

Green Gold Label Standard GGLS5 Forest management criteria

Requirements for the sourcing of
forest biomass under GGL



Standard GGLS5

Forest management criteria

Version 2-5

Valid from 1 January 2026 (Adoption date)

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Document navigation

This document is part of the Standards from the Overall documents. It concerns Standard 5 of the GGL scheme and applies to all regulatory frameworks.

The Overall documents comprise the GGL Setup and Governance, GGL Standards and GGL Operating documents. Additionally, the GGL scheme offers Instructions and Guidances for specific regulatory frameworks (RED, FIT/FIP, SDE+/++), which can supersede clauses in the Overall documents. This applies only when explicitly stated in the relevant Instructions and Guidances.

Refer to the **GGL Document Structure** (as part of the GGL Setup and Governance documents) for more detailed information on navigating and interpreting GGL documentation.

GGL Setup and Governance - Articles of association GGL foundation - GGL Document structure - GGL Regulation - GGL Scope definitions - GGL CB agreements - GGL Partner Code of Conduct - GGL Operating Agreement	GGL Standards - GGLS1 – Chain of custody criteria - GGLS2 – Agricultural source criteria - GGLS4 – Transaction and Product Certificate GGLS5 – Forest management criteria - GGLS6 – Power company criteria GGL Operating documents - GGL Participant fees - GGL Logo and tradename use - GGL List of prohibited materials	RED – Instructions - Instruction A.0 – RED Module - Instruction A.1 – RED Reporting duties - Instruction A.2 – RED Internal monitoring - Instruction A.3 – RED Auditor requirements - Instruction A.4 – RED GHG emissions - Instruction A.5 – RED Additional Agricultural source and Forest management criteria	RED – Guidances - Guidance A.0.i – RED Raw materials statement template - Guidance A.0.ii – RED Transaction certificate template - Guidance A.0.iii – RED Audit template - Guidance A.4.iv – RED GHG default values - Guidance A.5.v – RED Level A Risk assessments	GHG Guidance Guidance ABC.1 – GHG calculator
		FIT / FIP – Instructions - Instruction B.0 – FIT/FIP Module - Instruction B.1 – FIT/FIP Endorsed schemes - Instruction B.2 – FIT/FIP GHG emissions	FIT / FIP – Guidances - Guidance B.0.i – FIT/FIP Raw materials statement template - Guidance B.0.ii – FIT/FIP Transaction certificate template - Guidance B.0.iii – FIT/FIP Audit template - Guidance B.0.iv – FIT/FIP Supplier verification checklist for residues - Guidance B.2.v – FIT/FIP LCvGHG default values	
		SDE++ – Instructions - Instruction C.0 – SDE++ Module - Instruction C.1 – SDE++ Endorsed schemes - Instruction C.2 – SDE++ GHG emissions	SDE++ – Guidances - Guidance C.0.i – SDE++ Raw materials statement template - Guidance C.0.ii – SDE++ Transaction certificate template - Guidance C.0.iii – SDE++ Audit template	

The GGL standards are applicable as per indicative Figure i below.

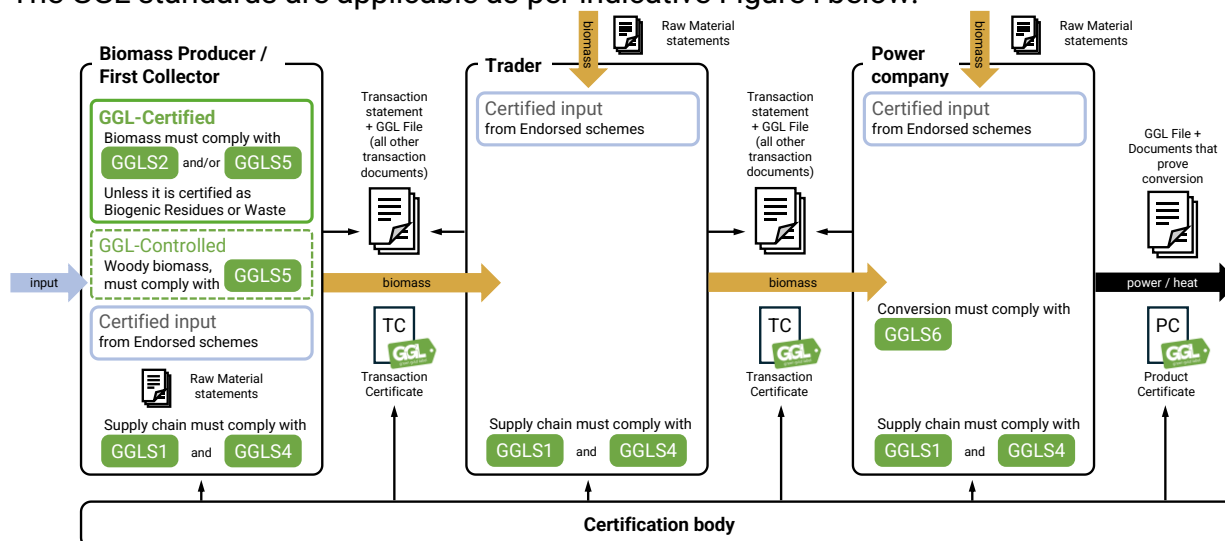


Figure i – applicability of GGL Standards

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Changes in this version

This section lists the key changes in this version 2-5 from version **GGLS5 - Forest Management Criteria - Version 2-4 (June 2019)**:

