on the forest is minor.

[2] https://data.consilium.europa.eu/doc/document/ST-7736-2023-INIT/en/pdf

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### 4.1.2 Forests and other wooded areas with high biological diversity

Highly biodiverse forest and other wooded land is defined as forest and other wooded land that is non-degraded and species-rich or has been identified as being highly biodiverse by the relevant competent authority.

Biological diversity is defined by the Convention on Biological Diversity as

> *"Variability among living organisms from all sources, (...); This includes diversity within species, between species and of ecosystems."*

Biological diversity is thus not limited to species of flora and fauna (animals, higher plants, mosses, lichens, fungi and microorganisms) per se. Many species are also further divided into sub-species and regional varieties and are divided into genetically different populations. Biodiversity therefore includes intra-species genetic diversity as well as the habitats of organisms and ecosystems. In simplified terms, biodiversity thus describes the levels "diversity of habitats", "diversity of species" and "genetic diversity within species".

Not degraded means areas not characterised by long-term loss of biodiversity due to for instance overuse, mechanical damage to the vegetation, soil erosion or loss of soil quality.

In the case of species-rich areas, this is:

- a habitat of significant importance to critically endangered, endangered or vulnerable species as classified by the International Union for the Conservation of Nature Red List of Threatened Species or other lists with a similar purpose for species or habitats laid down in national legislation or recognised by a competent national authority in the country of origin of the raw material
- a habitat of significant importance to endemic or restricted-range species
- a habitat of significant importance to intra-species genetic diversity
- a habitat of significant importance to globally significant concentrations of migratory species or congregatory species as defined in Regulation (EU) 1307/2014.
- a regionally or nationally significant or highly threatened or unique ecosystem

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Forest and other wooded land in the following regions of the European Union must, without exception, be considered highly diverse forests and other wooded land:

- habitats listed in Annex I to Directive 92/43/EEC
- habitats with great significance for animal and plant species of Community (EU) interest (Annexes II and IV of Directive 92/43/EEC)
- habitats of importance for wild birds listed in Annex I to Directive 2009/147/EC of the European Parliament and of the Council

Land that is considered highly biodiverse may be used for the production of raw materials whenever economic operators can provide evidence:

- that the harvesting of the raw material is necessary to preserve the highly biodiverse status or
- that management practices do not present a risk of causing biodiversity decline of the land.

This can be done through:

- check of compliance with the requirements for protected areas by a certification body
- provision of an official document from the authority responsible for the protected area
- similar confirmation by the competent authority as part of an inspection whereby the agricultural biomass producers have to be able to provide the authority with the contact people responsible and their telephone numbers
- Extract from designation of a protected area

A precautionary approach must always be taken when determining the potential biodiversity of forests and other wooded land. The auditor must assess whether the evaluation of biodiversity is necessary. If the auditor determines that an assessment of the status of forests and other wooded land is necessary, it must be performed by an external and independent expert without any conflicts of interest with the activity being audited, who may be a member of the auditing team. The evaluation and the result must then be checked as part of the audit.

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The requirements that apply to the REDcert auditors and experts are described in detail in the REDcert-EU document "Scheme principles for neutral inspections". The verification requirements for assessing the status of the land are described in detail in this document in section 4.7.2 "Verification of the status of land".

The use of biomass from forests or from wooded areas with high biological diversity rich in trees is only permitted if it can be demonstrated that the sourcing of this raw material does not have adversely affect biological diversity.

Information about the biodiversity status can still be obtained from the land-use codes specified in the farm's application for the direct support scheme, special area-related support measures, agricultural and environmental measures, participation in contractual nature conservation management or nature conservation programmes, etc. as well as in other applications submitted to or assessments from government agencies, e.g. the federal or regional nature conservation authority.

### 4.1.3 Areas designated by law or by the relevant competent authority for nature protection purposes

Areas serving purposes of nature conservation have been designated, by law or by the competent authority, for the purposes of nature protection, and land that has been recognised by the Commission of the European Communities for the protection of rare, threatened or endangered ecosystems in accordance with the second subparagraph of Article 30 (4) of Revised Directive (EU) 2018/2001.

In many countries, areas used for nature conservation purposes are differentiated by size, conservation function and conservation objectives (further information is provided in the country-specific scheme principles).

The verification requirements for assessing the status of the land are described in detail in this document in section 4.6.2 "Verification of the status of land".

Biomass may be produced on land that serves nature conservation purposes as long as evidence is provided that the production of that raw material did not interfere with the stated nature conservation purposes.

### 4.1.4 Highly biodiverse grassland

Biofuels, bioliquids and biomass fuels may not be produced from raw material obtained from land that is larger than 1 hectare and that was protected as highly biodiverse grassland in or after 1st January 2008, whether or not the land still has that status. Areas smaller than 1 hectare are exempt from this prohibition on use.

Commission Regulation (EU) No. 1307/2014, Article 1 (1) defines **grassland** as terrestrial ecosystems dominated by herbaceous or shrub vegetation for at least five years continuously. It includes meadows or pasture that is cropped for hay but excludes land cultivated for other crop production and cropland lying temporarily fallow.

It also excludes continuously forested areas as defined in Article 29 (4) (b) of Revised Directive (EU) 2018/2001, except in the case of agroforestry systems which include land-use systems where trees are managed in agricultural structures together with crop or livestock production systems. The predominance of herbaceous or shrub vegetation means that their combined ground cover is greater than the canopy cover of trees.

In this context **natural highly biodiverse grassland** means grassland that:

- would remain grassland in the absence of human intervention
- maintains the natural species composition, ecological characteristics and processes

Furthermore, **non-natural highly biodiverse grassland** means grassland that:

- would cease to be grassland in the absence of human intervention
- is not degraded, that is to say it is not characterised by long-term loss of biodiversity due to for instance overgrazing, mechanical damage to the vegetation, soil erosion or loss of soil quality
- is species-rich, that means:

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

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

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

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

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

As an exception to the basic rule, harvest in non-natural species rich grassland is permitted if convincing evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland. Economic operators must prove that harvesting of the raw material is necessary to preserve its grassland status and that current management practices do not present a risk of causing biodiversity decline of the grassland. Where economic operators are unable to provide the evidence, they shall provide evidence that they have been granted permission by the relevant competent authority, or designated agency, to harvest the raw material in order to preserve the highly biodiverse grassland status.

Auditors verifying whether land is high biodiversity grassland within the meaning of Article 29(3) (d) of Revised Directive (EU) 2018/2001 must verify whether the land is or has been highly biodiverse grassland at any moment since 1st January 2008.

Grassland in the following geographical ranges of the European Union must always be considered highly biodiverse grassland:

- habitats listed in Annex I to Directive 92/43/EEC
- habitats with great significance for animal and plant species of Community (EU) interest (Annexes II and IV of Directive 92/43/EEC)
- habitats of importance for wild birds listed in Annex I to Directive 2009/147/EC of the European Parliament and of the Council

For all land which according to the above mentioned definition was grassland in 1st January 2008 or has become grassland in the meantime it needs to be established whether the grassland would remain or cease to be grassland in the absence of human intervention for "natural highly biodiverse grassland" and "non-natural highly biodiverse grassland".

Where land remains grassland or would have remained grassland (if it was converted) in the absence of human intervention and is located in any of the geographic ranges listed in Article 2 of Commission Regulation (EU) No. 1307/2014, it must be considered as natural, highly biodiverse grassland. For land that is located outside these areas, it must be determined whether the grassland maintains or would have maintained in the absence of human intervention, the natural species composition, ecological characteristics and processes. Where that is the case, the land must be considered as being, or having been, natural, highly biodiverse grassland. **Biomass from land that was highly biodiverse**

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**grassland on 1st January 2008 or thereafter cannot be used for the production of biofuels, bioliquids and biomass fuels.**

In case the grassland would not remain grassland in the absence of human intervention and the harvesting of the raw material is necessary to preserve the grassland status, no further evidence is necessary to show compliance with Article 29 (3) (d) of Revised Directive (EU) 2018/2001 even if the grassland is located in the areas stipulated in Article 2 of Commission Regulation (EU) No. 1307/2014. Artificially created grassland with high biodiversity value must be identified as such by the competent authority.

If it is not necessary harvest raw material to preserve the grassland status or the grassland has been converted, e.g. to cropland used for the production of raw materials, it has to be determined whether the grassland is or was highly biodiverse:

- If the land is located in the areas stipulated in Article 2 of Commission Regulation (EU) No. 1307/2014, the grassland must be considered non-natural highly biodiverse grassland.
- If the land is located outside these areas it needs to be determined according to the criteria laid down in Article 1 (3) and (4) of Commission Regulation (EU) No. 1307/2014 whether the land is/was degraded and is/was species-rich. If the land is not degraded and species-rich, or it was before being converted, it has to be considered as non-natural highly biodiverse grassland. In case the grassland is or was non-natural highly biodiverse grassland, raw materials from this area cannot be regarded as compliant with the sustainability criteria.

If grassland has already been converted to cropland, it is not possible to assess the characteristics of the land itself. Verifying compliance with the criteria for highly biodiverse grassland requires some technical knowledge that goes beyond the expertise that can be expected from the auditors verifying the accuracy of the claims made by the economic operators.[3] This proof can be furnished in the form of approvals or certificates from state authorities related to changes in grassland status which considered the aspect of biodiversity when issued. This means a precautionary approach must be taken when assessing whether or not the grassland was highly biodiverse: the auditor "must judge whether an assessment of highly biodiverse grassland is necessary". And if an assessment is necessary, it must be conducted by a qualified independent expert who may additional to the auditor.

[3] European Commission, Directorate-General for Energy: Letter to the voluntary certification schemes with guidance on how to demonstrate proof of the protection of high biodiversity grassland (29.01.2015).

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Where grassland has already been converted to arable land and it is not possible to assess the characteristics of the land itself through information available from the national competent authorities or satellite imagery, the auditor must consider such land as not having been highly biodiverse grassland at the moment of conversion.

The evaluation and the result must then be checked as part of the inspection. The requirements that apply to the REDcert auditors and experts are described in detail in the REDcert-EU document "Scheme principles for neutral inspections".

Information about the grassland status can still be obtained from the land-use codes specified in the farm's application for the direct support scheme, special area-related support measures, agricultural and environmental measures, participation in contractual nature conservation management or nature conservation programmes, etc. as well as in other applications submitted to or assessments from government agencies, e.g. the federal or regional nature conservation authority.

However, the legally stipulated bans on ploughing and conversion (e.g. regulations governing the preservation of permanent grassland relevant to CAP-Conditionality (former cross-compliance); grassland habitat types in FFH areas with special protection under nature conservation laws; preservation of permanent grassland/greening; areas protected by nature conservation laws delineated in protected area ordinances, etc.) always have to be taken into account.

The verification requirements for assessing the status of the land are described in detail in this document in section 4.7.2 "Verification of the status of land".

**Note:**

The requirements for calculating greenhouse gas emissions as a result of land-use changes ($e_l$) must be considered. The requirements for calculating the greenhouse gas emissions as a result of land-use changes are described in the REDcert-EU document "Scheme principles for GHG calculation".

### 4.1.5 Heathland

Biofuels, bioliquids and biomass fuels produced from agricultural biomass shall not be made from raw material obtained from land that had the status of heathland in or after January 2008, whether or not the land continues to have that status.

