SolidStandards

Enhancing the implementation of quality and sustainability standards and certification schemes for solid biofuels (EIE/11/218)

D5.1b

Factsheets of sustainability certification initiatives for solid biomass and solid biofuels

INTELLIGENT ENERGY EUROPE

The SolidStandards project

The SolidStandards project addresses ongoing and recent developments related to solid biofuel quality and sustainability issues, in particular the development of related standards and certification systems. In the SolidStandards project, solid biofuel industry players will be informed and trained in the field of standards and certification and their feedback will be collected and provided to the related standardization committees and policy makers.

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About this document

This document is Deliverable 5.1b for Work Package 5.1 of the SolidStandards project. Refer to “Reading Guide for Work Package 5.1” for more information about Work Package 5.1.This document was prepared in October 2012 by:

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Contents

Important notes:

1. All data and information were collected as of June and July 2012. There is a range of parallel processes taking place at present concerning the development of certification schemes, for e.g. IWPB.
2. A large part of the information is presented in cartography. The original blank map is a royalty free image taken from Bruce John Design Inc. (2009).

1. Forest Stewardship Council (FSC)

Note: This fact sheet is adapted from the work by Inge Stupak for the IEA Bioenergy Task 40/43/38 Collaboration Project "Monitoring Sustainability Certification of Bioenergy", with a few additional information and modifications.

1. General aspects

1.1 Governance and management

Type of organisation: FSC is an independent, non-governmental, not-for-profit organization

Decision making bodies:

1) *The General Assembly* of FSC Members is the highest decision-making body in FSC and is made up of the three membership chambers: Environmental, Social and Economic, which are further split into sub-chambers North and South. The purpose of the chamber structure is to maintain the balance of voting power between different interests without having to limit the number of members.
2) *The FSC Board of Directors* is accountable to the FSC members, and is made up of nine individuals who are elected from each of the chambers for a three-year term.
3) *The Director General* runs the FSC on a day-to-day basis, with the support of a multicultural professional team at the FSC International Center in Bonn, Germany.

1.2 Target group

Forest management units: Forest management units (FMU) or groups of units (individual or multisite/group certification). Special programme exists for smallholders, which are those who own, manage or use forests and which are considered "small" in relation to others in their region, and those who apply low intensity harvesting practices to timber and/or non-timber forest products.

Other actors: Actors taking ownership of the FSC certified biomass from the forest to the consumer, including all successive stages of processing, transformation, manufacturing and distribution (FSC chain of custody (CoC)).

Projects: CoC includes a special standard for FSC project certification, which is a non-bureaucratic way to get one-off and complex products FSC certified without each involved participant having to become individually FSC certified.

1.3 Context and status

Context: FSC was established in the wake of the UN Conference on Sustainable Development in 1992 by concerned business representatives, social groups and environmental organizations.

Status: FSC is a fully developed certification system, with third party auditing. FSC is the only global forest management *certification system* with an integrated *accreditation* program that systematically controls its *certification* bodies.

1.4 Objective and coverage

Objective: The aim of FSC is to promote the responsible management of the world's forests.
Products: It covers all product raw materials produced in smaller and larger forests and forest plantations, including timber and non-timber forest products (NTFPs).

End-use: All raw material end-uses.
Sustainability issues: FSC covers environmental, social and socio-economic sustainability aspects, including also some side-effects on adjacent ecosystems.

Actors: It covers sustainability certification of the forest management, and tracking of certified material throughout the whole supply chain, from the forest to the consumer (in the case of woodfuels, the energy producer), cf. also 1.2.

Geographical coverage: FSC is nationally represented in more than 50 countries around the world. The National FSC initiatives adapt the FSC standard to national conditions by development of indicators to the FSC principles and criteria. In 2012 there are five National Initiatives in the Amazon (Bolivia, Brazil, Columbia, Ecuador and Peru), four in the Congo Basin (Cameroon, Democratic Republic of Congo, Gabon, and Republic of Congo) and one in China. FSC also certifies forest in other countries than those where national initiatives are present. For this purpose so-called interim standards are used. The FSC principles and criteria are adapted to national conditions by the certificate holding companies certifying the forest similarly to what is done by national initiatives where they exist.

1.5 Applied since

The first certificates were issued in 1993.

2. Scheme characteristics

2.1 Certification systems set-up

FSC system is set up to around three types of certification: Forest management (FM), Controlled Wood (CW) and the Chain of Custody (CoC). Main standards correspondingly include FSC STD 01 001 V4 0 EN FSC Principles and Criteria for Forest Stewardship, FSC STD 40 004 V2-1 EN Chain of Custody Certification, FSC STD 30 010 V2-0 EN Controlled Wood standard for FM enterprises, FSC STD 40 005 V2-1 EN Company Evaluation of Controlled Wood. A large number of associated standards, polices, advices, guidance and procedures have support the interpretation and implementation of the standards, as well as for operation of the FSC scheme itself.

FSC does not issue certificates itself. The certification process is carried out by independent organizations called certification bodies. These certification bodies assess forest management and chain of custody operations against FSC standards. Only FSC accredited certification bodies are authorized to issue FSC certificates. Certification bodies are accredited by Accreditation Services International (ASI) according to FSC STD 20 001 V3-0 EN General Requirements for FSC Certification Bodies - application of ISO/IEC Guide 65:1996 (E)

2.2 Chain coverage

Biomass production and CoC for the remaining actors in the supply chain, cf. also 1.2. and 1.4.

2.3 Biomass focus

Biomass feedstock from forests and forest plantations.

2.4 Sustainability principles

Forest Management:

a. *Principle 1: Compliance with laws and FSC Principles*. Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.
b. *Principle 2: Tenure and use rights and responsibilities.* Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established
c. *Principle 3: Indigenous peoples' rights.* The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected
d. Principle 4: Community relations and worker's rights. Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.
e. *Principle 5: Benefits from the forest.* Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.
f. *Principle 6: Environmental impact.* Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.
g. *Principle 7: Management plan*. A management plan -- appropriate to the scale and intensity of the operations – shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.
h. *Principle 8: Monitoring and assessment.* Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.
i. *Principle 9: Maintenance of high conservation value forests.* Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.
j. *Principle 10: Plantations.* Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

Controlled wood specifies the following five origins must be avoided:

a. Illegally harvested wood
b. Wood harvested in violation of traditional and civil rights
c. Wood harvested in forests in which High Conservation Values (areas particularly worth of protection) are threatened through management activities
d. Wood harvested from conversion of natural forests
e. Wood harvested from areas where genetically modified trees are planted

2.5 Proof of compliance

FSC includes three basic types of certificates: 1) Forest management (FM), 2) Chain of Custody (CoC) and 3) Controlled Wood (CW). All the below-mentioned standards are available from the FSC homepage (documents – standards)

Forest management
FSC FM *certification* is a way for forest managers or owners to ensure that their careful and long-term forest management is recognized. It involves an inspection of the forest management by an independent organization to check that it passes the internationally agreed FSC Principles and Criteria of good forest management. A forest or a forest area is certified. FSC has also developed special programs for small operations (SLIMF). Smallholders is the term used to describe those who own, manage or use forests which are considered "small" in relation to others in their region, and those who apply low intensity harvesting practices to timber and/or *non-timber forest products.*

Individual certification procedures for SLIMFs follow the basic certification process but have important differences in the procedures for certification and the standards that are used to assess good forest management. FSC offers two ways to minimize the costs of FSC certification and make it viable proposition for small and low intensity managed forests. First, the auditing procedures for certification have been streamlined resulting in direct cost-savings in certification procedures for smallholders. Secondly, FSC stipulates that all National Standards for forest management certification now contain indicators that are specific to SLIMF operations. These indicators are designed to create modified requirements for SLIMFs that take into account the size and intensity of these operations.

Group certification is possible for the regular forest management and SLIMF.

Standards:

a. FSC STD 01 001 V4 0 EN FSC Principles and Criteria for Forest Stewardship
b. FSC-STD-01-002 V1-0 EN Glossary of Terms
c. FSC STD 01 003 V1 0 EN SLIMF Eligibility Criteria
d. FSC STD 01 003a EN SLIMF Eligibility Criteria Addendum 2010-09-07
e. FSC-STD-01 005 V1-0 EN Dispute resolution system
f. FSC STD 30 005 V1-0 EN Standard for Group Entities in Forest Management Groups

(Ongoing projects especially aimed at increasing access and reducing barriers to certification of small forest operations (SLIMF): 1) FSC-Fairtrade dual certification pilot project, 2) GEF - Improved certification systems for sustainable tropical forest management, 3) CeFCo project - Certification of Forestry Contractors)

Chain of Custody
To sell material from an FSC certified forest with the FSC logo, a forest manager must also achieve FSC chain of custody certification. FSC *chain of* custody (CoC) furthermore tracks FSC certified material through the production process - from the forest to the consumer, including all successive stages of processing, transformation, manufacturing and distribution. Only FSC CoC certified operations are allowed to label products with the FSC trademarks.

a. FSC STD 40 003 V1-0 EN Multi site Chain of Custody
b. FSC STD 40 004 V2-1 EN Chain of Custody Certification
c. FSC STD 40 004a V2-0 EN FSC Product Classification
d. FSC STD 40 004b V1-0 EN FSC Species Terminology
e. FSC STD 40 006 V1-0 EN Project Certification
f. FSC STD 40 007 V2-0 EN Sourcing Reclaimed Materials

Controlled wood
Despite continued and sustained growth of the FSC market share, some shortages remain in the supply of FSC material. To allow manufacturers to provide FSC labelled products, FSC has introduced the 'MIX' label which allows manufacturing companies to mix FSC certified material with non-certified material. The non-certified portion has to comply with the FSC Controlled Wood standards which enable manufacturers and traders to avoid unacceptable timber and timber products. FSC Controlled Wood thus controls the non-certified material in FSC products to avoid timber from the most destructive and harmful practices, such as illegal logging or human rights abuses.

a. FSC STD 30 010 V2-0 EN Controlled Wood standard for FM enterprises
b. FSC STD 40 005 V2-1 EN Company Evaluation of Controlled Wood

Standards that apply to multiple types of certificate holders

a. FSC STD 50 001 V1-2 EN Certificate Holder Trademark Requirements
b. FSC TMK 50 201 V1-0 EN Requirements for promotional use of FSC trademarks (also applies to non-certified commercial organizations)

Standards that apply to FSC accredited certification bodies

a. FSC STD 20 001 V3-0 EN General Requirements for FSC Certification Bodies - application of ISO/IEC Guide 65:1996 (E)

2.6 Chain of custody

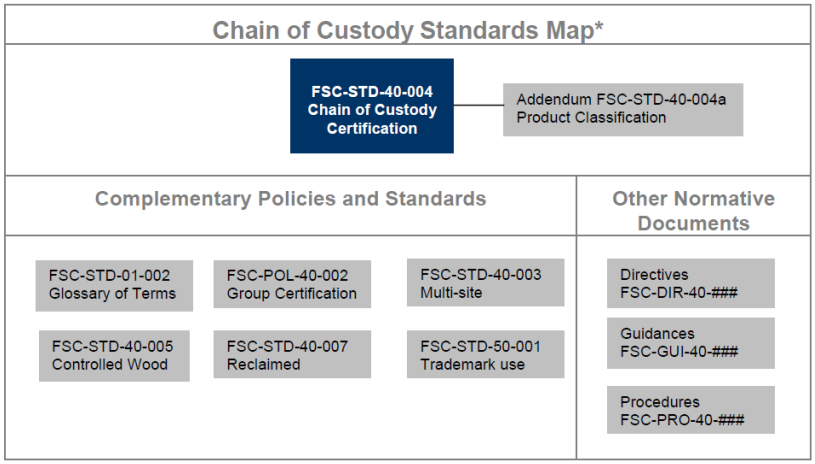
Scope

The FSC Chain of Custody standard specifies the management and production requirements for Chain of Custody control with respect to sourcing, labelling (where applicable) and sale of products as FSC certified, thereby providing a range of options for making FSC claims. The standard is applicable to all Chain of Custody operations trading, processing or manufacturing wood based and non-timber forest products from virgin and/or reclaimed materials including the primary industry sector (harvesting, pre-processing) or, in the case of recycled materials, reclamation sites, the secondary sector (primary and secondary manufacturing), and the tertiary sector (trading, wholesale, retail, print services).

The standard defines and addresses the basic elements of a Chain of Custody management system:

a. Quality management: responsibilities, procedures and records
b. Product scope: definition of product groups and outsourcing arrangements
c. Material sourcing: material specifications
d. Material receipt and storage: identification and segregation
e. Production control: control of quantities and determination of FSC claims
f. Sales & delivery: invoicing and transport documentation
g. Labelling: application of FSC labels on-product and labelling thresholds

It specifies the requirements under each system element that, if successfully implemented, allow organizations to sell and label products as FSC 100%, FSC Mix, or FSC Recycled, or to sell materials as FSC Controlled Wood. FSC-STD-40-004 is the main standard that applies for the certification of all Chain of Custody operations and may be combined with complementary standards according to the scope of the organization's certificate:



For a product to be claimed as FSC certified (through a product label or sales documentation), there must be an unbroken chain of certified organizations covering every change in legal ownership of the product from the certified forest up to the point where the product is finished or sold to retail.

Chain of Custody certification is therefore required for all organizations in the supply chain of forest-based products that have legal ownership of certified products and perform one or more of the following activities:

a. Pass on the FSC Claim to subsequent customers through sales and delivery documents;
b. Apply the FSC label on-product;
c. Process or transform FSC certified products (e.g. manufacturing, repackaging, relabeling, adding other forest-based components to the product).

NOTE: FSC claims in sales documents are required in cases where subsequent customers want to use the FSC certified products as input for the manufacturing of other certified products or for re-sale as FSC certified.

Organizations that do not perform the activities described above are exempted from Chain of Custody certification, including:

a. Retailers selling to end-users
b. Individual or organizational end-users of FSC certified products;

Eligible input for different eligible product groups

Eligible input: Virgin and reclaimed material input that is eligible to enter a specific FSC product group depending on its material category. [Material category] → [Eligible for product group(s)]:

FSC 100% material → FSC 100%, FSC Mix
FSC Mix material → FSC Mix
FSC Recycled material → FSC Mix, FSC Recycled
FSC Controlled Wood → FSC Mix, FSC Controlled Wood
controlled material → FSC Mix, FSC Controlled Wood
post-consumer reclaimed material → FSC Mix, FSC Recycled
pre-consumer reclaimed material → FSC Mix, FSC Recycled

The FSC CoC standard
The FSC CoC standard includes four parts:

a. PART I: Universal Requirements: Quality management; Scope of Chain of Custody system; Material sourcing; Material receipt and storage; Volume Control; Sales and Delivery
b. PART II: System for controlling FSC Claims: Transfer System; Percentage System; Credit System
c. PART III: Labelling: General labelling requirements; Eligibility for labelling
d. PART IV: Supplementary requirements: Outsourcing; Minor components

Illustration of eligible supply chain control systems:

ANNEX I: Comparison of the transfer, percentage and credit system [INFORMATIVE]

The following graphics explain the basic functionality of the various Chain of Custody systems for controlling FSC claims [see Sections 7–9] by means of production scenarios with differing inputs:

Inputs

- = FSC input: 'FSC 100%'
- = FSC input: 'FSC Mix 70%'
- = Controlled input

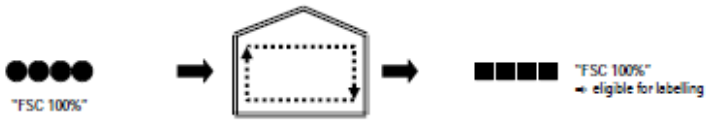
Outputs

- = 'FSC 100%'
- = 'FSC Mix' with percentage or credit claim
- = 'FSC Controlled Wood' claim

1. Transfer system

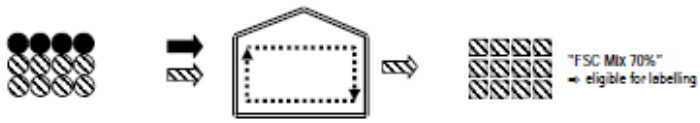
Under the transfer system the material category and associated claim with the lowest FSC input (for inputs of virgin material) or post-consumer input (for inputs of reclaimed material) per input volume has to be identified.
NOTE: The transfer system cannot be applied to material mixtures that include materials with neither FSC input nor post-consumer input.

Scenario A: Material input with a single FSC claim



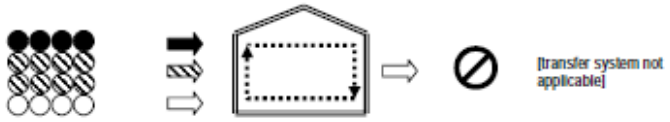
The transfer system is particularly useful in cases where only a single material input is used as e.g. in the case of 'FSC 100%' product groups. In these cases the input claim is simply transferred to the output.

Scenario B: Inputs with different FSC claims



In the second example a mixture of 'FSC 100%' and 'FSC Mix 70%' material input is used. In this case the material category with the lowest FSC input per input volume is 'FSC Mix 70%' which therefore can be transferred as applicable FSC claim for the output. This scenario is applicable for users who are either unable or do not want to calculate the exact FSC input to their production but only want to ensure a certain minimum FSC claim for their outputs.

Scenario C: Inputs with different FSC claims and without FSC claims

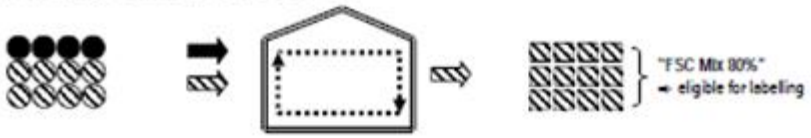


The transfer system cannot be applied as the material mixture contains material with no FSC input.