No.	Change type	Section reference	Details of change
1	Content	N/A	Removed Risk-based approach as basis for certification under GGL
2	Content	N/A	Low-ILUC risk criteria replaced by LULUCF criteria (RED)
3	Content	Section A	Included allocation logic to GGL Categories of biomass
4	Content	Principle 7	Strengthened protection of lands with high biodiversity value
5	Content	Principle 8	Strengthened protection of lands with high carbon stock
6	Content	Principle 7	Included requirements for evidencing
7	Text feature	Changes in this version	Included document navigation
8	Text feature	Changes and transitioning	Included changelog and transitioning procedure between previous and current version
9	Glossary	Glossary	Included glossary
10	Formatting	All	Changed and edited formatting, text and wording for clarity and readability
11	Formatting	All	Converted layout to new templates for GGL Documents

In transitioning to this current version of this document, the following applies to Certification bodies, Participants and Certificates:

Publication date	7 November 2025
Adoption date	This document version <u>applies only</u> for the GGL Scope with FIT/FIP-Module as of: • 1 January 2026
Effective date	The previous version of this document <u>becomes ineffective</u> for the GGL Scope with FIT/FIP-Module as of: • 2 March 2026
Transition period	Certification decisions prior to Effective date based on the previous version of this document <u>lose their validity</u> for the GGL Scope with FIT/FIP-Module as of: • 31 December 2026

To clarify: For GGL Scopes with the **SDE+ Module**, only the previous version of this document can be used and remains effective until further notice.

Glossary

Term	Definition
Adoption date	New (versions of) GGL documents state their Adoption date in the transitioning section. This is the date after which certification against the GGL Scheme and the specific document to which the Adoption date applies, is possible. Certification against previous versions remain valid until the Effective date of such document.
Audit	Formal examination and inspection by a GGL approved Certification Body of an organization's processes and activities to verify compliance. By contrast, an audit is different from an internal audit.
Biomass producer	The first participant of the GGL supply chain for woody and agricultural biomass (GGL categories 1, 2, 3 and 4) who produces raw material by harvesting or farming activities for which Raw Materials Statements are delivered. Biomass Producers are comparable to First Collectors in the sense these are the first GGL Participants in a GGL supply chain.
Biomass	Biomass means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin.
By-product	A by-product is a secondary product derived from a production process, manufacturing process or chemical reaction, not a waste or residue. A by-product might not be the primary aim of such process but has a significant economic value other than its use as biomass.
Certification Body / CB	An independent third party that evaluates and certifies the certification process. Certification Bodies approved by GGL for 1 or more GGL Scopes, are listed on the GGL website.
Conversion factor	The ratio between the mass of the output that is intended for biofuel production and the mass of the raw material entering the process.
Co-product	A useful product produced together with the main product, not a waste or residue. As such, the co-product shares in the greenhouse gas emission burden.
Credit system / volume credit system	Volume credit system is a chain of custody approach and mass balance system that allows tracking the net amount of sustainable materials as they move through a system or supply chain and ensures an appropriate allocation of these materials to the finished goods based on auditable bookkeeping. GGL does not allow application of the volume credit system for all types of biomass and for all GGL Scopes. The system deployed by GGL to support mass balance administrations is defined in GGLS1 - Chain of Custody criteria.
Direct origination / [...] originate directly	Biomass in GGL Categories 1, 2, 3 and 4 originate directly during harvesting and / or farming activities, meaning that such biomass originates on the location and at the time when the primary products (e.g., wood, agricultural products) originate.

Term	Definition
Effective date	New (versions of) GGL documents state their Effective date. This is the date after which only certification against the GGL Scheme and the specific document to which the Effective date applies, is effective. Certification against previous versions of such document is no longer valid.
FMU / Forest Management Unit	A well defined and demarcated land area, predominantly (i.e., >50%) covered by forests, with planned human intervention in a forest ecosystem to achieve specific goals and objectives.
GGL Categories	Biomass from 1 of the 5 categories that GGL recognizes being: 1) Woody biomass from large FMU's (> 500 hectares) 2) Woody biomass from small FMU's (< 500 hectares) 3) Residues from natural site and landscape management 4) Agricultural biomass 5) Biogenic residues and waste
GGL Module	These are the Instructions and Guidance documents based on which GGL has been approved and recognized as a Certification scheme under different legal and voluntary frameworks (e.g., RED in Europe, FIT/FIP in Japan).
GGL Scope	Means the scope of a Certification Body's license to perform certification services or Participants to trade biomass within GGL, and use the GGL Trademark. A GGL Scope is a combination of (a) regulation(s) under which GGL is recognized per its different modules and (b) types of biomass. Each GGL Participant and each CB is limited to perform activities under the GGL Scheme by the GGL Scope for which it is recognized. GGL Scopes are defined in the GGL Scope definitions document.
GGL-Certified	Biomass that has been certified against all applicable GGL criteria, or against a certification scheme other than GGL which has been endorsed & approved by the relevant authorities (e.g., EU for REDII, METI for FIT/FIP) to holds the equivalent status. GGL-Certified biomass meets all criteria for sustainability and legality.
GGL-Controlled	Woody biomass that has been certified against some of the applicable GGL criteria, or against a certification scheme other than GGL which has been endorsed & approved by the relevant authorities (e.g., EU for REDII, METI for FIT/FIP) to holds the equivalent status. GGL-Controlled biomass can only be from GGL-categories 1, 2 or 3 for Woody biomass, and only meets specific key criteria for sustainability. The sustainability of GGL-Controlled woody biomass has therefore been certified to a lesser extent than GGL-Certified woody biomass.
HCV / High conservation value	High Conservation Value (HCV) areas are natural habitats or landscapes that possess outstanding environmental, social, or cultural importance. These areas include ecosystems, species populations, or ecological functions that are critical at local, regional, or global levels.