Following proofs can be used as means of verification (non-exhaustive list of examples):

- official documents on the status of the land as of the cut-off date or conversion date
- certificates from contracted, independent verifiers or experts
- analyses and interpretations from remote sensing data and maps
- international, regional and local maps (e.g. land-use maps, site mappings, hydro-logical maps, vegetation maps, registry excerpts) or data
- the application for direct support schemes pursuant to Council Regulation (EC) No. 1307/2013 or for area-based measures as well as the notification that payments have been granted

In the absence of a definition in the country of origin of the biomass, heathlands shall be defined as *"Vegetation with low and closed cover, dominated by bushes, shrubs, dwarf shrubs (heather, briars, broom, gorse, laburnum etc.) and herbaceous plants, forming a climax stage of development"*[4]. Although heathlands are a heterogeneous ecosystem, in Europe they share some common attributes that allow to identify them (non-exhaustive):

- In terms of species, there is a prevalence of *Calluna vulgaris, Erica spp., Vaccinium spp., Ulex spp*.
- Soils are acidic, sandy or sandy-loam, poor in nutrients and freely-draining.
- Heathlands are present from lowlands to montane areas.

Evidence shall be provided that the land where the biomass was sourced did not have the status of heathland prior to January 2008. This can be done through the following:

- providing proof that the area where the biomass was harvested has been arable land prior to January 2008,
- providing an official document from the authority responsible for assigning the status of heathlands, for example, Federal Agency for Nature Conservation (*Bundesamt für Naturschutz*) in Germany

An overview of the areas covered by heathlands in the European Union can be found in the Natura 2000 Viewer[5]. Although information reported by this source is partial, in this site it is possible to check the geographical localization of heathlands using the codes 4030 and

[4] EU Copernicus: https://land.copernicus.eu/content/corine-land-cover-nomenclature-guidelines/html/index-clc-322.html (last accessed on 24.10.2024).

[5] Natura 2000 Viewer, available under https://natura2000.eea.europa.eu/ (last accessed on 08.01.2025)

4020 [6]. In addition, the Viewer also reports since when the site is protected, which can be useful to contrast with the cut-off date.

The auditor must assess whether the evaluation of the status of heathland is necessary. If the auditor deems the assessment of the status of heathland needed, it must be performed by an external and independent expert without any conflicts of interest with the activity being audited, who may be a member of the auditing team. The evaluation and the result must then be checked as part of the audit.

The requirements applicable to REDcert auditors and experts are described in detail in the REDcert document "Scheme principles for neutral inspections".

## 4.2 Land with high carbon stock[7]

Biofuels, bioliquids and biomass fuels may not be made from raw material obtained from land with high carbon stock, namely land that had one of the following statuses on 1st January 2008, whether or not the land continues to have that status.

### 4.2.1 Wetlands[8]

Wetlands are land that is covered with or saturated by water permanently or for a significant part of the year. These provisions do not apply if, at the time the raw material was obtained, the land had the same status as it had on 1st January 2008.

Wetlands include, in particular, swamps, marshes or bogs, as well as other bodies of water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.

- "Covered with water" means that water is visible on the surface as surface water.

[6] OLMEDA C., ŠEFFEROVÁ V., UNDERWOOD E., MILLAN L., GIL T. AND NAUMANN S. (COMPILERS). 2020. EU Action plan to maintain and restore to favourable conservation status the habitat type 4030 European dry heaths. European Commission. https://www.ecologic.eu/17537ht (last accessed on 24.10.2024)

[7] Revised Directive (EU) 2018/2001 Article 29 (4)

[8] Revised Directive (EU) 2018/2001 Article 29 (4) (a)

- The soil is "saturated by water" if it is completely inundated with water and, as a result, moisture is present at the surface but no shallow pools form.
- This state is evident throughout the entire year for areas that are permanently covered or saturated by water.
- This state is not evident throughout the entire year for areas that are covered or saturated by water for a significant part of the year. "A significant part of the year" means that the cover or saturation with water lasts for such a considerable part of the year that the dominant organisms have adapted to moisture or reduced conditions. This applies, in particular, to shallow water areas, coastal areas, swamps, bogs, fens and moors.

Retaining the wetland status also means that this state may not be actively changed or adversely affected. An auditor must verify every change in status of a wetland that has occurred within a year during the annual inspection.

The verification requirements for assessing the status of the land are described in detail in this document in section 4.6.2 "Verification of the status of land".

### 4.2.2 Forested areas[9]

a) Continuously forested areas, i.e. land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30%, or trees able to reach those thresholds in situ (Article 29 (4) (b) of Revised Directive (EU) 2018/2001). It does not include land that is predominantly under agricultural or urban land use (Communication of the European Commission 2010/C 160/02).[10] "Land under agricultural use" in this context refers to tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover.

b) Land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10% and 30% (known as "sparsely forested areas"[11]), or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of

[9] Revised Directive 2018/2001 Article 29 (4) (b) and (c)

[10] "Land under agricultural use" in this context refers to tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover (Communication of the EU Commission 2010/C 160/02).

[11] Definition of REDcert

the area before and after conversion is such that, when the methodology laid down in part C of Annex V of Revised Directive (EU) 2018/2001 is applied, the conditions laid down in paragraph 10 of this Article of Revised Directive (EU) 2018/2001 would be fulfilled (Article 29 (4) (c)).

The canopy cover is the degree to which the surface of the forest is covered by a layer of branches and foliage at the top of a forest's trees. A tree's cover corresponds to its crown width. The crown width can be estimated or measured. When determining the percentage of tree canopy cover, the vertical projection of all crown widths is used.

The status of forested areas includes all development stages and ages. It is possible for the cover canopy to fall below 10% or 30% temporarily in the event of deforestation or as a result of a natural catastrophe (e.g. avalanches). This does not, however, change the land's status as a forested area as long as reforestation or natural rejuvenation is assured within a reasonable amount of time.

The canopy cover expressed as a percentage denotes the average canopy cover of a forest area; it corresponds to an area with a homogenous canopy cover. If an area has measurably different canopy covers, it must be broken down into sub-areas each with homogenous canopy covers to determine the average canopy cover. The average canopy cover is then derived from the canopy covers of the sub-areas.

The total size of the forested area has to be considered regardless of much of the forested area lies within the farmed areas or cropland. Accordingly, the total size applies as a standard for the limits listed here for the cover degree of 10% (subparagraph b. – "sparsely forested") or 30% (subparagraph a. – continuously forested). If the total size of the forested area is larger than one hectare and if the entire area has trees higher than five metres, the area, and every part situated within an operational or cultivated area, is classified as forested area. Even if only 0.5 ha of the forested area lies within the farmed area, these 0.5 ha have to be classified as forested area as does the entire area.

Continuously forested areas may not be converted even if national regulations allow this.

Short-rotation plantations are not subject to the regulation set forth in Article 29 4 (b), (c) of Revised Directive (EU) 2018/2001 because they are classified as permanent crops and thus part of the agricultural land, unless they are defined differently by law in the country of origin.

The provisions set forth in paragraph of Revised Directive (EU) 2018/2001 (Art. 29 (4) a) to c) do not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008.

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The verification requirements for assessing the status of the land are described in detail in this document in section 4.7.2 "Verification of the status of land".

### 4.2.3 Peatland[12]

Biofuels, bioliquids and biomass fuels may not be made from raw material obtained from land that was peatland on 1st January 2008.

An exception is possible if evidence is provided that

- the land was completely drained on 1st January 2008 or
- the land has not been drained since 1st January 2008.

This means that for peatland that was partially drained on 1st January 2008 a subsequent deeper drainage, affecting soil that was not already fully drained, would constitute a breach of the criterion[13].

**Peat itself is not considered biomass.**

Peatland soil is soil that, when analysed up to a depth of 60 cm, exhibits organic material (peat substrate) in horizontal layers with a total thickness of at least 30 cm. The mass of the organic material is at least 20% organic carbon in the fine soil.

Drainage is defined as a reduction of the average annual water level due to an increased water loss or a reduced water supply as a result of human activities or installations both inside and outside of an area.

Peatland that was already used as cropland before the cut-off date may be used for biomass cultivation as long as evidence is provided that the cultivation and harvest of this raw material did not require land to be drained that was previously not drained.

The verification requirements for assessing the status of the land are described in detail in this document in section 4.6.2 "Verification of the status of land".

[12] Revised Directive (EU) 2018/2001 Article 29 (5)

[13] Communication of the EU Commission 2010/C 160/02

## 4.3 Environmentally responsible biomass production

Producers must keep their land in good agricultural and environmental condition and ensure that there is no significant decrease in or reallocation of permanent grassland. This includes preventing deterioration of habitats e.g. by constructing buildings or other facilities with excessive land use change and preventing the encroachment of unwanted vegetation on agricultural land. The REDcert-EU scheme must therefore ensure that biomass – including the provision of harvest residues and other agricultural residues – is produced in an environmentally responsible manner.

Environmentally responsible biomass production means:

- management according to the requirements of the GAP guidelines (good agricultural practice)
- maintaining the soil in a "good agricultural and environmental condition"

With the requirements of the GAP guidelines, REDcert draws on Regulation (EU) No. 2021/2116 (former 1307/2013), which regulates direct payments to farmers under the common agricultural policy (also known as "CAP-Conditionality" former "cross-compliance criteria"). Specifications for environmentally responsible biomass production can be found in Regulation (EU) No. 2021/2115 Annex III (former Regulation (EU) No. 1306/2013 Annex II).

In addition, the REDcert-EU scheme must respect the principles of good agricultural practice and standards for maintaining land in good agricultural and environmental condition. The principles of good agricultural practice must ensure the sustainable fertility and performance of soil as a natural resource.

The requirements of the REDcert-EU scheme for environmentally responsible biomass production also explicitly apply to harvest residues and other agricultural residues. If agricultural waste or residues are harvested, the biomass producer must ensure that there is no associated negative impact on soil quality and soil carbon stock.

The principles of good agricultural practice include in particular:

- the soil structure is preserved or improved
- soil compaction is prevented to the extent possible, particularly taking into account soil type, soil moisture and soil pressure caused by the equipment used for farming

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- soil erosion is prevented to the extent possible through site-adapted use, in particular by considering slope, water and wind conditions and soil cover
- natural structural elements of fields, especially hedges, trees growing in the middle of fields, field margins and field terraces, which are necessary to protect the soil, are maintained
- the biological activity of the soil is maintained or promoted by appropriate crop rotation, and
- the humus content of the soil typical of the site is preserved, in particular by a sufficient supply of organic matter or by reducing the intensity of tillage, and
- soil tillage must always be adapted to the site, taking into account the weather conditions.

### 4.3.1 Soil quality and carbon protection

If crop residues are harvested for use as biomass, biofuels, bioliquids and biomass fuels, the producer of the agricultural residues must implement measures that are suitable for maintaining soil quality and soil carbon content, while at least the requirements on the preservation of the soil structure, the protection of soils against erosion and preservation of the soil organic matter content (soil carbon) typical for the site have to be met according to Implementing Regulation (EU) 2022/996 Annex VI.

It should be verified that harvesting agricultural waste and residues does not have a negative impact on soil quality and soil carbon content. The purpose of this verification is to ensure that appropriate soil management or monitoring practices are applied on the land to promote soil carbon sequestration and soil quality on national level or on economic operator's level.