2. Percentage system

Under the percentage system all outputs can be sold with a percentage claim that corresponds to the proportion of FSC input and post-consumer input compared to the total input.

Scenario B: Inputs with different FSC claims

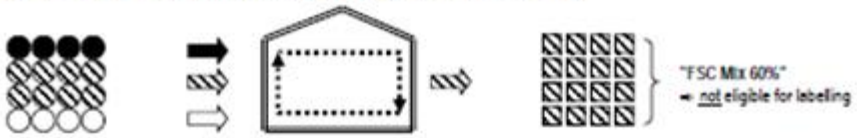


The FSC claim for the output is calculated as follows:

4 units with FSC input of 100%
8 units with FSC input of 70%

$$\frac{(4 \times 100\%) + (8 \times 70\%)}{4 + 8} \times 100\% = \frac{4 + 5.6}{12} \times 100\% = \mathbf{80\%}$$

Scenario C: Inputs with different FSC claims and without FSC claims



The FSC claim for the output is calculated as follows:

4 units with FSC input of 100%
8 units with FSC input of 70%
4 units without FSC input

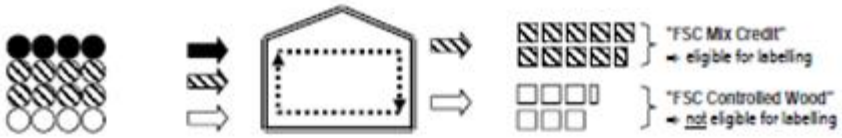
$$\frac{(4 \times 100\%) + (8 \times 70\%)}{4 + 8 + 4} \times 100\% = \frac{4 + 5.6}{16} \times 100\% = \mathbf{60\%}$$

3. Credit system

Under the credit system a proportion of the outputs can be sold with a credit claim corresponding to the quantity of FSC input and/or post-consumer inputs. FSC inputs and post-consumer inputs can also be accumulated as FSC credit on a credit account. The remainder of the output can be sold as 'FSC Controlled Wood'.

Scenario C: Inputs with different FSC claims and without FSC claims

NOTE: The credit system could also be applied to scenario B, above.



The number of output units which can be sold with an 'FSC Mix Credit' claim is calculated as follows:

4 units with FSC input of 100%
8 units with FSC input of 70%
4 units without FSC input

$(4 \times 100\%) + (8 \times 70\%)$ units $= 4 + 5.6$ units $= \mathbf{9.6\ units}$

The remainder of **6.4 units** can be sold as 'FSC Controlled Wood'.

2.7 Certification process and audit requirements

The steps to certification are as follows:

1. The operation contacts one or several FSC accredited certification bodies. To give a first estimate regarding cost and time needed the certification body will need some basic information about the operation. The certification body will provide information about the requirements for FSC certification and make a financial offer.
2. The operation decides which certification body it would like to work with and signs an agreement with the certification body.
3. The certification body initiates a stakeholder process and the operation prepares for the audit by providing the necessary documentation.
4. A certification audit takes place to assess the company's qualifications for certification. The data collected at the audit is the basis of the audit report based on which the certification body makes the certification decision.
5. If the certification decision is positive, the operation receives a FSC certificate. If the audit revealed that the operation is not yet in full compliance with FSC requirements, then the operation can go for further audits after it has resolved the non-conformance issues as listed in the certification report.

FSC certificates are valid for five years. The FSC accredited certification body will conduct annual surveillance audits to verify the operation's continued compliance with FSC certification requirements. These steps are the same independent on whether the operation wants to become forest management or chain of custody certified. At the end of the five years period, the certification contract can be renewed. To do so, the certification body proceeds with a complete new audit of the certified company (comparable to the initial certification audit).

2.8 National and crop specific variations

No crop variation, but national variation at indicator and verifier levels:

- FSC-STD-60-002 V1-0 EN Structure and Content of National Forest Stewardship Standards
- FSC-STD-60-006 V1-2 EN Development of National Forest Stewardship Standards

Development of national indicators should take a starting point in suggested indicators (cf. also 5.4).

- FSC-GUI-60-004 EN V1-0 FSC Forest Stewardship Standards: structure, content and suggested indicators.

Local Adaptation Generic Forest Stewardship Standards in countries without national initiatives (performed by certification bodies)

- FSC-STD-20-002 V3-0 EN Structure, content and local adaptation of generic forest stewardship standards

2.9 Policy relation

- Forest management shall respect all national and local laws and administrative requirements.
- In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.

2.10 Recognition by/of other standards

No official bilateral recognition of or by other schemes, but:

- FSC and Lembaga Ekolabel Indonesia (LEI) have had collaboration to explore potential areas of cooperation regarding sustainable forest management and forest certification in Indonesia
- CoC certification can be used to demonstrate compliance with public or private procurement policies and specifications such as the EU Ecolabel scheme for furniture, or the U.S. Green Building Leadership in Energy and Environmental Design (LEED) rating system.
- FSC and Fairtrade dual certification pilot project: http://www.fsc.org/dualcert.html

3. Standard, accreditation and certification bodies	
3.1 Standard setting body	The Forest Stewardship Council
3.2 Standard implementation body	The Forest Stewardship Council
3.3 Accreditation body	Accreditation Services International (ASI)

3.4 Certification bodies

AQA Certificazioni Fondazione Edmund Mach (AQA)
Accredited since 05 May 2011 (FSC-ACC-034)
Scope: Chain of Custody certification for Italy

BM Trada Certification Ltd. (TT)
Accredited since 19 May 2000 (FSC-ACC-008)
Scope: Chain of Custody certification worldwide

Bureau Veritas Certification (BVC)
Accredited since 25 July 2005 (FSC-ACC-020)
Scope: Forest Management and Chain of Custody certification worldwide

Certification Association “Russian Register” (RR)
Accredited since 08 December 2010 (FSC-ACC-031)
Scope: Chain of Custody certification for the CIS* countries, Bulgaria, Georgia, Latvia and Lithuania excluding the certification of SLIMF operations

Certiquality (CQ)
Accredited since 13 October 2004 (FSC-ACC-017)
Scope: Chain of Custody certification worldwide

Control Union Certifications B.V. (CU)
Accredited since 13 October 2005 (FSC-ACC-019)
Scope: Worldwide for Forest Management and Chain of Custody certification

CTIB-TCHN Belgian Institute for Wood Technology (CTIB)
Accredited since 25 November 2008 (FSC-ACC-026)
Scope: Chain of Custody certification for all countries in the EU and EFTA

Det Norske Veritas Certification AB (DNV)

Accredited since 15 August 2007 (FSC-ACC-022)
Scope: Chain of Custody certification worldwide Forest Management certification in Sweden

Forest Certification LLC (FC)
Accredited since 30 March 2009 (FSC-ACC-028)
Scope: FSC Forest Management and Chain of Custody certification in the CIS* countries excluding the certification of SLIMF operations.

GFA Consulting Group GmbH (GFA)
Accredited since 01 June 2000 (FSC-ACC-009)
Scope: Forest Management and Chain of Custody certification worldwide

HolzCert Austria (HCA)
Accredited since 13 August 2008 (FSC-ACC-024)
Scope: Chain of Custody certification worldwide

ICILA S.r.l (ICILA)
Accredited since 01 January 2001 (FSC-ACC-014)
Scope: Chain of Custody certification worldwide Forest Management certification in Italy

Institut für Marktökologie (IMO)
Accredited since 01 July 1998 (FSC-ACC-006)
Scope: Forest Management, Controlled Wood and Chain of Custody certification worldwide. Terminated for FSC Forest Management certification in Chile, as of 16th May 2008.

KPMG Forest Certification Services Inc. (KF)
Accredited since 01 December 2002 (FSC-ACC-010)
Scope: Forest Management and Chain of Custody certification worldwide

LGA InterCert GmbH (IC)
Accredited since 20 November 2007 (FSC-ACC-023)
Scope: Forest Management and Chain of Custody certification worldwide. Suspended for Chain of Custody certification worldwide as of 03 February 2012

PricewaterhouseCoopers LLP (PWC)
Accredited since 11 October 2011 (FSC-ACC-035)
Scope: Chain of Custody certification for Canada and the United States

QMI-SAI Global Assurance Services (QMI)
Accredited since 11 August 2008 (FSC-ACC-025)
Scope: Forest Management, Controlled Wood and Chain of Custody certification worldwide

Rainforest Alliance SmartWood Program (SW)
Accredited since 01 July 1995 (FSC-ACC-004)
Scope: Forest Management, Controlled Wood and Chain of Custody certification worldwide

Scientific Certification Systems (SCS)
Accredited since 01 July 1995 (FSC-ACC-003)
Scope: Forest Management, Controlled Wood and Chain of Custody certification worldwide

SGS – South Africa (Pty) Ltd (SGS)
Accredited since 01 July 1995 (FSC-ACC-015)
Scope: Forest Management, Controlled Wood and Chain of Custody certification worldwide Suspended for FSC Forest Management certification in Brazil, as of 17th February 2011

4. Implementation and certification

4.1 Level of experience

a. 149.85 million ha certified
b. 1,096 FM/CoC certificates
c. 22,466 CoC certificates
d. 16 CW/FM certificates
*FM: Forest management, CoC: Chain of Custody, CW: Controlled wood

4.2 Certified companies

Far above the above-mentioned number of certificates, because of group certification. A few examples: In Finland there are 2 FM/CoC certicates, which include 7 forest management units. In the Netherlands, there are 7

certificates involving 144 forest management units. Public and private units are sometimes certified under the same certificate (An overview for EU27 countries from 2009 can be found in "Technical assistance for an evaluation of international schemes to promote biomass sustainability" p. 113. http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/2010_02_25_report_international_schemes.pdf)

4.4 Costs for operators

Table 1 – FM, FM/COC and CW Annual Administration Fee

Categories of Forest Management	Per Hectare Rate (US $)
SLIMF	0.0001
Natural Forest - Conservation purposes	0.0001
Natural Forest - Community Forestry	0.0010
Natural Forest - Tropical	0.0020
Natural Forest - Boreal	0.0030
Forest - Temperate	0.0040
Plantations	0.0100

Table 2 – COC Annual Administration Fee (US $) for single CoC certificates

Classification of certificate holders by annual turn-over	Fixed rate
Class 1 < US $ 200,000	50
Class 2 US $ 200,001 to US $ 1,000,000	200
Class 3 US $ 1,000,001 to US $ 5,000,000	400
Class 4 US $ 5,000,001 to US $25,000,000	800
Class 5 US $ 25,000,000 to US$ 100,000,000	1400
Class 6 US$ 100,000,000 to US$ 5,000,000,000	3000
Class 7 US $ 5,000,000,001 to US $ 1,000,000,000	5000
Class 8 US > US $ 1,000,000,001	7500

Table 3 – COC Annual Administration Fee (US $) for multi-site CoC certificates.

Classification of certificate holders by annual turn-over	Fixed rate
Class 1 < US $ 200,000	50
Class 2 US $ 200,001 to US $ 1,000,000	200
Class 3 US $ 1,000,001 to US $ 5,000,000	400
Class 4 US $ 5,000,001 to US $25,000,000	800
Class 5 US $ 25,000,000 to US$ 100,000,000	1400
Class 6 US$ 100,000,000 to US$ 5,000,000,000	3500
Class 7 US $ 5,000,000,001 to US $ 1,000,000,000	7500
Class 8 US > US $ 1,000,000,001	15000

Table 4 – COC Annual Administration Fee for Traders (and project certification)

Classification of certificate holders by annual turn-over	Fixed rate
Class 1 < US $ 200,000	20
Class 2 US $ 200,001 to US $ 1,000,000	75
Class 3 US $ 1,000,001 to US $ 5,000,000	150
Class 4 US $ 5,000,001 to US $25,000,000	300
Class 5 US $ 25,000,000 to US$ 100,000,000	500
Class 6 US$ 100,000,000 to US$ 5,000,000,000	750
Class 7 US $ 5,000,000,001 to US $ 1,000,000,000	1500
Class 8 US > US $ 1,000,000,001	3000

Cost information also available from: FSC-POL-20-005 V1-0 Annual Administration Fee 2011

5. Actual utilization

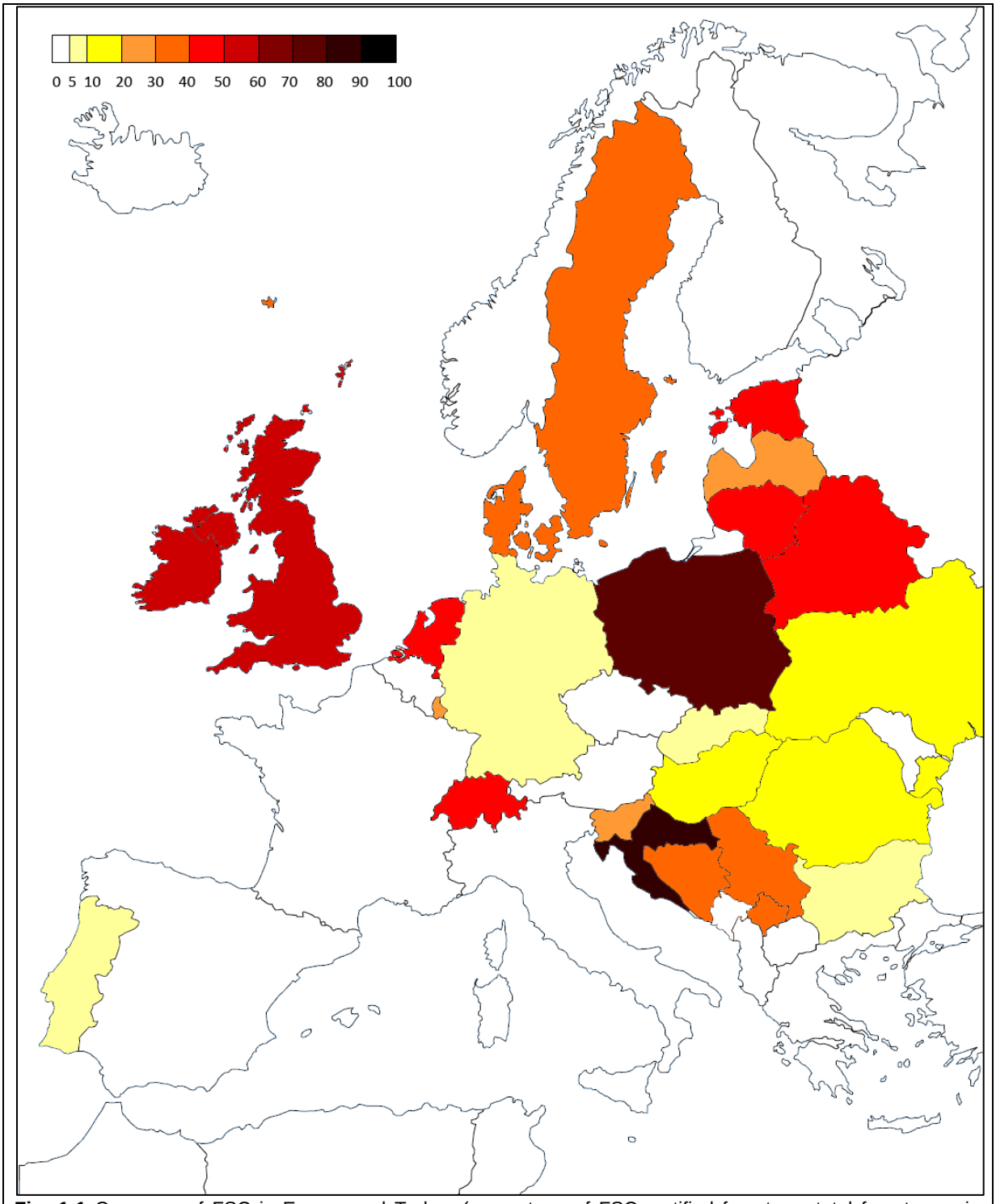


Fig. 1-1 Coverage of FSC in Europe and Turkey (percentage of FSC certified forest per total forest area in particular countries) (As of 15 June 2012) (Reproduced using data from FSC, 2012)
* North Africa, Cyprus and countries smaller than Luxembourg are not included

6. Source of information	
6.1 Website	http://www.fsc.org/
6.2 Guidance for operators	

No comprehensive guidance for operators. Guidance is given via certification bodies. However:
a. FSC-PRO-01-004 V2-2 EN Processing Pesticide Derogation Applications
b. FSC-PRO-20-003 V1-0 EN Transfer of FSC Certificates and License Agreements (applies also to certification bodies)

6.3 Guidance for auditors

The FSC P&C form the basis for all FSC forest management standards. Based on these 10 principles, the FSC has developed further rules (called policies or standards) that define and explain specific requirements

Standards

a. FSC-STD-20-002 V3-0 EN Structure Content Local Adaptation Generic Forest Stewardship Standards
b. FSC-STD-20-006 V3-0 EN Stakeholder Consultation for Forest Evaluation
c. FSC-STD-20-007 V3-0 EN FM Evaluations
d. FSC-STD-20-007a V1-0 EN FM Evaluations Forest Cert Reports
e. FSC-STD-20-007b V1-0 EN FM Evaluations Public Summ Reports
f. FSC STD 20 011 V1-1 EN Chain of Custody Evaluations
g. FSC STD 20 012 V1 1 EN Evaluation of FSC Controlled Wood

Policies

a. FSC-POL-40-002 EN Group CoC Certification: FSC Guidelines for certification bodies
b. FSC POL 20 002 EN Partial Certification of Large Ownerships 2000
c. FSC POL 20 003 EN The excision of areas from the scope of certification 2004
d. FSC POL 30 001 EN FSC Pesticides policy 2005
e. FSC POL 30 401 EN FSC certification and ILO Conventions 2002

Advice notes:

a. FSC ADV 01 007 V1-0 EN Participation of external observers in on-site FSC certification audits and / or ASI accreditation assessments (aiming certification bodies and ASI)
b. FSC ADV 20 004 V1-0 EN Qualifications Certification Body Auditors
c. FSC ADV 20 481 V1-0 EN Documentation Forest Areas Under Evaluation
d. FSC ADV 30 001 V1-0 EN Mosquito nets treated with a highly hazardous pesticide
e. FSC ADV 30 002 EN Fee Structure Derogations
f. FSC ADV 40 018 V1-0 EN Scope of FSC-STD-40-003
g. FSC ADV 60 006 V1-0 EN Expiry National Standards
h. FSC ADV 20 008 EN Controlled wood and windthrow 2005
i. FSC ADV 30 901 EN Interpretation of Criterion 9.2
j. FSC ADV 31 001 EN Interpretation of C10

Directives

a. FSC DIR 20 007 EN FM Evaluations (formal interpretation of requirements included in FSC STD 20 007)
b. FSC DIR 40 004 EN CoC Certification (formal interpretation of the requirements included in FSC STD 20 011)
c. FSC DIR 40 005 EN Controlled Wood (formal interpretation of the requirements included in FSC STD 40 005).

