



REDcert

System principles for the process step
Agriculture for implementation
of the Biomass Sustainability Ordinances
(BioSt-NachV and Biokraft-NachV)

Version 07

Table of contents

Introduction	4
1 Scope of application	5
2 Requirements for sustainable biomass production	6
2.1 Reference date	7
2.2 Areas with high biodiversity value (Article 4)	7
2.2.1 Forest land.....	7
2.2.2 Areas designated by law for nature protection purposes	8
2.2.3 Highly biodiverse grassland	9
2.3 Areas with high above-ground or underground carbon stock (Article 5)	11
2.3.1 Wetlands.....	11
2.3.2 Continuously forested areas	12
2.4 Areas that were peatland on or after the reference date (Article 6)	14
2.5 Sustainable agricultural practice (Article 7)	14
2.5.1 Protection of natural groundwater resources.....	15
2.5.2 Use of fertilisers.....	15
2.5.3 Use of sludge	16
2.5.4 Application and handling of plant protection products.....	16
2.5.5 Integrated pest management	17
2.5.6 Prevention of soil erosion.....	18
2.5.7 Preservation of organic matter and structure of soils	18
2.5.8 Water protection and management	18
2.5.9 Social responsibility.....	19
2.6 Greenhouse gas emission saving (GHG calculation, Article 8)	19
3 Documentation and verification	21
3.1 General documentation in the REDcert system	21
3.2 Compliance with requirement criteria pursuant to the Biomass Sustainability Ordinances	21
3.2.1 Self-declaration of the farm.....	21
3.2.2 Land status	23
3.2.3 Cross compliance.....	24

3.2.4	Documentation about the location of biomass cultivation	24
3.3	GHG calculation.....	26

Introduction

To protect the climate and reduce current CO₂ emissions, the sustainable use of biomass for energy is to be encouraged. The 2009/28/EC Directive defines sustainability requirements for the use of biomass for energy. With the Biomass Electricity Sustainability Ordinance (BioSt-NachV) and the Biofuels Sustainability Ordinance (Biokraft-NachV), the framework of the Renewable Energy Sources directive stipulated by the European Union for sustainability criteria for biofuels and liquid fuels is transposed into national law (Germany). The specifications of the Sustainability Ordinances apply for companies along the entire production, processing and supply chain all the way to the plant operator and those responsible for providing proof that they satisfy the requirements pursuant to the Energy Taxation Act and the Federal Immissions Control Act (BImSchG). All operations engaged in the production and supply of biomass in compliance with these regulations must have pledged to comply with an approved certification scheme. **REDcert is this type of certification scheme.**

1 Scope of application

The requirements for the production of sustainable biomass listed in this document apply to all farmers who supply sustainably produced biomass in the REDcert system (to system participants).

All relevant REDcert documents as well as European and national laws apply to the scope of application of this scheme.

2 Requirements for sustainable biomass production

The area-based requirements set forth in the Sustainability Ordinances are designed to ensure that no new land important for the protection of natural habitats or containing significant carbon stocks is converted for farming biomass for energy use.

The Sustainability Ordinances identify the following restrictions on use:

- complete ban on use (primary forests and natural, highly biodiverse grassland)
- permission for use as long as the status of the land is preserved (areas serving purposes of nature conservation, non-natural grassland with high biodiversity, forested areas, wetlands and peatland)
- permission to change status through use taking certain requirements into account (forested areas with a canopy cover of 10-30%)

As long as all areas were farmed as cropland as defined in Articles 4 to 6 of the Sustainability Ordinances prior to the reference date of 1 January 2008 and since then have been used as cropland, their status is protected and their cultivation considered compliant with the ordinances. This also explicitly includes areas not farmed as cropland as part of a rotation system (fallow land) or are temporary grassland, or that have been taken out of use as cropland in accordance with EU regulations for direct support schemes as part of the Common Agricultural Policy. How the land is used as of the reference date must be clearly documented by the farmer.