At the national level, the approach can be based on plans and activities which are required under national law. Proof that the plans developed, or activities carried out to verify the requirements for maintaining soil quality and carbon protection are already subject to national legislation and corresponding monitoring systems must be provided by the economic operator as part of the audit.

If compliance with the criteria on soil quality and carbon protection cannot be demonstrated on national level, the economic operator has to implement a management plan with measures which have an equivalent effect.

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These measures can include (exemplary and not exhaustively):

- At least a 3-crop rotation, including legumes or green manure in the cropping system, in order to promote soil fertility, soil carbon, soil biodiversity, pathogen control and limit soil erosion
- Sowing of cover/catch/intermediary crops using a locally appropriate species mixture with at least one legume
- Prevent soil compaction by avoiding tillage operation on wet soils and, thus, soil erosion
- No burning of arable stubble (except for plant health reason
- Liming of acidic soils to improve soil structure, soil biodiversity and soil carbon
- Addition of organic amendments, e.g. biochar, compost, manure and crop residues
- Agroforestry

The efficacy of the measures taken to protect soil quality and soil carbon must be verified and documented by a 'management plan', which is usually implemented as a field management documentation, where all activities related with the production of crops are documented. This management plan verifies and documents the application of the measures taken to protect soil quality and soil carbon.

Monitoring activities including appropriate instruments (exemplary, not cumulative), such as

- Risk assessment (identifying areas at high risk of soil degradation helps to prevent these risks and focus on the areas with the greatest impact),
- Analysis of soil organic matter,
- Analysis of soil organic carbon content,
- Soil erosion risk assessment,
- Nutrient input management plans,
- Regular pH analyses of the soil

The information to be used for this monitoring activities can be sourced either from individual economic operators and/or from a higher level including reliable scientific publications and national/regional authorities.

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REDcert can provide an overview about member states and third countries where the scheme is applied how the national legislation regulates the application of essential soil management practices to address the potential impact of harvesting such residues on soil quality and soil carbon together with mechanisms to monitor and enforce the implementation of those practices.

If such an overview of the type of national implementation is not available for a country, it is up to the certification body to verify the existence and efficacy of the management plan during an audit, provided they have the technical capacity to perform this role. However, REDcert must have overall oversight of national level certification as part of REDcert's internal monitoring process.

Where a group auditing approach is applied, it is the responsibility of the collection point/first gathering point to ensure that all farms supplying agricultural wastes and residues meet the specified requirement. Relevant information on how compliance is met (at national level or at level of the economic operator) is to be provided to the first gathering point/collection point via the self-declaration.

### 4.3.2 Preservation of the soil structure

Soil structure or soil texture means the physical distribution of the solid soil components. The suitability of a soil as a location for plants (production function of the soil) with high biological activity (habitat function of the soil) and as a filter for the groundwater (regulating function of the soil) depends on this physical distribution with the encapsulated pores for soil air and soil water. A site- and field-specific, careful assessment of the soil structure is necessary.

In the REDcert-EU scheme, agricultural land must be used in a way that preserves or improves the structure of the soil so that

- the physical condition of the soil is generally suitable for the intended crop by means of a sufficiently coarse and medium-pored, stable soil structure without harmful compaction and soil erosion
- the water, air and heat content as well as the filtering and buffering effect of the soil is ensured, and nutrients are accessible through good root growth

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- the potential for biological growth and degradation is increased and the self-regulating capacity of biologically active soils, which are sufficiently supplied with organic matter, is supported through microorganisms and soil animals
- possible interactions with disease and pest infestation are considered.

**This can be achieved, for example, by:**

- creating a porous, less silty soil surface through coarse-grained seedbed preparation after soil tillage or by mulch or direct sowing, strip-till method where this is possible or necessary depending on the location and crop rotation
- creating/maintaining a stable, resilient soil structure in the topsoil of farmland through gentle tillage to eliminate soil compaction or promote a crumb structure, sufficient humus supply, adaptation of soil loosening to crop rotation, conservation tillage (where possible) or biological stabilisation (intensive root growth, e.g. through catch crops and deep-root plants).

### 4.3.3 Prevention of soil compaction

Soil compaction is defined as the increase in soil density (g/cm³) or the corresponding decrease in pore content (vol.%) and has consequences for soil functions. It can be caused by anthropogenic factors (normal and shear forces, kneading), by subsidence due to its own weight or by the deposition of solid substances.

In plant production, powerful machines, equipment and transport vehicles are used in the interest of high output. The performance parameters (engine power, working widths, container volumes, etc.) of agricultural tractors, harvesting machines in particular, and transport and application technology have increased over the past decades.

The mechanical load of agricultural soils carries the risk that when driving with extreme wheel loads under conditions that are too humid, harmful compaction can be caused in the subsoil.

In the REDcert-EU scheme, cropland must be driven over in such a way that harmful compaction is prevented as far as possible, so that

- root growth, crop development and accessibility of water and nutrients are not affected
- the degradation of soil organic matter and buffering and filtering are not hindered

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- the living conditions for soil microflora and fauna are not negatively affected
- the infiltration capacity is not inhibited

**This can be achieved, for example, by:**

- technical possibilities, including reduction of the contact surface pressure (e.g. grid wheels, dual tyres, wide and terra tyres, belt drives, reduction of the internal tyre pressure, adaptation of the wheel load to the ground conditions), wheel load reduction (e.g. multi-axles, chassis that are gentle on the soil), use of machines and equipment with low wheel loads, power transmission that is gentle on the soil, prevention of soil slippage (e.g. all-wheel drive, PTO-driven instead of towed equipment on heavy soils, semi-mounted instead of mounted equipment), etc.
- possibilities for adapting working methods, including combining operations, driving outside the furrow when ploughing, not driving on unstable soil, using "crab steering" on multi-axle machines (e.g. beet or potato harvesters), providing field and intermediate storage, using full working widths to minimise trace amounts, etc.
- making the soil easier to drive over, e.g. by loosening of the soil specific to the soil type only under optimum conditions, restriction of ploughing and crumb loosening to the absolutely necessary extent depending on the crop rotation and crop type, restriction of deep loosening to the amount determined by previous assessment (e.g. soil probe, spade diagnosis), conservation tillage or direct sowing (as far as possible), biological stabilisation of a mechanically loosened soil structure (catch crop cultivation, set-aside or similar), etc.

### 4.3.4 Prevention of soil erosion

Soil erosion is defined as soil loss that is more or less influenced by erosive precipitation or wind and land use by humans. It leads to the detachment, transport and accumulation of soil particles and associated nutrients and pollutants. In addition to the negative effects of soil displacement with respect to soil functions and soil fertility on the affected area, substance discharges and inputs can have consequences for neighbouring and distant water bodies and biotopes.

Producers have to protect the soil from erosion by means of appropriate measures. "Good agricultural practices" include several measures to prevent erosion. This requires

- a basic evaluation of the farmland with regard to its potential risk of erosion, which can be derived from the length of the slope, slope gradient, type of soil, soil cover (tillage method, crop rotation) and, in particular, from empirical values (the potential soil erosion to be determined (e.g. by means of a soil erosion equation) must not, however, be equated with the actual soil erosion), as well as
- precautionary measures derived from this, which must be based on the assessment of the potential risk.

The challenge is to maintain the natural soil structure while lowering the risk of erosion caused by wind and water and to minimise the amount of time the soil is uncovered (e.g. time between harvest and next sowing). Areas with a higher potential for or risk of erosion should be identified and subject to special monitoring. Special attention should be paid to very sandy soils and land on slopes.

Minimum requirements to reduce the risk of erosion are therefore defined, depending on the degree of water or wind erosion risk on agricultural land. As guidance for risk assessment and the minimum requirements derived from it, the REDcert EU scheme refers to the recommendations of the "GAEC 5 provisions" and the provisions of CAP-Conditionality to limit soil erosion during tillage.

According to the GAEC 5 and CAP-Conditionality provisions, the following therefore applies:

- Cropland assigned to the water erosion category $CC_{Water1}$ and not included in a special erosion control measure may not be ploughed from 1st December to the end of 15th February. Ploughing after the previous crop has been harvested is permitted only if sown before 1st December. Where cultivation occurs perpendicular to the slope, these two restrictions on ploughing do not apply.
- If cropland is assigned to the water erosion category $CC_{Water2}$ and is not included in a special erosion control measure, it may not be ploughed between 1st December and 15th February. Ploughing between 16th February and the end of 30 November is allowed only right after sowing. The latest date for sowing is 30 November. Ploughing is prohibited before sowing row crops with row spacing of 45 centimetres or more.
- If cropland is assigned to the wind erosion category $CC_{Wind}$ and is not included in a special erosion control measure, it may only be ploughed if sown before 15th March. Deviating from this rule, ploughing is only permitted from 1st March onwards, except in the case of row crops with row spacing of 45 centimetres or more, when sowing takes place immediately afterwards. The ban on ploughing of row crops does not apply where, before 1st December, green strips at least 2,5 metres wide and at a

distance of not more than 100 metres are sown perpendicular to the main wind direction, or in the case of crops grown in embankments, where the embankments are positioned perpendicular to the main wind direction, or where seedlings are planted immediately after ploughing.

**Basic measures to prevent soil erosion can be, for example:**

- Erosion-reducing soil tillage and cultivation methods such as conservation tillage with mulch sowing for the purpose of large-scale erosion control (if possible, in the entire crop rotation, but at least in individual areas particularly affected by erosion (maize, sugar beets), mulch sowing if possible, without seedbed preparation in the interest of leaving a soil-protecting mulch layer and maintaining stable soil aggregates, etc.)
- Measures to prevent erosion in crop and plant farming, such as minimising periods without soil cover, including crop rotation, catch crops, under sowing and straw mulch, tilling the soil perpendicular to the slope, avoiding tracks running downhill, avoiding or eliminating infiltration-inhibiting soil compaction, establishing and preserving stable soil aggregates that reduce silting by promoting biological activity and by lime or similar measures, etc.
- Erosion-reducing design of crops and fields, such as subdividing the field by erosion control strips (e.g. trees, field margins), paths with ditches or by laying windbreaks perpendicular to the gradient or main wind direction, laying parallel strips perpendicular to the gradient and main wind direction with a change of crop types or sowing grass strips to slow down runoff, etc.

### 4.3.5 Preservation of natural structural elements in fields

In the REDcert-EU scheme, producers must ensure that typical landscape features (e.g. hedges, ponds, natural watercourses, ditches, trees in line, in groups or isolated, etc.) are preserved or restored.

The protection of natural structural elements in fields or in the agricultural area is both a component of proper agriculture and an important goal of nature conservation. The importance of natural structural elements results from their diverse ecological and cultural functions (soil and water protection, habitat function for flora and fauna, landscape diversity and character).