Guidance

a. FSC GUI 30 001 V2 0 EN FSC Pesticides Policy – Guidance on implementation 2007
b. FSC GUI 30-001a V1-0 EN Approved Pesticides Derogations
c. FSC GUI 30 004 EN Guidance on FSC P2 and P3: Guidance on interpretation 2005
d. FSC GUI 60 001 V1-0 EN Guidance on the interpretation of FSC Principles and Criteria to take account of small scale and low intensity (SLIMF)
e. FSC-GUI-60-004 EN V1-0 FSC Forest Stewardship Standards: structure, content and suggested indicators

Procedures

a. FSC-PRO-01-004a V1-0 EN FSC Forest Managers Checklist For Developing Derogation Applications
b. FSC-PRO-20-001 V1-0 EN Evaluation of the organization's commitment to FSC Values and occupational health and safety in the Chain of Custody
c. FSC-PRO-20-003 V1-0 EN Transfer of FSC Certificates and License Agreements (applies also to certificate holders)
d. FSC-PRO-40-004 V2-2 EN MC Derogation Applications
e. FSC-PRO-60-002a List Approved CW Risk Assessments

6.4. Guidelines to national initiatives

Manuals

a. FSC MAN 60 001 National Initiatives Manual

Standards

a. FSC-STD-60-002 V1-0 EN Structure and Content of National Forest Stewardship Standards
b. FSC-STD-60-006 V1-2 EN Development of National Forest Stewardship Standards

Guidance

a. FSC-GUI-60-004 EN V1-0 FSC Forest Stewardship Standards: structure, content and suggested indicators

Procedures

a. FSC PRO 60 002 V 2 0 EN Controlled Wood Risk Assessments by accredited national initiatives, national and regional offices.
b. FSC-PRO-40-002 V1-0 EN Development of national Chain of Custody group eligibility criteria
c. FSC-PRO-40-002a EN List National CoC Group Eligibility Criteria

6.4. Policies aiming at the certification scheme

Policies

a. FSC-POL-01-002 V2-0 EN Policy for Accepting Contributions (PAB) 2003
b. FSC-POL-01-004 V2-0 EN Policy for Association of Organizations with FSC
c. FSC-POL-60-001 V1-1 EN Development and Transition of the FSC network
d. FSC POL 10 003 EN Modular approaches to forest certification 2005
e. FSC POL 10 004 EN Scope of FSC PC 2005

Procedures

a. FSC-PRO-01-005 V2-1 EN Processing Appeals
b. FSC-PRO-01-008 V1-0 EN Processing Complaints in the FSC Certification Scheme
c. FSC-PRO-01-009 V2-0 Processing Formal Complaints in the FSC Certification Scheme (applying also to ASI)
d. FSC-PRO-01-004 V2-2 EN Processing Pesticide Derogation Applications (applies to FSC Policy and Standards Unit staff, FSC-accredited certification bodies (certification bodies), Accreditation Services International (ASI) staff, FSC-endorsed National Initiatives and to the FSC Technical Advisors).

2. Programme for the Endorsement of Forest Certification (PEFC)

Note: This fact sheet is adapted from the work by Inge Stupak for the IEA Bioenergy Task 40/43/38 Collaboration Project "Monitoring Sustainability Certification of Bioenergy", with a few additional information and modifications.

1. General aspects

1.1 Governance and management

Type of organisation: PEFC is not a forest certification scheme, but an international not-for-profit membership organization representing a wide range of stakeholder interests, which endorse national forest certification schemes. It has an annual budget of Swiss francs 2.5 million. Its activities are financed almost entirely (99%) from membership fees.

Approach to governance: Builds on national members whose local expertise is complemented by the experiences of internationally-active organizations. There are two categories of membership with voting rights: 1) National members (or "National Governing Bodies") are independent, national organizations established to develop and implement a PEFC system within their country, 2) International Stakeholder members are international entities including NGOs, companies, and associations committed to supporting PEFC's principles.

Decision making bodies:

1) *The General Assembly* is the highest authority of PEFC. It includes both national members and international stakeholder members with voting rights, and extraordinary members as observers.
2) The *Board of Directors* supports the work of the General Assembly and the organization as a whole. It is accountable to all members. Board members are elected by the General Assembly. Board members are chosen to ensure a balance between the major stakeholders supporting PEFC, the geographical distribution of members, annual cutting categories, and gender.
3) The *Secretary General* is responsible for the work of the PEFC Secretariat in Geneva, Switzerland. He is supported by a highly dedicated team of seven professionals.

1.2 Target group

PEFC's target group is national forest certification schemes. The target groups of the national forest certification schemes are generally:

a. *Forest management units:* Forest management units (FMU) or groups of FMUs.
b. *Other actors:* Actors taking ownership of the biomass certified by the national PEFC endorsed scheme, from the forest to the consumer, including all successive stages of processing, transformation, manufacturing and distribution (Chain of custody (CoC)).

Individual national schemes may additionally include other target groups. Sustainable Forest Management certification is only available in countries with PEFC-endorsed national certification systems.

1.3 Context and status

Context: PEFC was founded in 1999 in response to the specific requirements of small- and family forest owners as an international umbrella organization providing independent assessment, endorsement and recognition of national forest certification systems. It was established in 1999 by national organizations from eleven countries representing a wide range of interests to promote sustainable forest management especially among small forest managers. PEFC recognized the first national system in 2000, enabling forest owners and managers in Finland, Sweden, Norway, Germany and Austria to certify their responsible forest management practices.

Status: PEFC is a fully developed certification system, with third party auditing.

1.4 Objective and coverage

Vision: A world in which people manage forests sustainably. *Mission:* To give society confidence that people manage forests sustainably. *Objective:* To promote the sustainable forest management especially among small forest managers.

Products: PEFC endorsed schemes generally cover all product raw materials produced in smaller and larger forests and forest plantations, including timber and non-timber forest products (NTFPs).

End-use: PEFC endorsed schemes address all raw material end-uses.

Sustainability issues: PEFC schemes cover environmental, social and socio-economic sustainability aspects.

Actors: PEFC endorsed schemes cover sustainability certification of the forest management, and tracking of certified material throughout the whole supply chain, from the forest to the consumer (in the case of woodfuels, the energy producer).

Geographical coverage: PEFC endorsed schemes exist in about 30 countries on all continents, including USA, Canada, Brazil, Chile, Russia, Sweden, and Finland and other countries holding some of the world's largest forest areas.

1.5 Applied since

The first national system was endorsed in 2000

2. Scheme characteristics

2.1 Certification systems set-up

The exact set-up of the individual national certification systems vary, but it evolves around two types of certification: Forest management (FM) and the Chain of Custody (CoC), including a mechanism to avoid wood from illegal and controversial sources. Nationally PEFC endorsed schemes must, however, comply with the following international PEFC standards:

a. Standard Setting (PEFC ST 1001:2010): Describes the requirements for standardising bodies in the development and revision of forest management and scheme-specific chain of custody standards. It is based on ISO/IEC Guide 59.
b. Group Forest Management Certification (PEFC ST 1002:2010): Defines the general requirements for forest certification schemes which include group forest management certification and allow the certification of a number of forest owners/managers under one certificate.
c. Sustainable Forest Management (PEFC ST 1003:2010): Covers requirements for forest management standards applicable to all types of forests. The interpretation of the requirements for various types of forests or geographical zones is included as an appendix.
d. PEFC Logo Usage Rules (PEFC ST 2001:2008 v2).
e. Chain of Custody (PEFC ST 2002:2010): Specifies the requirements that organizations must comply with in order to be able to obtain Chain of Custody certification.
f. Annex 6 - Certification and Accreditation Procedures: Defines the certification and accreditation procedures for national certification schemes.
g. Annex 7 - Endorsement and Mutual Recognition of National Schemes and their Revision: Sets the rules for the endorsement and mutual recognition of national certification schemes, and guide the assessment and decision-making in the endorsement and mutual recognition process.

2.2 Chain coverage

Biomass production and CoC for the remaining actors in the supply chain.

2.3 Biomass focus

Biomass feedstock from forests and forest plantations. Forest management standards are applicable to all types of forests. The interpretation of the requirements for various types of forests or geographical zones is included in annexes, as well as the interpretation for forest plantations.

2.4 Sustainability principles

Sustainability principles and criteria vary significantly between PEFC endorsed schemes in number, structure and contents, but SFM standards must fulfil a set of minimum requirements. These requirements to SFM standards are laid out in the International PEFC standard*: PEFC ST 1003:2010: Requirements for certification schemes.* The outlined requirements must be reflected in the forest management standards submitted for PEFC endorsement. They constitute requirements for owners or managers applying for forest certification, as well as contractors and other operators operating in certified forests.

General requirements for SFM standards

The requirements for sustainable forest management defined by regional, national or sub-national forest management standards shall:

a. include management and performance requirements that are applicable at the forest management unit level, or at another level as appropriate, to ensure that the intent of all requirements is achieved at the forest management unit level; Note: An example of a situation where a requirement can be defined as being at other than forest management unit level (e.g. group/regional) is monitoring of forest health. Through monitoring of forest health at regional level and communicating of results at the FMU level the objective of the requirement is met without the necessity to carry out the individual monitoring of every forest management unit.
b. be clear, objective-based and auditable;

c. apply to activities of all operators in the defined forest area who have a measurable impact on achieving compliance with the requirements;
d. require record-keeping that provides evidence of compliance with the requirements of the forest management standards.

Specific requirements to SFM standards

a. Criterion 1: Maintenance and appropriate enhancement of forest resources and their contribution to the global carbon cycle
b. Criterion 2: Maintenance of forest ecosystem health and vitality
c. Criterion 3: Maintenance and encouragement of productive functions of forests (wood and non-wood)
d. Criterion 4: Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems
e. Criterion 5: Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water)
f. Criterion 6: Maintenance of other socio-economic functions and conditions
g. Criterion 7: Compliance with legal requirements

Normative references

a. FAO, FAO Global Forest Resources Assessment 2005, FAO Forestry Paper 147
b. ILO No. 87, Freedom of Association and Protection of the Right to Organise Convention, 1948
c. ILO No. 29, Forced Labour Convention, 1930
d. ILO No. 98, Right to Organise and Collective Bargaining Convention, 1949
e. ILO No. 100, Equal Remuneration Convention, 1951
f. ILO No. 105, Abolition of Forced Labour Convention, 1957
g. ILO No. 111, Discrimination (Employment and Occupation) Convention, 1958
h. ILO No. 138, Minimum Age Convention, 1973 ILO No. 169, Indigenous and Tribal Peoples Convention, 1989
i. ILO No. 182, Worst Forms of Child Labour Convention, 1999
j. United Nations, United Nations Declaration on the Rights of Indigenous Peoples, 2007
k. *Stockholm Convention on Persistent Organic Pollutants*, 1998

PEFC Due Diligence System (DDS) for avoidance of raw material from controversial sources

a. PEFC ST 2002:2010 provides requirements for the PEFC Due Diligence System which is required to be implemented by all organisations implementing this standard for all input forest based material of those product groups which are covered by the organisation's chain of custody and for which percentage based method has been applied, with the exception of: (a) certified material/products delivered by a supplier with PEFC recognised certificate, (b) recycled material, (c) material/products other than certified which are covered by the supplier's PEFC recognised chain of custody certificate, (d) material covered by the supplier's PEFC DDS certificate which was issued by PEFC notified and accredited certification body.
b. The DDS may also be implemented by organisations without chain of custody for the purposes of third party certification by PEFC notified certification bodies.
c. The organisation shall clearly identify the product groups for which the PEFC DDS is being implemented.
d. The organisation implementing the requirements for the PEFC DDS shall not apply on-product claims relating to the origin of material in non-controversial sources. The organisation may only communicate information on implementation and maintenance of PEFC DDS with respect to specific product groups.
e. The organisation's PEFC DDS shall be supported by the organisation's management system meeting requirements of chapter 6 of this standard.
f. The organisation shall implement the PEFC DDS in three steps relating to: (a) supplier's self-declarations, (b) risk assessment and (c) management of high risk supplies.
g. The organisation procuring raw material originating from threatened and endangered species classified by CITES shall follow all the regulations defined by CITES and other international conventions as well as national legislation.
h. The organisation shall not include any forest based material originating from countries which are covered by UN, or applicable EU or national government sanctions relating to export/import of forest based products. Note: The term "applicable" means that sanctions are applicable to the organisation.
i. The organisation shall not include any wood based material from genetically modified organisms in the product group covered by the organisation's PEFC DDS.
j. The organisation shall not include in the product group covered by the organisation's PEFC DDS any wood based material originating in conversion of forests to other vegetation type, including conversion of primary forests to forest plantations.

2.5 Proof of compliance

Varies significantly among national schemes, but all include at least a forest management standard and a standard for the Chain of Custody, including avoidance of illegal and controversial wood sources.

2.6 Chain of custody

Scope
The international PEFC standard specifies two optional approaches for chain of custody, namely the physical separation and percentage based methods. The standard also specifies the minimum management system requirements for the implementation and management of the chain of custody process. The standard covers requirements which can be implemented for chain of custody of forest based products. The chain of custody shall be used in connection with the definition of specific PEFC claim(s) or claims of PEFC endorsed forest certification schemes, which include criteria for the recognition of certified material. The standard shall be implemented for the purposes of third party conformity assessment based on requirements defined by the PEFC Council or PEFC endorsed forest certification schemes.

The PEFC CoC standard
The PEFC Chain of Custody includes six parts and four annexes:

- Scope
- Normative references
- Terms and Definitions
- Requirements for chain of custody process – physical separation
- Requirements for chain of custody process – percentage based method
- Minimum management system requirements

Appendix 1: Specification of the PEFC claim on “PEFC certified” material
Appendix 2: PEFC Due Diligence System (DDS) for avoidance of raw material from controversial sources
Appendix 3: Implementation of the chain of custody standard by multisite organisations
Appendix 4: Social, health and safety requirements in chain of custody

Supply chain control systems
There are two mechanisms for tracing the origins of forest-based products, tailored to the situation and needs of certified companies. These include:

a. The percentage based method 1: This mechanism allows mixing certified and non-certified raw material during the production or trading process. However the percentage of the certified raw material must be known and communicated to the company's customers (average percentage).
b. The percentage based method 2: Alternatively, the company can sell as certified the proportion of its production which equals the percentage of certified raw material used (volume credit).
c. The physical separation method: This mechanism requires separating certified and non-certified raw material during all phases of the company's production/trading process to ensure that certified raw material is not mixed with non-certified raw material. When the physical separation method is used for products with percentage-based claims, every delivery must be processed or traded separately.

To prevent wood from controversial sources (illegal logging) finding its way into products, PEFC has put in place a stringent safeguard mechanism for the avoidance of raw material from controversial sources. The mechanism is a compulsory part of PEFC’s Chain of Custody standard and puts in place safety checks such as risk analyses, external assessments and onsite inspections to ensure the legality of the uncertified wood. These safeguard checks are scrutinized by the independent certifiers during their annual audits and provide companies with a “double safeguard measure” for their procurement.