Farmers in an EU member state

- who receive direct payments pursuant to Council Regulation (EC) No. 73/2009 or aid for area-based measures pursuant to Article 36 (a)(i to v) and (b)(i, iv, v) of Council Regulation (EC) No. 1698/2005 from 20 September 2005 to support rural development through the European Agricultural Fund for Rural Development (EAFRD) (OJ L 277 from 21.10.2005, p. 1) which requires cross compliance or

- or are registered as an organisation pursuant to Regulation (EC) No. 761/2001 of the European Parliament and of the Council from 19 March 2001 allowing voluntary participation by organisations in a community eco-management and audit scheme (EMAS) (OJ L 114 from 24.4.2001, p. 1), in the relevant applicable version

will only be inspected for compliance with the requirement in Art. 17 of Directive 2009/28/EC if the farmer can furnish evidence that an application has been submitted for direct payments or that a valid EMAS registration exists.

Farms not receiving direct payments also have to be inspected for compliance with the content of Article 7.

2.1 Reference date

The reference date determines how the requirements for the protection of natural habitats pursuant to Articles 4-6 are assessed. **The reference date is 01.01.2008.** If areas were converted after 01.01.2008, conversion and use may not conflict with the requirements set forth in Articles 4-6.

An **exception** exists for biofuels produced from waste or residues unless the waste/residual materials stem from agriculture, forestry, and fishing or aquacultures.

2.2 Areas with high biodiversity value (Article 4)

Areas with high biodiversity value is all land that has the status of forest land, areas serving purposes of nature conservation or highly biodiverse grassland on or after the reference date regardless of whether these areas still have this same status.

2.2.1 Forest land

Forest land includes primary forests and other natural areas where native tree species grow and there is no clearly visible indication of human activity and ecological processes are not significantly disturbed. **Other types of woodland are not regulated by Article 4.**

Native tree species are tree species that grow within their natural growing range in places and under climate conditions to which they are adjusted through their natural evolution without human intervention.

Native tree species do not include

Created: 01.12.2013

Approved: 09.01.2014

Page 7 of 26

Valid from: 15.02.2014

Version: 07

- tree species introduced into areas by humans where they never would have grown without human intervention
- 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
- 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.

2.2.2 Areas designated by law 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 or species pursuant to Article 4 para. 4 (2).

The categories for protected areas valid in Germany are based on the Federal Nature Conservation Act (Bundesnaturschutzgesetz - BNatSchG) and the nature conservation laws at state level.

These include the following areas protected both at federal and state level by law: the biotopes and Natura 2000 areas, nature conservation areas, national parks, national natural monuments, biosphere reserves, Landschaftsschutzgebiete, natural parks, natural monuments and protected parts of landscapes as defined by the Federal Nature Conservation Act from 29 July 2009 (BGBl. I, p. 2542) that went into force 1 March 2010. Similar laws are to be taken into consideration in other countries. Country-specific system principles (regional settings) are provided by REDcert.

According to Article 4 (4)(3), biomass may be farmed on areas that serve the purpose of nature protection as long as evidence is provided that the production of that raw material does not conflict with the stated nature conservation objectives. The conservation objective and the requirements necessary to achieve this objective can be found in the respective Declaration of Protected Area. As the Natura 2000 sites are not protected, the relevant preservation objectives apply.

2.2.3 Highly biodiverse grassland

Highly biodiverse grassland is grassland that, in the absence of human intervention:

- would remain grassland and which maintains the natural species composition, ecological characteristics and processes (**natural grassland**) or
- would cease to be grassland and which is species-rich and not degraded (**non-natural grassland**) unless evidence is provided that harvesting the raw material is necessary to preserve its grassland status

Natural grassland develops under specific climate conditions and due to other factors (e.g. natural grazing, natural fire) which prevent successive transformation to a thickly forested area. It is distinct in that it would remain grassland without human intervention.

Natural, highly biodiverse grassland is distinct because its ecological characteristics and processes are intact and a natural species composition is present. A significant presence of invasive species is an indication that natural grassland cannot serve as a habitat for its natural species composition.

The ecological characteristics and processes can, for example, be disrupted by a significant change brought about by human intervention. As long as the impact does not lead to a significant change in the natural species composition or a significant disturbance in the ecological characteristics and processes, the land is still considered natural grassland. Extensive grazing or anthropogenic fires in savannas, for example, do not represent a significant disturbance.