The soil protection function of structural elements in the agricultural area primarily extends to the reduction of soil erosion by wind and water on cropland. As a result, the structural elements required for soil protection should be preserved and, if necessary, supplemented. This includes, in particular:

- structural elements to reduce wind erosion on farmland, such as permeable hedges/windbreak plantings, sufficiently dense rows of trees, possibly also other woodland plantings or landscape features that increase the roughness of the terrain, and
- structural elements to reduce water erosion on farmland, such as farmland terraces, roadways with borders, copses, absolute grassland and other small structures, ditches across the gradient, grass strips/margins with sufficiently deep marginal furrows and sufficient width across the gradient, hedges with undergrowth and sufficiently deep furrows at the edges as well as sufficient width perpendicular to the direction of the slope, in each case within and/or above the field, permanent grassland on slopes, in hollows, in former valley paths and deep gullies to slow down runoff and erosion.

When creating new structural elements for soil protection, former paths, field boundaries etc. should be used as far as possible. Through their integration into an overall concept of agricultural land use, they not only serve the purpose of soil protection, but also fulfil other ecological functions, especially with regard to biodiversity (biotope and biotope network function) as well as the diversity and individuality of the landscape.

### 4.3.6 Preservation of soil organic matter

The humus (also: soil organic matter (also $C_{org}$) is a prerequisite for soil formation and soil fertility and represents one of the largest carbon pools. It influences almost all physical, chemical and biological soil properties as well as the C and N cycles. It is therefore a decisive environmental factor and requires special attention. This raises the question of the optimal humus content. Humus and the nutrients it contains must be seen as an inseparable unit, as they influence each other.

In contrast to the mineral plant nutrients in the soil, there are no international reference values for optimum or desirable humus content of soils. Soil organic matter (SOM) consists of a decomposable (active) and a largely inert (stable) fraction. Only the decomposable part (“nutrient humus”) is dependent on soil management and can be influenced accordingly. On the other hand, the inert fraction (“permanent humus”), which accounts

for up to two thirds of the total quantity, is largely protected from decomposition depending on the soil type.

The total content of humus alone therefore says very little about the supply of decomposable SOM. Thus, for example, arable sandy soil with 1% organically bound carbon is already very rich in humus; a loamy soil with 1.5% $C_{org}$, on the other hand, may already be completely poor in decomposable organic matter.

The soil organic matter levels must be maintained in the REDcert-EU scheme by means of locally adapted field tillage practices or restored in the event that the soil has been drained of nutrients. This means that a balanced humus content must be sought for farmland, and a positive humus content must be sought in the event of undersupply. In the REDcert-EU scheme, this requirement explicitly applies not only to the cultivation of the main crop on the farmland, but also to the use of harvest residues or other residues from agricultural land.

If organic fertiliser is used to improve the organic soil substance, the nutritional-physiological requirements of the soil must be taken into account. The generally lower tillage intensity of conservation cultivation methods can effectively contribute to maintaining and increasing the SOM with all the positive consequences for the soil structure and properties.

The supply of the soil with organic matter can be assessed with the help of a suitable "humus balance method", as no reliable reference values for optimal humus content of the soil are available yet.

The requirements for the preservation of organic matter are considered to be met if there is sufficient crop diversification at farm level. Accordingly, the REDcert-EU scheme sets minimum requirements for the number and permitted percentages of individual agricultural crops in the total arable land of a farm. Diversification of cultivation generally only refers to the arable land of a farm. Permanent crops and permanent grassland, on the other hand, are not included in the agricultural crops to be considered in the context of crop diversification.

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**The following minimum requirements apply in the REDcert-EU scheme for verifying the preservation of soil organic matter through crop diversification:**

- Farms with up to 30 hectares of arable land must grow at least 2 different crops, with the main crop accounting for a maximum of 75 percent of the farmed area.
- Farms with more than 30 hectares of arable land must grow at least 3 different crops, with the main crop accounting for a maximum of 75 percent and the two crops with the largest area together for a maximum of 95 percent. If these farms meet the requirement 'at least three different crops' but do not meet all or part of the remaining requirements, the requirements are nevertheless met in the following two cases:

  a) The first exception involves farms with more than 75% grass or other green fodder crops as the main crop. In this case, the area of the other main crop of the remaining arable land must be less than 75 %, unless this is fallow land.

The second exception involves farms with more than 75% fallow land as their main crop. Then the area of the other main crop of the remaining arable land must be below 75 %, unless this is grass or other green fodder crops.

**If this is not the case, the preservation of soil organic matter in the REDcert-EU scheme can be verified (not conclusively), for example by the following methods:**

- every year, a humus balance is calculated at farm level by 31 March of the following year. If the humus balance is not below -75 kg humus-C per ha, the condition is met. The results of the humus balance must be kept for 5 years, or
- a soil humus survey is carried out, the results of which must not be older than 7 years in the calendar year in which the farm is inspected. Humus analyses are required for each field plot of 1 ha or more. For soil testing, humus content of more than 1% for soils with a clay content of up to 13% and a humus content of 1.5% for soils with a clay content of more than 13% is the limit value to meet the requirement. The results of the humus balance must be kept for a minimum of 8 years.

If, however, only crops with neutral or positive effects on the soil humus content ("humus multipliers") are grown on a farm, the farmer is exempted from the requirement to create a humus balance or soil humus analysis and the requirement to maintain organic matter is also deemed to be fulfilled.

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Crops with positive or neutral changes in the humus content are considered to be (according to Art. 3 (1) (6) in connection with Annex IV of the Direct Payments Obligations Ordinance):

- Protein crops (in particular field beans, peas, lupins) exclusively for the production of grain
- oilseeds (in particular rapeseed, sunflower) exclusively for the production of grain
- maize for the exclusive use of cobs or grains
- perennial arable fodder (in particular clover, clover grass, lucerne, arable grass and mixtures thereof), also for seed multiplication
- green fallow, cropland set-aside

Other examples of measures to maintain or build up soil organic matter are:

- reduced or no tillage
- rewetting
- use of cover crops
- addition or organic amendments, e.g. biochar, compost, manure, crop residues

The burning of stubble fields is prohibited in the REDcert-EU scheme in accordance with the good agricultural and environmental condition for the preservation of soil organic matter. It can be approved if this is necessary for plant protection as defined in the Plant Protection Act and if there is no reason to be concerned about harmful effects on the natural balance.

### 4.3.7 Fertiliser use

"Good Agricultural Practice" includes rules for handling and applying all kind of fertilisers responsibly. Special attention must be paid to fertilisers with high nitrogen content because of their negative impact on ground and surface water quality (nitrates and ammonium) as well as on GHG emissions ($NH_4$ and $NO_2$).

Producers therefore need to implement practices that reduce nitrate pollution taking into consideration the specific farming conditions in their region and the type of crop. These include:

- respecting periods when it is prohibited to apply fertiliser
- not applying fertiliser to ground with a steep gradient
- not applying fertiliser to water-saturated, frozen or snow-covered ground
- creating a crop nutrient balance taking into account nutrient inputs in relation to crop offtake (input = every kind of fertiliser; crop offtake = everything that is harvested including straw and co-products) or documenting the fertiliser or nutrient quantities actually applied
- using care when applying fertiliser near watercourses (e.g. no fertiliser at all around or near bodies of water or reduced amounts)
- calculating and providing the necessary storage capacity and setting up slurry storage facilities
- storing mineral fertilisers in appropriate storage facilities (covered, dry and clean)
- undertaking measures to prevent water contamination caused by run-off and seepage of liquids that contain slurry or slurry effluent from stored plant material (e.g. silage) into the groundwater or surface water
- using suitable procedures for applying chemical and organic fertilisers that keep nutrient losses (nitrates) to the groundwater at an acceptable level in terms of fertiliser quantity and quality
- storing organic and mineral fertilisers in suitable areas or storage facilities (generally covered, dry and clean)

Producers must ensure that they themselves and all employees involved in applying fertilisers have the knowledge necessary (expertise).

Producers must provide continuous documentation about the type of crop, time, area, type and amount of fertiliser.

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### 4.3.8 Use of sludge

The use of "sludge" as defined in Article 2 a) of Council Directive 86/278/EEC as a fertiliser on agricultural land is prohibited unless country-specific laws and regulations explicitly allow and regulate the use of sludge consistent with the above Directive.

If sludge is allowed to be applied as fertiliser, the documentation and verification requirements are the same as for fertilisers. Proof that official authorisation has been granted to apply sludge must also be available.

### 4.3.9 Integrated pest management

Another important aspect of "Good Agricultural Practice" is integrated pest management (IPM). The goal is to ensure that products are safe and of high quality while minimising the use of pesticides and other chemical plant protection products. This goal is achieved through various preventative measures. It requires continuous monitoring and analysis of all conditions that affect plant growth.

Producers must keep proof of their IPM activities and assess their production processes in relation to integrated pest management processes.

### 4.3.10 Application and handling of plant protection products

Producers are not allowed to handle or apply plant protection products (PPP) that are not officially approved and registered for a specific target crop. This also explicitly includes local or temporary restrictions on application, e.g. in protected areas or in places where "incidents" have already occurred.

Producers may not use chemicals listed in the Stockholm Convention on Persistent Organic Pollutants. Chemicals in plant protection products included in the lists of WHO classes 1a and 1b may not be used. Chemicals listed in Annex III to the Rotterdam Convention (UNEP Prior Informed Consent (PEP) programme list) must be avoided and alternatives considered if any are available on the market. There must be a scenario in place to phase out the use of chemicals to be avoided in order to ensure that none of these substances are still in use by January 2023. In cases where there are no alternatives to one of these chemical substances, an external assessor must be consulted to carry out an evaluation. This evaluation must be performed by an independent expert with sufficient expertise. Some of the chemicals in WHO classes 1a and 1b are not covered by the scope of current EU

legislation. These requirements also apply to producers who are subject to CAP-Conditionality.

Producers must follow the manufacturer's instructions provided for application.

Producers must provide appropriate documentation about the type of crop, time, area, type and quantity of PPP application including the results of monitoring for a particular plant disease and how often it occurs.

They must also provide information about the origin of the PPPs to ensure traceability (e.g. bills, shipping documents). The producer must ensure that he himself and all employees involved in applying the PPPs have the knowledge necessary (expertise) for the respective activity. Every individual who handles PPPs must have appropriate personal safety equipment.

The equipment used to apply the PPPs must be appropriate (i.e. accurate dosage and distribution of the PPPs) and it must ensure safe working conditions. There must be a process in place for regularly inspecting and calibrating this equipment.

Leftover approved PPPs or substances that are still in the possession of the producer after the approval has expired may not be applied to plants as a means of disposing of them. Just like the packaging for PPPs, they must instead be provided to appropriate and approved disposal facilities or returned to the manufacturer, who is generally required to take them back, for disposal.

### 4.3.11 Groundwater protection

Producers may not release harmful substances into groundwater as defined in Annex I of Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration and in Annex II Part B of Commission Directive 2014/80/EU of 20 June 2014 amending Annex II to Directive 2006/118/EC of the European Parliament and of the Council on the protection of groundwater against pollution and deterioration. In agricultural production, this mainly involves substances such as products with a mineral oil basis and pesticides that explicitly contain toxic organic-chemical substances and substances with biological risk potential. This also includes the requirements listed under 4.4.9.

Producers must also prevent indirect discharge of the dangerous substances as defined in Annex I of Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration and

Annex II Part B of Commission Directive 2014/80/EU of 20 June 2014 amending Annex II to Directive 2006/118/EC of the European Parliament and of the Council on the protection of groundwater against pollution and deterioration into the groundwater. They thus have to provide adequate facilities for the storage and handling of slurry or other type of livestock manure and silage with no risk of leakage or drip loss. If national provisions apply (e.g. that these facilities have to be approved by the competent authority), they must be fulfilled.
The disposal, use or storage of these types of substances must comply with the applicable legal regulations.

