BILAGSOVERSIGT

Bilag 1	ISCC-201-System Basics
Bilag 2	ISCC-201-Additional System Basics for Biogas Plants
Bilag 3	ISCC-202-Sustainability Requirements
Bilag 4	ISCC-203-Requirements for Traceability
Bilag 5	ISCC-203-01-Checklist for the Control of the Traceability Requirements
Bilag 6	ISCC-204-Mass balance calculation
Bilag 7	ISCC-205-GHG Emission Calculation
Bilag 8	ISCC-207-Risk Management
Bilag 9	ISCC-252-Regulations to carry out Audit
Bilag 10	ISCC-256-Group Certification
Bilag 11	20 faq on biofuels' sustainability and the ISCC
Bilag 12a	ISCC-Inspektion-Biomasseproducent
Bilag 12b	ISCC-Inspektion-FGP
Bilag 12c	ISCC-Inspektion-Konverteringsanlæg
Bilag 12d	ISCC-Inspektion-Oplagring og distribution
Bilag 13	REDcert-Selverklæring for biomasseproducenter af energiafgrøder
Bilag 14	REDcert-Selverklæring for biomasseproducent af rest- og affaldsprodukter
Bilag 15a	REDcert-Inspektion-Oplagring og distribution
Bilag 15b	REDcert-Inspektion-Biomasseproducenter af rest- og affaldsprodukter
Bilag 15c	REDcert-Inspektion-Biomasseproducenter af energiafgrøder
Bilag 16	Vejledning om overholdelse af bæredygtighedskrav for biogasproducenter (Tysk)
Bilag 17	Sustainable Biomass Production - Manual for Proofs of Sustainability
Bilag 18	Svensk eksempel på kontrolsystem

Bilag 1

System Basics

for the certification of sustainable biomass and bioenergy

ISCC 11-03-15
V 2.3-EU

Bilag 1

Document title:	ISCC 201 System Basics for the certification of sustainable biomass and bioenergy
Approved by:	**Date:**
Issue date:	11-03-15
Application date:	11-03-15

Bilag 1

Content

Bilag 1

1 Introduction

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

To overcome this deficit, policy has launched initiatives to avoid unwanted ecological and social side effects of the expanding biomass production. Certification is an instrument to distinguish sustainable products from non-sustainable ones on the market. It puts buyers in the position to opt deliberately for sustainability and greenhouse gas reduction. Hence, certification supports responsible farms and processing companies and reduces the risk of unsustainable production.

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

The certification of sustainable biomass for energetic use is a complex procedure. The ISCC certification system describes procedures and standards in its reference documents that allow an easy handling for the users. ISCC is based on the requirements set in the Renewable Energy Directive (2009/28/EC).

Sustainable production is a precondition for the further expansion of bioenergy use. The use of biomass for fuel, heat or electricity bears a big potential for climate protection and can reduce the dependency on energy imports. It is also expected that sustainability standards will be introduced on a voluntary or legal basis for the traditional markets as well as in the chemical / technical industries.

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:

- Globally applicable certification system for sustainability and the reduction of greenhouse gas emissions
- Not restricted to certain types of biomass only; covering all relevant raw materials
- Multi-stakeholder approach (farmers, processors, trade, industry, NGOs, associations, research institutions, authorities)
- Audits by independent 3rd party auditors, free from conflict of interest and competent
- Specific control points for sustainability audits
- Traceability based on mass balances
- Registry and Internet-publication of certificates issued
- Greenhouse gas accounting
- Cooperation with other recognized certification systems

Bilag 1

- Learning system, based on the concept study and subsequent pilot projects of the years 2006 to 2009.

2 Scope

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

ISCC can be applied globally. In order to take the specific regional and national circumstances into account ISCC adds continuously information on area classification, production, cultivation and social issues. This will support the auditor in conducting the risk assessment and audit.

The requirements described in the system basics and in further documents of the certification system refer to all enterprises of the supply chain for biomass. This supply chain starts with farms delivering to the first gathering points which receive biomass from farms and transport or further process it and ends with economic operators which brings sustainable biofuels or bioliquids into the market, e.g. cogeneration plants, mineral oil companies etc.

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

	Nr.	**Name**	**Content**
Governance documents	101	ISCC Statutes	The statutes govern the basic organisation and decision making processes of the association ISCC e.V.
	102	National and Regional Initiatives	Rules for the implementation 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 further documents
	202	Sustainability Requirements – Requirements for the Production of Biomass	The sustainability requirements specify the standards for sustainable crop cultivation
	202-01	Checklist for the Control of Sustainability Requirements for the Production of Biomass	The Checklist supplements document ISCC 202 and gives further guidelines to the certification bodies on how to verify the

Bilag 1

	Nr.	Name	Content
			requirements according to ISCC 202
	203	Requirements for Traceability	The listed requirements allow the traceability of biomass along supply chains, even complex and non stable supply chains. Data declarations at the individual stages of the supply chain is defined
	204	Mass Balance Calculation Methodology	The Chain of custody, is based on a mass balance methodology which is applied throughout the supply chain. Segregation is also allowed
	205	GHG Emission Calculation Methodology and GHG Audit	This document describes the detailed calculation methodology for GHG emissions and defines how certification bodies should audit the calculation
	207	Risk Management	Definition and requirements for the risk assessment and the consequences which are derived from it
	251	Requirements for Certification Bodies	Certification bodies audit the compliance with the ISCC standards. The document describes the requirements for certification bodies and which tasks they have to fulfil
	252	Regulations to carry out Audits	This document defines which audits the certification bodies 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
	256	Group Certification	Requirements for group certifications, in particular for smallholder farmers, producer organisations and cooperatives

Bilag 1

	Nr.	Name	Content
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	This Directive describes the legal framework and the requirements with respect to a sustainable production of biofuels and bioliquids
	406	Communication from the Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/02)	Communication sets out how member states and economic operators can implement the sustainability criteria and the Renewable Energy Directive's counting rules for biofuels in practice (non binding)
	407	Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme (2010/C 160/01)	Communication on guidelines for the practical implementation of sustainability schemes, default values and for the calculation of land carbon stocks based on the Renewable Energy Directive (non binding)

Table 1: Structure of the ISCC documentation

3 Normative references

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

Bilag 1

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. Who-ever is involved in the production, the processing and use of sustainable biomass can be-come member of this association; also other stakeholders interested in the ISCC certification system can become members, NGOs or scientific institutions, for instance. The day to day operation of the system is assigned to the ISCC System GmbH (ISCC limited liability corpo-ration).

The General Assembly of the ISCC association incorporates all stakeholders and interested parties. The Board is constituted by 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 is necessary for an effective and stakeholder orientated manage-ment of the organisation. Technical Committees may be appointed by the Board as to sup-port them in the handling of certain topics.

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

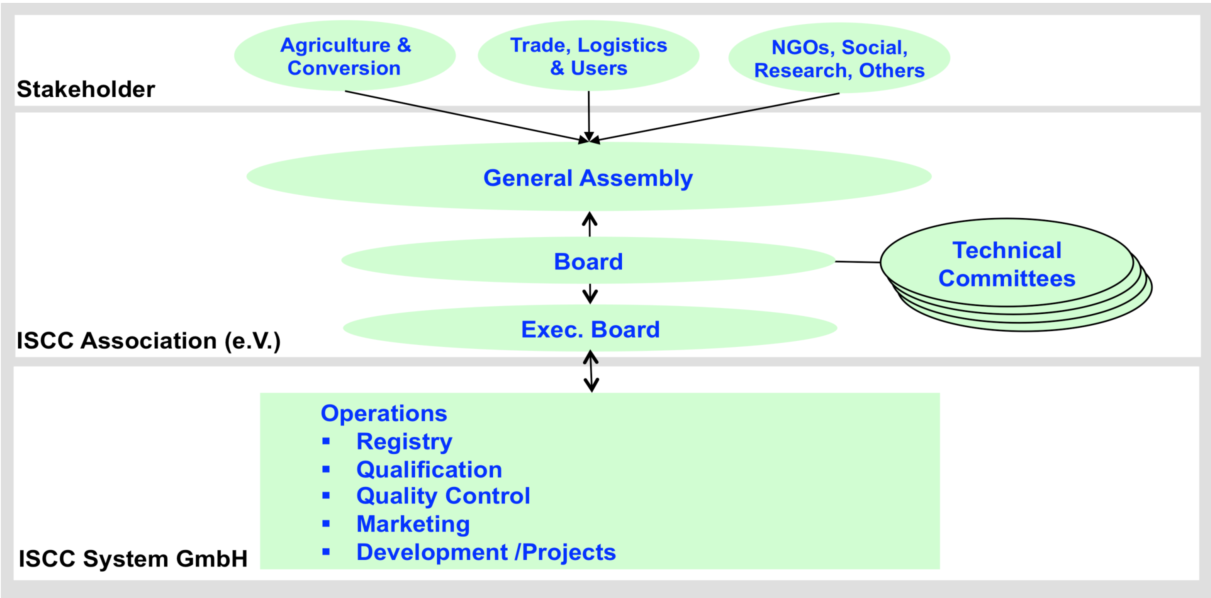

Figure 1: Interaction between Stakeholders, ISCC Association (e.V.) and ISCC System GmbH

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 initia-tives can be an ISCC Contact Point, 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.

Bilag 1

The national or regional initiatives play an important role when an adjustment of ISCC international standard is needed due to specific national or regional circumstances. Such adjustments must always be recognized by the European Commission and / or the national public authority and if relevant by the accreditation body. However, there are no adjustments allowed regarding the requirements set in the Directive.

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 procedures can be found in document ISCC 102 National and Regional Initiatives.