Non-natural grassland is defined primarily as land used for agriculture on which green fodder plants are grown as permanent crops. This land can include permanent grassland such as meadows, cut fields and pastures.

As long as no criteria and geographic areas with highly biodiverse grassland are defined by the EU Commission pursuant to Article 17 (3)(c) of Directive 2009/28/EC, any natural grassland existing as of the reference date may **not** be used to cultivate raw material for biomass used in the production of liquid biomass and biofuels.

Exceptions to the cultivation ban:

- As long as non-natural grassland is not permanent grassland but part of an agricultural crop rotation systems (fallow land, rotations between grazing and cropland, etc.), it is to be treated as cropland on which raw material for biomass may be grown and used as set forth in the Sustainability Ordinances.
- For non-natural grassland that was converted between the reference date and enactment of the administrative guideline on cropland, it is no longer possible to clearly determine whether this grassland exhibits high biodiversity. It thus remains unaffected by the exception above if no concrete indications exist that this was highly biodiverse grassland on or after the reference date.
- Areas taken out of use in accordance with EU regulations for direct support schemes for farmers under the Common Agricultural Policy or other support schemes are still considered agricultural land. The right to be able to use this land the same way and to the same extent after the recovery period has ended remains unaffected by other legislative rulings. This also applies if the composition of the land has changed due to being taken out of use (see Article 1 para. 3) of the law on equal status for decommissioned land and land used for agricultural purposes from 10 July 1995). In this respect, grasslands that emerge on cropland that was previously taken out of use are suitable for growing raw material for compliant biomass.

2.3 Areas with high above-ground or underground carbon stock (Article 5)

All land with high above-ground or underground carbon stock includes areas that had the status of wetlands or continuously forested areas on or after the reference date of 01.01.2008 which no longer had this status upon cultivation and harvesting of the raw material for biomass.

2.3.1 Wetlands

A wetland is land that is covered with or saturated by water permanently or for a significant part of the year.

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
- 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.

2.3.2 Continuously forested areas

Continuously forested areas are areas spanning more than 1 ha with trees higher than 5 m and

- with a canopy cover of more than 30%, or with trees able to reach these thresholds in situ, or
- with a canopy cover of 10% to 30%, or with trees able to reach these thresholds in situ, unless evidence is provided that the carbon stock of the area before and after the conversion is such that the bioliquid exhibits the greenhouse gas emission saving required by the Sustainability Ordinances even when calculated with actually measured values, or
- that have been classified as forest by the respective national legislation

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 continuously forested areas has to be considered regardless of much of the continually forested area lies within the farmed areas or arable land. Accordingly, the total size is valid as the standard for the threshold value of 10% or 30% stated here. If the total size of the forested area is larger than 1 ha and if the entire area has trees higher than 5 m, the area, and every part situated within an operational or cultivated area, is classified as continuously forested area. Even if only 0.5 ha of the continuously forested area lies within the farmed area, these 0.5 ha have to be classified as continuously forested area as does the entire area.

In **exceptional cases**, raw materials for biomass from areas converted after 01.01.2008 may be used. This only applies to areas that had a canopy cover of 10% to 30%, or with trees able to reach these thresholds in cases where the area before and after the conversion is such that the biofuel produced from the biomass guarantees that greenhouse gas emission saving will be met.

Forested areas may be cultivated as long as the land's status is preserved.

Short-rotation plantations are not subject to the regulation set forth in Article 5 para. 4 because they are classified as permanent crops and thus part of the agricultural land.

In Germany, the Federal Forest Law and the forest laws at state level determine the status of land as forest. Official approval is required to convert (clear) forests for other types of uses. Timber taken from properly and sustainably managed forests in Germany is generally to be considered suitable as defined in the Sustainability Ordinance.

2.4 Areas that were peatland on or after the reference date (Article 6)

This requirement does not apply if the cultivation and harvest of raw material for biomass does not involve drainage of soil.

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 used for farming prior to the reference date may be used to grow raw material for biomass.

