



ISCC 201 System Basics

System Basics

for the certification of sustainable biomass and bio-energy

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1 Introduction

The generation of energy from biomass has lately often been associated with land-use competition, increasing commodity prices and deforestation of rainforest. Until today, the international markets for agricultural products and bioenergy have not come up with a label for food, liquid biomass or biofuel from sustainable production. Thus, consumers do not have the possibility to choose between sustainable and non-sustainable products. The price is what makes a product successful, not its quality. The market offers no incentives for sustainably producing farmers and bioenergy producers.

To overcome this deficit, policy has launched initiatives to help to differentiate biomass for energy production. This shall avoid unwanted ecological and social side effects of the extending biomass production in various regions of the world. Certification is an instrument to distinguish sustainable products from non-sustainable ones on the market. It puts customers in the position to opt deliberately for sustainability and greenhouse gas reduction. Hence, certification supports responsible farms and reduces the risk of disadvantageous undertakings.

ISCC is such a certification system allowing a differentiation of sustainable products from non-sustainable ones including the greenhouse gas emissions at the different stages of the value chain.

The certification of sustainable biomass for energetic use is a complex procedure. The ISCC certification system describes procedures and standards that allow an easy handling for the users; at the same time, it meets the requirements of the reference documents, namely the German sustainability ordinances¹ and the Renewable Energy Directive.

Its sustainable production is a precondition for bioenergy to be further expanded. The use of biomass for fuel, heat or electricity bears a big potential for climate protection and can reduce the dependency on energy imports. Sustainability standards will also be introduced on a voluntary or legal basis for the traditional consumers as well as in the chemical-technical industry.

Independence, transparency and international scope are the characteristics of ISCC. The ISCC logo reliably distinguishes sustainable biomass and bioenergy from non-sustainable ones. ISCC provides a platform for the necessary dialogue. The essential characteristics of the ISCC system are:

- Internationally applicable certification system for sustainability and the reduction of greenhouse gas emissions
- Not restricted to certain biomasses; rather covering all relevant raw materials from agriculture and forestry
- Multi-stakeholder approach (farmers, processors, trade, industry, NGOs, associations, research institutions, authorities)
- Adaptive system

¹ Ordinances regarding the requirements for a sustainable production of biofuels and the production of liquid biomass for the production of electricity, such as the Biomass-electricity-Sustainability Ordinance and the Ordinance on Requirements Pertaining to Sustainable Production of Biofuels

- ISCC regulations for sustainability audits
- Traceability based on mass balances and documented evidence/ surveillance statements
- Registry of sites and certificates
- Greenhouse gas balancing
- Cooperation with other certification systems
- Based on the concept study and subsequent pilot projects of the years 2006 to 2009
- Supported by the Federal Ministry of Food, Agriculture and Consumer Protection and the Agency for Renewable Resources

2 Scope

The system basics described hereafter are effective for the ISCC certification system for the certification of biomass, liquid biomass and biofuels.

ISCC generally applies worldwide. Within the risk management the individual countries and regions, in which ISCC is active and elements of the supply chain are certified, are listed together with the information required by the risk management.

The requirements described in the system basics and in further documents of the certification system refer to all enterprises of the value chain for biomass. This value chain starts with farms, moves along with the so called first gathering points who take biomass from farms and transport or further process it and ends with REA (renewable energy act) plants and distributors which has to fulfil quota obligations, which are using the liquid biomass for energy production respectively putting into circulation biofuels.

The documentation structure of the ISCC system is shown in the following table.

	Nr.	Name	Content
Governance documents	101	ISCC Statutes	The statutes governs the basic organisation and control of the institution ISCC e.V.
	102	National und Regional Initiatives	Rules for the appointment of National and Regional Initiatives
	103	Quality Management	Description of the quality management of the ISCC system
Technical documents	201	System Basics	This document describes the basic functions and processes of the ISCC system. A more detailed description of the contents can be found in the further documents
	202	Sustainability Requirements – Requirements for the Produc-	The sustainability requirements specify the standards for crop