Normative references

a. PEFC ST 2001:2008, PEFC Logo usage rules - Requirements ISO/IEC Guide 2:2004, Standardization and related activities -- General vocabulary
b. ISO 9000:2005, Quality management systems -- Fundamentals and vocabulary
c. ISO 9001:2008, Quality management systems – Requirements
d. ISO 14001:2004, Environmental management systems -- Requirements with guidance for use
e. ISO/IEC 14020:2000, Environmental labels and declarations -- General principles
f. ISO/IEC 14021:1999, Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling)
g. ISO 19011:2011, Guidelines for quality and/or environmental management systems auditing
h. ISO/IEC Guide 65:1996, General requirements for bodies operating product certification systems
i. EN 643:2001, Paper and board – European list of standard grades of recovered paper and board

2.7 Certification process and audit requirements

Key stages required to obtain Sustainable Forest Management Certification include:

a. Become familiar with the certification options and requirements available in the particular country. This information can be obtained on the website of the relevant PEFC-endorsed national certification system.
b. Ensure that the operation's management practices meet PEFC's strict sustainable forest management requirements.
c. Locate a PEFC-recognized certification body in the particular country (if the particular country is not listed, please select "PEFC Council"); establish initial contact by phone, e-mail or personal meeting.

d. Arrange for an independent certification body to assess the forest management practices against the national sustainable forest management standard and check that all requirements are fulfilled.
This is done by making a formal application for Sustainable Forest Management certification with the certification body of the operation's choice. Based on this application, the operation will receive a proposal, including a cost estimate. Costs of PEFC Sustainable Forest Management certification are fixed by individual certification bodies; due to the competitive nature of the certification business prices may vary by country and certification body.
e. Provide all relevant documentation as requested by the certification body.
f. A field visit by auditors from the certification body will be arranged. Field visits include visits to selected sites in the forest and further documentation reviews, and interviews with relevant staff.
g. Resolve, if necessary, any non-compliance issues. This is a pre-requisite before a sustainable Forest Management certificate can be issued.
h. If the operation's management practices are found to be compliant with certification requirements, the operation will be issued a PEFC certificate. The certificate is usually valid for a period of three years. The operation will be required to submit the forests to an annual verification audit to ensure that the operations continue to comply with requirements.
i. Renew certification. In order to renew the operation's certification upon expiry of the certification certificate, the operation will be required to undergo a new certification audit.

Key Stages to obtain CoC certification

a. Set up the Chain of Custody system and train staff; ensure compliance with PEFC's strict requirements.
b. Locate a PEFC-notified certification body in the country of establishment (if this country is not listed, "PEFC Council" should be selected); establish initial contact by phone, e-mail or personal meeting.
c. Arrange for an independent certification body to assess the operation's Chain of Custody system against the Chain of Custody standard and check that all requirements are fulfilled.
d. This is done by making a formal application for Chain of Custody certification with the certification body of the operation's choice. Based on this application, the operation will receive a proposal, including a cost estimate. Costs of PEFC Chain of Custody certification are fixed by individual certification bodies; due to the competitive nature of the certification business prices may vary by country and certification body.
e. Most certification bodies establish their fees on the basis of the time needed to carry out the audit. Audit time depends on a number of variables, including company size and complexity of the Chain of Custody. This averages between half a day and two days.
f. A site visit by auditors from the certification body to assess compliance with the PEFC International Chain of Custody Standard will be arranged.
g. Resolve, if necessary, any non-compliance issues. This is a pre-requisite before a Chain of Custody certificate can be issued.
h. If the operation's Chain of Custody system is found to be compliant with certification requirements, the operation will be issued PEFC certification. The Chain of Custody certificate is usually valid for a period of three years. An annual surveillance audit is required to confirm that the operation continues to comply with Chain of Custody requirements.
i. Renew Chain of Custody certification. In order to renew the operation's Chain of Custody certification upon expiry, the operation will be required to undergo a new assessment.

2.8 National and crop specific variations

Australia: Australian Forestry standard
Austria: PEFC Austria
Belgium: PEFC Belgium
Belarus: Belarusian Association of Forest Certification
Brazil: Brazilian Forest Certification Programme (CERFLOR)
Canada: PEFC Canada
Chile: Chile Forest Certification Corporation (CERTFOR)
Czech Republic: PEFC Czech Republic
Denmark: PEFC Denmark
Estonia: Estonian Forest Certification Council
Finland: PEFC Finland
France: PEFC France
Gabon: PEFC Gabon
Germany: PEFC Germany
Italy: PEFC Italy
Ireland: PEFC Ireland
Latvia: PEFC Latvia
Luxembourg: PEFC Luxembourg
Malaysia: Malaysian Timber Certification Council (MTCC)
Norway: PEFC Norway
Poland: PEFC Poland
Portugal: PEFC Portugal

Russia: Russian National Council of Forestry Certification
Slovak Republic: Slovak Forest Certification Association
Slovenia: Institute for Forest Certification
Spain: PEFC Spain
Sweden: PEFC Sweden
Switzerland: PEFC Switzerland
United Kingdom: PEFC UK
United States: American Tree Farm System (ATFS); Sustainable Forestry Initiative (SFI)
Uruguay: Sociedad de Productores Forestales del Uruguay

2.9 Policy relation

- Forest management shall comply with legislation applicable to forest management issues including forest management practices; nature and environmental protection; protected and endangered species; property, tenure and land-use rights for indigenous people; health, labour and safety issues; and the payment of royalties and taxes.
- For a country which has signed a FLEGT Voluntary Partnership Agreement (VPA) between the European Union and the producing country, the "legislation applicable to forest management" is defined by the VPA agreement.

2.10 Recognition by/of other standards

Mutual recognition among PEFC endorsed schemes, but no recognition by/of standards and schemes that are not PEFC endorsed.

3. Standard, accreditation and certification bodies

3.1 Standard setting body	The national PEFC scheme.
3.2 Standard implementation body	The national PEFC scheme.

3.3 Accreditation body

Varies among nationally endorsed schemes, but internationally-recognized requirements for certification and accreditation defined by the International Standardisation Organisation (ISO) and the International Accreditation Forum (IAF) should be used. Accreditation bodies need to be members of the International Accreditation Forum (IAF), the world association of accreditation bodies. Accreditation takes place independently of PEFC.

3.4 Certification bodies

Varies among nationally endorsed schemes, but there is a total of 374 certification bodies accredited for PEFC certification

4. Implementation and certification

4.1 Level of experience

a. Forests area: 245 million ha
b. Forest owners: > 483,957 (the number of certificates being lower due to widely used group certification)
c. Companies (CoC): 8,797 (the number of certificates being lower due to widely used group certification)

4.2 Certified companies

See above.

4.3 Costs for operators

Costs of PEFC Sustainable Forest Management and CoC certification are fixed by individual certification bodies; due to the competitive nature of the certification business prices may vary by country and certification body.

5. Actual utilization

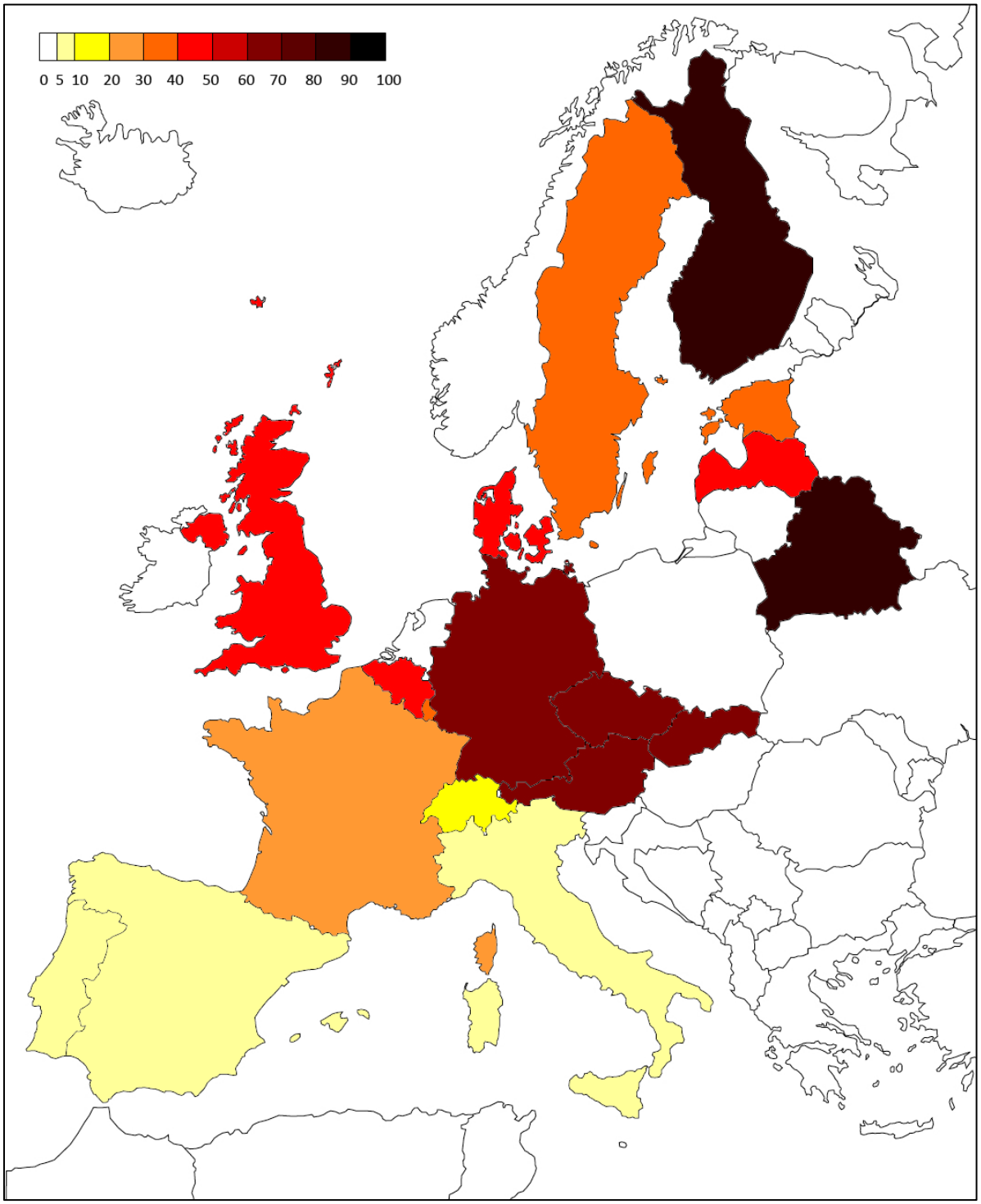


Fig. 1-2 Coverage of PEFC in Europe and Turkey (percentage of PEFC certified forest per total forest area in particular countries) (As of 15 June 2012)
(Reproduced using data from PEFC, 2012)
* North Africa, Cyprus and countries smaller than Luxembourg are not included

6. Source of information

6.1 Website	http://www.pefc.org/

6.2 Guidance for operators

Varies among nationally endorsed schemes. However:
Chain of Custody of Forest-Based Products – Guidance for Use (PEFC GD 2001:2011): Provides information for the implementation of the requirements of the PEFC Chain of Custody Standard PEFC ST 2002:2010.

6.3 Guidance for auditors
Same as 5.2
6.4 Guidance for national schemes
a. Structure of the PEFC Technical Documentation (PEFC GD 1001:2008): Much of PEFC's spectrum of activities is based on technical documentation outlining principles, criteria, and procedures b. PEFC Council Technical Documents Development Procedures (PEFC GD 1003:2009): Covers procedures for the development of technical documents to ensure objectivity, efficiency, and transparency amongst participating stakeholders. c. Administration of PEFC Scheme (PEFC GD 1004:2009): Covers requirements for the administration of the PEFC scheme including PEFC notification of certification bodies; PEFC Logo usage licensing; operation of the PEFC Registration System; complaint and dispute procedures. d. Issuance of PEFC Logo Use Licenses by the PEFC Council (PEFC GD 1005:2010): Covers the issuance of PEFC logo use licenses by the PEFC Council to ensure legally compliant use with the PEFC Logo usage rules – requirements, PEFC ST 2001:2008 etc. e. Minimum Requirement Checklist (GL 2/2011): Assist bodies developing or revising forest certification schemes and in the preparation of PEFC endorsement application, and facilitates the assessment of a national forest certification scheme against PEFC Sustainability Benchmark etc.
6.5 Guidance for international PEFC, including the PEFC council
a. Acceptance of PEFC Members (PEFC GD 1002:2008): Defines conditions and procedures for PEFC membership. b. Nomination for Election of the PEFC Council Chairman, Vice Chairmen and Members of the Board of Directors (GL 3/2010) c. PEFC Notification of Certification Bodies by PEFC Council (PEFC GD 1006:2010): Only certification bodies in compliance with PEFC requirements and recognized by PEFC by are authorized to provide PEFC Chain of Custody certification services. d. PEFC Council Procedures for the Investigation and Resolution of Complaints and Appeals (GL 7/2007): Describes the responsibilities and actions of PEFC Council and PEFC National Governing Bodies for the investigation and resolution of complaints and appeals. e. Involvement of the Panel of Experts in the Endorsement of National Forest Certification Schemes (GL 8/2008): Provides procedures governing the appointment and work of the Panel of Experts (PoE) within the process of the endorsement of national forest certification schemes.

3. Green Gold Label (GGL)

1. General aspects

1.1 Governance and management

Green Gold Label is registered and owned by the independent Green Gold Label Foundation. The Green Gold Label Foundation was established on 4 September 2003. The Foundation is responsible for the standards criteria and for communication with stakeholders. The member base is multi-stakeholder. Standard setters, primary producers, traders, end users and NGO's are all welcome to join the initiative. An annual subscription fee is charged based on the membership type. Furthermore, a fee is applicable based on the quantity of traded sustainable biomass. Further details for governance: http://www.greengoldcertified.org/site/pagina.php?id=15

1.2 Target group

Producer of agricultural / forestry (residual) products	GGLS1 Chain of Custody and Processing Standards;
Supplier of agricultural (residual) products (producer)	GGLS2 Agricultural Source Criteria;
FEP, Traders and Conversion units for RED Compliant biomass/-liquids/-fuels	GGLS3 RED Compliance
Supplier of products and residual- by- and derived products from vegetable origin from forestry and/or landscape- and nature maintenance (producer)	GGLS5 Forest Management Criteria;
Producer of agricultural/forestry (residual) products	CRM1 Chain of Custody and Processing Standards;
Operators and/or administrators that want to convert, restore and maintain an agricultural or forestry area to a non-agricultural or a non-forestry area with higher conservation values	GGL7 Conservation Stewardship

1.3 Context and status

Green Gold Label was established in 2002 by Dutch energy company Essent (now RWE) and Skall International (now Control Union Certifications).The Green Gold Label was created as the result of a number of research programmes initiated by Essent in cooperation with Utrecht University under the name of Fair Bio Trade. The objective of this research was to develop protocols for the importation of sustainable biomass. These studies also investigated the technical, environmental and economical aspects of conversion of clean biomass into sustainable energy.

1.4 Objective and coverage

Green Gold Label aspires to become the leading, independent, credible, accepted multi-stakeholder certification programme for sustainable biomass in Europe. Green Gold Label is committed to supporting the development of sustainable biomass for energy, power production and chemical purposes.

It covers production, processing, transport and final energy transformation. Green Gold Label (GGL) provides standards for specific parts of the supply chain, as well as standards for tracking & tracing the origin of the biomass.

1.5 Applied since

2002

2. Scheme characteristics

2.1 Certification systems set-up

The governing Green Gold Label Foundation offers two programmes: (i) Green Gold Label (GGL) for sustainable biomass; and (ii) Clean Raw Material (CRM) for clean wood

(i) Green Gold Label for sustainable biomass

A mass balance calculation is used to derive the total amount of GGL material. Only an accredited, independent

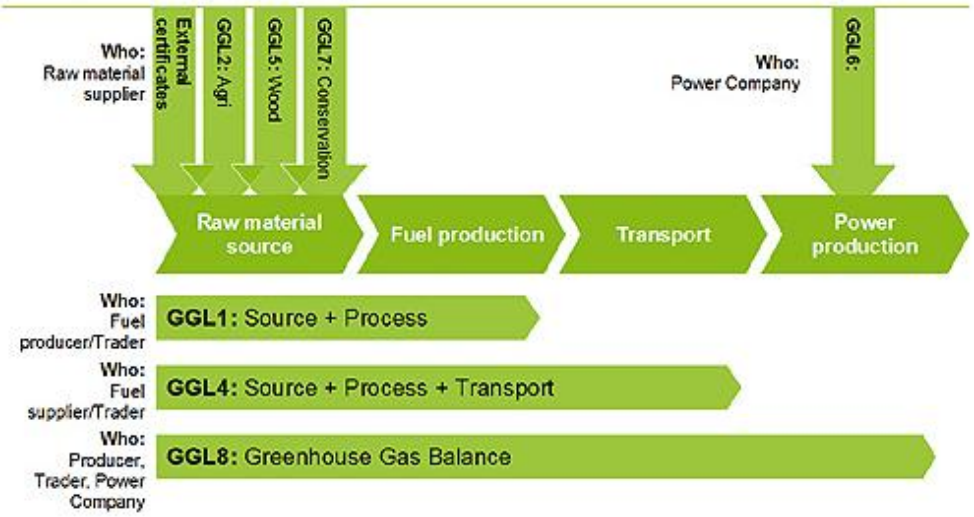
third party inspection body can issue Green Gold Label certification. There are various GGL standards that apply at different points in the biomass supply chain, each of the following steps is outlined in more detail in each standards:

A) Supply of raw material – external forestry or agricultural standard or GGL 2, 5 or 7
- for raw material sourcing if other external standards have not yet been met

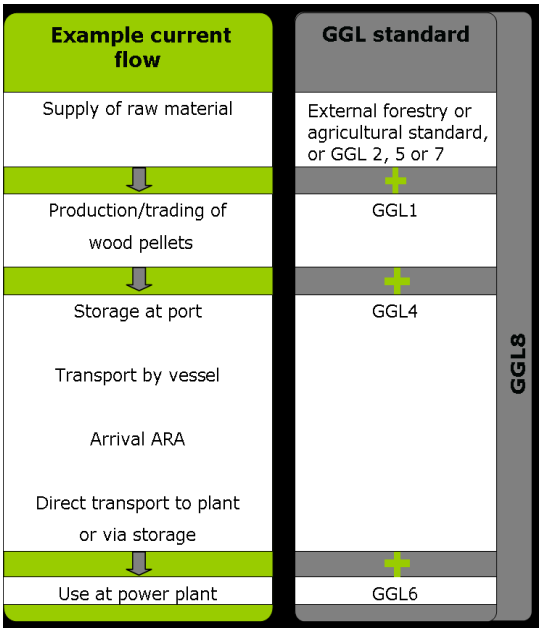
B) Production/trading of wood pellets – GGL1; and Transport and storage - GGL4
- for sourcing, process and transport. Producers, traders as well as each consignment must meet specific GGL requirements.