### 4.3.12 Water protection and management

In addition to the requirements under 4.4.10, water resources must be properly protected and managed. In general, water must be protected against pollution and run-off to ensure that enough water is supplied to humans, livestock and crops (in this particular order) in line with their needs.

Erosion control strips must be installed along natural watercourses in which production is less intensive in terms of field tillage and the use of fertilisers and pesticides.

When water is used for irrigation, a licence from the national or local authorities is required. Farmers must prove that comply with irrigation regulations. Documentation showing the amount of water used and the time period of irrigation must be kept and be available at any time.

### 4.3.13 Social responsibility

Sustainable production of biomass, biofuels, bioliquids and biomass fuels also requires that economic operators uphold the principles of social responsibility. All countries from which biomass is sourced must adopt and meet the minimum requirements laid down and ratified by the International Labour Organisation (ILO)).

The following conventions must be followed with respect to the production of sustainable biomass:

| | |
|---|---|
| **Freedom of association and collective bargaining rights** | 87 – Convention concerning Freedom of Association and Protection of the Right to Organise, 1948 |
| | 98 – Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively, 1949 |
| **Abolition of forced and bonded labour** | 29 – Convention concerning Forced or Compulsory Labour, 1930 |
| | 105 – Convention concerning the Abolition of Forced Labour, 1957 |
| **Elimination of discrimination in employment and occupation** | 100 – Convention concerning Equal Remuneration of Men and Women Workers for Work of Equal Value, 1951 |
| | 111 – Convention concerning Discrimination in Respect of Employment and Occupation, 1958 |
| **Abolition of child labour** | 138 – Convention concerning Minimum Age for Admission to Employment, 1973 |
| | 182 – Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour, 1999 |

You can find a list of the countries that have ratified the ILO conventions at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11001:0::NO:::.

## 4.4 Cut-off date

If land was converted on or after 1st January 2008, conversion and use of this land must fulfil the requirements to produce sustainable biomass (Section 4.1 to 4.3).

## 4.5 Documentation requirements

The REDcert scheme requires all economic operators to have a document management system that can be checked as part of an audit. Proper documentation is required to comply with the legal provisions for sustainable biofuels, bioliquids and biomass fuels.

All of the documents in the document management system must be kept for a minimum of 5 years or longer where it is required by the relevant national authority.

## 4.6 Conformity with the requirements criteria of Revised Directive (EU) 2018/2001

### 4.6.1 Documentation for farms

Farms must comply with the requirements of the REDcert-EU scheme and furnish proof of compliance as part of certification – as an individual farm or as part of a group of farms. The traceability of the sustainably produced raw materials for biomass must be guaranteed on farms and verification must be possible using appropriate documents (e.g. invoices, contracts, etc.). In addition, the farm must grant access to these documents and keep the documentation for a minimum of 5 years or longer where it is required by the relevant national authority.

Farms have to provide proof to the first gathering point that the biomass supplied was sustainably produced and complies with legal requirements. As proof that the cultivated and supplied biomass meets the requirements of Revised Directive (EU) 2018/2001, the producer of the raw material for the biomass (farmer) must submit a signed self-declaration to the first gathering point.

The respective documents verifying that the individual requirements have been met must either be kept by the first gathering point or be able to be provided by the farm.

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The documentation on the location of the biomass cultivation must be available at the farm and be able to be provided at any time for the purpose of a neutral inspection – also independently of an ongoing certification process of the first gathering point.

In the declaration, the farm also confirms and accepts that, within the framework of audits by the first gathering point to whom he supplies verifiably sustainable biomass, audits can be performed by his certification scheme or the executing certification body. If the result of the audit is positive, the farm is given an inspection certificate (as part of the neutral inspection in the farm).

A valid self-declaration (copy or original) must be available at the farm. The declaration is only valid for one harvest year. For more information, see the document "Scheme principles of neutral inspections".

The currently valid template of the self-declaration is publicly accessible and can be downloaded from the REDcert website.

**Note:**

Because it is not possible to clearly assign the biomass area to the type of production that is ultimately used to produce biomass in accordance with Revised Directive (EU) 2018/2001 at the time the biomass is cultivated or harvested (**the seller or processor decides whether it is used for food or animal feed or for energy production**), the farmer should specify all areas generally suitable for subsequent production. This ensures that the biomass processed in a subsequent production step actually originates from areas that comply with the requirements of Revised Directive (EU) 2018/2001. In addition, the farmer can be sure that – if the market situation allows – he can sell all of the biomass he produces in compliance with Revised Directive (EU) 2018/2001.

### 4.6.2 Verification of the status of land

In most cases, several documents or supporting evidence is required to verify the land and ensure that the depth of the inspection is appropriate.

### 4.6.3 Location where the biomass was cultivated

The exact location of the biomass cultivation must be documented. The proof can be provided as a polygon or similar verification of area using field blocks, plots and parcels.

### 4.6.4 Polygon

The polygon must be drawn in geographic coordinates with a resolution of 20 metres for each individual point. In connection with the creation of the polygon, it is also possible to approximate the actual shape of the field with a polygon (in the most basic case with a triangle) for reasons of practicality.

The respective start and end points of these lines delineating the polygon satisfy the accuracy requirements for the individual points above. The approximation using a polygon can be created with relatively few points provided that the resulting field area does not deviate any more than 10% from the officially determined field area. The official area can be verified by providing the application for the area-based premium, register entries or other similar documents. If the geo-coordinates of the individual points are not available in table form, they can be identified on the basis of tools such as Google Earth in such a way that the individual points are positioned manually as location markers (distinct, unique points that mark the border of the property) and the results (geo-coordinates) read and documented for the location markers.

As another application option for the polygon, the entire arable area of a farm including leased areas can be taken as a basis and then captured in a single polygon as long as there are no partial areas on the total area where no biomass may be grown as defined in Revised Directive (EU) 2018/2001.

#### 4.6.4.1 Field blocks, plots, parcels

If the farmer already has other proof of the areas for field blocks, plots or parcels that are similar to the polygon and identify the exact position of the area, these can also be used to document the location of biomass cultivation.

#### 4.6.4.2 Cropland before 1st January 2008

The biomass originates from cropland that was already classified as such prior to 1st January 2008. The following documents can be used to prove that the land was already used for agricultural purposes before the cut-off date:

- official documents on the status of the land as of the cut-off date or conversion date
- certificates from contracted, independent verifiers or experts
- analyses and interpretations from remote sensing data and maps
- regional and local maps (e.g. land-use maps, site mappings, hydrological maps, vegetation maps, registry excerpts)
- remote sensing data
- international maps and data
- The application for direct support schemes pursuant to **Regulation (EU) No. 2021/2115 (former Regulation (EU) 1307/2013) or for area-based measures as well as the notification** that payments will be granted under these schemes can be used as evidence.

**Note:**

REDcert recommends documenting the status of land as of the cut-off date already in purchasing, leasing or management contracts by referencing documents suitable for verification (see above). REDcert provides agricultural biomass producers in Germany with a free, online land register (www.flaechendaten.de) to provide proof of the land status as of 1st January 2008. Land information (plot, plot number and director, plot name, main and partial area) can be stored and archived in this register securely and in compliance with data protection regulations. Simply specifying the status contractually is not sufficient as proof.

#### 4.6.4.3 Land within protected areas

Growing and harvesting raw material for biomass on land within protected areas where forestry management is permitted represents a unique case. The farmer has to document whether farming takes place within an area designated to serve nature protection purposes and that nature protection requirements have been met in the growing and harvesting of the raw material for biomass.

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The following measures can serve as proof of compliance with nature protection requirements:

- inspection of compliance with nature conservation requirements by a certification body or

  provision of an official document from the nature conservation authority responsible for the protected area or
- similar confirmation by the competent authority as part of an audit – the farmer has to be able to provide the authority with the contact people responsible and their telephone numbers

#### 4.6.4.4 Peatland

Peatland that was already used as cropland before the cut-off date may be used for biomass cultivation as long as evidence is provided that the cultivation and harvest of this raw material did not require land to be drained that was previously not drained.

#### 4.6.4.5 Conversion after 1st January 2008

The following proof and documents are accepted as evidence that the converted land is not subject to the requirements for sustainable biomass production:

- land-use plans, geographic material, official documents or comparable documents related to the reference area after 1st January 2008 but prior to conversion that make it possible to clearly identify the reference area
- certificates of commissioned, independent verifiers or experts related to the reference area after 1st January 2008 but prior to conversion
- satellite images with sufficiently high resolution that show the reference area after 1st January 2008 and make it possible to clearly identify the reference area
- or other relevant official documents

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#### 4.6.4.6 CAP-Conditionality (former cross-compliance)

Farms that receive direct payments in an EU member state in accordance with Regulation (EU) No. 2021/2115 (former Regulation (EU) 1307/2013) or support for rural development (EAFRD) in accordance with Regulation (EU) No.2021/2115 (former Regulation (EU) 1305/2013), that are subject to CAP-Conditionality requirements or are registered under EMAS, must satisfy CAP-Conditionality requirements with respect to the following criteria:

- soil structure and soil organic matter
- handling and applying fertilisers containing nitrogen
- use of sludge
- integrated pest management
- handling and applying plant protection products
- handling and storing substances hazardous to water
- water protection and management

These farms are considered to be monitored (only) with regard to these (area) criteria.

The application for direct support schemes pursuant to Regulations (EU) No.2021/2115, EU No. 2021/2116, EU No. 639/2014, EU No. 640/2014, EU No. 641/2014, EU No. 809/2014, EU No. 2015/1089, EU No. 2016/699, EU No. 2017/1272, EU No. 2018/819 or for area-based measures as well as the notification that payments will be granted under these schemes can be used as evidence.

**The above-mentioned requirements of Revised Directive (EU) 2018/2001, which cannot be proven by fulfilling CAP-Conditionality requirements, have to be additionally verified through a certification procedure.**

# 5 Requirements for biofuels, bioliquids and biomass fuels made from waste and residues

Waste and residues are defined as in Article 3 (1) of Directive 2008/98/EC of the European Parliament and of the Council and as in Article 2 of Revised Directive (EU) 2018/2001. According to this definition, waste can be understood as "any substance which the holder discards or intends or is required to discard". Raw materials are not considered waste or residues where they have been deliberately modified or contaminated or the production process was changed for the purpose of declaring those materials as wastes or residues.

This also applies to the waste and residues listed in Annex IV of Regulation (EU) 2018/2001.

Materials listed in Annex IX, Part A and Part B of the Revised Directive (EU) 2018/2001 may qualify as waste or residues. However, only the fact that materials are listed does not automatically mean that they are waste or residues. Raw materials listed in Annex IX Part A and Part B can be regarded as products, co-products, wastes or residues. The classification of the raw material shall be determined in accordance with this chapter.

A residue is a substance that is not the end product that a production process directly seeks to produce; it is not a primary aim of the production process, and the process has not been deliberately modified to produce it.