Term	Definition
Land-related evidence	Evidence of compliance with the land-related criteria can be provided in different forms, including but not limited to aerial photographs, satellite images, maps, land register entries/databases and site surveys. This evidence can be “positive” or “negative”, for example, compliance with the criterion on “primary forest” could be shown by: - An aerial photograph of the land, showing it to be planted (positive), or - A map of all the primary forests in the region, showing the land to fall outside them (negative)
LULUCF / Land-use, Land-use Change and Forestry	Forest management criteria for the GGL Module for RED, defined in Regulation (EU) 2018/841 on the inclusion of GHG emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, amending Regulation (EU) No525/2013 and Decision No529/2013/EU The GGL methodology to demonstrate compliance with these requirements defined in GGL Instruction A.5 - RED - Additional agricultural source and forest management criteria.
Mass balance	Mass balance is a chain of custody approach that allows tracking the net amount of sustainable materials as they move through a system or supply chain and ensures an appropriate allocation of these materials to the finished goods based on auditable bookkeeping.
NTFP / Non-timber forest products	Non-Timber Forest Products (NTFPs) are biological materials derived from forests that do not require harvesting of a tree's main stem or trunk. NTFPs can include: tree branches, tops, bark, leaves, needles, cones, deadwood, understory vegetation, shrubs, grasses, fruits, seeds, and other plant residues.
Normative	Normative elements are those that are prescriptive, that is they are to be followed in order to comply with scheme requirements.
Old growth forest	Old growth forest refers to natural forest ecosystems that have developed over long periods of time (typically centuries) without significant disturbance or human intervention and that exhibit unique ecological features such as large and old trees, multilayered canopies, rich structural diversity, high levels of biodiversity, and the presence of deadwood.
Participant / GGL Participant	Economic operator that has been certified under GGL per GGL Regulation Section G or against a certification scheme other than GGL which has been endorsed & approved by the relevant authorities (e.g., EU for REDII, METI for FIT/FIP) to hold the equivalent status, such as forest and agricultural biomass producers, waste and residue producers, first gathering points, collectors, suppliers, traders, processing plants and conversion plants (end-users).
Peatland	Peatlands, generally also known as bogs, mires, or moors, are unique wetland ecosystems characterized by the accumulation of partially decomposed plant material - peat.
Point of origin	The location where the raw material is originally generated.
Publication date	New (versions of) GGL documents state their Publication date. This is the date at which that version is published. Certification against the new version of such document is not possible until after its Adoption date.

Term	Definition
RED	EU Renewable Energy Directive (EU) 2018/2001 (REDII) and amended by Directive (EU) Directive 2023/2413 (REDIII), most recent consolidated version (including amendments and corrections) as published on https://eur-lex.europa.eu
Residue	Residue means a substance that is not the end product(s) that a production process directly seeks to produce; it is not a primary aim of the production process and the process has not been deliberately modified to produce it.
Site	Site means a geographical location, logistical facilities, transmission or distribution infrastructures with precise boundaries within which products can be mixed.
Transition period	New (versions of) GGL documents state their Transition period. This is the period within which (re-)certification decisions taken prior to the Effective date against the previous version of the current document, remain valid. Initial audits, renewal audits and surveillance audits by a Certification Body during the Transition period shall only take place against the current version of the GGL Scheme document to which the Transition period applies.
Waste	Waste is a substance or an object which the holder discards or intends or is required to discard, that is not considered a by-product, and excludes substances that have been intentionally modified or contaminated in order to meet this definition.

A. Introduction

A.1

GGLS5 – Forest management criteria are based on the sustainability requirements in the Netherlands and the sustainability criteria from the Renewable Energy Directive. There are different existing, high-quality forest management standards or schemes in place. This standard can be applied independently to raw materials sourced within the scope of a GGL Participant's certificate to verify compliance against the criteria for responsibly managed, sustainable forestry.

A.2

Material that directly originates from a forest or from natural site or landscaping activities, can be GGL Category 1, 2 or 3 biomass when it meets the requirements for its GGL Scope that are defined in **GGL Scope definitions**. The decision process for allocation of input material is shown below in Figure ii.