	Nr.	Name	Content
		tion of Biomass	cultivation
	202-01	Checklist for the Control of the Requirements for the Production of Biomass	The regulations define for the certification bodies how to inspect the requirements of document ISCC 202
	203	Requirements for Traceability	The named requirements enable the traceability of the biomass. The data to declare are named.
	203-01	Checklist for the Control of the Requirements for Traceability	These rules define for the certification bodies how to inspect the requirements of document ISCC 203
	204	Mass Balance Calculation Methodology	The detailed traceability is enabled by a mass balance methodology which is described in this document
	205	GHG Emission Calculation Methodology	This document describes the detailed calculation methodology for GHG emissions
	206	Regulations to issue Proofs of Compliance with Sustainability Requirements	A special form of traceability data are proofs of compliance with sustainability requirements. The document describes the requirements on the issuance of these proofs of compliance.
	207	Risk Management	Requirements on a risk assessment and the consequences which are deduced out it
	208	Guidelines to use the ISCC Brand	Rules regarding the rights and duties related with the use of the ISCC brand
	251	Requirements for Certification Bodies	Certification bodies audit the compliance with the ISCC standards. The document describes the requirements on certification bodies and which tasks they have to fulfil
	252	Regulations to carry out Audits	This document defines for certification bodies which audits the

	Nr.	Name	Content
			have to conduct and which contents they have to consider
	253	Complaints, Appeals and Arbitration	In case of conflicts affecting ISCC this document provides procedures for arbitration
	254	Cooperation with other Certification Systems	Rules for the organisation of the cooperation with other certification systems
Guidelines	301	Terms and Definitions	The glossary gives an explanation of the basic topical terms
	302	Guidance - Certification of Sustainable Biomass	This guidance provides a further introduction in the topic
Reference documents	401	DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC	
	402	Ordinance on Requirements Pertaining to Sustainable Production of Biofuels (Biokraftstoff-Nachhaltigkeitsverordnung – Biokraft-NachV)	
	403	Ordinance on requirements pertaining to sustainable production of bioliquids for electricity production (Biomassestrom-Nachhaltigkeitsverordnung – BioSt-NachV)	

Table 1: Structure of the ISCC documentation

3 Normative references

All documents listed in the previous paragraph 2 are considered relevant references.

4 The ISCC certification system

4.1 Organisation

4.1.1 International level

The legally registered ISCC association is the responsible body for the ISCC system. Whoever is involved in the production, the processing and use of sustainable biomass can become member of this association; also other stakeholders interested in the ISCC certification system can become members, NGOs or scientific institutions, for instance. The executive power and the operative management of the system are assigned to the ISCC System GmbH (ISCC limited liability corporation).

The General Assembly of the ISCC association incorporate all stakeholders and interested parties. The Board is constituted of members of the General Assembly. It represents the different groups participating in ISCC. The Board again may delegate the competencies to an Executive Board, which are necessary for an effective and stakeholder orientated management of the organisation. Technical Committees may be appointed by the Board as to support them in the handling of certain subject areas.

The structure of the organisation as well as the rights and duties of the involved actors are defined in document ISCC 101 ISCC Statues.