2.5 Sustainable agricultural practice (Article 7)

Sustainable farming as defined by the Sustainability Ordinances requires

- farms to comply with the principles and guidelines of "Good Agricultural Practice"
- farms to maintain the soil in a "good agricultural and environmental condition"

The Sustainability Ordinances refer here to Council Regulation (EC) 73/2009 with "common rules for direct support schemes for farmers under the common agricultural policy ..." (known as cross compliance criteria"). The requirements stipulated in Annex II (a) "Environment" and in Annex III are mandatory for sustainable biomass production.

2.5.1 Protection of natural groundwater resources

Farmers may not discharge any dangerous substances contained in List I of Directive 80/68/EEC into the groundwater or accept the risk of contamination. In agricultural production. This mainly concerns:

- substances with a mineral oil basis (fuels and lubricants)
- materials such as pesticides that explicitly contain organic-chemical substances labelled "toxic" or "harmful to the environment"

Farmers shall also be careful to prevent any indirect discharge of substances specified in List II of the Directive above. 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 other special national or regional laws regulating handling of these substances are in place, they must be satisfied.

Every application or storage of these substances for the purposes of targeted use (e.g. fertiliser) must be carried out in compliance with the valid legal regulations.

2.5.2 Use of fertilisers

"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 (laughing gas).

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

- respect periods when applying fertiliser is inappropriate (outside of the growth period)
- not apply fertiliser to water-saturated, flooded, frozen or snow-covered ground
- manage nutrient inputs in relation to crop offtake
- respect the conditions for applying fertiliser near watercourses (e.g. no fertiliser at all around or near bodies of water or a smaller amount)
- provide adequate storage for commercial fertilisers (manure, slurry)
- store inorganic fertiliser on a farm in appropriate storage facilities which are covered, dry and clean
- be careful to prevent water pollution caused by run-off from slurry storage facilities or seepage of silage from manure storage facilities (for more information, see 2.5.1)

- implement procedures for applying mineral and commercial fertilisers to the soil that will keep nutrient losses (nitrates) to the groundwater at an acceptable level in terms of quantity and quality of the fertiliser
- ensure that all fertilisers on the farm are stored in storage facilities appropriate for the respective fertiliser¹
- ensure that he (the farmer) himself and all employees involved in applying and handling PPPs are properly trained ahead of time

The farmer must continuously provide the appropriate documentation about the type of crop, time, area, type and amount of fertiliser.

2.5.3 Use of sludge

The use of 'sludge' as defined in Directive 86/278/EEC Article 2 a) as a fertiliser on agricultural land is prohibited unless country-specific laws and regulations regulate the use of sludge in accordance with this Directive.

If sludge is allowed to be applied as fertiliser, the documentation requirements are the same as for fertilisers including proof that official permission was granted.

2.5.4 Application and handling of plant protection products

Farmers are not allowed to handle or apply plant protection products (PPP) that are not officially approved for a specific target crop. This also explicitly applies to any local or temporary restrictions on the use of approved PPPs, e.g. in protected areas or in places where "incidents" have already occurred.

Farmers must follow the manufacturer instructions provided on how to apply PPPs. They have to 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 also have to provide information about the origin of the PPPs to ensure traceability (e.g. bills, shipping documents).

The farmer must ensure that he himself and all employees involved in applying and handling PPPs are properly trained ahead of time. Everyone who handles PPPs must be provided with the proper protective equipment to minimise the risks of the respective PPP.

¹ The storage facilities must be clean, covered, and generally dry (with the exception of liquid fertilisers).

The technical 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 should be a verifiable system in place for regularly inspecting and calibrating this application equipment. If PPPs or formerly approved PPPs are left over, they may not be applied to plants as a means to dispose of them. Leftover PPPs and empty PPP packaging (e.g. canisters) must be given to appropriate and approved disposal facilities or returned to the manufacturer for disposal.

2.5.5 Integrated pest management

Another important aspect of "Good Agricultural Practice" is integrated pest management (IPM). The goal of IPM is to ensure that products are safe and of high quality while simultaneously keeping the amount of pesticides used to an absolute minimum.

This can be achieved by several targeted preventive measures and requires continuous monitoring of the occurrence of certain diseases or pests taking into account the respective stage of growth of the crop/culture in question.