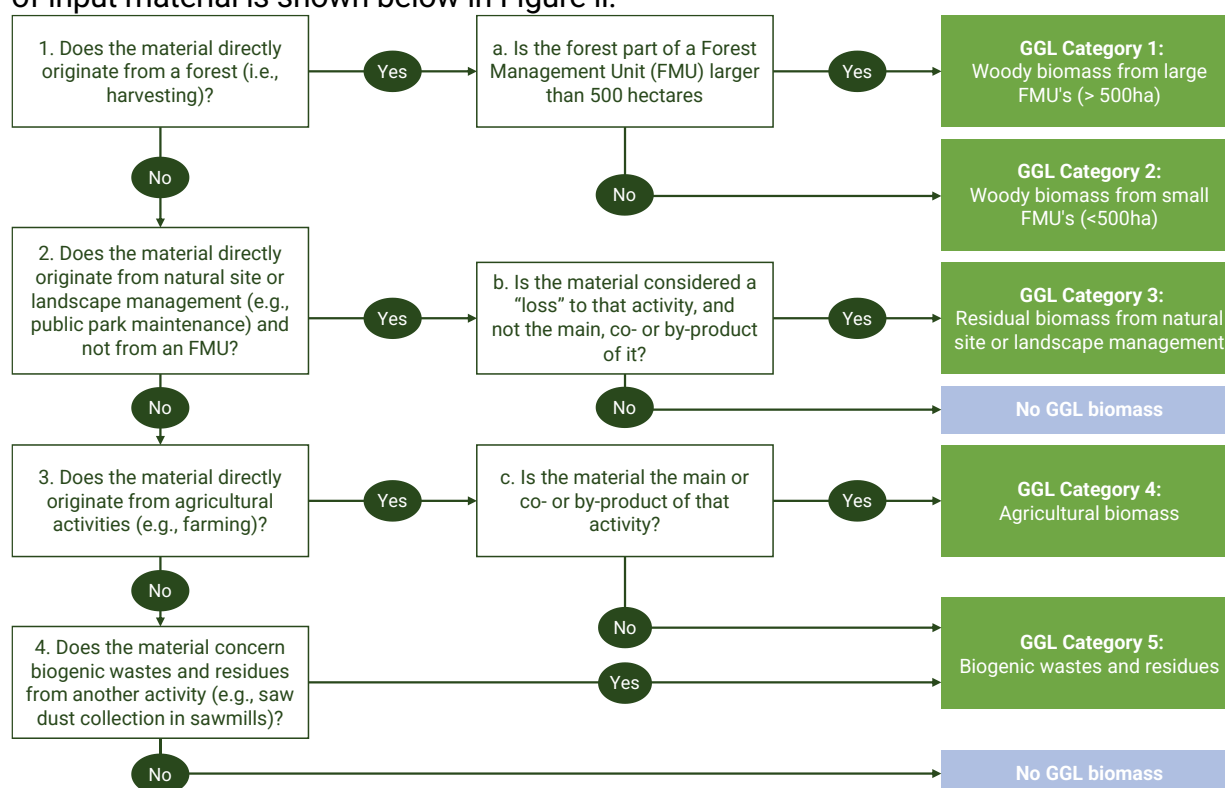


Figure ii – allocation logic for biomass to a GGL Category

A.3

This standard offers 2 options for Biomass producers when sourcing biomass in GGL Categories 1, 2 or 3:

1. Individual verification
2. Verification of groups or regional association (detailed under C below)

In all cases, the Biomass producer (as a GGL Participant) is responsible for applying to a Certification Body to include any of the options mentioned above in the scope of its GGL certification.

A.4

The requirements for verification by Participants, as outlined in A.3 under 2) against this standard, are described in Principle 5 of **GGLS1 – Chain of custody criteria**.

A.4.1 For option 1 (Individual verification), the Certification Body shall conduct onsite audits at all Forest Management Units (FMUs) included in the scope. In this case, the Biomass producer (as GGL Participant) is not required to conduct its own onsite verification at each FMU.

A.4.2 The above requirement A.4.1 does not apply to option 2 (groups or regional associations), in which case the Biomass producer shall be responsible for ensuring that onsite verification audits are carried out as stipulated in this Standard.

Note - Requirements from Principles 5.12 and 5.13 from **GGLS1 – Chain of custody criteria** apply in full for verification audits A.3 under 2) above.

A.5

All GGL Standards are normative unless stated otherwise.

B. GGL Principles for sustainable forest management

Principle 1. The Biomass producer complies with all applicable laws and regulations

- 1.01 The Biomass producer holds the full legal right to use the forest, with documentation demonstrating legal rights to manage the land as forests and manage and utilize its forest resources (e.g. registrations in the land register, licenses, permits), including associated maps (where applicable).
- 1.02 The Biomass producer complies with all obligations to pay taxes and royalties, with clear and sufficient evidence that all taxes and royalties related to forest management are paid timely and in full (e.g. statement from tax authorities, auditor's statement, payment receipts).
- 1.03 All applicable anti-corruption legislation is followed. If no anti-corruption legislation exists, the Biomass producer shall take alternative anti-corruption measures that are proportionate to the scale and intensity of the management activities and the associated risk of corruption.
 - 1.03(a) Alternative anti-corruption measures result in awareness of any applicable anti-corruption laws and regulations, as well as a system to monitor its performance against these.
 - 1.03(b) In countries with a Corruption Perceptions Index¹ lower than 50 and where anti-corruption laws and regulations do not exist or are generally considered ineffective:
 - Staff whose roles involve a higher level of risk in ethical business practice (e.g., sales, harvesting, logistics, dealing with local officials) are trained on what to do in the event of an issue arising in their area.
 - A transparent and effective system is in place for confidential reporting and addressing unethical business practices without fear of reprisals towards the reporting party.

Principle 2. The conservation value of the FMU shall be maintained and where possible, enhanced

- 2.01 Sites with a High conservation value (HCV) and representative areas of forest types found in the FMU have been identified are protected, and where possible enhanced.
 - 2.01(a) Documentation demonstrating that the FMU follows a process for identification, protection and monitoring of sites with a HCV, the FMU involves affected and interested stakeholders proactively, and the forest management plan contains at least the following elements:
 - Relevant regional scientific information, nationally and/or internationally recognised databases, environmental impact reports and information submitted by stakeholders;
 - Evidence of involvement of the local inhabitants or indigenous people as a condition for establishing cultural values;
 - Identification of threats and effective measures to protect and/or reinforce

¹ According to the latest edition of the [Corruption Perceptions Index as published by Transparency International](#).