4.2 The processes of the certification system at a glance

Processes and procedures of the ISCC System and the related terminology are based on the binding requirements of the Directive 2009/28/EC (RED) 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.

At the same time the organisation of the certification systems should enable an implementation as easy as possible for the participating elements of the supply chain.

The terminology and procedures in the system reflect the focus on a global 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 of the processes in the ISCC System. ISCC has considered the requirements of ISAE 3000 in it's system set up especially with respect to quality control, risk management by ISCC and the auditor, planning and performing of audits, sampling processes and reporting.

Certificates will be issued by an independent certification body after conducting a successful audit. Certificates are documents which confirm that the owner complies with the requirements of the RED. Certificates can be issued by the certification bodies for all relevant elements of the supply chain. A precondition for this issuance of certificates is the application for certification by the relevant elements of the supply chain and the positive participation in an audit which is conducted by this independent certification body, recognized by a national public authority or an accreditation body and cooperating with ISCC.

Certificates can be received by farms/plantations, first gathering points, conversion units, traders/warehouses. Every first gathering point and conversion unit needs to be audited in order to receive a certificate. Farms and plantations have two options. They can be audited individually or as part of a group (see also ISCC 256, group certification). Group auditing for compliance with the scheme's land related criteria is only acceptable when the areas concerned are near each other and have similar characteristics. Group auditing for the purpose of calculating greenhouse gas savings is only acceptable when the units have similar production systems and products. Warehouses can be audited as a single entity, as warehouses/collecting points belonging to a first gathering point or as part of a company's logistics network. In the latter case the logistic centre plus a sample of associated warehouses must be audited (see also ISCC 252 Regulations to carry out Audits and ISCC 207 Risk

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Management). Relevant market players (economic operator which brings sustainable bio-liquids/biofuels into the market) can receive a certificate on a voluntary basis. Transport does not need to register with ISCC and does not need to receive a certificate.

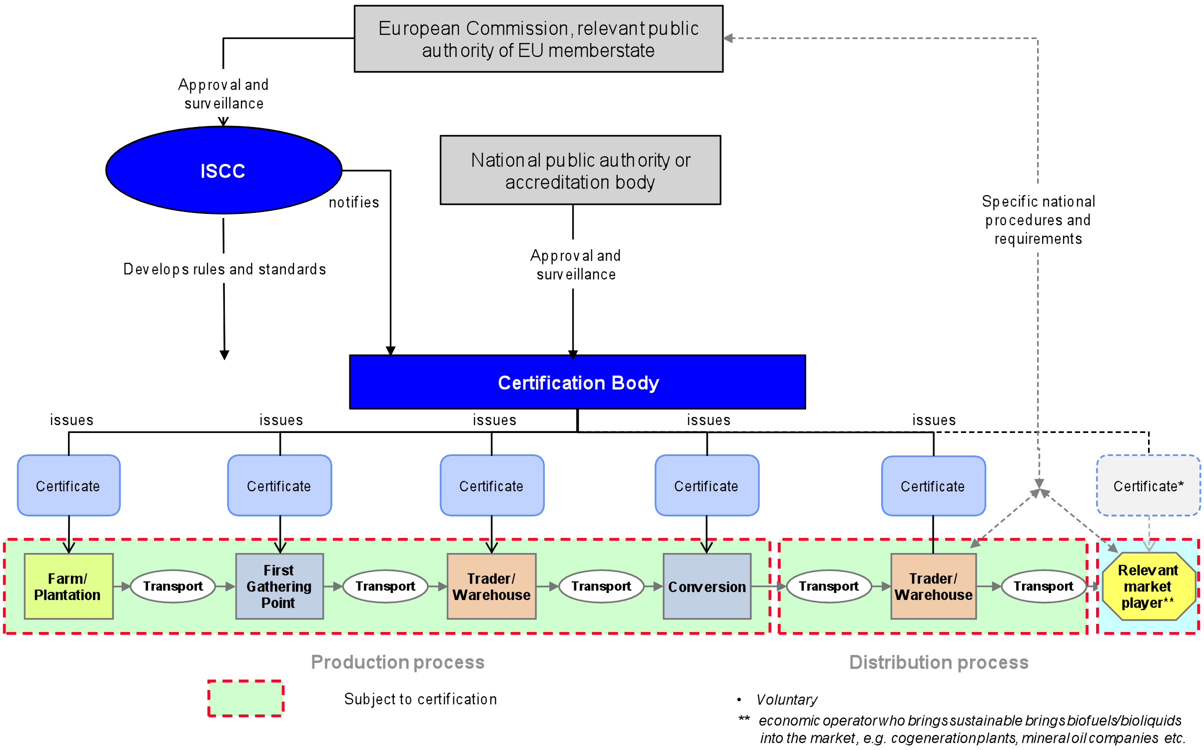

Figure 2: The processes of the certification system at a glance

The requirements for certification bodies are described in document ISCC 251 Requirements for Certification Bodies. Independence, free from conflict of interest and competence are important preconditions to be met by the third party auditors. Details of audit procedures are specified in ISCC 252 Regulations to carry out Audits. Audits must be properly planned, conducted and reported on, based on the procedures and requirements set in the system.

4.3 Certification criteria

4.3.1 Fundamentals

Compliance with three categories of certification criteria is mandatory in order to participate in the ISCC certification system:

(1) Sustainability requirements for biomass production and cultivation

(2) Requirements for greenhouse gas emission savings and the calculation methodology

(3) Requirements for traceability and mass balance in order to provide consistent evidence of the origin of the biomass.

Within the ISCC documents these certification criteria and respective processes are defined as a globally valid standard.

Bilag 1

In countries where the ISCC standard is applied can be specified by national or regional initiatives and described more precisely and adapted to the particular country situation. National or regional specifications will be subject to the recognition by the European Commission. No change of the requirements set in the Directive is allowed.

4.3.2 Sustainability requirements

Farms and plantations which produce sustainable biomass must comply with sustainability requirements. These requirements (see also ISCC 202 Sustainability Requirements for the Production of Biomass) are:

(1) Protection of areas with high biodiversity value

(2) Protection of areas with high carbon stock

(3) Protection of peat land

(4) Sustainable management of the farm.

4.3.3 Requirements concerning the greenhouse gas emission savings

To qualify for this certification system, the produced bioliquids and biofuels must grant greenhouse gas emission savings of at least 35 percent. To prove this, elements of the supply chain can either calculate their greenhouse gas emissions or use disaggregated default values. The last conversion unit in the chain (last interface) must finally calculate the greenhouse gas emission savings compared to the fossil reference for bioliquids and biofuels.

In the case of biofuels and bioliquids produced by any installation (includes any processing installation used in the production process, as long as it has not been intentionally added to the supply chain only to qualify for the exemption) that was in operation on 23 January 2008, the 35% greenhouse gas saving threshold needs to apply from April 1st 2013, and may also apply before that date (s.a. ISCC 203, 5 Special Provisions).

Greenhouse gas emissions from any land use change that has occurred since January 2008 shall be taken into account in the greenhouse gas calculation. Requirements for the calculation and verification of the greenhouse gas emissions and emission savings are specified in document ISCC 205 GHG Emissions Calculation Methodology and GHG Audit.

4.3.4 Requirements concerning the traceability

Traceability does not only cover the basic requirements that products can be traced back and forth throughout the supply chain from origin to the point of final delivery but also the possibility to specify what their properties are, e.g. what they are made from and how they have been processed. The properties of relevance are the sustainability characteristics which are an important element of a mass balance and traceability system and are assigned to consignments of sustainable products.

The origin of the sustainable biomass used to produce bioliquids and biofuels must be traceable through the different stages of distribution, production and supply right up to the biomass cultivation. This is achieved within ISCC by a traceability and mass balance system (chain of custody) where delivery notes ensure that origin, quantity and related greenhouse gas emissions can be clearly identified at each stage of the supply chain.

The mass balance system

(a) allows consigments of raw material or biofuel with differing sustainability characteristics to be mixed;

(b) requires information about the sustainability characteristics and sizes of the consignments refered to in point (a) to remain assigned to the mixture; and

(c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.

The specific requirements for the chain of custody are documented in documents ISCC 203 Requirements for Traceability and ISCC 204 Mass Balance Calculation Methodology.

4.4 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.

4.4.1 Participants in the certification system (relevant elements)

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

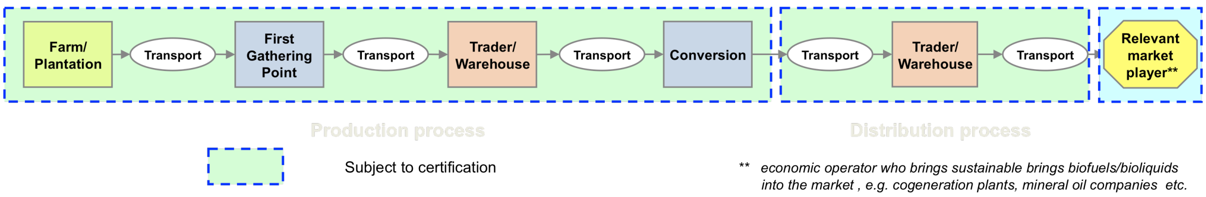

Figure 3: Different elements and sections of the supply chain

The relevant elements of the supply chain are:

(1) **Farms/ plantation:** Farms/ plantations are companies or sites which either own or have leased one or multiple fields. Subject to certification is always the entire land (agricultural land, pasture, forest, any other land) of the farm/ plantation. Selection of fields (cherry picking) is not allowed under the ISCC standard. Within ISCC farms/plantations have two options: They can either apply for individual certification or they receive a certificate as part of a group. Farms/ plantations will be audited with respect to the sustainability requirements as stated in ISCC 202. If farms/plantations intend to calculate their individual greenhouse gas emissions the GHG calculation needs to be included into the audit as well.