Farmers must provide evidence of their IPM activities and benchmark and assess their production process in relation to state-of-the-art integrated pest management processes.

2.5.6 Prevention of soil erosion

Farmers have to protect the soil from erosion by means of appropriate measures. GAP includes several measures to prevent erosion using field tillage practices as well as land and crop rotation. 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 monitored. Special attention should be paid to gritty soils and sloping land.

2.5.7 Preservation of organic matter and structure of soils

The soil organic matter levels (humus) must be maintained by means of appropriate measures especially field tillage practices. If commercial fertiliser is used to maintain or restore the organic matter of soil, the nutritional requirements of the soil must be taken into account (see also 2.5.2).

Farmers must keep their land in Good Agricultural and Environmental Condition and ensure that there is no significant decrease in or reallocation of natural land. 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 farmer must also ensure, where possible, the retention and/or re-establishment of typical landscape features (e.g. hedges, biotopes, natural watercourses, ditches, etc.). He should minimise livestock stocking rates or/and appropriate regimes.

2.5.8 Water protection and management

In addition to protecting water from hazardous substances, (see 2.5.1), 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

Buffer zones should be established in the direct vicinity of watercourses and waterfalls to reduce the intensity of soil cultivation and fertiliser and pesticide use.

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 available at any time.

2.5.9 Social responsibility

Sustainable production of biomass biofuels also requires that economic operators uphold the principles of social responsibility. All countries where biomass is farmed and processed should adopt and meet the minimum requirements laid down and ratified by the International Labour Organisation (ILO²). In this context, the following "core labour standards" are mandatory:

- Convention 87 - Freedom of Association and Protection of the Right to Organise, 1948
- Convention 98 - Right to Organise and Collective Bargaining, 1949
- Convention 29 - Forced Labour, 1930
- Convention 105 - Abolition of Forced Labour, 1957
- Convention 100 - Equal Remuneration, 1951
- Convention 111 - Discrimination in Respect of Employment and Occupation, 1958
- Convention 138 - Minimum Age, 1973
- Convention 182 - Worst Forms of Child Labour, 1999

2.6 Greenhouse gas emission saving (GHG calculation, Article 8)

The greenhouse gas emission saving indicates the percentage of greenhouse gas emissions that could potentially be saved by using liquid biomass or biofuel instead of fossil fuels. Pursuant to Article 8, the greenhouse gas emission saving from the use of liquid biomass or biofuels has to be **at least 35%**.

This saving shall increase

- on **1 January 2017** to at least **50%** and

² see: <http://www.ilo.org>

- on **1 January 2018** to at least **60%** in interfaces in which production started on or after 31 December 2016

The farm has to refer to the partial standard value in accordance with Annex 1 of the Sustainability Ordinances for the biomass he has produced and supplied or calculate the actual value through individual calculation and provide it to the downstream operation

The details are explained in "System principles for GHG calculation".

3 Documentation and verification

3.1 General documentation in the REDcert system

The traceability of the sustainably produced raw materials for biomass has to be guaranteed on farms at all times and shown using appropriate documents (e.g. invoice, contracts, etc.).

3.2 Compliance with requirement criteria pursuant to the Biomass Sustainability Ordinances

3.2.1 Self-declaration of the farm

Farms do not themselves have to be part of a certification system. However, they have to at least comply with the requirements of a certification system – in this case REDcert – recognised under the Biomass Sustainability Ordinances. They have to confirm to the first gathering point that the biomass supplied was sustainably produced and complies with legal requirements. As **confirmation for a delivery of sustainable biomass** that these **area-based requirements** (see item 3) are satisfied by the farm, the producer of the raw materials for biomass (farmer) can submit a **written self-declaration** to the first gathering point in which he confirms that the biomass he cultivated and supplied meets the requirements of the Biomass Sustainability Ordinances. The farmer must be able to furnish the respective documents verifying that the individual requirements have been met and they must be accessible at all times. The documentation on the location of the cultivation of the biomass (land-relevant documents, see 3.2.4) 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 receiving first gathering point.