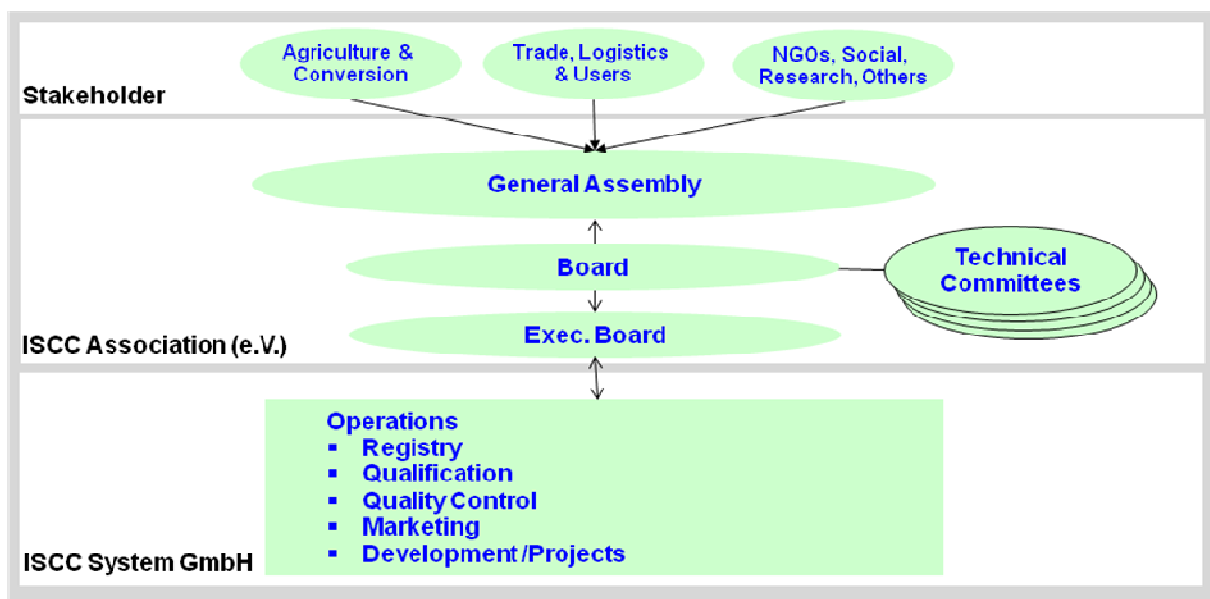


Figure 1: Interaction between stakeholders, association and operational certification system

4.1.2 National and regional level

Initiatives to promote and support the ISCC system can be formed under the umbrella of ISCC at national and regional level. Depending on the intensity of its activities, such initiatives can be an ISCC Contact, a National or Regional Technical Working Group or an ISCC Office.

The initiatives work and function according to the ISCC association's regulations. They are approved by and committed to ISCC through contracts.

The national or regional initiatives play an important role where international standards require an adjustment of ISCC standards on account of specific national or regional conditions. Such adjustments must always be approved by ISCC.

The initiatives must act in a way to take into account the respective stakeholder interests of the countries under the terms of the General Assembly.

Detailed regulations to this are to be found in document ISCC 102 National and Regional Initiatives.

4.2 The processes of the certification system at a glance

The processes of the ISCC System and the related terminology look about two basic requirements:

For the relevant elements of the supply chain for the production of biomass and bioenergy the system constitutes an instrument for the implementation of the requirements of the DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC as well as the German sustainability ordinances (ordinance on requirements pertaining to sustainable production of bio-fuels (Biokraftstoff-Nachhaltigkeitsverordnung – Biokraft-NachV) and ordinance on requirements pertaining to sustainable production of bioliquids for electricity production (Biomassestrom-Nachhaltigkeitsverordnung – BioSt-NachV)). The rules contained in these ordinances are the basis for several structures and processes of the system.

At the same time the organisation of the certification systems should enable an implementation as easy as possible for the participating element of the supply chain. The implementation should be orientated at current methods in international applicable certification systems.

The terminology and procedures in the system documents show the adjustment on a worldwide application of the system. Specifics respectively special terminologies occurring from the implementation of the ordinances are pointed out where reasonable or necessary.

The subsequent figure 2 shows an overview about the processes in the ISCC System.

Based on the German sustainability ordinances the competent authority in Germany for the approval process of certification systems and certification bodies is the Bundesanstalt für Landwirtschaft und Ernährung (BLE).

Certificates can be issued by the certification bodies for all relevant elements of the supply chain. Preconditions for this issuance of certificates are the application for certification by the relevant elements of the supply chain and the positive participation in an audit which is conducted by an independent certification body.

