

Green Gold Label Program

Introduction & scope

This standard is applicable to power producing companies and power trading companies that want to receive or trade the Green Gold Label product certificates.

The aim of the Green Gold Label (GGL) criteria for power companies is to prove (a part of) the power generated is the product of processed Green Gold Label certified biomass (GGL Biomass).

This Standard forms part of the Green Gold Label certification system as described in the GGLS4 criteria. For power companies the GGLS6 certificate is a condition to receive GGLS4 product certificates on their Green Gold Label biomass. The GGLS6 certificate has a term of four years, and is revalidated by annual audits.

Glossary

See GGL Glossary

Principles

Principle 1 Authorizations and responsibilities

- Criteria
- 1.1 The responsibilities, authorizations and interrelations of all personnel who manage, perform and verify work affecting quality shall be recorded in writing. The definition and documentation of responsibilities and authorizations under GGL should also make reference to the documentation and track and trace of the GGL biomass or the power produced by the GGL biomass. The business should record the responsibility structure in an organization chart.
 - 1.2 Management shall appoint a management representative who, irrespective of other responsibilities, shall have a defined authority:
 - ✓ to ensure that a quality system, complying to the requirements of this Standard is set up, implemented, maintained and distributed, and;
 - ✓ to report to management on the operation of the quality system, to allow review of and improvements to the system.

Principle 2 Quality policy and management objectives shall be focused on traceability of Green Gold Label certified products.

- Criteria
- 1.1 The management shall define and document its policy and objectives for, and commitment to, quality, including an accessible bookkeeping needed for GGL traceability.
 - 1.2 Management will demonstrate commitment by means of quality objectives. This will be achieved (as a minimum) by the following items:
 - 1.2a Importance attached to compliance to the GGL rules shall be known throughout the organization;
 - 1.2b Written Quality Policy; this includes correct bookkeeping and traceability of GGL biomass and the power produced with the GGL biomass, the organization's awareness of its position in regard to make rightful claims about electricity produced with GGL certified biomass;
 - 1.2c Directors' Declaration; this includes a commitment from management to supervise the correct development, implementation and maintenance of the GGL-system at all levels in the organization;
 - 1.2d Records of relevant quality;
 - 1.2e Management assessments; and to make the necessary resources available;
 - 1.2f Internal audits; Documented procedures for planning and carrying out internal audits shall be established. The object of these audits is to determine whether

the quality system functions adequately to meet the basic quality standards. Internal quality audits shall be planned at least once a year and carried out by personnel who are independent from those directly responsible for the activity on which the audit is to be carried out, and may be performed by subcontractors;

- 1.2g The results of the audits shall be recorded and brought to the attention of personnel who are responsible for the area in which the audit is carried out. With regard to any shortcomings observed during the audit, corrective measures must be taken promptly. The implementation and effectiveness of the measures taken shall be verified and recorded;

Principle 3 Quality systems

Criteria

- 3.1 A documented quality system shall be drawn up and recorded in writing as a means of ensuring that the quality and quantity of all biomass, the quality and quantity of Green Gold Label certified biomass is measured and recorded, as well as the quantity of the power produced with the biomass, the Green Gold Label certified biomass and with any other fuel.
- 3.2 The quality system shall indicate the methods by which the organization will ensure to make rightful claims about electricity produced with GGL certified biomass, and cover the procedures within the quality system and explain the structure of the documentation used in the quality system.
- 3.3 Changes in the GGL criteria are to be appropriately incorporated into the Quality System.
- 3.4 Documented quality system procedures shall be established to comply with the requirements of this Standard. These procedures must include:
- ✓ (external) storage of biomass;
 - ✓ incoming biomass and other fuels used for power registration;
 - ✓ registration of quality and quantity of GGL and non-GGL certified biomass;
 - ✓ procedure for the burning of biomass;
 - ✓ registration of power produced with GGL and non-GGL certified biomass;
 - ✓ registration of power produced with other fuels;
 - ✓ safety procedures;
 - ✓ environmental procedures;
 - ✓ procedures for the handling, transport and storage of biomass and other fuels;
- Documented procedures shall be established to ensure that purchased biomass/material meet GGL requirements. Demonstrable agreements with service providers relating to compliance with the GGL criteria must be in place.
- 3.5 A procedure to establish, document and implement corrective and preventive measures shall be maintained. The corrective and preventive measures are aimed at achieving basic quality and the standards mentioned in this standard. Changes that arise from the corrective and preventive measures must be implemented and recorded.
- 3.6 The quality system, including documented procedures with tasks, responsibilities and authorities for personnel are to be implemented in an effective way. This also applies to temporary personnel. The procedures making up the quality system are to be matched to the complexity of the work and the level of the personnel involved. Where there is any deviation from the GGL Standard, the client should demonstrate that its alternative measures have the same quality level.
- 3.7 Personnel must have sufficient knowledge and expertise for their assigned tasks in the context of achieving the quality needed for traceability and correct claims about the GGL certified biomass/material used.