(2) **First gathering points:** First gathering points are economic operators that first receive the biomass needed for the production of bioliquids and biofuels from companies and sites that grow and harvest this biomass. First gathering points either trade or further process this raw material. An important characteristic of a first gathering point is the fact that it determines the incoming biomass exactly according to quality and amount and that it documents this information and returns it to its suppli-

ers. First gathering points must be physically visited for an audit. Collecting points of several farms which are for example equipped with a mobile weighbridge during harvest are not regarded as a first gathering point. The same applies for warehouses which do not trade in and/or sell biomass or raw material, but act on demand of a first gathering point.

(3) **Traders/warehouses:** Traders/warehouses after the first gathering point storing sustainable products (i.e. biomass, bioliquids or biofuels) will be audited regarding traceability and mass balance.

(4) **Conversion units:** Oil mills, refineries, biodiesel and ethanol plants as well as other factories processing bioliquids or biofuels will be audited with respect to traceability, mass balance and (if default values are not applied) respective greenhouse gas calculation.

(5) **Transport:** Enterprises transporting the biomass between the above mentioned elements of the supply chain are not subject to an audit unless they actively apply for it.

(6) **Relevant market player:** These are economic operators who bring sustainable biofuels or bioliquids into the market (e.g. cogeneration plants, mineral oil companies etc) which may participate in the certification system on voluntary bases.

4.4.2 Application for certification

The elements of the supply chain that want to participate in the ISCC system will have to select first a certification body cooperating with ISCC. After selecting the certification body the respective company shall register with ISCC (ISCC webpage http://www.iscc-system.org/iscc_certification_guidance/registration/index_eng.html). Once the required data is processed and the company has received a registration number the selected certification body can start the audit process (see ISCC 252 Regulations to carry out Audits).

Most important for farms are the requirements of documents ISCC 202 Sustainability Requirements for the Production of Biomass, ISSC 207 Risk Management and in the case that group certification is chosen document ISCC 256 Group Certification. Other elements of the supply chain have to take the documents ISCC 203 Requirements for Traceability, ISCC 204 Mass Balance Calculation Methodology, ISCC 205 GHG Emission Calculation Methodology and GHG Audit and ISCC 207 Risk Management into account.

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

4.4.3 Conducting audits

All elements in the supply chain that register with ISCC and want to receive a certificate are subject to an audit before participating in the scheme. Certification bodies carry out certification audits as well as surveillance audits at 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.

Auditors should comply with the requirements of the ISAE 3000 when performing an ISCC audit.The regulations specifying how to carry out audits are fixed in document ISCC 252 Regulations to carry out audits.

Bilag 1

4.4.4 Issuance of certificates

4.4.4.1 *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.

ISCC publishes its certificates on its websites.

4.4.4.2 *Content of certificates*

Certificates must at least include the following information:

(1) A unique certification code number composed of the registration code of the certification system, the certificate number and the number of the certification body,

(2) Name and address of the audited company

(3) Name and address of the certification body

(4) the name and address of the certification system

(5) date of issue of the certificate

4.4.4.3 *Validity*

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

4.4.4.4 *Resignation*

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

4.4.4.5 *Withdrawal*

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

4.5 Risk management

On different application levels, the ISCC system uses an adapted risk management to guarantee compliance with the requirements. The overall requirements are listed in document ISCC 207 Risk Management. Specific requirements are listed within the respective documents.

4.6 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, biofuels and bioliquids from sustainable production.

Bilag 1

4.7 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.

Bilag 2

ISCC 201 / Biogas Plant

Additional System Basics

for the certification of gaseous biofuels produced in biogas plants

ISCC 28-06-13
V 1.02 28-06-13

Bilag 2

Document title:	ISCC 201 / Biogas Plant Additional System Basics for the certification of sustainable gaseous biofuels produced in biogas plants
Issue date:	**8 May 2013 (V 1.02 as of 28 June 2013)**
Approved on:	**29 May 2013**

Bilag 2

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1 Introduction

The European Commission formulated binding sustainability requirements for the energetic use of biomass in the directive 2009/28/EC. This Renewables Directive was transposed into national law through the Biomassestrom-Nachhaltigkeitsverordnung [Biomass Electricity Sustainability Ordinance] (BioSt-NachV) and the Biokraftstoff-Nachhaltigkeitsverordnung [Biofuel Sustainability Ordinance] (Biokraft-NachV). They introduced binding sustainability criteria for liquid and gaseous biofuels as well as for liquid fuels, including biomethane processed to natural gas quality that is used in the mobile field.

The binding requirements apply to all elements of the value chain (farms/plantations, first gathering points, warehouses, suppliers, transports, biogas plants (which may also be first gathering points, as the case may be) and biogas processing plants (BPP).

To prove the implementation of these requirements, the companies involved undertake to comply with the regulations of recognised certification systems. ISCC is such a certification system.

2 Scope

This document comprises additional requirements for all elements of the value chain for the production of biomethane. The specific criteria described complement the system basics described in the ISCC document 201 and generally apply to all relevant elements of the value chain.

The following documents must be taken into account as well for the certification of biogas plants:

	No.	Name	Content
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 further documents.
	202	Sustainability Requirements – Requirements for the Production of Biomass (crop cultivation)	The sustainability requirements specify the standards for sustainable crop cultivation
	202-02	Self declaration of EU farms of their compliance with the ISCC sustainability requirements	
	203	Requirements for	The listed requirements allow for the traceability of the biomass.

Bilag 2

	No.	Name	Content
		Traceability	The data that must be declared at the individual elements in the supply chain is named
	204	Mass Balance Calculation	The detailed traceability of the biomass within individual production sites is possible by way of a mass balance methodology which is described in this document
	205	GHG Emission Calculation Methodology and GHG Audit	This document describes the detailed calculation methodology for greenhouse gas emissions and defines for certification bodies how to audit the requirements
	300	Country-specific Notes and Guidelines	Country-specific information in particular for the preparation of the audit and for the assessment of country-specific risks
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	The directive describes, among other things, the legal requirements in the EU as to the production of sustainable biomass and bioliquids
	402	Ordinance on Requirements Pertaining to Sustainable Production of Biofuels (Biokraftstoff-Nachhaltigkeitsverordnung – Biokraft-NachV)	These ordinances nationally implement the Directive 2009/28/EC
	403	Ordinance on requirements pertaining to sustainable production of bioliquids for electricity production (Biomassestrom-Nachhaltigkeitsverordnung – BioSt-NachV)	

Bilag 2

	No.	Name	Content
	404	Administrative regulation Biomassestrom-Nachhaltigkeitsverordnung (BioSt-NachVwV)	Administrative regulation for the recognition of certification systems and certification bodies according to the BioSt-NachV
	405	BLE-Guideline Sustainable Biomass production	Summary of information with respect to the sustainable production of biomass and the implementation of the legal requirements
		Biomethane as a fuel: a guidance on Biokraft-NachV for practice	Summary of information with respect to the certification of biomethane
		Biomass Ordinance	Ordinance on the production of electricity from biomass

Table 1: Relevant documents for the certification of gaseous biofuels produced in biogas plants

3 Normative references

In general, all applicable ISCC documents shall be considered relevant references for the scope of application in addition to the documents listed in chapter 2.

Bilag 2

4 Certification

4.1 Certification of biogas plants

4.1.1 Fundamentals

The certification criteria for biogas plants are composed of the following items:

(1) farms / plantations

(2) biogas plants as first gathering points

(3) biogas plant and biogas processing plants as last interface

(4) mass balancing

(5) issue of Proofs of Sustainability

4.1.2 Farms / plantations

The requirements regarding the sustainable production of biomass are described in detail in the ISCC document 202 (Sustainability Requirements – Requirements for the Production of Biomass (crop cultivation)).

The farm must provide the data for the cultivation of biomass required for the calculation of GHG emissions and disclose them to their customers. At present, there are no standard values in Biokraft-NachV and no NUTS2 values for the cultivation of substrates (e.g. maize silage) that are used for the production of biogas either. The farm must collect the relevant data or calculate GHG emissions individually. The ISCC document 205 (GHG Emission Calculation Methodology and GHG Audit) describes the relevant data and the calculation methodology.

4.1.3 Biogas plant as first gathering point

Biogas plants may also be first gathering points of sustainable biomass (substrates) at the same time. In the context of the ISCC system, first gathering points are companies that first receive the biomass required for the production of biofuels from companies or sites that produce or harvest this biomass in order to trade in this raw material (section 2 paragraph 3 no. 1 Biokraft-NachV). It is relevant for the certification of these plants that the weight, the origin (production site), the dry substance content and the value of GHG emissions stated by the production site are documented for the incoming biomass (substrates). The self-declarations made by the production sites as well as the supply contracts for biomass (substrates) must be kept as proof of the biomass. Deliveries with different GHG values must always be stored separately. Silage losses occurring during the storage of the substrate must be documented and explained.

Bilag 2

4.1.4 Biogas plant and biogas processing plants as last interface

4.1.4.1 Definitions

Biogas plants are conversion plants that produce (raw) biogas from substrates (biomass). Biogas processing plants process (raw) biogas to biomethane. The processed biomethane then has the quality of natural gas and is thus the ready-to-use fuel. Biogas processing plants are always the last interface. Both biogas plants and biogas processing plants must undergo certification. When biogas plants and a biogas processing plant belong to the same site, a single certification referring to both plants is sufficient.