Farms have to provide evidence for the sustainable origin of the produced biomass. The subsequent elements of the supply chain have to meet the particular requirements regarding traceability, mass balance and GHG emission calculating.²

² The sustainability ordinances (BioSt-NachV und Biokraft-NachV) use a specific terming for the relevant elements of the supply chain. For the relevant elements of the supply chain they distinguish between interfaces on one hand and enterprises that are directly or indirectly involved in the production,

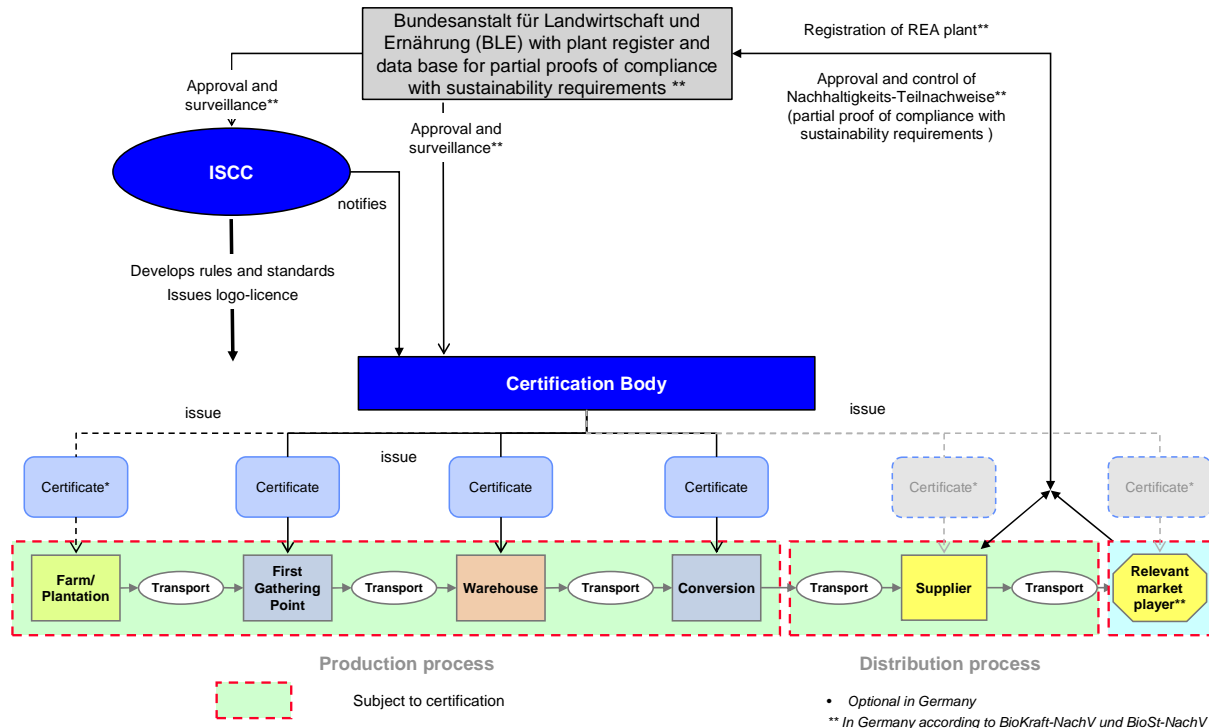


Figure 2: The processes of the certification system at a glance

The requirements for certification bodies are described in document ISCC 251 Requirements for Certification Bodies. Details of audit procedures are specified in ISCC 252 Regulations to carry out Audits.

4.2 Certification criteria

4.2.1 Fundamentals

The relevant certification criteria that must be complied with to participate in the ISCC system fall into three categories:

- (1) Sustainability requirements that have to be complied with in cropping for biomass production,
- (2) requirements concerning the greenhouse gas emission savings and

the transport and marketing (supply) of the biomass for these interfaces, on the other hand. According to the ordinances, interfaces are:

1. Enterprises that firstly receive the biomass needed for the production of liquid biomass from farms that grow and harvest this biomass. They either trade in or further process this raw material,
2. oil mills and
3. refineries and other factories refining the liquid biomass to a quality that is required by power plants.

The ISCC certification system does not distinguish between the different relevant elements of the supply chain. It is, however, important to make such distinction in view of the formal compliance with the sustainability ordinances (BioSt-NachV und Biokraft-NachV).

- (3) requirements concerning the traceability and mass balance to provide consistent evidence of the provenance of the biomass.

These certification criteria and the respective processes are specified in the ISCC documents according to an internationally valid standard.

In countries applying the ISCC system, these standards can be further specified and explained in guidelines by national or regional initiatives.