Agricultural, aquaculture, fisheries and forestry residues mean residues that are directly generated by agriculture, aquaculture, fisheries and forestry. These do not include residues from related industries or from processing. Examples for those residues are straw, husks, or shells (only if directly derived on agriculture level). Examples for forestry residues are branches, treetops, thinning wood, pre-commercial thinning.

Production residues: A substance that is derived from a process, but not the final product of the intended process, is not the primary aim of the process and the process has not deliberately modified to produce it. Examples for those processing residues are crude glycerine or bagasse.

For the purposes of complying with the requirements of Article 29 (2) of Revised Directive (EU) 2018/2001, voluntary schemes must verify that the harvesting of agricultural waste and residues does not have a negative impact on the soil quality and the soil carbon stock. Such verification must ensure that a relevant set of essential soil management or monitoring practices is applied on the land to promote soil carbon sequestration and soil quality, in accordance with Annex VI of the Implementing Regulation (EU) 2022/996. The audit will determine whether the country of origin requires the application of these practices to address the potential impact of harvesting such residues on soil quality and soil carbon or the respective management practices are reviewed at the level of the farm holdings.

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## 5.1 Guidelines for the classification of a material as waste, residue (production residue), product or by-product

Whether a raw material is to be considered as a waste or residue is determined at the point in the supply chain where the material originates.

A residue (production residue) is a result not directly intended by the production process. The most important distinguishing characteristic that determines whether a material is classified as a residue or product is therefore the question of whether the material is produced intentionally or unintentionally:

- If the material is produced intentionally, it can no longer be considered a residue (production residue), but a product.
- If, therefore, a material is "the result of a technical decision" (to intentionally produce this material), it cannot be classified as a production residue. The same applies if the production process of the primary product has been changed to give the material special technical properties.
- If the material occurs unintentionally and inevitably during the production process, this material is classified as a residue (production residue). It may, however, be suitable for economic reuse, so that it has an economic value – provided there is demand for it – and must therefore be regarded as a co-product.

**If the following three criteria (cumulative) are met, a production residue is no longer classified as waste to be discarded but as a co-product:**

- Real certainty exists about how the material will subsequently be used, this is not just a theoretical possibility. For example, certainty can be established through the existence of long-term contracts with the subsequent user of the material, from which the use of the material (and not its disposal/removal) can be assumed. If an economic operator can sell the material in question at a profit, this can also be seen as an indication that the material is being used with certainty. However, if certainty about the use of the material cannot be established, it must be declared as waste for reasons of preventive environmental protection.
- No further processing is necessary before the material is used again. A material that can theoretically be recovered but requires prior processing remains waste until the end of this process, even if it is certain how it will be subsequently used later on.

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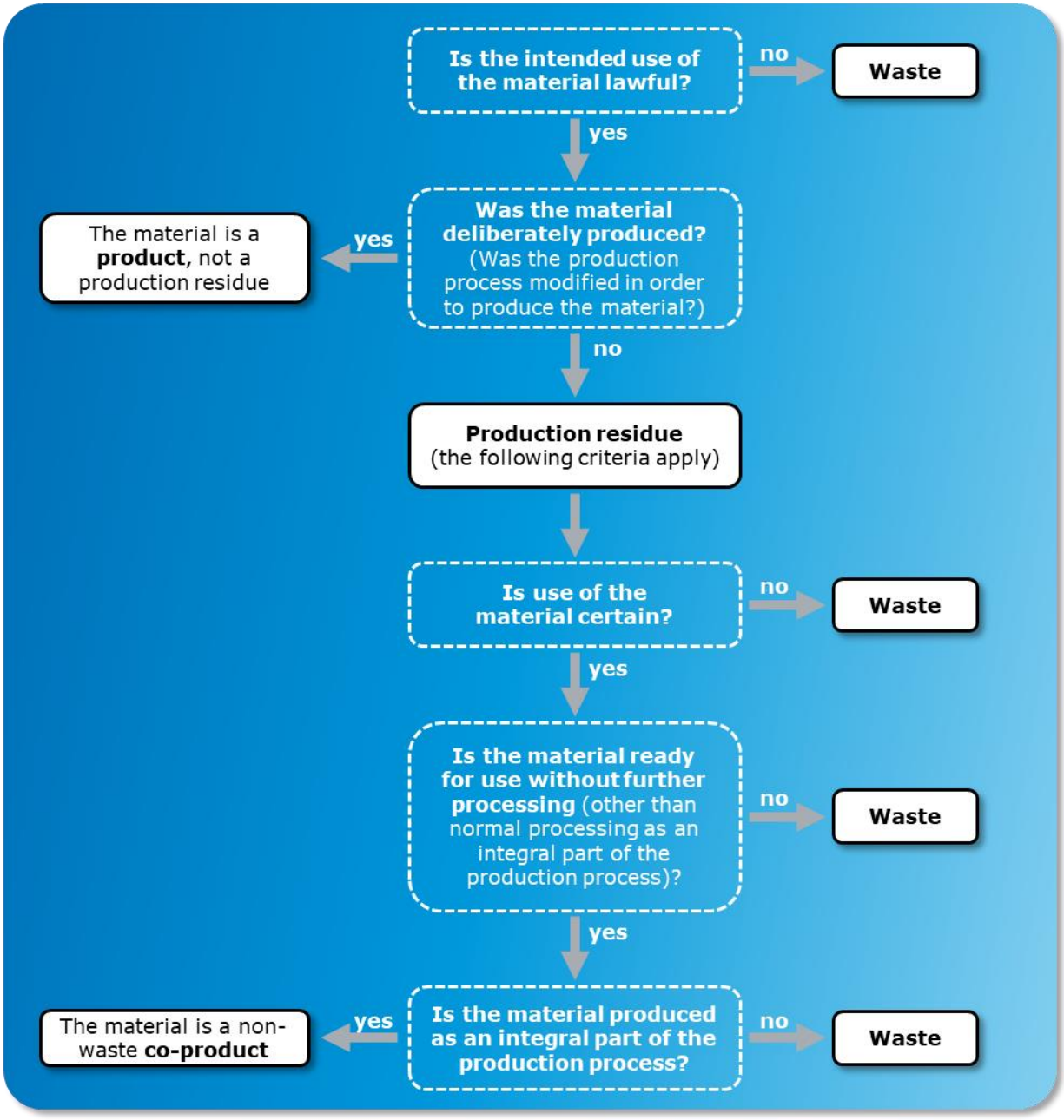
- The material and/or its preparation for recovery is an integral part of the production process and it is actually subject to this recovery.

If there is a possibility that residues (production residues) are actually unusable, do not meet the necessary technical requirements for usability or there is no demand for the material, they continue to be regarded as waste. If it turns out afterwards that the waste can nevertheless perform a useful task, it loses its status as waste if it has been made reusable as raw material.

The figure below contains a decision tree which is intended to help assess material properties with regard to classification as waste or non-waste.




In addition, the Commission identifies other characteristics used in the assessment of a material in the table below. However, these characteristics are explicitly meant only as a guideline and in no circumstances should they be used as sole decision-making criteria.

| Characteristics for classification as waste and residue | Characteristics for classification as non-waste |
|---|---|
| ➢ the material does not meet the necessary technical requirements for further use<br>➢ there is no demand for the material<br>➢ the material is stored for an indefinite period of time until it can be used<br>➢ the material must be subject to prior processing before its subsequent use<br>➢ the material is moved to another place for material processing<br>➢ the material has a purpose<br>➢ the material does not meet the standards of the relevant product regulations for its potential use<br>➢ the material is only produced in very small quantities | ➢ the material has characteristics that make it suitable for economic reuse<br>➢ there are long-term contracts between the holder and the future user of the material<br>➢ the material can be sold at a profit<br>➢ the material is required in the main activity of the manufacturer<br>➢ the material meets the standards of the relevant product regulations for its possible use<br>➢ the material is only produced in very large quantities |

## 5.2 Scope of application

The following section explains the requirements criteria and documentation and describes verification for waste and residues. The scheme requirements apply for all

economic operators in the area of waste and residues regardless of the type of crediting. These economic operators are:

- waste producers (companies that supply waste or residues to collection points, treatment or processing operations)
- collection points where waste and residues are fed into the processing chain
- conversion plants of all kinds
- suppliers of biomass (waste and residues as well as biofuels, bioliquids and biomass fuels)

Operations that accept waste or residues from the supplying companies or private households for the first time are called **collection points**. These are generally collection/treatment and processing operations. Recycling depots are also classified as collectors/first gathering points if the biomass handled there is for the purpose of resale. Operations where waste and residues are processed by purely mechanical methods (sedimentation, filtration) are considered first gathering points/collectors and not conversion facilities as long as the input material and the material after mechanical processing is classified and declared using the same waste code (in accordance with national legislation). The terms "collection point" and "first gathering point" that are used in the other REDcert documents and checklists are synonymous.

Operations that process biomass made from waste or residues with the required quality for use as fuel or liquid biomass to produce electricity are **(last) interfaces**.

Collection points, interfaces and suppliers that are active before and after the interfaces above and are also registered in the REDcert-EU scheme are required to undergo audits and must be certified.

## 5.3 Traceability and documentation requirements

Operations that supply waste or residues to collection/treatment or processing operations must confirm to the recipient that the supplied waste or residue is only biomass as defined by Revised Directive (EU) 2018/2001. To this end, the REDcert-EU form "Self-declaration for the supply of waste and residues for biofuel production" must be filled out and provided to the biomass recipient. This form can be found on the REDcert website at www.redcert.org. The form can be used for every individual consignment or all consignments arising from an agreement or contract.

If the self-declaration is used for all deliveries in an agreement or contract, the contract number or agreement number must be indicated on the self-declaration. It is also possible to incorporate the same wording in the self-declaration as text in the contract between the collector and the waste producer. The self-declaration as such or as part of the contract is valid for a maximum of one year starting from the date of issue. For more information, see the document "Scheme principles of neutral inspections".

In terms of waste and residue, the traceability of the biomass must be ensured by means of a mass balance system. The general requirements of a scheme-compliant mass balance system are described in detail in the REDcert-EU document "Scheme principles for mass balance".

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The REDcert-EU scheme requires all economic operators to have a document management system that can be checked as part of an audit. Proper documentation is required to comply with the legal provisions for sustainable biofuels, bioliquids and biomass fuels. All of the documents in the document management system must be kept for a minimum of 5 years or longer where it is required by the relevant national authority.

Operations where waste and residues are processed by purely mechanical methods must document changes in quantities (ratio of input/output). This must be checked by the auditor and verified during the audit.

## 5.4 Other phase-specific documentation requirements

The requirements for traceability and documentation described above apply for all economic operators in the area of waste and residues. Other specific REDcert scheme requirements for collection points, (last) interfaces and suppliers are described in the following.