- HCV sites;
- Programme for monitoring the status of HCV sites and the effectiveness of conservation measures taken.
- 2.01(b) The sites may contain one or more of the following values:
- Diversity of species: concentrations of biological diversity, including indigenous species and endangered species that are of importance on a global, regional or national level;
 - Ecosystems and habitats: rare or endangered ecosystems, habitats or refugia;
 - Ecosystem services: basic ecosystem services in critical situations, such as protection of important water sources and control of erosion of vulnerable soils and slopes;
 - Ecosystems on landscape level: whole forest landscapes, other big whole ecosystems, or mosaics of ecosystems on landscape level that are of importance on a global, regional or national level as they contain viable populations of most of the natural species in natural patterns of spreading and numbers;
 - Cultural values: sites or means of living that are of global or national cultural, archaeological or historical importance and/or of fundamental importance to the traditional culture/beliefs of the local population or indigenous people.
- 2.01(c) Local communities must be involved in the establishment and evaluation of strategies and actions to maintain and/or enhance the sites of HCV.
- 2.02 Threatened and endangered species and their habitats (e.g. nesting and feeding areas) that are present or are likely to be present within the FMU are identified based on "best available information" known to and observed by the FMU, as well as based on what could be learnt from neighbours and other local stakeholders. Measures have been taken to protect threatened and endangered plant and animal species and, if applicable, to increase the populations and enhance the habitat of these species.
- 2.03 Any parts of the FMU that are scheduled for conversion from natural or semi-natural forest to plantation or any other kind of non-forest land use have been clearly identified, documented and mapped. The conversion of forests within the FMU to other forms of land use, including wood plantations, is not permitted unless:
- a. The conversion concerns a small area, i.e., the total converted area over the years is no greater than 5% of the area of the FMU on benchmark date 1 January 2008;
 - b. The conversion clearly has long-term advantages for nature conservation, and;
 - c. There is no damage or threat of damage to areas with a HCV.
- 2.04 In case of wood plantations there is a preference for native species, and a relevant percentage of the plantation shall be enabled to revert to natural forest at a later stage. Specifically:
- a. The selection of species for planting is based on their overall suitability for the site and their appropriateness to the management objectives, which is demonstrated through documented trials;
 - b. Any choice to use exotic species and genotypes must be clearly justified and

- justifications shall be documented, and;
- c. Representative samples of existing natural ecosystems, covering at least 5% of the FMU's area, are managed to retain or restore them to their natural state, based on the identification of key biological areas and consultation of stakeholders, local government and scientific authorities.
- 2.05 The exploitation of non-timber forest products (NTFP), including products from hunting and fishing, is regulated, monitored and controlled among others to safeguard the maintenance of the biodiversity in the forests. The FMU identifies and complies with all legal requirements applicable to the management and/or collection of NTFP including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Principle 3. The quality, health and vitality of the FMU, shall be maintained and where possible, enhanced.

- 3.01 The quality of the soil in the FMU must be maintained and if necessary improved, with special attention to coasts, riverbanks, erosion sensitive areas and sloping landscapes.
- 3.01(a) Specific measures have been taken to maintain and, if necessary improve the soil within the FMU in terms of structure, fertility and biological activity. As a minimum, site preparation and harvesting methods within the FMU must have been designed to minimise soil compaction and maximise the retention of nutrients on-site.
 - 3.01(b) All forestry operations within the FMU with a potential negative environmental impact on watershed protection (e.g. coasts, riverbanks) and areas susceptible to erosion and slopes, are accompanied by appropriate control systems and procedures. Control systems are based on national or regional best practices regarding erosion and sediment control, minimisation of forest damage during harvesting, road construction and other mechanic disturbances under specific weather conditions (e.g., all-weather harvesting instead of dry weather harvesting).
- 3.02 The water balance and quality of both groundwater and surface water in the FMU and downstream (outside the FMU) shall be at least maintained and where necessary improved.
- 3.02(a) Forest operations within the FMU should not negatively impact the local hydrology of natural water courses, water bodies, riparian zones and their connections.
 - 3.02(b) All forestry operations within the FMU with a potential negative environmental impact shall be accompanied by appropriate control systems and procedures regarding protection of water resources both within and downstream from the FMU, based on national and regional best practices.
- 3.03 Important ecological cycles present in the FMU are preserved, including carbon and nutrient cycles.
- 3.03(a) Site preparation and harvesting methods have been designed to minimise soil compaction and maximise the retention of nutrients on-site.
 - 3.03(b) There is land-related evidence that specific measures have been taken to ensure that sensitive areas are sufficiently protected from erosion or fire.
- 3.04 Unnecessary damage to the ecosystem is prevented by applying the most

suitable logging (e.g., Reduced Impact Logging (RIL)) and road construction methods and techniques for the local conditions.