4.1.4.2 Fundamentals

The internal heat requirement of the biogas plant and of the biogas production plant must be proven. The heat energy used must demonstrably be provided from renewable sources without the use of additional fossil energy.

The substrate quantities introduced into the biogas plant and/or the fermenter must be documented using an operations diary and/or work diary. The information on the origin of the substrate, the dry substance content as well as the assigned GHG value must also be documented in this diary. Recording must be carried out as exactly as possible. It must be verified at least once per month that the substrate quantities supplied correspond to those used in the fermenter of the biogas plant.

Moreover, the biomethane yield of the entire plant must be documented in the operations diary. The biomethane yield must be measured at the biogas plant using standardised equipment or measured continuously by the biogas processing plant. The biomethane gas quantity produced and the substrate quantity used must be compared after three months at the latest.

The energy content of the produced biomethane must be calculated based on the non-condensing heating value (“Heizwert”).

4.1.4.3 Calculation of GHG emissions

The Biokraft-NachV has standard values for biogas from organic municipal waste and for biogas produced from liquid or dry manure for the calculation of GHG emissions. If an individual calculation of GHG emissions is required for biogas plants, they must have a gas-tight digestate storage tank and a dosing unit with weighing system. Methane losses must be taken into account when calculating the GHG reduction.

GHG values must only be aggregated when maximum values have been specified by law (see Biokraft-NachV). If aggregation is not possible, the GHG values must be calculated for every substrate used. The substrate quantities documented in the operations diary and the assigned GHG values must be taken into account for the calculation. The total biogas and/or biomethane yield will be split into the individual substrates. An exact allocation of substrate quantity and gas yield is not possible. The calculation is to be carried out in analogy with the procedure for the settlement of the EEG remuneration (see “Ordinance on the Production of Electricity from Biomass – BiomassV“). For example, methane yields (in m^3 per ton of fresh mass) can be found in the Biomass Ordinance (BiomasseV) or other scientific documents (e.g. KTBL values “Typical values for agriculture”).

Diffuse methane emissions from the fermentation process must be taken into account when calculating GHG emissions. Methane emissions amounting to 1% of the biomethane quantity produced are assumed. Lower values must be proven by corresponding measurements. Emissions occurring during the storage of digestate must be considered for the GHG calculation as well. An allocation of the emissions to digestate is not possible.

4.1.4.4 Biogas processing plant

The biogas processing plant must prove that the heat energy used comes from renewable sources. If heat is regenerated from the use of the biogas produced, the corresponding quantity of heat and the quantity of biogas used must be proven.

Biogas processing plants must measure their power consumption and take into account the methane slip for the GHG calculation. For doing so, it is sufficient to measure the actual methane slip, provide the manufacturer warranty or refer to scientifically accepted standard values. Plants that employ a procedure using pressure must retreat their exhaust air thermally.

Biogas processing plants are always the last interfaces. They must calculate the final GHG reduction potential of the biomethane. In order to do so, emissions from the downstream processing and transport of the biomethane must be considered as well. This includes the transport of the biomethane to the filling station as well as the compression to the pressure required by the filling station. Scientifically accepted standard values or individually measured values may be used. The transport of biomethane to the filling station can be carried out using the natural gas network. In this case, the natural gas network (pipelines) is considered to be the means of transport and not the warehouse.

4.1.5 Mass balancing

The mass balancing of biomass in the ISCC system is described in detail in document 204. In addition, the following requirements must be taken into account for the certification of biomethane produced by biogas plants.

The natural gas network can be used for the transport of biomethane. In this case, the natural gas network must meet the requirements as to a mass balancing system. The quantity of biomethane fed into and taken from the natural gas network must be documented stating the properties. The export of biomethane into the natural gas network must be recorded using a standardised export meter and documented (units: m^3 or kWh). At the end of the respective balancing period, the quantity of biomethane taken from the natural gas network must not exceed the quantity of biomethane fed in before. To prove this fact, a company-internal database may be used that is subject to controls by the main customs offices. Moreover, documentation must be carried out using the Nabisy database. The documentation of mass balancing using the biogas register is not permissible. The balancing period must not exceed three months.

Bilag 2

4.2 Generation of Proofs of Sustainability

The creation of Proofs of Sustainability is described in the document 206. The following requirements must be taken into account in addition for the certification of biomethane produced in biogas plants.

The biogas processing plant issues the Proof of Sustainability for the biomethane fed into the natural gas network. In the field of biomethane production, the “immediate” transmission of the Proof of Sustainability to the competent authority is not possible, since the settlement between the commercial partners is carried out using the energy content of the biomethane (in kWh) and not in m^3 or kg. The energy content cannot be transmitted “immediately” since it is determined analytically and is generally only available 3 weeks after the end of the month. Thus, the Proof of Sustainability should be issued at this point in time. The Proof of Sustainability should be entered into the Nabisy system within 7 working days. Before the data are entered into the Nabisy, they must be converted according to the requirements of BLE [Federal Office for Agriculture and Food] (conversion factor 3.6 MJ/kWh).

No other Proofs but the Proofs of Sustainability prescribed by Biokraft-NachV and entered into / issued through the Nabisy system are accepted for mass balancing. A Proof and / or the documentation through the biogas register is/are neither permissible regarding the biofuel quota nor regarding a tax relief granted by the customs offices. A parallel documentation of business transactions in the Nabisy and in the biogas register is not permissible either as soon as Proofs of Sustainability have been issued for biomethane.

Bilag 3

Sustainability Requirements for the Production of Biomass

ISCC 11-03-15

V 2.3-EU

Bilag 3

Document title:	ISCC 202 Sustainability Requirements for the Production of Biomass	
Approved by:		**Date:**
Issue date:	11-03-15	
Application date:	11-03-15	

Bilag 3

Content

Bilag 3

1 Introduction

In the context of a sustainable development the use of biomass is only justifiable, if a sustainable, environmentally and socially sound production of the biomass is ensured.

Therefore the protection of certain areas and the compliance with several environmental and social standards are indispensable.

This standard for sustainable production comprises six principles with their respective criteria and does not only aim at the prevention of ecological shortcomings but also at the safekeeping of adequate working conditions and the protection of employees' health on farms. The criteria are defined as "major musts" and "minor musts".

Annex 1 entails the six principles with the respective criteria to be fulfilled. The criteria are categorized according to their relevance in "major musts" and "minor musts". All "major musts" and at least 60% of the "minor musts" must be fulfilled for a successful audit.

All criteria of ISCC principle 1 (Biomass shall not be produced on land with high biodiversity value or high carbon stock (according to Article 17(3), (4) and (5) of the Directive 2009/28/EC. HCV areas shall be protected.) belong to the category "major must" and must be complied with. Raw material for biofuels/bioliquids should not be taken from land with high biodiversity value or high carbon stocks.

If land fell into one of these categories in January 2008 and no longer does, raw material for biofuels/bioliquids should not be taken from the land. If land belongs to more than one of these land categories, all the relevant criteria apply. Eligibility for an exception under one of the criteria would not confer an exception from other criteria that apply. Raw material should not be obtained from primary forest and other (primary) wooded land, designated nature protection areas, and highly biodiverse grassland.[1] Any conversion of grassland is prohibited until the EC has published its definition.

As indicated already, all other "major musts" of the principles 2 to 6 must be fulfilled as well. Exceptions in the principles 2 to 6 are possible under certain conditions if producers cannot fulfil certain requirements due to the specific conditions in an individual country. Exceptions are not allowed for principle 1. At the same time, at least 60% of the minor in the principles 2 to 6 musts be fulfilled.

Within EU Member Countries that have implemented Cross Compliance it is only necessary to control principle 1 as principles 2 to 6 are already covered by Cross Compliance and other control systems and one can rely on existing control systems to ensure that farmers fulfil the requirements from ISCC principles 2 to 6. If there are farmers within the EU who supply raw material for biofuels/ bioliquids production but are not covered by these control systems, all six ISCC principles need to be controlled. This is also the case in Romania and Bulgaria where Cross Compliance regulations are not finally implemented yet. Although Cross Com-

[1] The European Commission intends to establish the criteria and geographic ranges to determine which grassland can be considered to be highly biodiverse grassland. ISCC will communicate to economic operators any details of lists on protected areas as soon as they are available from the EC. ISCC will similarly update the standard documentation accordingly.

pliance regulation is not subject to an ISCC audit, the auditor must notify the respective national or regional authority of any obvious Cross Compliance violations. A correction of these violations must also be part of the auditor's task list for the respective farm.

For countries that have ratified the respective ILO Conventions, it is assumed that the social requirements (principle 4) are fulfilled. However, this is only the case as long as the auditor, based on his risk assessment does not come to a different conclusion.

Appendix 2 of this document entails an indicative list of information sources for the land use related and social criteria of ISCC. The information sources can be used for the risk management of the auditors.

As needed, a National or Regional Initiative (National or Regional Technical Working Group) can adapt the international ISCC standards to local conditions by the means of a specification of the standard. Therefore the working groups shall consider the regulations in the documents ISCC 102 National and Regional Initiatives. Possible national or regional specifications of the ISCC standard are always subject to recognition by the European Commission and or the national public authority and if relevant by the accreditation body.

2 Scope

The sustainability requirements in this document are valid for all farms participating in the ISCC system.

A differentiation takes place when auditing the standards in these cases:

- The relevant companies receive direct payments pursuant to Regulation (EC) no. 73/2009 or subsidies for area-oriented measures pursuant to Article 36 letter a numbers i through v and letter b numbers i, iv and v of Council Regulation (EC) no. 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) (OJ L 277 of 21 October 2005, p. 1) that obligate them to fulfil Cross-Compliance requirements,

  or

- are registered as organisations pursuant to Regulation (EC) no. 761/2001 of the European Parliament and of the Council of 19 March 2001 allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (OJ L 114 of 24 April 2001, p. 1), in the applicable version.