### 5.4.1 Collection points

Collection points for waste and residues must document the following for incoming goods:

- the name of all companies that he receives waste or residues from
- a confirmation that the supplied waste or residue is only biomass as defined by the (EU) 2018/2001 **(self-declaration)**
- shipping documents for every recorded quantity of waste or residue **(e.g. delivery slip)**
- If not included in the shipping documents, for every consignment:
    - the type of waste or residue supplied waste code in accordance with Biowaste Ordinance if applicable and the respective category must be specified in accordance with Regulation (EC) No. 1069/2009 for animal by-products
    - the type of waste or residue supplied waste code in accordance with Biowaste Ordinance if applicable and the respective category must be specified in accordance with Regulation (EC) No 1069/2009 for animal co-products

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- the quantity of waste or residue
- if necessary, the GHG emissions (including upstream emissions (if appropriate)) as an absolute value in relation to the dry matter (for individual calculation or when requested by the biomass recipient) OR it should be indicated whether partial or default values should be applied to the incoming sustainable biomass

It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit (i.e. dry matter basis for raw materials and intermediate products). Furthermore, actual values for each specific element must be reported (if appropriate). If (disaggregated) default values are applied, then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

Purchasing contracts or similar documents as well as contracts with third parties commissioned to handle waste or residues shall be provided for inspection by the certification body responsible.

### 5.4.2 Collection from private households

The collection point does not need a self-declaration for waste and residual materials that originates from private households. Waste and residual materials from private households can still fall under the scope of certification according to Revised Directive (EU) 2018/2001.

In the collection of cooking fats and oils, the collection point must ensure that the cooking fats and oils from private households are only disposed of under supervision – e.g. are poured into closed containers at the collector's site.

In addition, the collection point must keep records on the quantities of cooking oil and fat gathered from private households. These records must clearly show which quantities were collected in the defined collection period.

The collection period can be defined by the collection point up to a maximum of 1 month – this must be documented accordingly. The records must be kept in such a way that the documentation clearly delineates the quantities of cooking oil and fat collected in the same period by waste producers.

### 5.4.3 Requirements for (last) interfaces

The requirements for (last) interfaces that are described in this document (see section 8 "Interface/last interface") apply. The terms "sustainable biomass" and "waste and residues" are used interchangeably in this document

Separate proofs of sustainability also have to be created for biofuels, bioliquids and biomass fuels produced from waste and residues.

### 5.4.4 Supplier requirements

Supplier requirements are described in this document in section 7 "Suppliers". The terms "sustainable biomass" and "waste and residues" are also used interchangeably here.

## 5.5 Audits and certification

Collection points, interfaces and suppliers that are active before and after the interfaces above and are also registered in the REDcert-EU scheme are required to undergo audits and must be certified.

The whole supply chain is covered starting from its origin, i.e. the economic operator where the waste or residue arises. The inspection system is described in the "Scheme principles for neutral inspections".

## 5.6 Auditing of logistic facilities and services

Logistic facilities (and the use of them) and logistic services are considered as operating sites subject to annual on-site auditing. For more information, see the document "Scheme principles of neutral inspections" (section 4.1.3 and 4.1.4).

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# 6 First gathering points

## 6.1 General requirements

First gathering points have to document that they have pledged to satisfy the requirements of the REDcert-EU scheme in the handling (e.g. storage, preparation, mixing) of biomass under the scope of Revised Directive (EU) 2018/2001.

**Verification can be provided in the form of, for example, the certificate (valid for 12 months) or the scheme contract with REDcert.**

First gathering points also have to ensure that all of the operations directly or indirectly involved in the production or supply of biomass which are not interfaces themselves have at least pledged to meet the requirements of the REDcert-EU certification scheme for the production of biomass and have actually met these requirements.

**Verification can be provided to the first gathering point in the form of the self-declarations filled out and signed by the farmers.**

## 6.2 Documentation requirements

The traceability of the biomass is ensured by a mass balance system. Records must be kept during every phase of production and supply. The system must be applied in such a way that the quantity of sustainably produced biomass is identified for every phase. Records must ensure that there is always a transparent link between the biomass and the documentation.

The REDcert-EU scheme requires all economic operators to have a document management system that can be checked as part of an audit. Proper documentation is required to comply with the legal provisions for sustainable biofuels, bioliquids and biomass fuels.

All of the documents in the document management system must be kept for a minimum of 5 years or longer where it is required by the relevant national authority.

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### 6.2.1 Incoming sustainable biomass

The first gathering point has to document the following:

- name and number of all farms – **a list is kept that is provided to the certification body responsible to perform sample inspections**
- that the requirements set forth in Article 29 of Revised Directive (EU) 2018/2001 are satisfied by the farms for every consignment of sustainable raw material supplied (verified by the annual submission of a self-declaration by the farm)
- whether the farm is subject to audits in accordance with Regulation (EU) No. 2021/2115 (former Regulation (EU) No. 1307/2013) **(conditionality)** (former cross-compliance)
- location of the cultivation area as a polygon in geographic coordinates with a resolution of 20 metres for each individual point (this is not necessary if the producer confirms that he keeps the respective verification in the self-declaration)
- country of origin of the feedstocks
- delivery documents for every quantity of sustainable biomass **(e.g. delivery slip or weight certificate)**
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- if not listed in the delivery documents, the following for every quantity of compliant biomass
    - the type of incoming sustainable biomass
    - designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
    - the date the sustainable biomass was received
    - the quantity of sustainable biomass [in tonnes]
    - GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter of sustainable biomass for each specific element (if appropriate) as an absolute value or
    - indication of the (disaggregated) default value, e.g. "(Disaggregated) default value applied" or similar or

- NUTS2 values in grams of carbon dioxide equivalent per kilogram of dry matter of sustainable biomass
- the information in the self-declaration determines whether it is necessary to perform an individual calculation of the GHG emissions or whether default values or NUTS2 values are applied

- country where the biomass was produced
- purchasing contracts between the farm and the first gathering point or other standard industry documents or documents similar to purchasing contracts
- contracts with third parties that have been contracted to handle the sustainable biomass (e.g. subcontractors, brokers, storage facility operators)
- the name of the person who verified the accuracy of the data forwarded and documented by the upstream operation or operating site upon receipt of the sustainable biomass
- the name of the person who accepted the quantity of sustainable biomass

### 6.2.2 Internal documentation

With respect to the internal processes, the first gathering point must also collect the following data and archive it in the document management system:

- the quantity of sustainable biomass that went into the process
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
- country of origin of the feedstocks
- the type of internal processes (e.g. mixture and preparation)
- conversion rates
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter for each specific element (if appropriate) if an internal calculation is performed
- mass balance according to Revised Directive standards

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- the name of the person who verified the accuracy of the internal process and the recorded and documented mass balance attributes

### 6.2.3 Outgoing sustainable biomass

Pursuant to Revised Directive (EU) 2018/2001, first gathering points are required when supplying sustainable biomass to provide the data necessary for the documentation in the down-stream operations or in the operating site of the downstream interface and to identify inconsistencies in the documentation immediately vis-à-vis the REDcert-EU certification scheme and the contracted certification body.

The following data is to be provided by the first gathering point to the next interface when sustainably produced biomass is sold:

- delivery documents for every quantity of outgoing sustainably produced biomass
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- certificate number and name of the certification scheme (in this case: REDcert)
- country of origin of the feedstocks
- type of sustainable biomass supplied
- designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
- date sustainable biomass left the premises
- quantity of sustainable biomass (in tonnes)
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter of sustainable biomass as an absolute value for each specific element (for an individual calculation)

The following documents must be available:

- name and address of the buyer for every quantity of sustainably produced biomass
- purchasing contract between first gathering point and downstream interface, operation or operating site

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- contracts with third parties that have been contracted to handle the sustainable biomass
- mass balance including batching for every new batch resulting from the internal process

It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit (i.e. dry matter basis for raw materials and intermediate products). Furthermore, actual values for each specific element must be reported (if appropriate). If (disaggregated) default values are applied then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

# 7 Suppliers

This document describes the requirements criteria as well as the documentation and verification for all suppliers who participate in the REDcert-EU scheme.

A distinction is made in the scheme between suppliers before the last interface and suppliers after the last interface.

**Suppliers before the last interface** are economic operators who supply biomass or non-final renewable fuels and recycled carbon fuels, after their initial production/collection, to the next recipient up to the last interface.

**Suppliers after the last interface** are economic operators that supply renewable fuels and RCFs after production through the last interface up to the plant operator or those required to provide proof that they satisfy the requirements to the next recipient in the chain.

## 7.1 General requirements

The REDcert-EU scheme requires all economic operators to have a document management system that can be checked as part of an audit.

In the bioenergy sector, the supplier after the last interface has to document that he has pledged to comply with the requirements of the REDcert-EU scheme. Verification may be in the form of, for example, the inspection certificate or the scheme contract with REDcert.

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## 7.2 Documentation requirements

Suppliers who participate in the REDcert-EU scheme must have a document management system which can be checked as part of an audit that is used to provide the data required for every consignment of sustainable biomass to the downstream operations. All of the documents in the document management system must be kept for a minimum of 5 years or longer where it is required by the relevant national authority.

When providing sensitive company data, proof must be provided that this data is handled confidentially by all operations along the supply chain.

### 7.2.1 Incoming sustainable biomass

Suppliers must document the following information upon receipt of biomass:

- name and address of the seller (upstream interface, farm or operating site) for every quantity of sustainably produced biomass
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- country of origin of the feedstocks
- the type of incoming sustainable biomass
- designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
- the date the sustainable biomass was received
- the quantity of sustainable biomass [in tonnes]
- certificate number and name of the certification scheme
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter in the case of raw materials or intermediate products of the sustainable biomass (including upstream emissions (if appropriate)) as an absolute value for each specific element (if appropriate) (for an individual calculation) or in grams of carbon dioxide equivalent per MJ in the case of biofuel/bioliquid
- "fuel production process" – for use of the processing disaggregated default values/default values

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It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit. For raw materials or intermediate products, the GHG emissions relate to the dry matter content. Furthermore, actual values for each specific element must be reported (if appropriate). In the case of biofuel/bioliquid, these relate to the energy content of the end product. If (disaggregated) default values are applied then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

### 7.2.2 Outgoing sustainable biomass

The following records must be kept by the suppliers both before and after the last interface upon sale of sustainably produced biomass:

- Name and address of the buyer (downstream interface, operation or operating site) for every quantity of sustainably produced biomass
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- country of origin of the feedstocks
- type of sustainable biomass supplied
- designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
- date sustainable biomass left the premises
- quantity of sustainable biomass (in tonnes)
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter in the case of raw materials or intermediate products of the sustainable biomass as an absolute value for each specific element (if appropriate) (for an individual calculation) or in grams of carbon dioxide equivalent per MJ in the case of biofuel/bioliquid
- "fuel production process" – for use of the processing disaggregated default values/default values

It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit. For raw materials or intermediate products, the GHG emissions relate to the dry matter content. Furthermore, actual values for each specific element must be reported (if appropriate).

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In the case of biofuel/bioliquid, these relate to the energy content of the end product.

If (disaggregated) default values are applied, then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

- any information about the mixture of various quantities
- reallocations to other operations/operating sites

issuing proofs of sustainability

Suppliers in the REDcert-EU scheme also have to report inconsistencies in the documentation of the upstream operations or operating sites immediately to the REDcert certification scheme and the contracted certification body. There is also a general obligation to provide data to REDcert upon request (e.g. if this is necessary to ensure continuous traceability of the sustainable biomass).

# 8 Interface/last interface

## 8.1 Documentation requirements

The REDcert-EU scheme requires all economic operators to have a document management system that can be checked as part of an audit. Proper documentation is required to comply with the legal provisions for sustainable biofuels, bioliquids and biomass fuels. All of the documents in the document management system must be kept for a minimum of 5 years or longer where it is required by the relevant national authority.