- 3.04(a) There is land-related evidence that the most suitable logging and road construction methods and techniques are used in the FMU to prevent unnecessary damage to ecosystems. This may include the use of RIL techniques, adapted to the site-specific characteristics within the FMU.
- 3.04(b) Harvest planning and harvest operations are carried out in accordance with national or sub-national (e.g. State) best-practices and guidelines.
- 3.05 When fires are used to achieve the forest management objectives (such as e.g., regeneration of specific tree species) adequate control measures must be taken, including at least fire control and safety precautions that shall be in place.
- 3.06 Forest management measures are designed to prevent and control diseases and pests, where these form a threat to natural capital.
 - 3.06(a) The Biomass producer has identified and documented pests and diseases that are present and that potentially threaten the natural stock within the FMU.
 - 3.06(b) Where applicable, the Biomass producer has procedures in place to prevent and control potential and existing pests and diseases that have been identified (e.g. by applying Integrated Pest Management (IPM)).
- 3.07 The use of chemicals is only permitted to combat pests and diseases if the ecological processes and the optimal deployment of sustainable alternatives prove insufficient. Pesticides classified as type 1a (Extremely hazardous) and 1b (Highly hazardous) by the World Health Organisation (WHO)² and chlorinated hydrocarbons are not permitted for use or storage by the Biomass producer. Where chemicals are used, the Biomass producer shall ensure that at least:
 - An up-to-date list with specifications of the chemicals and their quantities is maintained for all pesticides used in the FMU.
 - All staff and contractors involved in the use of pesticides have received training in handling, application and storage procedures.
 - Safe transport, storage, handling, application and emergency procedures have been implemented.
- 3.08 The accumulation of inorganic waste and litter is prevented, and such waste and litter are collected, stored in the approved areas and disposed of responsibly. Regarding inorganic waste and litter, the Biomass producer ensures that at least:
 - A documented system is in place for collecting and storing inorganic waste and litter safely, and for safe transportation for disposal.
 - No land-related evidence shows that the FMU's waste products are disposed of other than at the listed sites, or outside environmentally appropriate and safe methods, or violating applicable legal requirements.
 - All staff and contractors involved in the use of chemicals, fuel and oil have received training and materials for controlling and cleaning up chemicals, fuel and oil in the case of accidental spillage.

² [WHO Recommended Classification of Pesticides by Hazard, 2019](#) (or its future replacement by WHO)

Principle 4. The production capacity of wood products and other relevant non-timber forest products (NTFPs) shall be maintained to safeguard the future of the forests

- 4.01 The production capacity of all forest types represented in the FMU is maintained and monitored by the Biomass producer. This includes at least:
- A clear methodology to determine the Annual Allowable Cut (AAC) or harvest per forest type.
 - The allowable harvest level is based on conservative, well-documented and most current estimates of growth and yield to not jeopardise the forest's productive potential in the medium to long term.
 - Clear, accurate and up-to-date records of harvest volumes for all commercial timber species, and of the commercial harvest of any NTFP.
- 4.02 The FMU is sufficiently protected against all forms of illegal exploitation of timber and NTFP, illegal establishment of settlements, illegal land use, illegally initiated fires, and other illegal activities. The boundaries of the FMU have been clearly marked and mapped, and concrete measures are taken to prevent illegal harvesting, including of products of hunting and fishing, settlement, illegal land-use, illegal fires and any other unauthorised activities within the FMU. Appropriate measures are being taken when illegal activities are detected.

Principle 5. Wood originating from forests and plantations in which genetically modified trees are utilised shall not be used

- 5.01 Genetically modified trees shall not be used.

Principle 6. Sustainable forest management shall be achieved through a management system

- 6.01 The forest management system is designed to achieve the objectives of a forest management plan and covers the inventory, analysis, planning, implementation, monitoring, evaluation and adjustment cycle.
- 6.01(a) Depending on the scale and intensity of the forest management, the FMU has a management plan and/or supporting documents in place. This forest management plan shall include the long-term management objectives and a description of the inventory, planning, monitoring and evaluation cycle. An Environmental Impact Assessment (EIA) is part of the planning.
- 6.01(b) When national or sub-national legislation, as well as monitoring and enforcement systems do not cover the following topics, the forest management system shall at least ensure:
- the legality of harvesting operations, and;
 - forest regeneration of harvested areas, and;
 - that harvesting does not take place in areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in wetlands, grassland, heathland and peatlands, unless land-related evidence is provided that the harvesting of that raw material does not interfere with those nature protection purposes.
 - that harvesting:
 - Maintains soil quality and biodiversity, in line with sustainable forest

management principles;

- Avoids harvesting of stumps and roots, degradation or conversion of primary and old growth forests (as defined in the country where the forest is located) into plantation forests, and harvesting on vulnerable soils
- Complies with maximum thresholds (as defined in the country where the forest is located) for large clear-cuts and for deadwood extraction; and,
- Use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats;
- that harvesting maintains or improves the long-term production capacity of the forest.

6.02 A forest management plan is drawn up that at least includes:

- a description of the current condition of the forest management unit, including maps with areas that are protected (e.g., on basis of cultural or ecological values);
- the budget planning for the implementation of the forest management plan;
- the long-term management objectives for the FMU including economic and social functions, as well as ecological aspects (species, ecosystems, functions) based on at least the following information:
 - a description of the inventory and analysis, planning implementation, monitoring, evaluation and review cycle;
 - a description of the current state of the FMU;
 - the average Annual Allowable Cut (AAC) per forest type and, if applicable, the annual allowable harvest of NTFPs based on reliable and current data;
 - the average annual harvest permitted per forest type and, if applicable, the annual exploitation of NTFPs permissible, calculated based on reliable and up-to-date data.

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

6.04 The implementation of the forest management plan is monitored periodically, and the ecological effects of the forest management are evaluated based on reliable data. Clearly documented and consistent procedures for collecting the monitoring data replicable over time to allow comparison and assessment of change. The frequency, intensity and expense of the monitoring activities are defined and are appropriate to the scale, intensity and risks of the forest operations, as well as to the relative complexity and fragility of the resources under management.

Monitoring shall at least include the following information to facilitate evaluation:

- data collected during surveys before and after harvesting and the generic inventories to identify and describe key changes in forest flora over time;
- data on the presence of key fauna species within the FMU, sufficiently so to allow identification and description of significant changes in the

- population over time;
 - data aimed at demonstrating the conservation of high protection values and representative sites of forest types within the FMU.
- 6.05 Forest management is implemented by a professional office and field staff. The staffs' expertise and knowledge are maintained by means of an adequate and regular training programme.
- 6.05(a) Competence/training requirements for all employees are identified and (periodic) training is provided when necessary, to ensure employees are sufficiently qualified and trained to perform their tasks.
- 6.05(b) Appropriate employee qualifications are available.
- 6.05(c) Safeguards and verification procedures are in place to ensure that contractors are qualified for the activities they conduct within the FMU.