In the self-declaration, the operation also confirms and accepts that, within the framework of inspections by the first gathering point to whom he supplies compliant biomass, inspections can be performed by his certification system or the executing certification body. If the result of the inspection is positive, the farmer receives an inspection certificate (see "System principles of neutral inspections").

A valid self-declaration (copy or e.g. if the original was faxed) must be available with the farmer.

The template for the self-declaration can be found at <http://www.redcert.de/> => Documents => Self-declaration. The self-declaration is only valid for biomass harvested in the year the declaration is submitted.

To prove that the sustainability requirements vis-à-vis the first gathering point or the certification body under item 3 of this document have been satisfied, the farmer can furnish, e.g. the following documents:

Verification documents from authorities such as

- official documents on the status of the land as of the reference date or conversion date

Verification documents from verifiers

- certificates from contracted, independent verifiers and experts
- analyses and interpretations from remote sensing data and maps
- field inspections and samples
- interviews with operations, local stakeholders or special interest groups
- conducting Environmental Impact Assessments, High Conservation Value Assessments, High Nature Value Assessments, Key Biodiversity Assessments, International's Rapid Assessment

Verification documents from the farm

- tax documents, land register excerpts
- management plans that address specific conservation aspects and describe which activities, techniques and dates the operation uses to comply with the conservation objectives

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.

3.2.2 Land status

3.2.2.1 Cropland before 01.01.2008

The biomass originates from cropland that was already classified as such prior to 01.01.2008. It also does not originate from protected areas (Articles 4 to 6 of the Biomass Sustainability Ordinances) that were converted to cropland after 01.01.2008.

As **proof** of the land status as of the reference date, the application for direct support schemes pursuant to Council Regulation (EC) No. 73/2009 or for area-based measures as well as the notification that these payments will be granted under these schemes can be used. The Nature Conservation Ordinance including the activities permitted can also be used.

3.2.2.2 Land within protected areas

The cultivation and harvesting of raw material for biomass on land within protected areas where farming is permitted represents a unique case. The farmer has to document whether farming takes place within an area serving the purpose of nature conservation and that nature conservation requirements have been met in the cultivation and harvesting of the raw material for biomass. As **proof** of the land status as of the reference date, the application for direct support schemes pursuant to Council Regulation (EC) No. 73/2009 or for area-based measures as well as the notification that these payments will be granted under these schemes can be used. The Nature Conservation Ordinance including the activities permitted can be used instead.

The following measures can be undertaken as proof that the nature conservation requirements have been satisfied:

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

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

3.2.3 Cross compliance

If the farm, as a recipient of payments under direct support schemes, is subject to cross compliance, it automatically satisfies the requirements for agricultural management (Articles 7 and 51 of the Sustainability Ordinances). As **proof**, the application for direct support schemes pursuant to Council Regulation (EC) No. 73/2009 or for area-based measures as well as the notification that payments will be granted under these schemes can be used.

3.2.4 Documentation about the location of biomass cultivation

In addition to the sustainability criteria required by the EU Commission, the exact location of biomass cultivation must be specified in Germany and in the EU member states. The documentation on the location of biomass cultivation must be available either with the **farmer** and accessible at any time or with the **first gathering point** of the supplied biomass. The proof can be provided as a polygon pursuant to Article 26 of the Sustainability Ordinances or similar verification of area using field blocks, plots and parcels.

3.2.4.1 Polygon

The polygon must be drawn pursuant to Article 26 of the Sustainability Ordinances 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 the Sustainability Ordinances.

3.2.4.2 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.

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 the Sustainability Ordinances at the time the biomass is cultivated or harvested (**the dealer or processor decides whether it is used for food, feed or energy**), 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 the Sustainability Ordinances. 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 the ordinances.

3.3 GHG calculation

To prove compliance with requirements for the sustainable production of biofuel, the farmer must document the following:

- the calculations of the greenhouse gas emissions
- the precise data measured inserted into the formula
- the default and reference values used and the conversion factors

To verify that achieving the greenhouse gas emission saving is guaranteed both before and after land conversion, the carbon stock of the area must be identified and verified prior to conversion using precisely measured data.

The details of the calculation are described in the "System principles GHG calculation".