C) Use at power plant - GGL6
– for power plants to prove that the power generated is the product of processed GGL certified biomass (introduction in 2011).

D) Greenhouse gases and energy balance calculation – GGL8
- for Greenhouse Gas Balance was developed in anticipation of the Dutch NTA 8080 (starting in 2011). The calculation method is based on the Renewable Energy Directive (RED) and covers the whole supply chain.



Biomass supply chain overview example:



(ii) Clean Raw Material for clean wood

Clean Raw Material (CRM) is a specific clean wood certificate for pre-treated biomass, based on the Dutch standard NTA 8003 "Classification of biomass for energy production" codes 101-169.

Chain of custody and processing standards – CRM1
CRM is the counterpart of GGL1 for CRM material. Where GGL focuses on sustainability, CRM is used to prove that clean wood is used for the production of e.g. torrefied material. Due to the nature of this material, certain GGL1 requirements do not apply (such as the mass balance calculation). This new standard requires the material not to contain more than 3% binding agents, which also have to be of biomass origin.

Transaction Certificate – CRM2
CRM2 is the counterpart of GGL4 for CRM material, covering a specifically described amount of clean wood, leading to a CRM Transaction Certificate.

Notes: GGL3 is not included here because the foundation is still waiting for the decision from the RED.

2.2 Chain coverage

GGL involves tracing from source to power generation: It covers production, processing, transport and final energy transformation.

2.3 Biomass focus

The scope of the Green Gold Label scheme includes the entire chain of biomass/biofuel/bio-liquids for energy production and biofuel conversion starting at the primary production. It concerns all products, by-products, residues remains and derivatives of vegetable origin from agriculture and/or landscape and environment management that are eligible for energy production (hereinafter: the “Materials”).

http://www.greengoldcertified.org/data/docs/Certification%20Requirements%20v6bEN.pdf
(Updated Nov 11)

2.4 Sustainability principles

GGLS8 – Greenhouse gasses and energy balance calculation Standard

This standard contains the rules and reference values for the greenhouse gas (GHG) and energy balance calculation for biomass. With the GHG calculation the fossil greenhouse gasses coming from fossil fuels used for producing the biomass are calculated. Comparing it against a reference value for the European fossil fuel mix for the energy grid that the biomass is to replace, in order to decrease the amount of fossil GHG, the balance needs to be positive and above a given value. With the energy balance the total fossil energy used for production and transport of the biomass is subtracted from the final green power produced by the biomass. The result has to be positive, and in some countries only credits are given on this result of the green power minus the fossil fuel used for production and transport.

This standard complies with the GHG calculation as prescribed by the
- Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on the promotion of the use of energy from renewable sources
- NTA 8080: Sustainability criteria for biomass for energy purposes (2009).

2.5 Proof of compliance

- GGL1: Chain of Custody and Processing – Trader
- GGL2: Agricultural Source Criteria
- GGL4: Transaction and Product Certificate
- GGL5: Forest Management Criteria
- GGL6: Power Company Criteria
- GGL7: Conservation Stewardship Criteria
- GGL8: Greenhouse gasses and energy balance calculation Standard
- CRM1: Chain of Custody and Processing Standards
- CRM2: Transaction Certificate

2.6 Chain of custody

Production and Trading - GGLS1 – Chain of Custody and Processing – Trader

Applicants may be operators that trade and/or produce the final or half (finished) product of the biomass to enter the Green Gold Label program. In case the party is partly or completely outsourcing the production of the end products, the production units involved have to comply with the GGLS1 standard as well.

Principles:

1. Provisions relating the transport and the use of certificates and prescribed indications
2. Control of incoming products.
3. Administration
4. Quality control processing facility
5. Calculation amount of Green Gold Label material vs Non-Green Gold Label material with the use of the mass balance calculation, to be calculated by the producer.
6. Processing facility and equipment.
7. Registration of the amount of Green Gold Label material vs Non-Green Gold Label material.

http://www.greengoldcertified.org/data/docs/GGLS1%20-%20COC%20and%20Processing%20Standards%20v%202012%201.pdf

Transport and storage – GGLS4 – Transaction and Product Certificate

A GGL transaction certificate is issued on a defined amount of material (like a delivery within a contract) when it complies with the principles of GGLS4. If the sold batch of material consists of material that (partly) was covered by a previous transaction certificate, a transaction certificate can only be made when the former transaction certificate has been redeemed. The GGLS4 standard consists of 3 functional parts (principles):

1. Source and production (chain of custody producers) (including trade departments of producers)
2. Trader, transport and storage (chain management system for transport)
3. Energy companies / plant (completion and company's quality system)

http://www.greengoldcertified.org/data/docs/GGLS4%20Transaction%20and%20Product%20certificate%20v2011%203.pdf

CRM1 – Chain of Custody and Processing Standards

The CRM1 standard is intended for applicants of the CRM process certification. Applicants may be operators that trade and/or produce the final or half (finished) product of the biomass to enter the Clean Raw Material program. In case the party is partly or completely outsourcing the production of the end products, the production units involved have to comply with the CRM1 standard as well.

Principles:

1. Provisions relating the transport and the use of certificates and prescribed indications
2. Control of incoming products.
3. Administration
4. Quality control

http://www.greengoldcertified.org/data/docs/crm01.pdf

CRM2 – Transaction Certificate

A CleanWood transaction certificate is issued on a defined amount of material (like a delivery within a contract) when it complies with the principles of CRM2. If the sold batch of material consists of material that (partly) was covered by a previous transaction certificate, a transaction certificate can only be made when the former transaction certificate has been redeemed. The CRM standard consists of 3 functional parts (principles):

1. Source and production (chain of custody producers)
2. Trader, transport and storage (chain of custody system for transport)
3. Energy company

http://www.greengoldcertified.org/data/docs/CRM2%20Transaction%20certificate%20v2011%201.pdf

2.7 Certification process and audit requirements

Scope certificates are valid for the period of 16 months. The annual inspection will be conducted about four months before the expiry of the certificate. During this annual audit, all applicable conditions will be fully inspected.

The GGL requirements have been classified into *MAJOR MUST*, *MINOR MUST* and *SHOULD*. All CRM requirements have been classified as *MAJOR MUST* requirements.

1. *MAJOR MUST*: mandatory requirement that has to be demonstrably complied with before a certificate is issued. Infringement of the requirement relates to insufficient implementation of one or more of the requirements or to a situation where it is not or insufficiently secured that the product does comply with requirements. If the company is or remains non-compliant with a MAJOR MUST, the certificate shall be withdrawn. Corrective actions must be verified by the certification body (CB), either by means of a site visit or by other means, such as

a document assessment. Deadline: 1 month after finding.

2. *MINOR MUST*: mandatory requirement that has to be demonstrably complied with before a shipment of certified batch of biomass material can take place. Infringement of the requirement relates to lack of follow up on or control of requirements, for as far as there is no impact on the effectiveness of the scheme in the organization. If the company is or remains non-compliant with a MINOR MUST requirement, the non-conformity will be upgraded to a MAJOR MUST shortcoming. Corrective actions must be verified by the CB, either by means of a site visit, or by other means, such as a document assessment. Deadline: 3 months after finding.

3. *SHOULD*: requirement that potentially in the long run could turn into or lead to an infringement of a MINOR MUST requirement or a MAJOR MUST requirement.
The company subject to a GGL audit (hereafter 'the participant) is strongly encouraged to correct the SHOULD, but the issue of a GGL certificate does not depend on it.

Prior to issuing a certificate, the participant is obliged to have demonstrably executed corrections and corrective actions for each and every MAJOR MUST shortcoming. The participant must also comply with at least 80% of the MINOR MUST requirements.

2.8 National and crop specific variations

There are no national or crop specific variations defined.

2.9 Policy relation

European level: A decision from the European Commission is pending for the approval of the newly developed GGL – RED standard under the Renewable Energy Directive (RED). Once approval is received, more details on the transition to this new standard will be published. This new standard consists of: GGL2 - agricultural criteria (RED), GGL3 - chain of custory and processing (RED), GGL5 - forestry criteria (RED)

The UK: The English Office of the Gas and Electricity Markets (Ofgem) has benchmarked the newly developed GGL – RED standard under the Renewable Obligations Orders (ROO). Forestry management certification systems such as FSC were also part of the benchmark. As of July 2012, the GGL - RED standard is the only voluntary system that has been approved by Ofgem.

The Netherlands: The Green Gold Label has applied for approval by the European Commission (see above), which is solid enough recognition for NEa to award a temporary acceptance. The Dutch Emissions Authority (NEa) had temporarily accepted the Green Gold Label on a global basis for a variety of raw materials and for all sustainability criteria from 1 July 2011 until 1 July 2012.

2.10 Recognition by/of other standards

Of:
GGLS5 is derived from existing and internationally recognised forest management standards (FSC, PEFC, CSA SFM, SFI). GGLS5 has not been developed to replace the existing standards, rather to enable participating parties and stakeholders to perform a quick-scan assessment on sound forest management practices. For agricultural sector, ORGANIC and GlobalGAP are accepted under GGL.

Details of standards accepted under GGL:

	Agriculture			Forestry				Chain of Custody
	GGLS 2	Organic	GlobalGAP	FSC	PEFC	CSA	SFI	GGLS 1
Land use meets local legislation and rules		X	X	X				X
Production and processing is legal		X	X	X				
Respect for land use rights of indigenous people				X				
Maintenance and improvement of emplyees' well-being and safety	X		X	X	X	X		X
Focus on optimisation of economic feasibility	X		X	X	X		X	X
Maintenance of bio-diversity reserves, soil, ecosystems and landscapes	X	X	X	X	X	X	X	X
Long-term management	X	X	X	X			X	
Monitoring of ecosystem conditions	X			X			X	
No negative influence on present ecosystems				X				
Plantations complement existing ecosystems	X	X		X				
Insight in processed and produced product streams				X				X

3. Standard, accreditation and certification bodies	
3.1 Standard setting body	
Green Gold Label creates various Working Groups where specific topics are addressed, for example the development of the Green Gold Label standards, accreditation procedures, communication, engagement with governments etc. The Working Groups are multi- stakeholder governing bodies.	
3.2 Standard implementation body	GGL Foundation: Executive Board, Advisory Board, Technical Committee
3.3 Accreditation body	GGL Foundation
3.4 Certification bodies	Control Union Certifications

4. Implementation and certification

4.1 Level of experience

More than 5 million tonnes of biomass certified with the Green Gold Label in 9 years time since 2002, and approximately 3 million tonnes in 2012. Currently over 25 biomass suppliers are GGL certified producers/traders, as verified by Control Union Certifications, an accredited certification body.

4.2 Certified companies (as of July 2012)

Company	Country	Validity
CM Biomass partners	Denmark	06.04.2013
EC Biomass	South-Africa	18.01.2013
Ekman	Sweden	31.10.2012
Enermontijo (GGL Controlled)	Portugal	11.02.2013
Enerpellets (GGL Controlled)	Portugal	12.02.2013
Enviva	USA	03.02.2013
Georgia Biomass LLC	USA	04.01.2013
Green Circle Bio Energy Inc.	USA	30.04.2013
Latgran	Latvia	14.11.2012
NewFuels	Latvia	02.05.2013
Pacific BioEnergy Corp.	Canada	24.11.2012
Pellets Power 2 Lda	Portugal	18.01.2013
Pinnacle	Canada	02.11.2012
Plantation Energy Australia	Australia	28.08.2012
Premium Pellet	Canada	24.11.2012
Shaw Resources	Canada	14.06.2012
Toepfer International	Switzerland	13.01.2013
Vitol	Switzerland	14.06.2012

4.3 Costs for operators

The participant is obliged to fulfil any prescribed fees, established by the Foundation, on time. The CB will charge the participant the registration costs, based on the number of registered companies or establishments. Information of exact fees and costs is not available to the public. However, from anecdotal source, the cost is approximately 0,10 EUR per metric tonne (2012).

5. Actual utilization

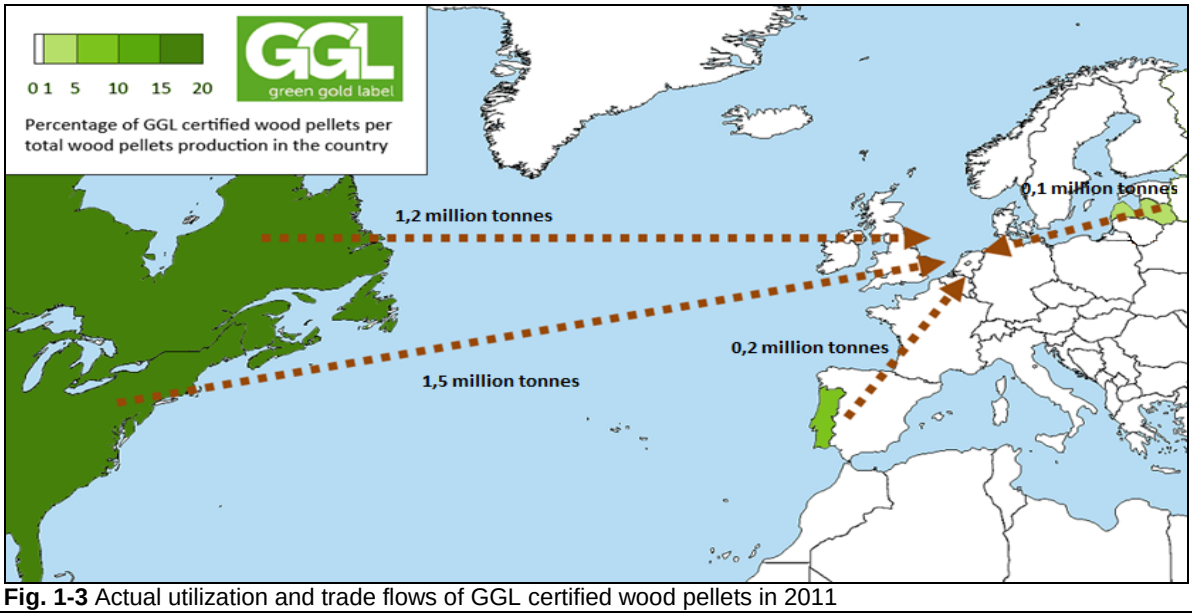


Fig. 1-3 Actual utilization and trade flows of GGL certified wood pellets in 2011

(Source: Interviews with industry actors)

Suppliers
Canada: 1, 2 million tonnes
USA: 1,5 million tonnes
Portugal: 0,2 million tonnes
Latvia: 0,1 million tonnes

End-users
UK: 1,8 million tonnes
The Netherlands: 1,2 million tonnes

For more information please refer to Work Package 5.2 for a detailed case study on GGL.

6. Source of information	
6.1 Website	http://www.greengoldcertified.org
6.2 Guidance for operators	http://www.greengoldcertified.org/data/docs/Certification%20Requirements%20v6bEN.pdf http://www.greengoldcertified.org/site/pagina.php?id=11
6.3 Guidance for auditors	http://www.greengoldcertified.org/data/docs/Certification%20Requirements%20v6bEN.pdf http://www.greengoldcertified.org/site/pagina.php?id=11

4. Laborelec Label

1. General aspects	
1.1 Governance and management	SGS Belgium and Laborelec
1.2 Target group	Pellets suppliers
1.3 Context and status	
At the request of GDF-SUEZ/Electrabel, SGS Belgium and Laborelec have jointly designed this verification scheme for biomass pellets being fired in thermal power plants. The process owner of this process is GDF-SUEZ/Electrabel European Public Affairs (EPA, Hilde De Buck). GDF-SUEZ/Electrabel TPM/Fuel Procurement is in charge of the daily application of the verification procedure.	
1.4 Objective and coverage	
Systems of green certificates have been developed in Belgium that makes the level of the green support mechanism proportional to the energetic efficiency of the whole supply chain. Within that frame Laborelec has developed together with SGS Belgium a global biomass certification scheme that adds up the wishes of all regional authorities in Belgium.	
1.5 Applied since	2007
2. Scheme characteristics	
2.1 Certification systems set-up	
The scheme has generally 2 major sections: (i) From the pellet supplier to the buyers (Doc 02 to Doc 06) (ii) For **forestry** (Doc 08) and **sawmill industry** (Doc 09) inspection based on the Sustainability principles developed by the Cramer Commission. The procedures consist of: (i) the evaluation of the **energy consumptions** along the pellet supply chain (milling, drying, pelletising, transportation…). If the raw material is a residue (e.g. saw dust), the evaluation energy use within the supply chain starts only from the point where the residue is generated (e.g. sawmill); (ii) the **full traceability** of the resources that were used for manufacturing the biomass fuel and the evidence that those resources are managed in a sustainable way.	
2.2 Chain coverage	From feedstock production (forestry or residues) to electricity production
2.3 Biomass focus	Wood pellets
2.4 Sustainability principles	
I. Feedstock sourcing: (A) <u>Sustainable forestry principles</u>: 1. GHG and energy balance 2. Carbon sinks in the soil and in the vegetation 3. Food supply and local biomass applications aspects 4. Biodiversity in forest management 5. Environmental Impacts Assessment (EIA). 6. Soil in forest management 7. Ground and surface water in forest management 8. Air quality in forest management 9. Contribution to local prosperity related to forest management 10. Contribution of the forest management to local welfare. (B) <u>Sustainable saw mill industry principles:</u> 1. GHG and energy balance 2. Environmental Impacts Assessment (EIA) 3. Ground and surface water management 4. Air quality management 5. Contribution to local prosperity related to wood processing 6. Contribution of the company management to local welfare **II. Supply chain and end-use**: GHG and energy balance	
2.5 Proof of compliance	
The verification procedure relies on 4 key players delivering and checking 4 documents : 1. A **local independent inspection body** prepares an audit report based on a on-site visit and the	

procedure described in the **Pellet supplier audit procedure (Doc 03).** The auditor verifies the data delivered by the pellet supplier with respect to the origin of the raw material, the characteristics of the pellet product and the energy consumption related to production and local transport. The local independent inspection body is generally a local division of SGS or a local subcontracting party.