4.2.2 Sustainability requirements

Cropping for biomass production must comply with sustainability requirements. These requirements are:

- (1) Protection of areas of high conservation value
- (2) Protection of areas with high carbon stock
- (3) Protection of peat land
- (4) Sustainable management of the farm

The standards that must be complied with by the farms are described in document ISCC 202 Sustainability Requirements – Requirements for the Production of Biomass.

4.2.3 Requirements concerning the greenhouse gas emission savings

To qualify for this certification system, the produced liquid biomass respectively biofuel must grant greenhouse gas emission savings of 35 percent. To prove this, each element of the supply chain must calculate its greenhouse gas emissions and pass the figures on to the next interface in the chain. The last interface in the chain must finally calculate and substantiate the overall savings of the liquid biomass respectively biofuel.

Requirements for the assessment of the greenhouse gas emission savings are specified in document ISCC 205 GHG Emission Calculation Methodology.

4.2.4 Requirements concerning the traceability

The provenance of the sustainable biomass used to produce liquid biomass respectively biofuels must be traceable through the different stages of production and supply right down to the plant. This is done according to traceability systems and documented evidence/ surveillance statements, which ensure that provenance, quantity and the related greenhouse gas emissions can be clearly identified for each stage. The documented evidence/ surveillance statements must also prove that the quantity taken from a stage of production or supply does not exceed the quantity received by the same stage within one period.

Traceability systems allow intermingling sustainable biomass, liquid biomass and biofuels with non-sustainable products even if their greenhouse gas emissions differ.

The specific requirements for traceability systems are documented in document ISCC 203 Requirements for Traceability; the methodology for the mass balance calculation is described in document 204 Mass Balance Calculation Methodology.

4.3 Certification procedure

The workflow of the certification process complies with the requirements of ISO Guide 65 (ISO 45 011). The applied audit procedures comply with the requirements of ISO 19011.

4.3.1 Participants in the certification system (relevant elements)

Enterprises of the value chain of liquid biomass can be participants in the ISCC certification system (see figure 3).

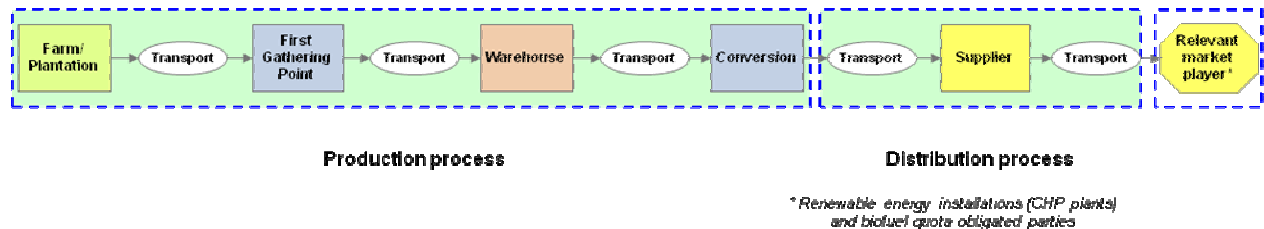


Figure 3: Different elements and sections of the supply chain

The relevant elements of the value chain are:

- (1) **Farms:** They produce different kinds of agricultural biomass. In the certification system these farms have a special status: They either can apply for participation in the certification system and receive – if audited successfully – a certificate for sustainable cropping; alternatively or they become part of the system as supplier for a first gathering point. In the latter case, they sign a self declaration towards the first gathering point to comply with the ISCC standards; they will then be audited as supplier sample of the first gathering point. After a positive audit they will be issued a surveillance statement.
- (2) **First gathering points:** Enterprises that firstly receive the biomass needed for the production of liquid biomass from farms that grow and harvest this biomass. First gathering points either trade in or further process this raw material.
- (3) **Warehouses:** Warehouses in the ISCC system store sustainable biomass (solid, fluid or gaseous). At the same time, they can be part of other elements of the value chain or act autonomously.
- (4) **Conversion units:** Oil mills, refineries and ethanol plants and as well as other factories refining the liquid biomass respectively biofuel to a quality that is required by power plants respectively for putting in circulation of biofuels.
- (5) **Suppliers:** A supplier in the ISCC system is an element of the value chain that supplies sustainable liquid biomass or biofuel to another suppliers, to a plant run according to the Renewable Energy Sources Act (EEG) or to a distributor which has to fulfil quota obligations. The sustainability of the supplied liquid biomass or biofuel must be proved and documented.
- (6) **Transport:** Enterprises transporting the biomass between the above mentioned enterprises and to the power plants, storing the biomass or trading in it.
- (7) **Plant run according to the Renewable Energy Sources Act (EEG) / distributor which has to fulfil quota obligations:** the last user of the sustainable biomass is al-