If one or both of these conditions is/are fulfilled, only requirements not covered by according EU regulations are audited.

3 Normative references

As a basic principal, all relevant ISCC documents are valid for the scope of application. The normative references display the documents whose contents are linked and have to be considered as common points.

Relevant references:

Bilag 3

ISCC	201	System Basics
ISCC	202-01	Checklist for the Control of Requirements for Biomass
ISCC	203	Requirements for traceability
ISCC	256	Group Certification
ISCC	102	National and Regional Initiatives

Bilag 3

4 Requirements for the production of biomass

All farms and plantations that go through an ISCC audit shall comply with relevant national and regional laws and regulations as long as they do not violate any requirements of ISCC and the Directive 2009/28/EC. If for example certain countries have legislation in place that allows for a certain degree of forest clearance for agricultural production it would not be allowed to produce biomass under the ISCC System on these areas as this would violate ISCC Principles and the requirements from the Directive.

4.1 PRINCIPLE 1: Biomass shall not be produced on land with high biodiversity value or high carbon stock. HCV areas shall be protected.

The Directive 2009/28/EC identifies categories of land with high biodiversity value (Article 17(3)) and high carbon stocks (Article 17(4) and (5)). If land fell into one of these categories in January 2008 and no longer does, raw material for biofuels/bioliquids should not be taken from the land.

For some of these criteria the Directive allows for exceptions, provided that certain evidence is provided.

If land belongs to more than one of these land categories, all the relevant criteria apply. Eligibility for an exception under one of the criteria would not confer an exception from other criteria that apply.

Raw material should not be obtained from land with high carbon stock. The provision shall not apply if at the time the raw material was obtained, the land had the same status as it had in January 2008.

Compliance with national and local laws and regulations relevant to biomass production in the area and surroundings where biomass production takes place is required. The company should be familiar with the relevant legislation and should remain informed on changes in legislation. If national or local legislation allows the violation of ISCC Principles or the requirements from the Directive a production according to ISCC requirements is not possible.

4.1.1 Biomass is not produced on land with high biodiversity value

The production on land that had one of the following statuses in or after January 2008, no matter whether or not the land still has this status is not allowed:

(1) **Forest land**
Forest land comprises primary forests and other natural areas that are covered with native tree species and do not show clearly visible indications of human activity and the ecological processes are not significantly disturbed.

Tree species are defined as native, if they grow within their natural geographical range on sites and under climatic conditions to which they have adapted naturally and without human interference.

Bilag 3

The following tree species do not count as native:

- Tree species that have been introduced by humans and that would not occur in that area otherwise; and
- tree species and breeds that would not occur on these sites or under these climatic conditions, even if these sites or climatic conditions fall within the larger geographical range of the species.

Clearly visible indications of human activity are:

- Land management (i.e. wood harvest, forest clearance, land use change),
- heavy fragmentation through infrastructural constructions such as roads, power lines,
- Disturbances of the natural biodiversity (e.g. significant occurrence of non-native plant or animal species).

Activities of indigenous people or other humans managing the land in a traditional way do not count as clearly visible indications of human activity if they manage the forest on a subsistence level and their influence on the forested area is minimal (e.g. the collection of wood and non-timber products, the felling of a few trees as well as small-scale forest clearance according to traditional management systems).

(2) Areas designated by law or by the relevant competent authority to serve the purpose of nature protection

Areas for nature protection purposes comprise areas that are designated by law or by the relevant competent authority to serve the purpose of nature protection as well as areas that have been acknowledged by the European Commission as areas for the protection of rare, threatened or vulnerable ecosystems or species.

In Germany for example, all areas designated to serve the purpose of nature protection are protected parts of nature and landscape on the basis of the nature conservation acts of the states. They include the biotopes protected by federal or state law as well as Natura 2000 areas, nature conservation areas, national parks, national natural monuments, biosphere reserves, landscape protection areas, natural parks, natural monuments and protected landscape elements according to the Federal Act for the Protection of Nature of July 29th 2009 (BGBI. I, S. 2542) entering into force on March 1st 2010.

Comparable legal regulations must be regarded in other countries.

It is allowed to grow biomass on areas that serve the purpose of nature protection as long as evidence is provided that the production of raw material did not interfere with the nature protection purpose in question.

(3) Areas for the protection of rare, threatened or endangered ecosystems or species

Areas for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by international

Bilag 3

agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4) of the RED.

An exception is possible if evidence is provided that the production of that raw material did not interfere with those protection purposes.

ISCC will communicate to economic operators any details of lists on protected areas as soon as they are available from the EC. The standard documentation will be updated accordingly.

4.1.2 Biomass is not produced on highly biodiverse grassland

Grassland of high biodiversity is defined as grassland, which in the absence of human intervention would:

(1) remain grassland of intact natural species composition, ecological characteristics and processes (natural grassland); or

(2) not remain grassland and which is rich in species and not degraded (artificial grassland), unless there is evidence that the harvesting of the biomass is necessary to preserve its grassland status.

Natural grassland develops under certain climatic and other factors (e.g. natural grazing, natural fires) preventing succession to dense forest. Its special characteristic is to remain grassland without any effort of humans.

Natural grassland with high biological diversity is characterized by intact ecological characteristics and processes as well as a natural species composition. A significant occurrence of invasive species, for instance, could indicate that natural grassland does not feature a natural species composition. A disturbance of ecological characteristics and processes can be caused by a significant change through humans, for instance. As long as this influence does not cause a change in the natural species composition or a significant disturbance of the ecological characteristics and processes, an area is still to be regarded as natural grassland. In savannahs, for instance, extensive pasturing and anthropogenic fire do not pose a significant disturbance.

Artificially created grassland (non-natural grassland) is mainly agricultural land permanently cultivated for green fodder; it can be permanent grassland such as meadows, mowing pastures and grazing pastures.

According to the EC public consultation document[2], the following operational definitions are considered:

- Grassland: An area where a continuum of grasses or grass-like plants with few woody plants grows.
- Non-natural grassland: an area whose condition as grassland is maintained [for at least [5] years] as a result of human intervention such as ploughing, sowing, mowing or livestock grazing.

[2] http://ec.europa.eu/energy/renewables/consultations/2010_02_08_biodiverse_grassland_en.htm.

- Natural grassland: grassland that has not been sown and is maintained as grassland by the influence of natural factors such as natural fires, grazing by wild animals, (periodic) drought or freezing temperatures.

This EC's consultation process seeks comments on three possible approaches for establishing the criteria and geographic ranges for highly biodiverse grassland.

Biomass cannot be harvested from areas that have been declared natural grassland of high biodiversity in January 2008 or thereafter. Whereas biomass is allowed to be harvested from non-natural grassland with high biodiversity, in case the preservation of the grassland status requires the harvest of the biomass.

Local conditions of species richness must be regarded when evaluating whether grassland features high biodiversity. Here, species richness must be assessed along the lines of the bio geographical conditions and site conditions (e.g. a species inventory for that region, if available). In case, of a land-use change from grassland without high biodiversity, the greenhouse gas emissions caused by that change must be incorporated into the greenhouse gas emissions calculation

Highly biodiverse grassland, as stated in the RED, has not yet been fully defined by the EC. **Until definitions, criteria and geographic areas featuring grassland with high biodiversity are determined by the Commission, any conversion of grassland in or after January 2008 is prohibited within the ISCC system.**

4.1.3 Biomass is not produced on land with high carbon stock

This means land that used to have one of the following statuses in January 2008 or thereafter and no longer had this status at the time of growing and harvesting biomass:

(1) **Wetlands**
Wetlands are areas that are covered with or saturated by water permanently or for a significant part of the year. In particular all wetlands that have been included in the list of internationally important wetlands according to article 2, section 1 of the Convention of February 2nd 1971 on Wetlands of International Importance (Ramsar Convention on Wetlands), especially as habitat for waterfowl and waders of international importance fall into this category. The application of the requirement is not restricted to the wetlands covered by the convention, it applies to all wetlands.

Wetlands are in particular areas of marsh, fen, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.

- Covered with water means that water is visible on the surface as water surface.
- Saturated by water is a soil that shows also water at the surface, but not as a closed water surface.
- Areas that are permanently covered by or saturated with water show this state throughout the year.

- Areas that are covered by or saturated with water during a considerable part of the year do not show this state throughout the year. A considerable part of the year means that coverage or saturation with water lasts long enough so organisms adapted to wet or reduced conditions dominate. This holds especially for shallow water, shores, low-moor bog, fen and moor.

The conservation of the status of a wetland also implies that this condition is not to be changed or compromised. Thus if raw material is taken from land that was wetland in January 2008 and is still wetland when the raw material is taken, using such material would not breach the criterion.

(2) Forested areas

Forested areas is land that

- spans over more than one hectare with trees higher than five metres and a canopy cover of more than 30% (continuously forested areas), or trees able to reach those thresholds in situ (it does not include land that is predominantly under agricultural land use[3]), or
- spans over more than one hectare with trees higher than 5 metres and a canopy cover of between 10% and 30%, or trees able to reach these thresholds in situ, unless reliable evidence is provided that the carbon stock of the area concerned before and after conversion is such that, when the methodology laid down in part C of Annex V of the RED is applied, the appropriate threshold for the greenhouse gas saving criterion would still be fulfilled, or.
- is forest according to the respective national legal definition.