2. The **pellet producer** is requested to fill in a declaration about the information delivered to the auditor. This declaration is the **Pellet supplier declaration form (Doc 02).** If the audit report cannot be made immediately e.g. because the plant is not yet in operation, then a **Pre-audit declaration form (Doc 06)** can be filled in and verified by the auditor such that contracting issues can be organized in the meanwhile.
3. The **sea or fluvial transport company** is invited to deliver the long distance transportation data as described in the **Pellet transport declaration form (Doc 04)**. The data are verified by SGS BELGIUM for coherency.
4. Finally, on the base of the audit report, **SGS Belgium** computes the balance of the energy use and the fossil carbon for the whole supply chain in the **Energy and Carbon Balance Form (Doc 05)**.

2.6 Chain of custody

In order for biomass to be accepted according to the Laborelec's standards, it must in a nutshell be a byproduct (preferably not a primary one such that additional certificates are not lost) from agriculture and forestry. The biomass (solid recovered fuels) shall consist of organic material that comes from well-managed woods, (public) zones of vegetation or agricultural grounds. Energy consumption must be reasonable with respect to other references and heat for drying must be generated from renewable sources (biomass).

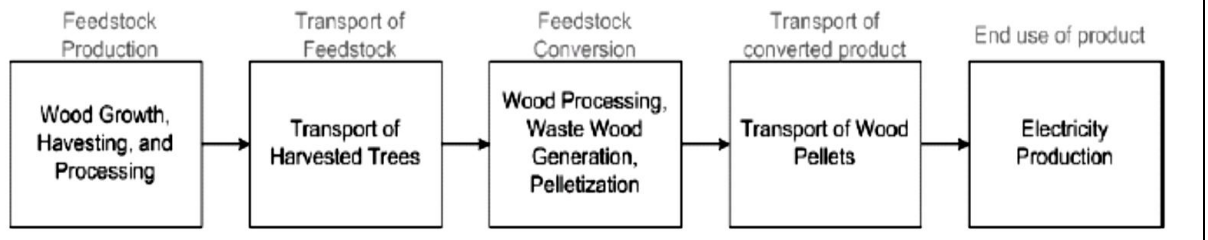
(A) Forestry

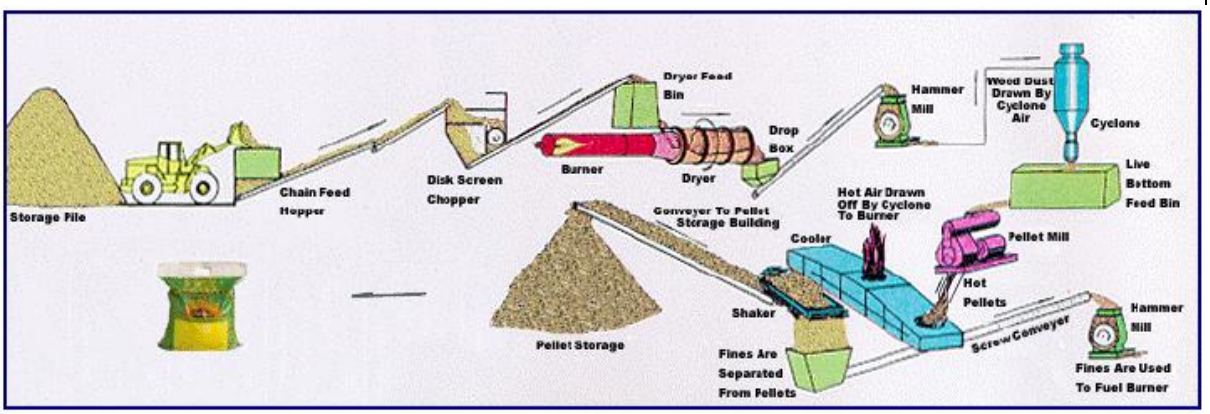
The forestry part is included. The scope perimeter is limited to the wood production processes until the fringes of the forest. All activities within the forest management unit will be under the scope of the audit.

(B) Saw mill industry

The scope perimeter of this inspection is limited to the transport of input material to output production. All activities within the sawmil will be under the scope of the audit. Materials quantities to be assessed are restricted to the inputs and outputs materials which are to be used in pellets plants.

(C) Pellet supply chain



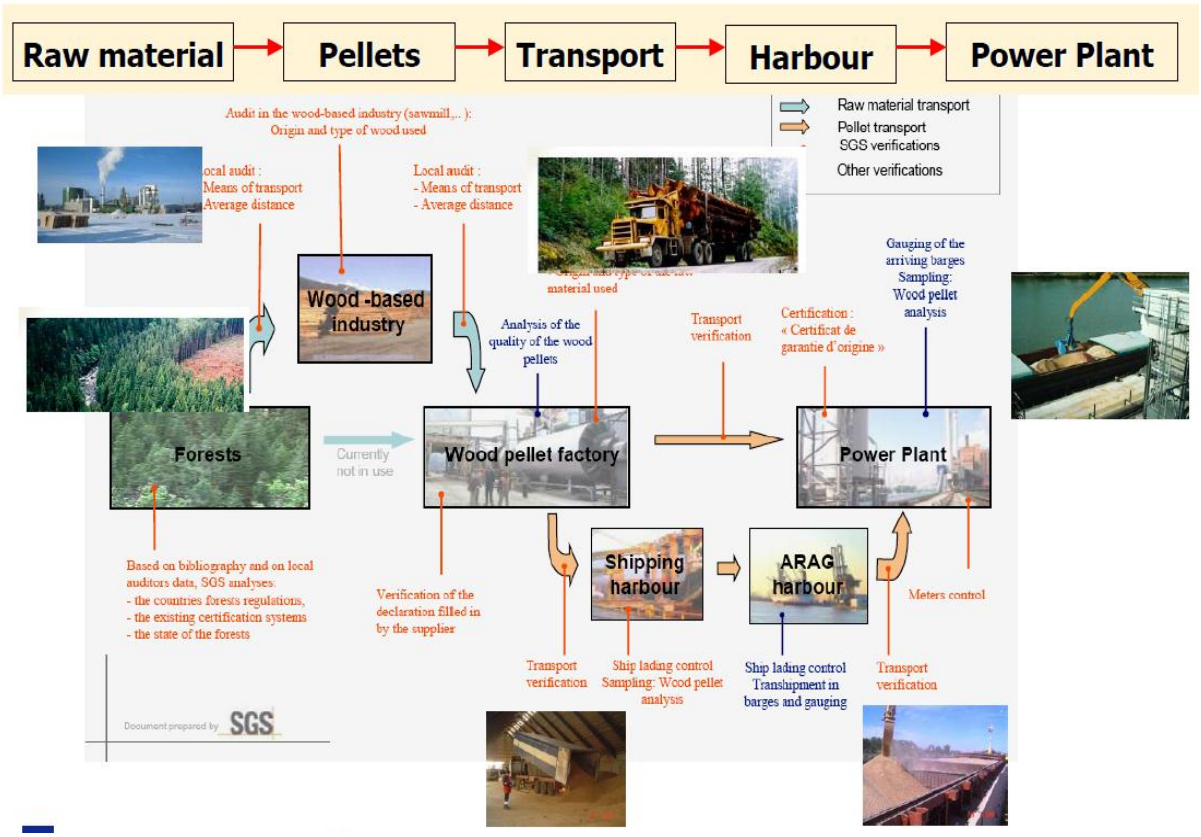


2.7 Certification process and audit requirements

The quality system for being granted green certificates corresponding to the generated renewable electricity firing wood pellets is focused on a tracing system for biomass from (by) products (and its energy produced) back to the sustainable source. Both Flanders and Wallonia authorities request at least an inspection report of each biomass fuel producing facility. Both regions have different legislations and different methodologies for

calculating the number of granted certificates but Laborelec applies the same certification procedure.

SGS checks first of all the sourcing of the wood (hardwood, softwood, saw dust, shavings, coppices) and the transportation between the sources and the pellet plant. If the biomass is not a secondary product but a primary one, then the whole energy consumption needed for planting, fertilizing, harvesting etc. must be taken into consideration and energy used subtracted from the number of granted green certificates. SGS evaluates all energy consumptions for making the pellets (electricity for the densification and auxiliaries, fossil fuels or biomass for drying). Finally, SGS looks to the final transportation to the sea harbour (train, truck) and checks the global traceability. Refer to 2.5 for the more details of how the documents are prepared.



Two guideline documents also prepared for forest inspection and sawmill industry inspection:
Doc 08 - Inspection Procedure for Forestry Based Company
Doc 09 - Inspection Procedure for Sawmill Industry
These audit forms in Doc 08 and 09 are based on the sustainability principles developed by the Cramer Commission. It is designed to assist inspectors in the implementation of the verification criteria set by the NTA 8080 commission (last version published in February 2009).

Belgian authorities impose that each supplier undergoes an audit within 6 months after the biomass has been first fired. The audit must examine the sustainability of the raw material sourcing as well as detail the energy balance of the whole supply chain. This includes the energy that is used for pelleting the wood and for transporting the final product up to the site of the power plant. If the product would appear in contradiction with the generic sustainability principle, the Walloon Energy Commission (CWaPE) would then have the right to cancel the granted green certificates. For each producer, the global supply chain is analyzed by a local independent inspectorate, and approved by SGS Belgium, the latter being accepted as independent body by Belgian authorities for the grant of green certificates.

2.8 National and crop specific variations	There are no national or crop specific variations defined.

2.9 Policy relation

This certification scheme is applied to all Belgium Green certificates (5 different Green Certificates mechanisms are running in Belgium: 2 different in Flanders (1 Green, 1 Cogen), 1 in Wallonia, 1 in Brussels and 1 at the Federal level)

2.10 Recognition by/of other standards

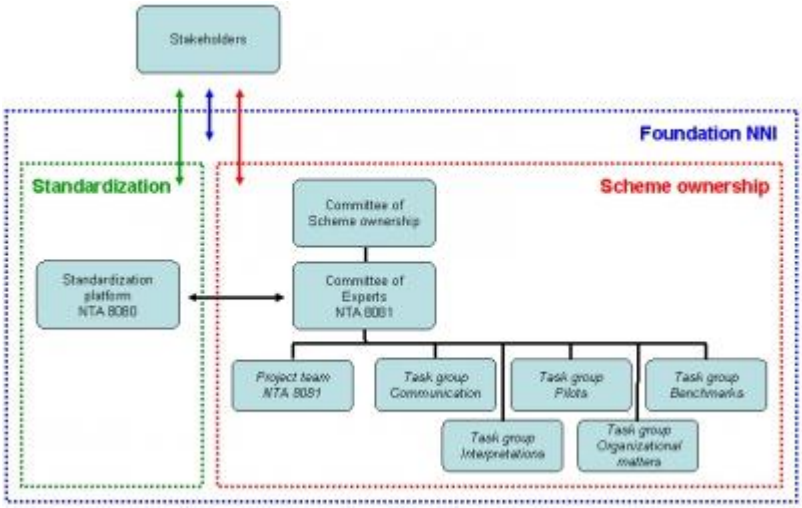
Recognition of FSC certified forests – If any FSC certificate covering the surfaces where the wood to be processed was harvested is provided, no further verification of the Principles 2 to 10 in sustainable forestry (see 2.4) is needed.

3. Standard, accreditation and certification bodies	
3.1 Standard setting body	Laborelec and SGS Belgium
3.2 Standard implementation body	Laborelec (Technical specifications and verification process)
3.3 Accreditation body	N/A
3.4 Certification bodies	SGS Belgium (Inspection and independent reporting)
4. Implementation and certification	
4.1 Level of experience	N/A
4.2 Certified companies	N/A
4.3 Costs for operators	less than 0,1% of the biomass fuel cost. No exact data for the costs.
5. Actual utilization	
Laborelec Label is mainly used for the Belgian market. Belgium is a Federal State divided in 3 Regions: Wallonia, Flanders and the Brussels Capital Region. Since wide competences have been transferred from the Federal State to the Regions, there are now 5 Green Certificates mechanisms on-going in Belgium, based on an obligation coupled with a penalty for the non-achieved share of green power. Laborelec Label is applied for wood pellets that are imported. The trade flows are confidential.	
6. Source of information	
6.1 Website	http://www.laborelec.be/ENG/biomass-verification-procedure/
6.2 Guidance for operators	http://www.laborelec.be/ENG/biomass-verification-procedure/
6.3 Guidance for auditors	http://www.laborelec.be/ENG/biomass-verification-procedure/

5. NTA 8080/8081

1. General aspects	
1.1 Governance and management	

The Netherlands Standardization Institute (NEN) is a private, non-profit organization. NEN is the independent owner of the certification scheme. The scheme is published in NTA 8081. Certification is done by certifying bodies that have entered into an agreement with NEN. The management of the certification scheme is placed at NEN Scheme Ownership. This is an integrated division of the NEN Office and is responsible for the ownership of schemes and all related activities.



A Committee of Experts has been set up to draft, establish and maintain the certification scheme. This committee is responsible for involving the stakeholders in the maintenance of the scheme. Other activities, including the drafting of interpretation documents, ensure that the certification scheme remains in accordance with the opinion and the needs in the market. This helps to safeguard the applicability of the scheme.

1.2 Target group	Suppliers (producers, processors, traders) and buyers solid, liquid & gaseous biomass.

1.3 Context and status

Based on Dutch Cramer criteria and European (RED) sustainability criteria, a certification system for biomass for energy purposes has been developed by a diverse group of stakeholders. The criteria have been turned into verifiable requirements. With the support of NEN, a broad stakeholder panel representing market players, government and civil society organizations has determined the sustainability requirements with regard to biomass in the form of a voluntary agreement. On the basis of that agreement, NTA 8080, a certification scheme has been developed. The NTA 8080 certification system describes the requirements and certification rules for sustainably produced biomass for energy applications (power, heat & cold and transportation fuels).

NTA 8080 and CAN/CSA-Z809 are the only two standards with sustainability criteria for solid biomass developed by standardisation bodies (noting that CSA is not developed for bioenergy).

1.4 Objective and coverage

To offer a way for suppliers and buyers of biomass to distinguish sustainable products, based on verifiable requirements translated from Dutch and European sustainability criteria.

With the NTA 8080 certificate the market actors can demonstrate that the biomass that they produce, convert, trade or use complies with international criteria for sustainability.

1.5 Applied since	2011

2. Scheme characteristics	
2.1 Certification systems set-up	

The Dutch technical agreement (NTA) describes the requirements for sustainably produced biomass for energy applications (power, heat & cold and transportation fuels). Biomass includes solid as well as liquid and gaseous biofuels. The NTA 8080 is intended to be applied at organizations that wish to sustainably: produce, convert, trade or use biomass for energy generation or as transporting fuel. 'Small-holders' (small family companies) have been taken into account when drafting NTA 8080. These companies do not need to meet certain

requirements due to their nature. It concerns requirements in the field of local prosperity and requirements related to employers. A consultation of (local) stakeholders is excluded as well. 'Small-holders' may opt for establishing a group in order to be certified as a group.

Residual flows can be applied to the generation of energy or production of fuels. In NTA 8080, a residual flow is defined as a flow of biomass that is released in the production of other (main) product, representing an economic value less than 10% of the main product's value and for which processes have not been deliberately modified to produce the residual flows (included in interpretation document as part of EC recognition). To deal practically with this definition, NTA 8080 includes a list with biomass flows that meet this condition. For this, the classification according to NTA 8003:2008, Classification of biomass for energy application (only in Dutch) has been used.

2.2 Chain coverage

The certification scheme distinguishes four types of 'scopes':

- 'Producer': produces the primary biomass or collects residual flows;
- 'Processor': processes or converts the (primary) biomass;
- 'Trader': trades in the biomass;
- 'End-user': uses the (processed) biomass for the generation of electricity and heat or production of biogas or biofuel (neat or blended).

2.3 Biomass focus	All biomass for all types of end-uses (electricity, heat & cold and transportation fuels)

2.4 Sustainability principles

NTA 8080 is based on the so-called Cramer criteria, developed by a project group chaired by Mrs Jacqueline Cramer that identified six themes:

- greenhouse gases (emissions and carbon stock);
- competition with other applications;
- biodiversity;
- environment (soil, water and air);
- prosperity;
- social well-being.

The project group has developed 9 principles + general requirements to guarantee the sustainability of biomass. These principles are translated into NTA 8080. List of principles includes:

1. General requirements
2. The GHG balance of the production chain and application of the biomass must be positive
3. Biomass production must not be at the expense of important carbon sinks in the vegetation and in the soil.
4. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, and building materials).
5. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity.
6. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.
7. In the production and processing of biomass ground and surface water must not be depleted and the water quality must be maintained or improved.
8. In the production and processing of biomass the air quality must be maintained or improved.
9. The production of biomass must contribute towards local prosperity
10. The production of biomass must contribute towards the social well-being of the employees and the local population.