- 3.8 A procedure shall be drawn up to cover authorizations to approve and issue documents and data.
- 3.9 Documents and data must be approved by an appropriately authorized person before issue.

Principle 4 Improvement of quality management

- 4.1 A procedure shall be drawn up for document management to identify the applicable revision status of documents to prevent the use of invalid and/or obsolete documents. A reference list or similar document may be used.
- 4.2 A method is to be devised for updating and managing documents for service providers which are significant. Each page should show the date of the last revision. The system of managing the quality system must ensure that:
 - 4.2a the relevant issues of appropriate documents are available at all locations where operations essential to the effective functioning of the basic quality system are performed;
 - 4.2b invalid /obsolete documents are immediately removed from all points of issue or use, or otherwise prevented from being used unintentionally;
 - 4.2c any obsolete document that is retained for legal reasons and/or for reference purposes is identified as such;
 - 4.2d where possible the nature of the change should be identified within the document.

Principle 5 Records

- Criteria
- 5.1 Appropriate records shall be maintained of the experience, expertise and (required) training of the employees concerned.
 - 5.2 The manner in which (quality) records are collected, identified, filed and stored shall be established in writing or electronic storage. Quality records shall be maintained to demonstrate that the traceability of with GGL certified biomass produced power can be achieved. Quality records shall be stored and maintained in such a way that they are readily retrievable.
 - 5.3 The results of checks, measurements, sampling and inspections shall be recorded and filed. The records must show clearly who has performed the inspections and tests and their accreditation. Analyses must be performed by an accredited laboratory.
 - 5.4 Records of all orders and commissions of purchase are to be maintained to allow traceability of orders, during a period as described under “control of documents and records” below.
 - 5.5 Records and documents relating the GGL quality system must be kept at least 10 years.

Principle 6 Quality control plan

- Criteria
- 6.1 A quality control plan shall be developed to document how the critical points are controlled, following the same sequence as the production process. The following matters should be considered in drawing up the quality control plan:
 - ✓ information flow within the organization
 - ✓ the physical biomass to power flow within the organization
 - 6.2 In order to perform adequate tracking of the biomass and the electricity produced, the production process shall be described in appropriate detail considering the scope of the process, including the critical points. Procedures and instructions shall be drawn up for the monitoring of critical points and for the

monitoring of the basic quality of production. In these schemes adequate information shall be provided on methods of controlling safety aspects of the process/ operations. These schemes shall take into account all the relevant steps in the process. The verification of the process schemes must be repeated with every change in the process, so that changes and/or innovations in the operations/production process can be set out and assessed with regard to risks.

- 6.3 The organization shall identify and evaluate the potential hazards of all operations/processes. This identification and hazard analysis by the legal owner of the material shall include all aspects of the operations/processes that might have an adverse effect on the safety of the personnel
- 6.4 A risk analysis must be performed for each identified hazard. The results of the analysis shall be documented, including the assumptions and principles used in determining/estimating the risk. Permissible levels of risk shall be defined and these standards must comply as a minimum with the legal requirements. When conducting the risk analysis, practical experience, experimental data, literature, etc. shall be taken into account where applicable. A risk assessment should demonstrably be available for every type of biomass to be purchased or received.
- 6.5 As a result of the hazard identification and risk analysis, control measures to reduce risks to an acceptable level must be identified, implemented and, where appropriate, documented.

Principle 7 Transport and shipments

- Criteria**
- 7.1 For all shipments received as GGL certified material a GGL product certificate must be available.
 - 7.2 All relevant licenses, registrations and certificates required as a consequence of national or EU legislations must be available.
 - 7.3 In case of road transportation of GGL biomass by an external transport company, this should demonstrably comply with the conditions of the GGL standards in regard to transport, as mentioned in GGLS 4.
 - 7.4 Contracts for GGL biomass must be drawn up in such a way to ensure that biomass that is claimed to be GGL is indeed GGL certified. This includes provision of all necessary documents for the chain of custody system. It can possibly be done by hiring third party inspection.
 - 7.5 A reliable administrative system shall be operated to include:
 - ✓ the amount and quality of the biomass;
 - ✓ the amount and quality of the Green Gold Label and certified biomass;
 - ✓ the amount and quality of the Clean Raw Material certified biomass;
 - ✓ The amount and quality of the other fuels used to produce power;
 - ✓ the power produced with the biomass;
 - ✓ the power produced with the Green Gold Label and Clean Raw Material certified biomass;
 - ✓ the energy produced with the use of other fuels;
 - an administration to link the incoming fuels to the power produced;
 - any associated documentation, guarantees, certificates, etc. which accompany the biomass.
 - 7.6 The agreements to guarantee the basic quality of the purchased biomass shall be laid down in writing.