The canopy cover is the degree of the coverage of an area by tree crowns of a storey. The coverage of a tree equals the size of its crown. The crown size can be estimated or measured. For the determination of the canopy cover of a forest in percent the vertical projection of all tree crowns must be used.

The status of forest areas includes all stages of development and age. Thus, it is quite possible that the canopy cover temporarily falls below 10 or 30 %, e.g. after tree harvest or a natural hazard (e.g. windfall). Such incidents do, however, not change the status of the area as forested area as long reforestation or natural succession is ensured within a justifiable time.

The canopy cover percentage marks the mean canopy cover of a forest area; it refers to an area of homogeneous coverage. If an area shows measurably varying coverage, it must be divided into subareas of homogeneous canopy cover to determine the mean canopy cover. The mean canopy cover is calculated from the canopy covers of the subareas.

[3] Land under agricultural use in this context refers to tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover.

Continuously forested areas are to be judged as entity, no matter how much of this continuously forested area lies within the farm land or the production area. Accordingly, the whole area is the basis for the calculation of the threshold values of 10 or 30%. If the total area of the forested area exceeds 1 ha and is stocked with trees higher than 5 metres, the area and each part of it that lies within the farm land or the production area is termed continuously forested area. Even if only 0.5 ha of the continuously forested area lie within the farm land, these 0.5 ha must be classified as continuously forested area just like the total forested area.

No conversion of continuously forested areas is allowed, even if this is allowed by national regulation.

These regulations do not apply to short rotation plantations, because they count among permanent crops and belong to farm land.

4.1.4 Biomass is not produced on land that was peatland in January 2008 or thereafter (Article 17(5) of the Directive 2009/28/EC)

Biofuels and bioliquids shall not be made from raw material obtained from land that was peatland in January 2008. An exception is possible if evidence is provided that

- the soil was completely drained in January 2008, or
- there has not been draining of the soil since January 2008.

This means that for peatland that was partially drained in January 2008 a subsequent deeper drainage, affecting soil that was not already fully drained, is not allowed.[4]

Peat itself is not considered biomass.

Peatland soils are soils with horizons of organic material (peat substrate) of a cumulative thickness of at least 30 cm at a depth of down to 60 cm. The organic matter contains at least 20 mass percent of organic carbon in the fine soil.

Drainage means a drawdown of the mean annual level due to an increased water loss or a reduced water supply resulting from human activities or constructions within or outside of the area.

Peatland soils that have been used for cropping before January 2008 are allowed for biomass production as long as a subsequent deeper drainage is not affecting soil that was not already fully drained.

4.1.5 Reference date

If areas have been converted after January 2008, the conversion and use must be in accordance with the requirements of principle 1.

[4] Please also see Communication from the Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/02).

Bilag 3

4.1.6 All other production areas of the farm/ plantation comply with the ISCC Principle 1

Subject to certification is always the entire land (agricultural land, pasture, forest, any other land) of the farm/ plantation. Selection of fields ("cherry picking") is not allowed under the ISCC standard.

Bilag 3

4.2 PRINCIPLE 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

Compliance with national and local laws and regulations relevant to soil degradation, soil preservation, soil management, contamination and depletion of water sources, water quality, air emissions and burning practices is required.

4.2.1 Environmental impact assessment

4.2.1.1 Environmental aspects are considered if planning buildings, drainage etc.

Environmental impact of new buildings, drainage systems and other constructions or systems is assessed and kept as little as possible. If any of these activities are done at the farm documents must be available to show that environmental aspects have been considered.

4.2.2 Natural water courses

4.2.2.1 Natural vegetation areas around springs and natural watercourses are maintained or re-established.

The status of riparian vegetation is known by the producer. Where natural vegetation in riparian areas has been removed there is a plan with a timetable for recultivation.

4.2.3 Soil conservation and avoidance of soil erosion

4.2.3.1 Soil conservation and avoidance of soil erosion

Good agricultural practices must be applied with respect to:

- Prevention and control of erosion;
- Maintaining and improving soil nutrient balance;
- Maintaining and improving soil organic matter;
- Maintaining and improving soil pH;
- Maintaining and improving soil structure;
- Maintaining and improving soil biodiversity;
- Prevention of salinisation.

A soil management plan aimed at sustainable soil management, erosion prevention and erosion control must be documented. Annual documentation of applied good agricultural practices with respect to the abovementioned aspects must be in place

4.2.3.2 Field cultivation techniques used to reduce the possibility of soil erosion

Evidence of measures of reduced soil erosion is available. Maps of fragile soils must be available. A management strategy should exist for plantings on slopes above a certain limit (needs to be soil and climate specific). A management strategy should be in place for other fragile and problematic soils (e.g. sandy, low organic matter soils).

Bilag 3

4.2.4 Soil organic matter and soil structure

4.2.4.1 Soil organic matter is preserved

A soil organic balance is compiled (can be generic) or every six years a soil organic matter analysis takes place. Results are kept for seven years.

4.2.4.2 Organic fertilizer is used according to nutritional requirements

Organic fertilizer is used according to nutritional requirements of the soil. If organic matter, like Empty Fruit Bunches (EFB) or other remaining plant material is used in the production areas (mulched), the material is evenly distributed.

4.2.4.3 Restriction on burning

The burning of stubble or other crop residues is allowed only with the permission of competent authority. Burning as part of land clearance is not allowed.

4.2.4.4 Techniques have been used that improve or maintain soil structure

Techniques applied are suitable for use on the land. The soil structure shall be maintained, e.g. by an appropriate use of machinery.

4.2.4.5 Use of agricultural by-products

The use of agricultural by-products does not jeopardize the function of local uses of the by-products, soil organic matter or soil nutrients balance. Documentation must be available that the use of by-products does not occur at the expense of the soil nutrient balance, soil organic matter balance or important traditional uses (such as fodder, natural fertiliser, material, local fuel) unless documentation is available that similar or better alternatives are available and are applied.

4.2.5 Ground water and irrigation

4.2.5.1 Mineral oil products and plant protection products are stored in an appropriate manner, which reduces the risk of contaminating the environment

The storages of the material are consistent with best available technology and respective laws and prevent contamination by the stored materials.

4.2.5.2 The producer respects existing water rights, both formal and customary, and can justify the irrigation. Local legislation is followed

If ground water is used for irrigation, the producer respects existing water rights, both formal and customary, and can justify the irrigation in light of accessibility of water for human consumption. Local legislation is followed.

4.2.5.3 Application of good agricultural practices to reduce water usage and to maintain and improve water quality

Documentation of water management plan aimed at sustainable water use and prevention of water pollution. Annual documentation of applied good agricultural practices with respect to:

- Efficient water usage;
- Responsible use of agro-chemicals;
- Waste discharge.

4.2.5.4 The producer can justify the method of irrigation used in light of water conservation

4.2.5.5 To protect the environment, water is abstracted from a sustainable source

4.2.6 Use of fertilizer

4.2.6.1 During the application of fertilizers with a considerable nitrogen content care is taken not to contaminate the surface and ground water

The producer must demonstrate that he observes at least a distance of 3 m to river banks. He takes care that there is no run-off of applied fertilizer into surface water bodies and the ground water.

4.2.6.2 Fertilizers with a considerable nitrogen contents are only applied onto absorptive soils

Fertilizer with a content of more than 1.5% of nitrogen in the dry matter are not applied onto flooded, water logged or frozen soils.

4.2.6.3 Records of fertilizer application

Complete records of all fertilizer applications are available (where, what, how much, date).

This includes:

(1) the name or reference of the field

(2) exact dates (day/month/year) of the application

(3) the trade name, type of fertilizer

(4) amount of product which was applied in weight or volume.

(5) application machinery type used and the method

(6) name of the operator.

4.2.6.4 Fertilizer application machinery

The fertilizer application machinery allows accurate fertilizer application. It is kept in good condition and verified annually to ensure accurate fertilizer application.

4.2.6.5 Inorganic fertilizers are stored in a covered, clean and dry area

The covered area is suitable to protect all inorganic fertilizers, e.g. powders, granules or liquids, from atmospheric influences like sunlight, frost and rain. Based on risk assessment (fertilizer type, weather conditions, temporary storage), plastic coverage could be acceptable.

Storage cannot be directly on the soil. It is allowed to store lime and gypsum in the field for a day or two before spreading. Inorganic fertilizers, e.g. powders, granules or liquids, are stored in an area that is free from waste, does not constitute a breeding place for rodents, and where spillage and leakage is cleared away. The storage area for all inorganic fertilizers, e.g. powders, granules or liquids, is well ventilated and free from rainwater or heavy condensation. No storage directly on the soil.

4.2.6.6 Fertilizers are stored in an appropriate manner, which reduces the risk of contamination of water courses

All inorganic fertilizers, e.g. powders, granules or liquids are stored in a manner which poses minimum risk of contamination to water sources, e.g. stored liquid fertilizer must be surrounded by an impermeable barrier (according to national and local legislation, or to contain a capacity to 110% of the volume of the largest container if there is no applicable legislation), and consideration has been given to the proximity to water courses and flood risks.

4.2.6.7 Fertiliser is used according to an input/output balance

4.2.6.8 The use of raw sewage sludge is not allowed

4.2.7 Integrated Pest Management (IPM)

4.2.7.1 Assistance with implementation of IPM systems has been obtained through training or advice

The technically responsible person on the farm has received formal documented training and / or the external technical IPM consultant can demonstrate their technical qualifications.

4.2.7.2 The producer can show evidence of implementation of at least one activity that falls in the category of "Prevention"

The producer can show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.