2.5 Proof of compliance

The NTA 8080 certification system includes two levels of certification: 'NTA 8080 approved' for organisations that comply with the NTA 8080 requirements and 'NTA RED' for organisations that do not yet meet the NTA 8080 requirements but comply with all the RED criteria. In order to become recognized by the EC, NTA 8080 has included in the interpretation document the 'RED language' (for biofuels and bioliquids).

2.6 Chain of custody

Traceability methods included:

- Organizations that wish to be certified against NTA 8080 shall apply segregation or mass balance as the traceability method. The book and claim method is excluded because this system needs different requirements to the chain concerning infrastructure and administration;
- Segregation of product: among other documents, the organization has to declare that no mixing has occurred with material that has not been certified according to NTA 8080 or equivalent; in case the

organization applies identity preserved, the declaration shall also demonstrate that no mixing has occurred with material that originates from different sources;
- Mass balance of product: this approach included in NTA 8080 is used in markets for certified mass and bulk products, especially when these products are converted and/or processed in continuous processes;
- The two methods are in line with the EU RED requirements, which consider that each link in the biomass chain shall have a chain of custody in place according to the mass balance or the segregation method

Possibility of less stringent requirements:
- Residues: Yes
- Smallholders: Yes, adapted criteria, streamlined auditing, group certification
- Small holders are exempted from certain requirements regarding consultation of stakeholders, prosperity, working conditions, contribution to social well-being of local population and integrity of the company. Small holders may opt for establishing a group in order to be certified as a group. A definition for smallholders is available

2.7 Certification process and audit requirements

Certification is based on the justified confidence that a product, service, process, system or person complies with an (internationally) agreed standard. In this case it is the standard (published as NTA 8080) for sustainable biomass for energy purposes. Organisations could apply the "NTA 8080 approved" certificate to demonstrate that the biomass they produce, process, trade or use, is sustainable. The process for being granted a certificate is described in the road map. Certified organisations are recorded in the register.

Roadmap (see details at http://www.sustainable-biomass.org/publicaties/3898)
1. Preparation
2. Initial audit
3. Issuing of certificate
4. Maintenance of certificate

2.8 National and crop specific variations	No

2.9 Policy relation

The Dutch government wishes to incorporate sustainability criteria for biomass into the relevant policy instruments. In the short term this regards the Dutch subsidy arrangement for electricity production and the obligation for biofuels for road transport. In the longer term, the Dutch government wishes to promote a wider application of these sustainability criteria.

The EC has recognized the 'NTA 8080' scheme for demonstrating compliance with the sustainability criteria under Directives 98/70/EC and 2009/28/EC of the European Parliament and of the Council in July 2012. The Decision is valid for a period of five years after it enters into force.

2.10 Recognition by/of other standards

The Committee of Experts at NEN has the task to verify whether other certification systems for sustainably produced biomass comply with the requirements of NTA 8080. So far, other standards have not yet been endorsed. Only systems that issue certificates by bodies accredited by an IAF member can be qualified, according to the rules which are in force at the time of this report.

3. Standard, accreditation and certification bodies

3.1 Standard setting body	NEN in consultation with a broad stakeholder panel
3.2 Standard implementation body	NEN

3.3 Accreditation body

NEN solely enters into agreements with certification bodies having an applicable accreditation declaration from an IAF/MRA partner and that shall periodically assess the technical competency of the CBs.

In the Netherlands the Dutch Accreditation Council RvA is the accreditation body that is IAF/MRA partner. Note that in December 2010 the scheme itself was accepted by the Dutch Accreditation Council (RvA - Raad voor Accreditatie).

3.4 Certification bodies

- DEKRA Certification
- Quality Services Certification
- Control Union Certifications

- Bureau Veritas Certification
- SGS Nederland
- Kiwa Netherlands

4. Implementation and certification	
4.1 Level of experience	The system operates since 2011. 19 certificates have been issued as of August, 2012.
4.2 Certified companies	N/A

4.3 Costs for operators

Certificate cost for operators:
Annual fee per certificate [€50- €200] AND annual membership fee [€50-€5,000, depending on turnover] OR fee per metric ton [€0.03]. The annual fee per certificate is collected by the CB and subsequently transferred to the scheme manager.

Cost of auditing:

- NTA 8081 provides detailed guidance regarding the number of audit days required for initial certification audits, yearly surveillance audits and 5-yearly certification prolongation audits. The audit effort is divided along the chain and with this it is linked to the number of certificates and the scope of the certificates.
- If the organization is a 'producer', the audit effort will increase by a number of days for inspecting and assessing the production unit(s), which is linked to the area of cultivation.
- The audit duration per certificate may be reduced or increased depending on size and complexity. Complexity depends on the processes, the number of departments involved, the number of positions and persons within the organization.

5. Actual utilization

See certificate register: http://www.sustainable-biomass.org/publicaties/3999.

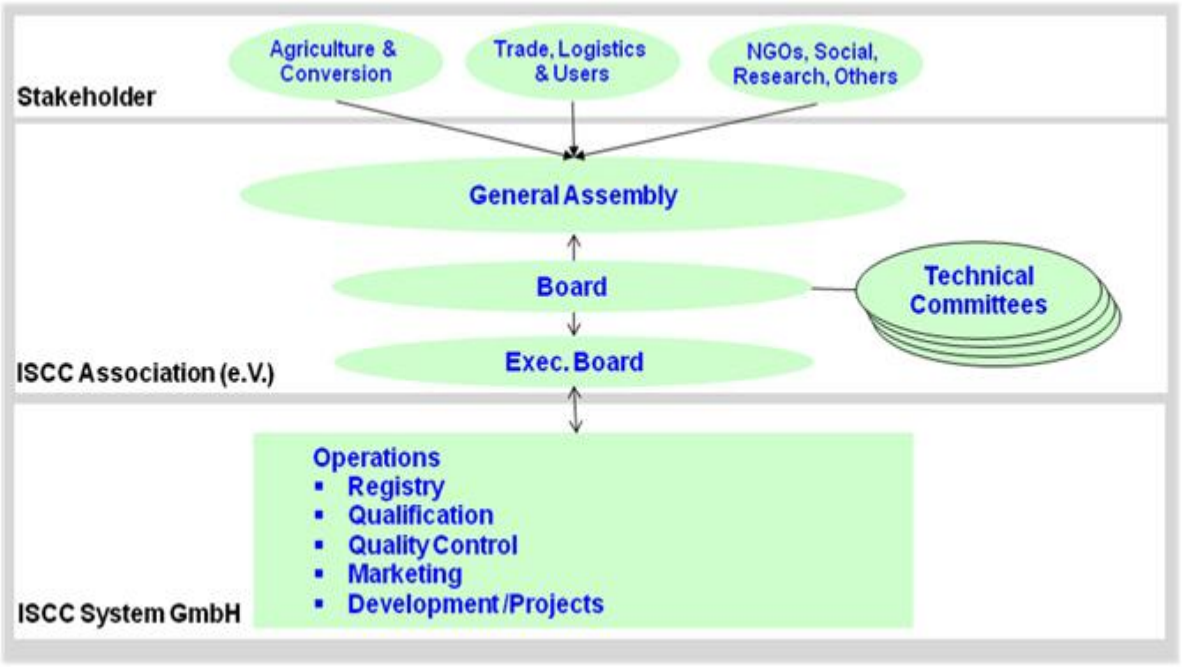
6. Source of information	
6.1 Website	http://www.sustainable-biomass.org
6.2 Guidance for operators	http://www.sustainable-biomass.org/publicaties/3898
6.3 Guidance for auditors	Auditors have to follow a dedicated training course for auditors before conducting NTA 8080 audits

6. ISCC PLUS

1. General aspects

1.1 Governance and management

ISCC PLUS is an extension of ISCC certification scheme. The ISCC is financially supported by the Agency for Renewable Resources (FNR) on behalf of German Ministry of Food, agriculture and Consumer Protection (BMELV) through the Renewable Resources funding programme. The governance body is the ISCC Association. The management of the system is hands of the ISCC GmbH.



1.2 Target group

All economic operators in the supply chain.

1.3 Context and status

ISCC PLUS offers efficient options to extend sustainability certification to food, feed, technical/chemical and bioenergy applications. A new certification system for food, feed, technical/chemical (e.g. bioplastics) and other bioenergy (e.g. solid biomass) applications has been developed: ISCC PLUS. An overview on the system was given at the Second ISCC Global Sustainability Conference and General Assembly in Brussels on February 8, 2012. The current status of the ISCC plus system documents is available on the website. (See 5.1)

The consultation period ended on May 31st, 2012. ISCC PLUS offers an opportunity for already certified conversion units (ISCC DE or ISCC EU) to efficiently extend sustainability certification to food and feed products (e.g. oil seed meal, DDGS, oil for food and other uses).

1.4 Objective and coverage

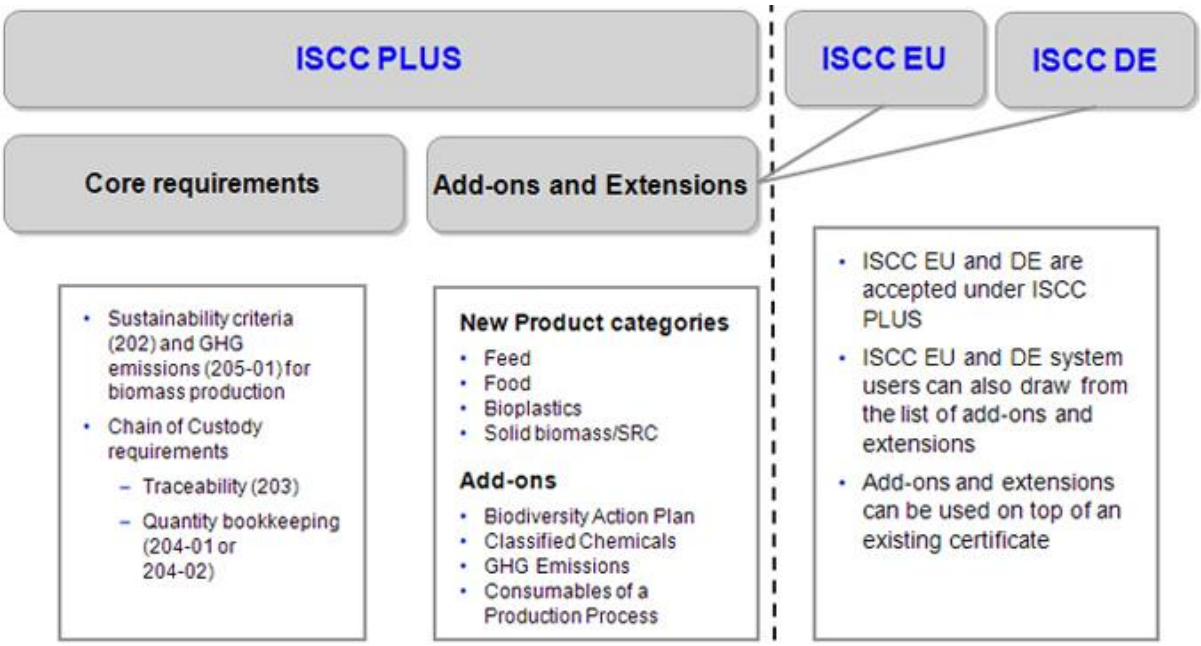
See 1.3.

1.5 Applied since

In public consultation phase

2. Scheme characteristics

2.1 Certification systems set-up



2.2 Chain coverage

All economic operators in the supply chain.

2.3 Biomass focus

Food, feed, technical/chemical and bioenergy applications (including solid biomass)

2.4 Sustainability principles

1. Biomass shall not be produced on land with high biodiversity value or high carbon stock. HCV areas shall be protected
2. Biomass shall be produced in an environmentally responsible way. This includes the protection of soil, water and air and the application of Good Agricultural Practices
3. Safe working conditions through training and education, use of protective clothing and proper and timely assistance in the event of accidents
4. Biomass production shall not violate human rights labour rights or land rights. It shall promote responsible labour conditions and workers' health, safety and welfare and shall be based on responsible community relations
5. Biomass production shall take place in compliance with all applicable regional and national laws and shall follow relevant international treaties
6. Good management practices shall be implemented

Relevant references (See on website - 5.1):
ISCC PLUS 201 System Basics
ISCC PLUS 202-01 Biodiversity Plan
ISCC PLUS 202-02 WHO-classified Chemicals
ISCC PLUS 202-0n Options to add further Requirements for agricultural Production
ISCC PLUS 203 Requirements for Traceability
ISCC PLUS 204-01 Mass Balance Requirements
ISCC PLUS 204-02 Physical Segregation Requirements
ISCC PLUS 202a Sustainability Requirements - Equivalence benchmark

2.5 Proof of compliance

For the traceability of sustainable biomass within the chain of custody two groups of requirements are important:
(1) Minimum requirements for the management system: these define requirements for the organisation of the respective elements of the supply chain.
(2) Information requirements regarding sustainable products. These describe necessary data for identification of

sustainable products at any step of the supply chain. These information requirements fall into two categories:

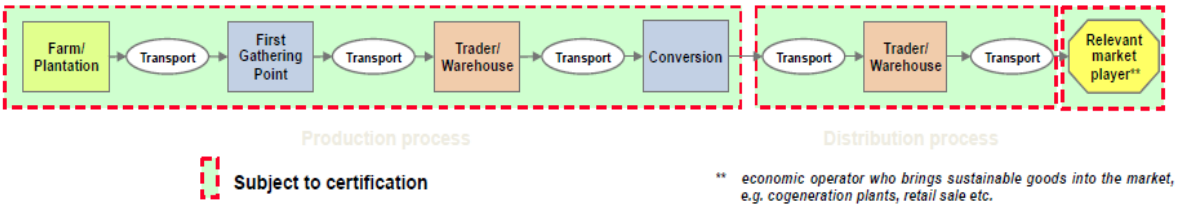
a. Information requirements for delivery notes regarding sustainability characteristics and traceability attributes
b. Information and documentation requirements for audits

2.6 Chain of custody

At any stage of the sustainable supply chain there must be evidence of compliance with the ISCC-criteria and a statement that products were obtained in a way that complies with the ISCC-requirements, e.g. that the raw materials used were obtained and handled in a way that complies with the land related sustainability criteria. The evidence that the relevant elements of the supply chain (see figure below) comply with the ISCC-requirements is given by a valid certificate. Everybody can check the validity of certificates globally by using the ISCC database via the ISCC webpage (free access). Only certified elements of the value chain can make statements that products were obtained and handled in a way that comply with the ISCC PLUS standard. These statements, which give evidence of the sustainability characteristics of sustainable products are delivery notes issued by certified elements of the supply chain. The origin of the sustainable biomass used for the production of sustainable products can only be traced back if every stage of the production and delivery process is certified (see also following picture). In order to trace back products, farms/plantations, first gathering points, traders/warehouses and conversion units need to receive a certificate. Transport does not need to register with ISCC and does not need to receive a certificate. Relevant market players such as an economic operator, which brings sustainable products into the market, can receive a certificate on a voluntary basis (see also ISCC PLUS 201 and ISCC PLUS 252).

Traceability and evidence of the sustainability characteristics of a sustainable product is documented via sustainability declarations with respective traceability attributes and the corresponding quantity bookkeeping. For the quantity bookkeeping different chain of custody options exist (see also ISCC PLUS 204-01 Mass Balance Requirements or 204-02 Physical Segregation Requirements). This assures that sustainability characteristics and traceability attributes such as origin, kind of product or raw material and related quantity can be uniquely identified and assigned to a batch of product or raw material and that the amount, which has been withdrawn at the respective stage of the supply chain does not exceed the amount supplied.