Principle 8 Subcontractors

- Criteria**
- 8.1 Subcontractors shall be evaluated at least once per year. This evaluation must relate to the ability to comply to the GGL criteria as well as to the necessary

certificates (ISO 17020 for inspection companies and ISO 17025 for laboratories).

- 8.2 Any external storage shall be considered a part of the facility, and rules applicable to the facility shall be applicable to the storage. In case a participant makes use of an external storage facility, the participant shall demonstrably make sure that the external storage facility complies in full with all applicable requirements of principles 4 and 6 of GGLS1. The participant shall in such cases include the requirements in a contractual agreement with the landlord of the facility or its legal representative.
- 8.3 Quality and quantity of the biomass delivered shall be analyzed and measured arriving at the gate (see GGL Glossary). This may be performed by an accredited subcontractor (see 8.1).

Principle 9 Health and safety

- Criteria**
- 9.1 The company must provide and see to the use of all the necessary personal safety gear for its employees according to the legal standards in that country.
 - 9.2 All measures necessary to ensure adequate industrial tidiness shall be devised and implemented. Industrial cleaning programs and registration of such activities must be set down in writing, stating methods, frequencies and times.

Principle 10 Contamination prevention

- Criteria**
- 10.1 Methods of handling must prevent contamination with non-biomass materials. Before startup, the equipment used for handling should be inspected on cleanliness, state and suitable to handle the material by qualified personnel.
 - 10.2 Storage silos or storage areas must prevent contamination with non-biomass material. Before filling the storage space should be inspected by qualified personnel on cleanliness and to be intact and to be suitable for storing biomass. External storage space also should be inspected; this may be performed by qualified subcontractors.
 - 10.3 Transport of the material within the facilities under the GGLS6 certification (for example from external storage to the power station) must be inspected. Transportation facilities must be inspected by qualified personal or qualified subcontractor on cleanliness, the state and to be suitable for transport of biomass.

Principle 11 Calibration of the GHG Calculation according to fossil fuel reference and efficiency rate of a utility

- 11.1 In order to check whether the applied GGL defaults are still justified for a specific utility in a country of destiny, the following items need to be verified:
 - ✓ The 'marginal value', i.e. electricity produced from an average (country) mix of fossil fuels only (excluding renewable sources and nuclear energy). The actual emissions per unit electricity produced (also called "fossil fuel comparator" is set on *0.198 kg CO₂ per MJ_{th}; equal with 712,8 kg CO₂ per MWh*, for Europe¹. The fossil fuel comparator should be derived from the official (representative) authority in an EU-27 Member State.
 - ✓ Actual efficiency of co-firing pellets in a specific utility (e.g. by using previous annual data). The default efficiency factor of co-firing a certain share of wood pellets is set on *39.2%*.

¹ Report from the European Commission to the Council and the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling. 25th of February 2010, Brussels COM (2010) 11 Final.

- 11.2 If applicable, than apply adjusted reference values for the fossil fuel comparator and, or adjusted efficiency factor for the co-firing of wood pellets. Revise the GHG calculations (GHG savings in terms of kg CO₂ per ton pellets) accordingly.
- 11.3 In case of a non GGL certification, i.e. NTA8080, it should be known how much GHG emissions are inherited to the previous parts of the biomass supply chain.
- 11.4 If no such data are available, an additional GHG calculation should be made at these suppliers, according to GGLS1 and GGLS8 standards.

Principle 12 Mass balance

Criteria 12.1 A mass balance of certified GGL biomass of the power produced shall be used:
(A / B) C = D

where:

- A = Total incoming annual mass of certified GGL biomass.
- B = Total incoming annual mass of biomass.
- C = 100%.
- D = percentage of GGL certified material.

and

- A = Power produced with the total incoming annual mass of certified GGL biomass.
- B = Power produced with the total incoming annual power produced.
- C = 100%.
- D = percentage of GGL certified power produced

Where D is at least the amount of GGL biomass needed to comply with the requirements of GGLS8 Green House Gas calculation

- 12.2 GGLS 8 shall be applied to an “annual average biomass input” for such a power company. The GHG savings default figures shall possibly be adjusted each year, depending on the outcome of principle 11.