4.2.7.3 The producer can show evidence of implementation of at least one activity that falls in the category of "Observation and Monitoring"

The producer can show evidence of implementing at least one activity that will determine when, and to what extent, pests and their natural enemies are present and using this information to plan what pest management techniques are required.

4.2.7.4 The producer can show evidence of implementation of at least one activity that falls in the category of "Intervention"

The producer shows evidence that in situations where pest attack adversely affects the economic value of a crop, intervention with specific pest control methods will take place. Where possible, non-chemical approaches must be considered.

4.2.8 Use of Plant Protection Products (PPP)

4.2.8.1 Staff dealing with plant protection products is competent

Where the plant protection product records show that the technically responsible person making the choice of the plant protection products is a qualified adviser, technical competence can be demonstrated via official qualifications or specific training course attendance certificates. Fax and e-mails from advisors, governments, and other suitable institutions are allowable. Where the plant protection product records show that the technically responsible person making the choice of plant protection products is the producer, experience must be complemented by technical knowledge that can be demonstrated via technical documentation, e.g. product technical literature or specific training course attendance.

4.2.8.2 Producers only use plant protection products that are registered in the country of use for the target crop where such official registration scheme exists

All the plant protection products applied are officially registered or permitted by the appropriate governmental organization in the country of application. Where no official registration scheme exists, reference to the FAO International Code of Conduct on the Distribution and Use of Pesticides is possible.

4.2.8.3 The producer follows the label instructions

All requirements (protective clothing, storage, handling etc.) have to be followed for the products used.

4.2.8.4 All application equipment is calibrated

Documented evidence of up to date sheets for all repairs, oil changes and maintencance are available. Application machinery (automatic and non-automatic) has been verified for correct operation within the last 12 months and this is certified or documented either by participation in an official scheme (where it exists) or by having been carried out by a person who can demonstrate their competence.

4.2.8.5 Invoices of registered plant protection products kept

Invoices of the registered plant protection products used must be kept for record keeping and available at the time of the external inspection.

4.2.8.6 If there are local restrictions on the use of plant protection products they are observed

It must be documented and secured that the producers are aware of restrictions and is following them.

4.2.8.7 All the plant protection product applications have been recorded (where, when, what, how much, why, who)

Records are available and complete:

(1) the crop name and/or variety,

(2) date, location and trade name of product

(3) justification for application, product quantity applied

(4) application machinery used and the operator

(5) the common name of the pest(s), disease(s) or weed(s) treated.

4.2.8.8 Surplus application mix or tank washings is disposed of in a way not to contaminate the ground water

It must be secured and documented that the producer is aware of national or local legislation and that legislation is observed. When surplus application mix or tank washings are applied onto designated fallow land, it can be demonstrated that this is legal practice and all the treatments have been recorded in the same manner and detail as a normal plant protection product application. Surface water contamination has been avoided.

4.2.9 Plant Protection Product Storage

4.2.9.1 Plant protection products are stored in accordance with local regulations in a secure, appropriate storage. Potential contamination of the ground water must be avoided

The plant protection product storage facilities comply with all the relevant current national, regional and local legislation and regulations. The plant protection product storage facilities are kept secure under lock and key. Appropriate storage facilities are:

(1) structurally sound and robust

(2) have a sealed floor

(3) built of materials or located so as to protect against temperature extremes

(4) built of materials that are fire resistant (Minimum requirement RF 30, e.g. 30 minutes resistance to fire)

(5) have sufficient and constant ventilation of fresh air to avoid a build up of harmful vapours

(6) are located in areas with sufficient illumination both by natural or by artificial lighting, to ensure that all product labels can be read easily on the shelve

(7) located in a separate space independent from any other materials.

4.2.9.2 There are facilities for measuring and mixing plant protection products

The plant protection product storage facilities or the plant protection product filling/mixing area if this is different, have measuring equipment whose graduation for containers and calibration verification for scales has been verified annually by the producer to assure accuracy of mixtures and are equipped with utensils, e.g. buckets or water supply points for the safe and efficient handling of all plant protection products which can be applied.

4.2.9.3 There are facilities to deal with spillage to avoid contamination of the ground water

The plant protection product storage facilities and all designated fixed filling/mixing areas are equipped with a container of absorbent inert material such as sand, floor brush and dustpan and plastic bags, that must be signposted and in a fixed location, to be used in case of spillage of plant protection product.

4.2.9.4 The product inventory is documented and readily available

A stock inventory which indicates the contents (type and quantity) of the store is available and it is updated at least every three months. Quantity refers to how many bags, bottles, etc., not on milligram or centilitre basis.

4.2.9.5 All plant protection products are stored in their original package

All the plant protection products that are currently in the store are kept in the original containers and packs, in the case of breakage only, the new package must contain all the information of the original label.

4.2.9.6 Liquids are not stored on shelves above powders

All the plant protection products that are liquid formulations are stored on shelving which is never above those products that are powder or granular formulations.

4.2.9.7 Obsolete plant protection products are securely maintained and identified and disposed of by authorised or approved channels

There are documented records that indicate that obsolete plant protection products have been disposed of by officially authorised channels. When this is not possible, obsolete plant protection products are securely maintained and identifiable.

4.2.10 Empty Plant Protection Product Containers and Waste Disposal

4.2.10.1 The re-use of empty plant protection product containers for purposes other than containing and transporting of the identical product is avoided

There is evidence that empty plant protection product containers have not been or currently are not being re-used for anything other than containing and transporting of the identical product as stated on the original label.

4.2.10.2 The disposal of empty plant protection product containers does occur in a manner that avoids exposure to humans and the environment

The system used to dispose of empty plant protection product containers ensures that people cannot come into physical contact with the empty containers. The risk of contamination of the environment, watercourses and flora and fauna is minimised.

4.2.10.3 Official collection and disposal systems are used when available

Where official collection and disposal systems exist, there are documented records of participation by the producer.

Bilag 3

4.2.10.4 Empty containers are rinsed either via the use of an integrated pressure rinsing device on the application equipment, or at least three times with water. The rinsate from empty containers is returned to the application equipment tank. Local regulations regarding disposal or destruction of containers are followed

Installed on the plant protection product application machinery there is pressure-rinsing equipment for plant protection product containers or there are clear written instructions to rinse each container three times prior to its disposal. Either via the use of a container-handling device or via written procedure for the application equipment operators, the rinsate from the empty plant protection product containers is always put back into the application equipment tank when mixing. All the relevant national, regional and local regulations and legislation if it exists, has been complied with regarding the disposal of empty plant protection product containers.

4.2.10.5 The premises have adequate provisions for waste disposal

The farm has designated areas to store litter and waste. Different types of waste are identified and stored separately.

4.2.10.6 There is a farm waste management plan. Waste recycling avoids or reduces wastage and avoids the use of landfill or burning

A comprehensive, current, documented plan that covers wastage reduction, pollution and waste recycling is available. Air, soil, water, noise and light contamination must be considered.

Bilag 3

4.3 PRINCIPLE 3: Safe working conditions through training and education, use of protective clothing and proper and timely assistance in the event of accidents

Compliance with national and local law on working conditions is required. The company should be familiar with the relevant legislation and should remain informed on changes in legislation.

4.3.1 Safe Working Conditions

4.3.1.1 The farm has a written health, safety and hygiene policy and procedures including issues of risk assessment

The health, safety and hygiene policy must at least include the points identified in the risk assessment. This could include accident and emergency procedures, hygiene procedures, dealing with any identified risks in the working situation. The policy must be reviewed and updated when the risk assessment changes.

4.3.1.2 First Aid kits are present at all permanent sites and in the vicinity of fieldwork

Complete and maintained first aid kits according to national regulations and recommendations must be available and accessible at all permanent sites and available for transport to the vicinity of the work.

4.3.1.3 Workers (including subcontractors) are equipped with suitable protective clothing in accordance with legal requirements and/or label instructions or as authorised by a competent authority. Protective clothing is cleaned after use and stored so as to prevent contamination of clothing or equipment

Complete sets of protective clothing, (e.g. rubber boots, waterproof clothing, protective overalls, rubber gloves, face masks) which enable label instructions and/or legal requirements and/or requirements as authorised by a competent authority to be complied with are available, used and in a good state of repair. This includes appropriate respiratory, ear and eye protection devices, where necessary. Protective clothing is regularly cleaned, according to a schedule adapted to the type of use and degree of soiling. Cleaning the protective clothing and equipment includes the separate washing from private clothing and glove washing before removal. Dirty, torn and damaged protective clothing and equipment and expired filter cartridges should be disposed of. Single-use items (e.g. gloves, overalls) have to be disposed of after one use. All the protective clothing and equipment including replacements filters are stored apart and physically separate from the plant protection products/ any other chemicals which might cause contamination of the clothing or equipment in a well-ventilated area.

4.3.1.4 Potential hazards are clearly identified by warning signs and placed where appropriate

Permanent and legible signs must indicate potential hazards, e.g. waste pits, fuel tanks, workshops, access doors of the plant protection product / fertilizer / any other chemical storage facilities as well as the treated crop. Warning signs must be present.

Bilag 3

4.3.1.5 There are records kept for training activities and attendees

A record is kept for training activities including the topic covered, the trainer, the date and attendees. Evidence of attendance is required.

4.3.1.6 All workers handling and/or administering chemicals, disinfectants, plant protection products, biocides or other hazardous substances and all workers operating dangerous or complex equipment as defined in the risk assessment have certificates of competence, and/or details of other such qualifications

Records must identify workers who carry out such tasks, and show certificates of training or proof of competence.

4.3.1.7 All workers received adequate health and safety training and have been instructed according to the risk assessment

Workers can demonstrate competency in responsibilities and tasks through visual observation. If at time of inspection there are no activities, there must be evidence of instructions.