Different elements and sections of the supply chain:

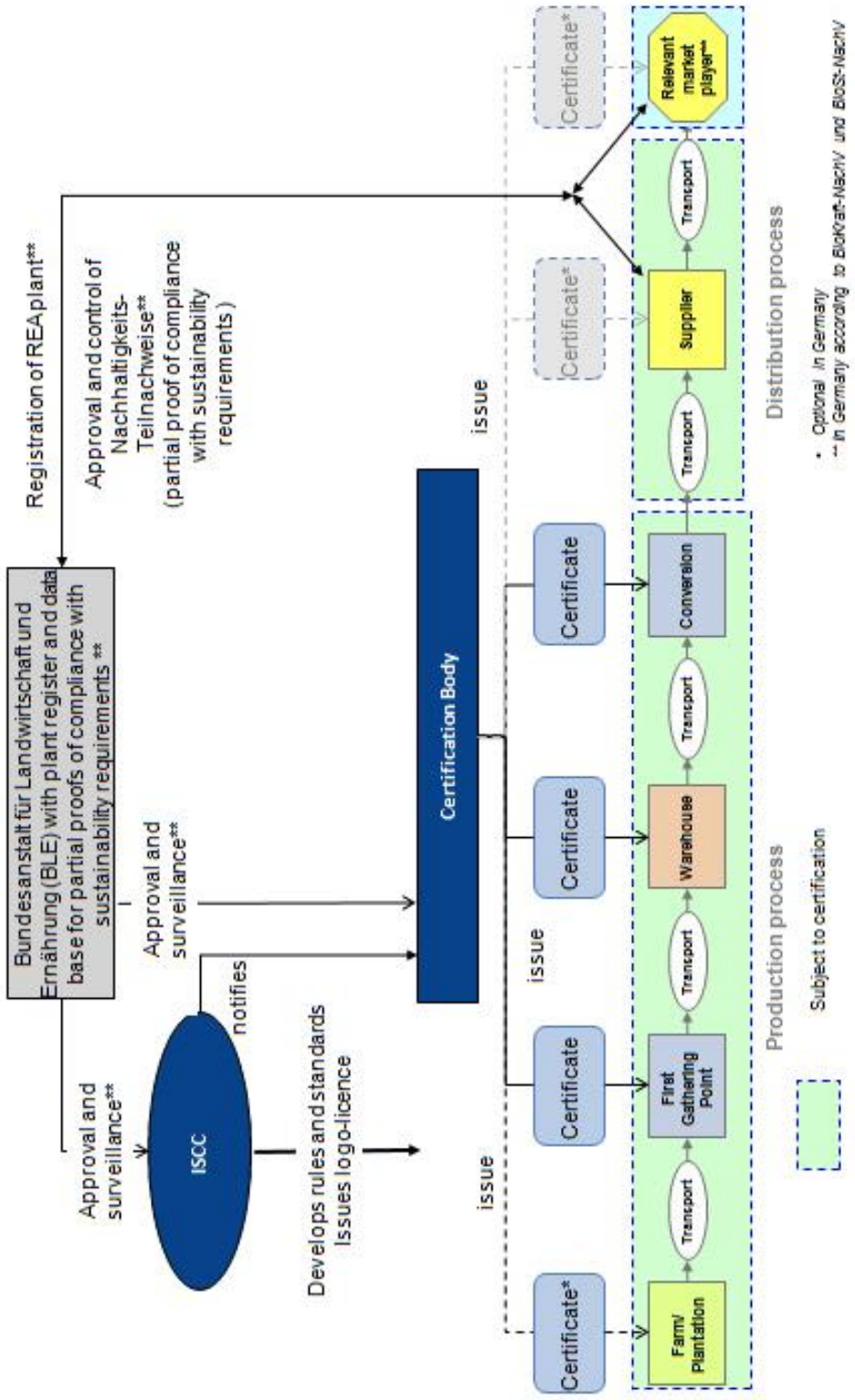


Risk management is an integral part for every element of the supply chain (see also figure above). Within the ISCC System it is required to identify the relevant risk factors for every element of the supply chain.

The relevant elements of the supply chain are:

1. Farms or plantations are operations for the purpose of cultivation of sustainable biomass. The farm or plantation audit shall always include the entire area of a farm including grasslands, pasture, swamps etc. Farms or plantations do not need to operate a quantity bookkeeping. However audit requirements include the documentation of the origin as well as verification that the yield per hectare times field size in hectare is in line with the related quantity of stored, delivered or sold sustainable biomass. GHG emissions of the biomass production shall be designated for the farms/plantations and can be based on actual values, aggregated values or disaggregated default values. At an audit the GHG emission values must be available at the first gathering point. Farms/plantations shall either be audited individually or as a supplier of the first gathering point. Group certification is also possible (see also ISCC PLUS 256 Group certification).
2. First gathering points: First gathering points are operational units, which gather sustainable biomass from farms/plantations for the first time in order to trade or further distribute this biomass.
3. Traders/warehouses: A trader/warehouse is a warehouse after the first gathering point receiving, storing and dispatching sustainable products
4. Conversion units: Conversion units (such as oil mills, sugar mills, refineries, saw mills etc.)
5. Transport includes all modes of transportation such as road, train or sea transport. For transporting sustainable products normally no additional audit according to this standard is necessary.

2.7 Certification process and audit requirements



There are 2 types of audits:

- Certification audit: The validity of an ISCC certificate is one year. Due to this, an annual ISCC certification audit must take place for every element of the supply chain. Those audits are based on the standards of the ISCC System and the related documents.
- Surveillance audit:
  - Appointment of the surveillance by a competent authority: In case of reasonable suspicion, especially due to the results of precedent surveillances, ISCC may induce the surveillance of the element of the supply chain as part of the ISCC integrity program.

• Unannounced surveillance audits: Certification bodies can use unannounced surveillance audits as an instrument of risk management.	
2.8 National and crop specific variations	No
2.9 Policy relation	
The ISCC EU and DE is a reliable proof for the compliance with the European Renewable Energy Directive (EU RED) respectively the German Sustainability Ordinances (BioNachV). ISCC PLUS is an extension of ISCC developed for other biomass (e.g. solid biomass) in addition to liquid biofuels.	
2.10 Recognition by/of other standards	N/A
3. Standard, accreditation and certification bodies	
3.1 Standard setting body	
For ISCC: Important decisions on the definition and further development of the system are taken by the ISCC association (e.V.). Meo Carbon Solutions GmbH is operator of the ISCC System . The standard is developed via intensive stakeholder consultation, and is regularly updated based on advices from technical committees or improvement requests from stakeholders. Every 5 years the system is revised as a whole and the standard is adapted accordingly. Currently ISCC PLUS has completed its public consultation phase (in May 2012).	
3.2 Standard implementation body	
The ISCC System GmbH is responsible for the operational aspects of the certification system	
3.3 Accreditation body	
The BLE (German authority for Agriculture and Food)	
3.4 Certification bodies	
See here for requirement for certification bodies http://www.iscc-system.org/index.php?eID=tx_nawsecuredl&u=0&file=fileadmin/content/documents/ISCC-Zertifizierungs-Prozess/ISCC_PLUS/ISCCPLUS251RequirementsforCertificationBodies.pdf&t=1343236454&hash=fb4924e4d8757f088b044856d7010b0feddf2473	
4. Implementation and certification	
4.1 Level of experience	Not yet implemented
4.2 Certified companies	Not yet implemented
4.3 Costs for operators	N/A
5. Actual utilization	
ISCC PLUS just completed the public consultation phase and has not yet been applied.	
6. Source of information	
6.1 Website	http://www.iscc-system.org/en/iscc-system/iscc-plus-public-consultation/
6.2 Guidance for operators	http://www.iscc-system.org/en/iscc-system/iscc-plus-public-consultation/
6.3 Guidance for auditors	http://www.iscc-system.org/en/iscc-system/iscc-plus-public-consultation/

7. Initiative of Wood Pellet Buyers (IWPB)

1. General aspects

1.1 Governance and management

Initiative Wood Pellets Buyers (IWPB) is a working panel grouping the major European utilities firing wood pellets in large power plants GDF SUEZ, RWE, E.On, Vattenfall, Drax Plc, and Dong, as well as certifying companies SGS, Inspectorate, and Control Union. Laborelec participates in this work panel as a technical expert.

Current status: Propose to use the GGL foundation as the new governance structure for the new sustainability standard based on the IWPB principles. **According to anecdotal source, IWPB probably would be launched in 2013.*

1.2 Target group	Large purchasers of wood pellets

1.3 Context and status

The IWPB was formed in June 2010. It is a co-operation of existing sustainability schemes in Belgium (Laborelec), United Kingdom (Drax) and the Netherlands (Green Gold Label) with the purpose of generating renewable electricity. Trade of wood pellets between these three countries will only be possible in a close future if evidence of sustainability can be brought to the buyer.

Every large biomass power plant must rely on long-term procurement contracts or even vertical integration of wood pellets sourcing. But, when one of this plant must be shut down for a while due to technical failure, then deliveries of wood pellets to the plant will continue and, to keep storage costs under control, it is then essential to be able to re-trade the pellets to other large customers, being all utilities. This initiative was taken after the statement had been made in early 2010 that trading of wood pellets between two utilities was impossible to realize. This was due to the lack of uniform approach of the respective companies with respect to three main issues:
1) the layout and conditions of the respective procurement contracts for wood pellets,
2) the technical specifications for the wood pellets product,
3) the sustainability principles applicable to wood pellets sourcing.

Trade has now become essential to secure flexibility in supply and demand of pellets, e.g. power stations have unplanned maintenance periods, suppliers of pellets can have technical problems, investors want to hedge price risk, ships can be delayed etc. Trade is also essential for the suppliers. Therefore, it is important that the product be to a certain degree standardized. The more standardized the product is, the more transparent the market and the more competitive the product will be.

1.4 Objective and coverage

The IWPB is developing a common sustainability approach for solid biomass in large scale power plants.
The IWPB focuses on wood, not excluding agricultural biomass like cultivated wood and uses a common list of eight sustainability principles. IWPB was formed to facilitate the trading of wood pellets through the design of common product specifications and sustainability principles among the partnered companies. The output of the Initiative will not be a sustainability scheme or a standard itself but it will work with a list of recognised metastandards. The output should be compatible with the (coming) obligations in the participating countries.

1.5 Applied since	Not applied yet. A first draft proposal was launched beginning of November 2011.

2. Scheme characteristics

2.1 Certification systems set-up

(a) Several references from members utilities were used like:
1. the Green Gold Label developed by Essent and Control Union in the Netherlands,
2. the corporate approach developed by Drax in the UK for biomass sustainability,
3. the agreement of Vattenfall with the Senate of Berlin for the use of biomass as a sustainable fuel,
4. the verification procedure developed by Laborelec and SGS in Belgium for the grant of green certificates with sustainable solid biomass.

(b) Meta standards: PEFC and FSC meta-standards should be used for cross-compliance to verify sustainability principles; SFM system should not be imposed, but due diligence on forestry is necessary in absence of certification

(c) Focus on 3 aspects:
1. the layout and conditions of the respective procurement contracts for wood pellets,
2. the technical specifications for the wood pellets product,

3. the sustainability principles applicable to wood pellets sourcing.

(d) Current focus:
1. Voluntary verification and not certification
2. NOT be a sustainability scheme or standard (procedure)
3. The output will be a transparent voluntary scheme, verified and reported by independent bodies, establishing cross-compliance of meta-standards and legislation in country of origin.

2.2 Chain coverage	From source to power generation
2.3 Biomass focus	Wood pellets
2.4 Sustainability principles	

There are 8 draft principles. The principles are numbered but there is no priority rank related to their numbering. IWPB requests full transparency on the realization level of all the 8 principles for sustainable biomass. Though, a distinction is made between "WILL" and "AIM TO" principles as follows. The first three sustainability principles are fundamental issues: they are mandatory criteria listed in the RED Directive EC 2009/28 for bio-liquids and biofuels. Wood pellets deliveries must always be consistent with those principles. Compliance with the sustainability principles must be verified by independent inspection companies. Those principles are therefore meant as "WILL". The sustainability principles 4 to 8 are important issues that must be considered for sustainable solid woody biomass but they appear to be more difficult to verify extensively. Therefore it is aimed for those principles to be taken into consideration, and that a report is made by an independent body providing transparency on the way those principles are fulfilled. It is expected that feedback of this report to the suppliers will allow them to improve their performance over time. Those principles are therefore meant as "AIM TO". This does not mean that they are less important than those listed as "WILL". It does however mean that the thinking on those subjects is still evolving; it is therefore important to promote a continuous circle of improvement, rather than to adhere to a standard which is reasonable today, but outdated tomorrow.

The general corporate responsibility as expressed in principle nine remains applicable to biomass supply as to any type of other commodity being purchased. Therefore it will not be detailed in this document, but refers to the website where the Code of Conducts of all member utilities can be found. It covers general concerns like health & safety, human rights, discrimination, corruption, etc.

SUSTAINABILITY PRINCIPLES
Principle 1: GREENHOUSE GAS BALANCE (GHG) The greenhouse gas (GHG) savings along the entire life-cycle, taking into account the whole supply chain including production, processing, transport and end-use are at least 60% with respect to reference fossil fuels.
Principle 2: CARBON STOCK Production of woody biomass does not take place at the expense of significant carbon reservoirs in vegetation and soil.
Principle 3: BIODIVERSITY Production of wood biomass may not take place in areas with high biodiversity value, unless evidence is provided that the production of that raw material did not negatively interfere with nature protection purposes.
Principle 4: PROTECTION OF SOIL QUALITY Production of woody biomass should maintain or improve the soil quality.
Principle 5: PROTECTION OF WATER QUALITY Production of woody biomass should not exhaust ground and surface water and should avoid or significantly limit negative impacts on water.
Principle 6: PROTECTION OF AIR QUALITY Production of woody biomass should avoid negative impact or significantly reduce impact on air quality.
Principle 7: COMPETITION WITH LOCAL BIOMASS APPLICATIONS Production of woody biomass should not endanger food, water supply or subsistence means of communities where the use of this specific biomass is essential for the fulfilment of basic needs.
Principle 8: LOCAL SOCIO-ECONOMIC PERFORMANCE Production of woody biomass should respect property rights and contribute to local prosperity and to the welfare of the employees and the local population.
Principle 9: ETHICS Ethical issues that the organization should uphold include at least health & safety, respect of internationally proclaimed human rights, freedom of association and the right to collective bargaining, elimination all forms of forced and compulsory labour, effective abolition of child labour, elimination of discrimination in respect of employment and occupation, promotion of greater environmental responsibility, high standards of business integrity, including the work against corruption in all its forms.

2.5 Proof of compliance
Proof of compliance is assessed by independent bodies. ***Some notes:*** Principle 1 to 3: This is the essence of the three first principles that must be fully verified by independent bodies. The IWPB considers that to be acceptable our supply chains must show enough GHG savings with respect to fossil fuels, exclude deforestation and avoid sourcing raw material from sensitive areas like tropical primary forests, peatlands and wetlands. Principle 4 to 8: To assess the level of compliance, a written report produced by independent bodies should give evidence on the level of fulfilment in a fair and balanced way. The level of details of investigation and quality of the report should reflect the supplier and/or country specific risks related to the fulfilment of the defined principles. IWPB expects suppliers and producers of biomass to use the report feed-back to initiate corrections and strive for continual improvement of their performance regarding the sustainability principles.
2.6 Chain of custody
The IWPB aims to warrant the quality of wood pellets throughout the whole chain of custody, covering production, processing, transport and end use of solid bio-fuels for electricity and heat generation and for allocating electricity and heat.
2.7 Certification process and audit requirements
The IWPB is based on voluntary verification and not certification. The output of the Initiative will not be a sustainability scheme or a standard itself but it will work with a list of recognised meta-standards.

2.8 National and crop specific variations	N/A

2.9 Policy relation
Draft principles are based on the RED criteria. Views from IWPB: - Every country should have the same sustainability rules, and that those rules are European rules. - Recommends binding criteria on sustainability (solid biomass) Current progress: Aim to be compatible with obligations in BE, UK, NL (coming)
2.10 Recognition by/of other standards
Aim to be the official European standards for wood pellets. For assessing sustainability principles, meta-standards might be used. Given list is not comprehensive. Every scheme should be considered against the sustainability principle. If other schemes or certification programs are being used by the supplier but are not listed here, the details of the program should then be provided. - Approved pre-scope certificate of one of the endorsed forest management certification systems, with the intention of full certification (APSC) - Assured Combinable Crops Scheme (ACCS) - Basel Criteria for Responsible Soy Production - Central Point of Expertise on Timber Procurement (CPET) - CSA-SFM (Canadian Standards Association's Sustainable Forest Management) - EFSIS/FABBL Farm Assurance (for combinable crops)-transport - FFCS (Finnish Forest Certification System) - FSC (Forest Stewardship Council) http://www.fsc.org/en - GLOBALGAP - RISK ASSESSMENT ON SOCIAL PRACTICE (GRASP) - Irish Grain Assurance Scheme (IGAS) - Storage Only - Laborelec Sustainability Certification - Linking Environment and Farming (LEAF) Marque - PEFC (Pan European Forest Certification), http://www.pefc.org/internet/html - Roundtable on Sustainable Palm Oil (RSPO) - SFI (Sustainable Forest Initiative) - Sustainable Agriculture Network / Rainforest Alliance (SAN/RA); and - UK Forestry Standard / UK Woodland Assurance Standard (UKWAS) - Green Gold Label

- Stockholm Convention on Persistent Organic Pollutants
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- Carthagena Protocol on Biosafety to the convention on biological diversity
- Round Table on Responsible Soy (RTRS)
- ISCC
- NTA 8080

For the sake of independence and transparency, IWPB plans to join an existing certification organization such as the German-based ISCC Association, which operates the International Sustainability and Carbon Certification System.
IWPB is also co-operating with the European Pellet Council on the concept of an ENplus Green label for pellet producers. ENplus is a quality and chain-of-custody label. In addition to addressing quality issues, the green option of this label would assure that the sustainability criteria are met by pellet producers.
(source: http://www.canadianbiomassmagazine.ca/content/view/3007/38/)

3. Standard, accreditation and certification bodies	
3.1 Standard setting body	The group is presently consulting stakeholders to develop sustainability indicators by the member inspection companies.
3.2 Standard implementation body	N/A
3.3 Accreditation body	N/A
3.4 Certification bodies	Member inspection companies : SGS, Inspectorate and Control Union
4. Implementation and certification	
4.1 Level of experience	Inheritance from existing certification schemes
4.2 Certified companies	N/A
4.3 Costs for operators	
IWPB has recognized that the costs of certification can form a serious barrier to small biomass producers. The group is considering the concept of group certification, in which the costs of certification can be shared by a number of small producers. Another consideration is to have a light version of the certification tool for small producers.	
5. Actual utilization	
It is expected that IWPB will be implemented in 2013.	
6. Source of information	
6.1 Website	http://www.laborelec.be/ENG/initiative-wood-pellet-buyers-iwpb/
6.2 Guidance for operators	Draft proposal sustainability criteria: http://www.laborelec.be/ENG/wp-content/uploads/2011/11/PELLCERT2011_2011-11-09-IWPB-Sustainability_principles.pdf
6.3 Guidance for auditors	-

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