Principle 7. Raw materials shall not be obtained from land that has or recently had a high biodiversity value

- 7.01 Land-related evidence shall be provided that raw materials are compliant with this standard
- 7.02 The raw material is not produced on land that had one of the following statuses in or after January 2008, whether or not the land still has that status:
- Primary forest and other wooded land, namely natural forest and other wooded land containing native tree species without clearly visible indication of human activity and where the ecological processes are not significantly disturbed.
 - Old growth forest, as defined in the country where the forest is located.
 - Highly biodiverse forest and other wooded land which is species-rich and not degraded, and has been identified as being highly biodiverse by the relevant competent authority, unless land-related evidence is provided that the production of that raw material did not interfere with those nature protection purposes.
- 7.03 When raw material originates from wood plantations converted from natural forests, it shall be demonstrated whether this conversion occurred before 31 December 1997. When raw material originates from wood plantations where conversion of natural forests has taken place after 31 December 1997, it shall be demonstrated that:
- a. Either the forest manager that harvested the biomass was not directly nor indirectly responsible for the conversion;
 - b. Or the conversion took place in natural forests that, at the time of conversion, were in a degraded state or of which the soil had degraded verifiably with land-related evidence, and where the conversion was carried out in an ecologically and economically justifiable manner.
- 7.04 The raw material is not produced on highly biodiverse grassland that had one of the following statuses after 1 January 2008, whether or not the land still has that status:
- Natural grassland, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes.
 - Non-natural grassland, namely grassland that would cease to be grassland

in the absence of human intervention and which is species-rich and not degraded, unless land-related evidence is provided that the harvesting of the raw materials is necessary to preserve its grassland status.

- 7.05 The raw material is not produced on heathland or land that had such status after 1 January 2008. Heathlands is land with poor acid soil, dominated by ling (*Calluna*) or heaths (*Erica*).

Principle 8. Raw materials shall not be obtained from land that has or recently had a high carbon stock

- 8.01 Biomass is not sourced from lands that had one of the following statuses on 1 January 2008 and that no longer has that status:
- Wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year. Land-related evidence for verification should reflect seasonal changes.
 - Continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and with a canopy cover of more than 30%, or trees able to reach those thresholds in situ. This definition includes areas defined as such according to the respective national legal definition but excludes land that is predominantly under agricultural land use.
 - Forested areas with 10-30% canopy cover refer to land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10% and 30%, or trees able to reach these thresholds in situ.
- 8.02 The provisions of 8.01 shall not apply if, at the time the raw material was obtained, the land had the same status as it had on 1 January 2008.
- 8.03 Raw material shall not be obtained from land that was peatland, namely land consisting largely of peat or peat bogs on 1 January 2008, unless it can be demonstrated by providing land-related evidence that the production and harvesting of that raw material does involve drainage of previously undrained soil.

Principle 9. The use of biomass does not result in long-term carbon debt

- 9.01 The FMU is managed with the aim of retaining or increasing carbon stocks in the medium or long term. The Biomass producer shall provide clear and sufficient land-related evidence that the harvesting rates and methods ensure that carbon stocks, in terms of tree stands or other carbon proxies, are maintained or increased in the medium or long term.
- 9.02 Biomass is not sourced from stumps unless these stumps had to be removed/harvested for other reasons than wood or biomass production.
- 9.02(a) The Biomass producer shall:
- Register all wood or biomass received from stumps;
 - Demonstrate that the risk of accepting or accidentally accepting unregistered wood or biomass from trunks received from its suppliers can be considered low.
- 9.02(b) In the event stumps are removed and used for biomass, the Biomass producer shall demonstrate that these stumps had to be removed from the

site for other reasons than wood or biomass production (e.g. road construction).

- 9.03 On yearly average, less than half the volume of the annual round wood harvest from forests is processed as biomass for energy production.
- 9.03(a) The Biomass producer shall have verifiable and relevant information available showing that less than 50% of annual harvested round wood (excluding thinning) in its sourcing region is used for production of biomass. Relevant information includes any government report, NGO report, local economy statistics or similar information reflecting the allocation of biomass coming from the region.
- 9.03(b) In the absence of regional biomass allocation information as indicated in 9.03(a), there shall be clear and sufficient land-related evidence (e.g. total harvested and supplied wood and volumes supplied to pellet mills) that less than 50% of annual harvested round wood (except thinning wood) is converted to biomass for energy production.
- 9.03(c) Round wood from production forests with a rotation period of 40 years or less is exempt from Principle 9.03.

Principle 10. Basic labour rights of forest workers are safeguarded

- 10.01 All of the Biomass producers' employees have the freedom of association and rights to collective bargaining are respected for all forest workers.
- 10.02 Wages paid shall meet or exceed minimum forest industry standards or other recognized wage agreements.
- 10.03 Principles and rights at work as defined in the ILO Declaration on Fundamental Principles and Rights at Work (1998) are maintained and complied with.

Principle 11. Health and safety of the forest workers shall be protected

- 11.01 The health and safety of forest workers shall be protected through risk identification, safety programs mitigating risks, training and personal protection equipment.
- 11.02 The recommendations from the ILO Code of Practice on Safety and Health in Forestry Work shall be followed.