Economic operators producing biofuels, bioliquids or biomass fuels from **forest biomass** (e.g. biomass-to-liquid via Fischer-Tropsch) must issue, in addition to the documentation requirements specified below, a statement of assurance that forest biomass is not sourced from land areas where no biomass may be grown (i.e. land with high biodiversity value, wetland or peatland status in reference to the cut-off date), producing biomass fuels from forest biomass.

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### 8.1.1 Incoming sustainable biomass

The interfaces have to document and keep the following information after receipt of sustainable biomass:

- delivery documents for every quantity of sustainable biomass (e.g. delivery slip)

and if not listed in the delivery documents, the following for every quantity of biomass to comply with Revised Directive (EU) 2018/2001:

- name and address of the supplier/upstream operation
- a copy of the certificate of the upstream interface that was valid at the time the production, processing or other step was carried out in the interface for the biomass
- the purchasing contract for sustainable biomass between the operation or the operating site and the upstream operation or operating site
- contracts with third parties (e.g. with external providers or in the case of a sub-contracting agreement, etc.) that was commissioned to handle the sustainable biomass
- for each quantity of sustainable biomass that has to be uniquely and unmistakably labelled (e.g. unique identification number):

1. the type of incoming sustainable biomass
2. designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
3. country of origin of the feedstocks
4. the date the sustainable biomass was received
5. the quantity of sustainable biomass [in tonnes]
6. confirmation statement of the employee responsible for the incoming goods
7. GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter of the sustainable biomass (including upstream emissions (if appropriate)) as an absolute value for each specific element (if appropriate) (for an individual calculation)
8. "fuel production process" – for use of the processing disaggregated default values/default values

It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit. For raw materials or intermediate products, the GHG emissions relate to the dry matter content. Furthermore, actual values for each specific element must be reported (if appropriate). In the case of biofuel/liquid biofuel/biomass fuel, these relate to the energy content of the final product. If (disaggregated) default values are applied, then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

### 8.1.2 Internal company information

The following additional data is also to be documented for internal processes:

- the quantity of sustainable biomass that entered the process and has to be uniquely and unmistakably labelled (e.g. unique identification number)
- designation and code if applicable (for waste and residues) and, if relevant, the category for animal fats, etc.
- country of origin of the feedstocks
- Date fuel plant started production
- the type of internal process (e.g. pressing, refining, mixing of the sustainable biomass in tank storage, reallocation of quantities to another operating site, issuance of a proof of sustainability or partial proof of sustainability, etc.)
- in the case of raw material or intermediate products, the feedstock factor (kg/kg) for the dry matter content
- in the case of biofuel/bioliquid/biomass fuels, the feedstock factor for biofuel (MJ/MJ)
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter for each specific element (if appropriate) if an internal calculation is performed
- the allocation factor for the intermediate product for raw material or intermediate products
- in the case of biofuel/liquid biofuel, the allocation factor for biofuel/liquid biofuel/biomass fuel
- mass balance incl. the quantity resulting from the internal process

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- the confirmation statement of the employee responsible who verified the accuracy of the internal process and the recorded and documented mass balance attributes

### 8.1.3 Outgoing sustainable biofuel, bioliquid and biomass fuels

The last interface is required to document the following upon sale of sustainable biofuel, bioliquid or biomass fuel:

- name and address of the buyer for every quantity of sustainably produced bioliquid or biofuel
- every consignment with biomass must be clearly and unmistakably labelled (e.g. with a unique identification number)
- country of origin of the feedstocks
- type of supplied sustainable biofuel, bioliquid or biomass fuel
- date the sustainable biofuel, bioliquid or biomass fuel left the premises
- quantity of sustainable biofuel, bioliquid or biomass fuel (in tonnes)
- date fuel plant started production
- biofuel type, name and code (for waste and residues) and, when relevant, category for animal fats, etc.
- GHG emissions in grams of carbon dioxide equivalent per kilogram of dry matter in the case of raw materials or intermediate products of the sustainable biomass as an absolute value for each specific element (if appropriate) (for an individual calculation) or in grams of carbon dioxide equivalent per MJ in the case of biofuel/bioliquid
- "fuel production process" – for use of the processing disaggregated default values/default values

It should be noted that only actual GHG emission values are to be recorded/transmitted along the supply chain in the appropriate unit. For raw materials or intermediate products, the GHG emissions relate to the dry matter content. Furthermore, actual values for each specific element must be reported (if appropriate). In the case of biofuel/liquid biofuel/biomass fuel, these relate to the energy content of the final product. If (disaggregated) default values are applied, then it should simply be stated "(Disaggregated) default value applied" or similar (see REDcert-EU "Scheme principles for GHG calculation").

The following must also be documented for the special case of the last interface:

- the issuance of proof of sustainability (see section 8.2)

The REDcert certification scheme is to be notified immediately of any discrepancies in the documentation of the upstream operations and operating sites. There is also a general obligation to provide data to REDcert upon request (e.g. if this is necessary to ensure continuous traceability of the sustainable biomass).

When transmitting sensitive company data, proof must be provided that this data is handled confidentially.

## 8.2 Issuing proofs of sustainability

Proofs of sustainability are documents that verify that the sustainability requirements are satisfied for a quantity of biomass or biofuel at the time they are issued by the last interface.

### 8.2.1 Prerequisites for issuing proofs of sustainability

The following conditions have to be fulfilled for the last interface to be able to issue proofs of sustainability:

(1) The last interface has to have a certificate recognised under the Directive which is valid at the time the proof of sustainability is issued.

(2) The last interface must present a copy of its certificate to the directly upstream interfaces that are recognised in the same way and that were valid at the time the biomass was supplied

(3) The last interface must confirm that the requirements of the Directive have been satisfied in production

(4) The last interface must specify the GHG emissions that all of the operations directly or indirectly involved in the production or supply of the biomass which are not interfaces themselves caused in the production and delivery of the biomass in g $CO_{2eq}$/MJ as long as they have to be included in the calculation of the greenhouse gas emission saving

(5) The last interface must verify the origin of the biomass under a mass balance system.

(6) The last interface must ensure that the liquid biomass or biofuel has the legally required greenhouse gas emission saving

### 8.2.2 How proof of sustainability becomes invalid

**Proof of sustainability is invalid when:**

- they do not contain one or more of the entries required in the form,
- they contain falsified or incorrect information,
- the certificate of the issuing interface was not or was no longer valid at the time the proof of sustainability was issued (exception: if the individual required to provide proof was not aware of the inaccuracy of the information and, even exercising the usual diligence, he would not have been able to notice the inaccuracy and the certificate of the issuing interface was valid at the time the proof of sustainability was issued)
- the proof of sustainability or the certificate of the issuing interface was issued in a certification scheme that was not or was no longer recognised at the time the proof of sustainability or the certificate was issued
- the proof of the issuing interface was issued by a certification body that was not or was no longer recognised at the time that proof was issued.

## 8.3 Issuing partial proofs of sustainability

Suppliers after the last interface can issue partial proofs of sustainability for partial quantities of biofuels, bioliquids or biomass fuels for which a proof of sustainability was already issued. In addition, different quantities of biofuel, bioliquids or biomass fuels for which a proof of sustainability was already issued can be merged in partial proofs of sustainability.

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# 9 Relevant documents

| No. | Document | Published/revised |
|---|---|---|
| 1 | Scope and basic scheme requirements | The current version of the REDcert-EU scheme principles is published on the website at www.redcert.org. |
| 2 | Scheme principles for the production of biomass, bioliquids and biofuels | |
| 3 | Scheme principles for GHG calculation | |
| 4 | Scheme principles for mass balancing | |
| 5 | Scheme principles for neutral inspections | |
| 6 | System principles for integrity management | |
| 7 | Phase-specific checklists | |
| 8 | Definitions in the REDcert-EU scheme | |
| Revised Directive (EU) 2018/2001. Available via: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02018L2001-20240716 | | |

REDcert reserves the right to create and publish additional supplementary scheme principles if necessary.

The legal EU regulations and provisions for sustainable biomass as well as biofuels, bioliquids and biomass fuels including other relevant references that represent the basis of the REDcert-EU documentation are published separately on REDcert's website at www.redcert.org. When legal regulations are referenced, the most current version is always assumed.

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# 10 Revision information for Version EU 08

| Section | Change |
|---|---|
| General | Directive (EU) 2018/2001 has been changed to Revised Directive (EU) 2018/2001 |
| 2 | **Added:**<br><br>The production of sustainable forest biomass in accordance with Article 29(6) and 29(7) of Revised Directive (EU) 2018/2001 cannot be certified under the REDcert-EU scheme. However, economic operators producing biofuels, bioliquids or biomass fuels may use forest biomass provided that it has been certified in accordance with a voluntary scheme officially recognised by the European Commission covering the requirements set out in Article 29(6) and 29(7). In addition, the voluntary scheme must ensure that, where the requirements set out in Article 29(6)(a)(vi) and (vii) are not met, the requirements set out in Article 29(3) to 29(5) are applied to the harvesting of forest biomass. One such voluntary scheme is the SURE-EU scheme, which covers the relevant requirements for the production of sustainable forest biomass.<br><br>Economic operators using forest biomass for the production of biofuels, bioliquids or biomass fuels (e.g. biomass-to-liquid via Fischer-Tropsch) must fulfil additional requirements, which are specified in Chapter 8. |
| 4.1.1 | Primary forests and other wooded land<br><br>**Changed to:**<br><br>Primary forests, other wooded land and old growth forest<br><br>Primary forests and other wooded land are forests where native tree species grow and there is no clearly visible indication of human activity and ecological processes are not significantly disturbed.<br><br>**Changed to:**<br><br>Primary forests and other wooded land are forests where native tree species grow and there is no clearly visible indication of human activity and ecological processes are not significantly disturbed; and old growth |

| | |
|---|---|
| | forests as defined in the country where the forest is located. In absence of a definition in the country the following should apply: A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes. |
| 4.2.3 | 4.3 Land that was peatland in January 2008<br>**Changed to:**<br>4.2.3 Peatland |
| 4.1.5 | New chapter describing heathland and procedures for verification |
| 5 | **Added:**<br>Materials listed in Annex IX, Part A and Part B of the Revised Directive (EU) 2018 / 2001 may qualify as waste or residues. However, only the fact that materials are listed does not automatically mean that they are waste or residues. Raw materials listed in Annex IX Part A and Part B can be regarded as products, co-products, waste or residues. The classification of the raw material shall be determined in accordance with this chapter.<br>**Added:**<br>Examples for those residues are straw, husks, or shells (only if directly derived on agriculture level). Examples for forestry residues are branches, treetops, pre-commercial thinning wood.<br>Production residues: A substance that is derived from a process, but not the final product of the intended process, is not the primary aim of the process and the process has not deliberately modified to produce it. Examples for those processing residues are crude glycerine or bagasse. |
| 8 | **Added:** |

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| | Economic operators producing biofuels, bioliquids or biomass fuels from **forest biomass** (e.g. biomass-to-liquid via Fischer-Tropsch) must issue, in addition to the documentation requirements specified below, a statement of assurance that forest biomass is not sourced from land areas where no biomass may be grown (i.e. land with high biodiversity value, wetland or peatland status in reference to the cut-off date), producing biomass fuels from forest biomass. |

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