lowed to apply for a certificate and thus provide evidence for the use of sustainable biomass.

4.3.2 Application for certification

The relevant elements of the supply chain that want to participate in the ISCC system apply at a certification body approved by the certification system by the BLE for the conduction of a certification procedure. Before they apply, they make sure they comply with the requirements and provide the necessary documentation.

Most important for farms are especially the requirements of document ISCC 202 Sustainability Requirements and document ISCC 207 Risk Management. Specifically relevant for the other elements of the supply chain are the standards ISCC 203 Requirements for Traceability, ISCC 203-01 Checklist for the Control of the Requirements for Traceability, ISCC 204 Mass Balance Calculation Methodology, ISCC 205 GHG Emission Calculation Methodology and ISCC 207 Risk Management.

The requirements for certification bodies are specified in document ISCC 251 Requirements for Certification Bodies.

4.3.3 Conduct of audits

The certification bodies carry out certification audits as well as surveillance audits in all relevant elements of the supply chain. They audit the compliance with the requirements specified for the respective elements. The results of these audits must be documented in audit reports.

Certification bodies also conduct audits (surveillances) in farms that supply the first gathering points of a value chain.

The regulations specifying how to carry out audits are fixed in document ISCC 252 Regulations to carry out Audits.

4.3.4 Issuance of certificates and surveillance statements

4.3.4.1 Issuance and publication of certificates

Upon positive evaluation of the audit results, the certification body issues certificates to the relevant elements of the supply chain. Depending on the requested certification procedure, farms can receive a surveillance statement.

ISCC publishes its certificates on its websites.

4.3.4.2 Substance of certificates

Certificates must at least include the following information:

- (1) A unique certification code number composed of at least the registration code of the certification system, the certificate number and the interface number,
- (2) the date of issue of the certificate and
- (3) the name of the certification system in which the certificate was issued.

4.3.4.3 Validity

Certificates are valid over a period of twelve months from the date of issuance.

4.3.4.4 Resignation

The certificate holder can resign from participation in the ISCC system any time by giving notice to the certification body.

4.3.4.6 Suspension

If the certification body determines serious non-conformities of a participating element of the supply chain against ISCC standards and if these cannot be corrected respectively if possible corrections are not accomplished, this can lead to a suspension (pre-stage to the withdrawal)

The duration of the suspension should not exceed six months. With the suspension the audited element of the supply chain receives the possibility for the implementation of corrective actions. If the corrective actions are fulfilled, the certificate can be appointed again. The relevant element of the supply chain bears the costs of necessary inspections of the corrective actions.

4.3.4.6 Withdrawal

In case of grave violation against the ISCC specifications, the certification body may withdraw the certificate.

4.3.4.7 Issuance of surveillance statements

After a positive evaluation of the surveillance in a farm supplying a first gathering point, the farm can receive a surveillance statement confirming its compliance with the ISCC standards.

4.4 Risk management

On different application levels, the ISCC system uses an adapted risk management for compliance with the requirements of high probability. The respective regulations are listed in document ISCC 207 Risk Management.

4.5 Logo use

After a positive outcome of the certification procedure, the relevant elements can apply for the use of the ISCC logo. The ISCC logo labels the provenance of the biomass from sustainable cropping.

Conditions of logo use are explained in document 208 Guidelines to use the ISCC Brand.

4.6 Arbitration procedure

An arbitration body is set up by the Board in case of complaints regarding the standard development process and in case of disagreement regarding the interpretation of the ISCC certification requirements.

The arbitration procedure is regulated in document ISCC 253 Complaints, Appeals and Arbitration.