C. Group or regional association

C.1 Introduction

This section covers the requirements that apply when a Biomass producer (GGL Participant) wishes to include a group or regional association of multiple FMU's in its supply base. All requirements from this section shall be met additionally in those cases; in addition to other applicable requirements.

C.2 Group manager is an independent legal entity or person

- C.2.1 A group or regional association is led and supervised by an independent legal entity or by a person acting as legal entity (hereafter referred to as the Group manager).
- C.2.2 The group manager shall be responsible for the full group and individual group members in relation to conformity to all applicable GGL requirements.
- C.2.3 The entity shall meet all statutory requirements, such as registrations and the paying of taxes.
- C.2.4 The division of responsibility between the entity and the members of the group in relation to sustainable forest management and all requirements of this standard has been clearly laid down in writing.

C.3 All FMU's in a group or regional association shall meet criteria from this standard

- C.3.1 A group or regional association, as well as all FMU's that are part of these shall meet the requirements for sustainable forest management of this standard ***GGLS5 – Forest management criteria***.
- C.3.2 The group or regional association shall have procedures in place to ensure compliance to the requirements of this standard by each member of the group or regional association. Depending on the size and geographical complexity of the group, theses may contain procedures like e.g.,:
 - the organisational structure;
 - the responsibilities of the group manager and the members with corresponding activities;
 - rules regarding membership of the group;
 - rules regarding suspending or revoking membership of the group;
 - complaints procedures for group members and stakeholders;
 - procedures for taking corrective measures following an internal request or a request from the Certification body, including deadlines and consequences if the measures are not complied with.
- C.3.3 The group manager shall have a documented quality management system ensuring that all relevant requirements are met. This shall include procedures, training and competence building for staff of both the group manager and members of the group.
- C.3.4 The status of the FMUs in the relevant region shall be outlined in a forest

management plan or a similar document.

C.3.5 The functioning of the group in relation to this standard shall be managed by the group manager, who ensures conformity to all applicable GGL requirements. The group manager shall maintain and at all times have available for third-party verification, at least the following information of each of the members of its group:

- Name of the FMU;
- Status of the member as a legal entity (e.g., cooperative, limited liability company, private individual);
- Description of (forest) area included within the group, including precise location in latitude and longitude coordinates;
- Size of area included;
- Date of joining and/or leaving the group;
- Date and status of last internal audit carried out (including any follow-up of non-conformities);

C.3.6 The group manager shall annually carry out internal audits of a sample of the group members. The formula to determine the sample shall be:

$$Y = \sqrt{X} \text{ (i.e., square-root of } x\text{)}$$

Where

X = Total amount of group members;

Y = Minimum sample size for auditing - rounded to the upper whole number

The selected group members shall be based on scale, risk, forest type and results from previous internal audits. Internal audits performed by the group manager shall replace verification by a Certification body of each individual FMU or supply unit that has been audited, and not require their verification every 12 months upon continued or repeated deliveries.

Note - On this basis, this internal audit replaces requirements from **GGLS1 – Chain of custody criteria** specifically Principles 5.12 and 5.13.

C.3.7 The internal audit reports shall be documented in a clear and systematic way, and cover all applicable requirements from the GGL standards. Verifiers adapted to local conditions shall be trained and developed for sustainable forest management principles by the group manager, and their names and qualifications shall be included in the internal audit reports.

C.3.8 The group manager shall have a written contract or written consent form in which each group member acknowledges the GGL requirements and agrees to the general obligations and responsibilities for participation in the group, including solving all identified non-conformities. This written document is signed by both the certifying body and the group manager.

- C.3.9 The group manager shall suspend the group member and inform its Certification Body accordingly, when not all requirements are met within the given timeframe. Material originating from a suspended group member shall not be accepted as GGL-Certified or GGL-Controlled biomass as the case may be, and sufficient measures shall be taken to avoid any risk of mixing.
- C.3.10 The group manager shall provide to each group member all necessary documents for meeting the GGL requirements.
- C.3.11 A chain of custody system is in place for the biomass, that covers the entire chain from the group member to the group manager, linking the original source to the material used in the biomass within a traceable system that ensures mass balance. Each step within the chain of custody system bears final responsibility and has a quality management system in place that provides safeguards for compliance with the requirements of the chain of custody system.
- C.3.12 Each group member in the chain of custody keeps all necessary documentation for demonstrating compliance with the applicable sustainability requirements available for a minimum of five years.
- C.3.13 Each group member in the chain of custody registers for all incoming or outgoing consignments the quantities and the required sustainability information under this standard.
- C.3.14 Each group member in the chain of custody has the relevant data available to allow the group manager to determine and calculate the correct GHG emissions' information, as applicable under the GGL Module under which the biomass is traded.
- Note - GHG emission values are to be calculated and listed in units as per applicable GGL Module. For the avoidance of doubt: REDII/III requires calculations as per ***Instruction A.4 – RED GHG Emissions***.
- C.3.15 If a group member in the chain of custody wishes to mix consignments with different sustainability characteristics, a mass balance is used that meets requirements from the Volume credit system in ***GGLS1 – Chain of custody criteria***. In those cases the following also applies:
- C.3.15.1 The method may be applied up to the level of a specific location;
 - C.3.15.2 The organisation defines a period with a maximum of a year, during which incoming and outgoing consignments are measured and reports the results;
 - C.3.15.3 the sustainability characteristics of mixed biomass output can be traced back to the characteristics and quantities of the individual incoming consignments, taking account of the applicable conversion factors