4.3.1.8 Workers have access to clean food storage areas, designated dining areas, hand washing facilities and drinking water

A place to store food and to eat must be available. In addition, hand washing facilities and potable drinking water must be available to workers

4.3.1.9 On site living quarters are habitable and have the basic services and facilities

The living quarters for the workers on farm are habitable, have a sound roof, windows and doors, and have the basic services of running water, toilets and drains.

4.3.2 Plant Protection Product Handling

4.3.2.1 The accident procedure is evident within ten meters of the plant protection product/ chemical storage facilities

An accident procedure must display the basic steps of primary accident care and be accessible by all individuals within ten meters of the plant protection product/chemical storage facilities and designated mixing areas.

4.3.2.2 There are facilities to deal with accidental operator contamination

All plant protection product / chemical storage facilities and all filling/mixing areas present on the farm have eye wash capability, a source of clean water no more than 10 meters distant, a complete first aid kit and a clear accident procedure with emergency contact telephone numbers or basic steps of primary accident care, all permanently and clearly signed.

4.3.2.3 There are procedures dealing with re-entry times on the farm

There are clear documented procedures which regulate all the re-entry intervals for plant protection products applied to the crops according to the label instructions. Where no re-entry information is available on the label, there are no specific requirements.

Bilag 3

4.4 PRINCIPLE 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

The criteria listed here are based on internationally recognized requirements concerning social aspects (International Labour Organization, core ILO standards: ILO 29, 105, 138, 182, 87, 98, 100, 111).

In addition, compliance with relevant national and local laws is required.

4.4.1 A self-declaration on good social practice regarding human rights has been communicated to the employees and signed by the farm management and the employees' representative

The farm management and the employee's representative have signed and displayed a self-declaration assuring good social practice and human rights of all employees. The self declaration must be in language appropriate to workers and surrounding communities. This declaration contains commitment to the ILO core labour standards, respect for living wage, respect for the social environment, respect for legal land titles, sufficient compensation for communities, commitment to solve social conflicts, fair contract farming arrangements.

4.4.2 Employment conditions comply with equality principles

Evidence is available that the farm provides equality of opportunity and treatment regardless of race, colour, sex, religion, political opinion, nationality, social origin or other distinguishing characteristic (ILO conventions 100 and 111).

4.4.3 There is no indication of discrimination (distinction, exclusion or preference) practiced that denies or impairs equality of opportunity, conditions or treatment based on individual characteristics and group membership or association. For example, on the basis of: race, caste, nationality, religion, disability, gender etc.

A publicly available equal opportunities policy including identification of relevant/affected groups in the local environment exists.

4.4.4 There is no indication of forced labour at the farm

There must be no use of forced, bonded or involuntary labour as meant in ILO Convention 29 and 105.

Bilag 3

4.4.5 Workers have the freedom to join labour organizations or organize themselves to perform collective bargaining. Workers must have the right to organize and negotiate their working conditions. Workers exercising this right should not be discriminated against or suffer repercussions

All employees are free to establish and to join organizations of their own choice. There is evidence (workers' interviews with self-selected/anonymous workers) that the employer imports the establishment and/or there is no evidence that the employer blocks effective functioning of worker-committees where representatives are elected by the workers. There is evidence of acceptance of Collective Bargaining Agreements. Trade union members are guaranteed the possibility to fulfil their tasks at least outside of the regular working hours. The employment conditions regarding freedom of association and collective bargaining are in accordance with all national and local legislation and ILO Conventions 87 and 98.

4.4.6 The farm does pay a living wage which meets at least legal or industry minimum standards

The company's pay slips demonstrate that living wages meet at least legal or industry minimum standards and are sufficient to meet basic needs of personnel and to provide some discretionary income.

4.4.7 The person responsible for workers' health, safety and good social practice and the elected individual(s) of trust have knowledge about and/or access to recent national labour regulations/collective bargaining agreements

The responsible person and the elected person of trust demonstrate awareness and/or access to national regulations concerning: Gross and minimum wages, working hours, union membership, anti-discrimination, child labour, labour contracts, holiday and maternity leave, medical care and pension/gratuity and regular two way communication.

4.4.8 All impacts for surrounding areas, communities, users and land owners taken into account and sufficiently compensated for

A participatory social impact assessment has been conducted, and the report is publicly available in appropriate language to surrounding communities. On the basis of that report a continued dialogue with surrounding communities is in place. Documents of regular meetings with communities (with two-way communication) and local government with listed risks and/or impacts and evidence of minuted negotiations or resolution processes are compiled.

4.4.9 The management does hold regular two-way communication meetings with their employees where issues affecting the business or related to worker health, safety and welfare can be discussed openly

At least two meetings a year are held between management and employees. Matters related to the business and worker health, safety or welfare can be discussed without fear, intimidation or retribution. Records from such meetings are kept and the concerns of the employees are recorded. The elected person of trust should assign an independent mediator by name and address.

Bilag 3

4.4.10 There is at least one worker or a workers' council elected freely and democratically who represent the interests of the staff to the management

Documentation is available that demonstrates that a clearly identified, named person of trust and/or a workers' council representing the interests of the staff to the management is elected by all employees and recognized by the management. This person shall be able to communicate complaints to the management.

4.4.11 There is a complaint form and/or procedure available on the farm, where employees and affected communities can make a complaint

A complaint form and/or procedure are available for farm employees and surrounding communities. They have been made aware of its existence and complaints or suggestions can be made at any time. Complaints and their solutions from the last 24 months are documented and accessible.

4.4.12 All children living on the farm have access to quality primary school education

All children at primary schooling age (according to national legislation) living on the farm must have access to primary school education, either through provided transport to a public primary school or through adequate on-site schooling.

This is in accordance with the International Covenant on Economic, Social and Cultural Rights, Art. 13.

4.4.13 There are records that provide an accurate overview of all employees (including seasonal workers and subcontracted workers on the farm) and indicate full names, a job description, date of birth, date of entry, wage and the period of employment

Records demonstrate clearly an accurate overview of all employees (including seasonal workers and subcontracted workers) working on the farm. Records contain wage and period of employment. Records must be accessible for the last 24 months.

4.4.14 No minors are employed on the farm.

The minimum age complies with all local and national legislation as well as with ILO Convention 138 and 182. Documents include recording of workers' date of birth and documented evidence that the employer is aware of prevailing legislation. Children within the age of compulsory schooling must not be employed during school hours. Young workers (15-18) must not undertake hazardous work that jeopardizes their health, safety or morals. All forms of slavery or practices similar to slavery, forced or compulsory labour of children is prohibited.

4.4.15 All employees are provided with fair legal contracts. Copies of working contracts can be shown for every employee indicated in the records. These have been signed by both the employee and the employer

For every employee indicated in the records, a contract can be shown to the auditor on request. Both the employee as well as the employer has signed them. Records must be kept for at least 24 months. Where a registration system exists, copies of working contracts are registered with the labour authority of the country of production.

This is in accordance with ILO Convention 110.

4.4.16 There is a time recording system that shows daily working time and overtime on a daily basis for all employees

There is a time recording system that makes working hours and overtime transparent for employees and employer. Working times of all employees during the last 24 months are documented.

4.4.17 The working hours and breaks of the individual worker are indicated in the time records and comply with legal regulations and/or collective bargaining agreements

Documented working hours, breaks and rest days are in line with legal regulations and/or collective bargaining agreements. Records indicate that regular weekly working hours do not exceed 48 hours. N/A for supervisors or management. Rest breaks/days are also documented during peak season. Overtime shall be voluntary and shall always be compensated at a premium rate.

4.4.18 Pay slips document the conformity of payment with at least legal regulations and/or collective bargaining agreements

Wages and overtime payment documented on the pay slips are in line with legal regulations (minimum wages) and/or collective bargaining agreements (if applicable). If payment is calculated per unit, employees (on average) shall be able to gain the legal minimum wage within regular working hours.

4.4.19 Other forms of social benefits are offered by the employer to employees, their families and/or community

Incentives (please specify in quantities if possible): Incentives for good working performance, bonus payment, support of professional development, family friendliness, medical care/health provisions, improvement of social surroundings are offered.

4.4.20 Mediation is available in case of a social conflict

An independent mediator should be assigned by name and address by the elected person of trust.

4.4.21 Fair and transparent contract farming arrangements are in place

The contracts are on paper in the appropriate language and consigned copies are available with both parties.

Essential indicators are:

(1) The contracts are on paper in the appropriate language and co-signed copies are available with both parties. In case of cooperative contract arrangements, all members have a copy.

(2) Payments for harvest are, in calculated form, done on paper and signed and handed over to contract farmer for his/her own record keeping.

(3) Provisions governing price-quality parameters are clearly defined in the contract.

(4) The contract contains clear provisions on exit arrangements, buy-out possibilities, handing over of property deeds (when appropriate), and compensation measures in case of bankruptcy of the mother company when legally required.

(5) There are minutes of meetings providing evidence of regular discussions or negotiations between Mother Company and contract farmers' representatives.

4.4.22 Biomass production does not impair food security

Biomass production shall not replace stable crops and does not impair the local food security. Local food prices do not rise as a direct effect of biomass production.

Bilag 3

4.5 PRINCIPLE 5: Biomass production shall take place in compliance with all applicable regional and national laws and shall follow relevant international treaties

4.5.1 The producer can proof that the land is used legitimately and that traditional land rights have been secured

Documents show legal ownership or lease, history of land tenure and the actual legal use of the land. The producer must identify existing land rights and does respect them (see Principle 1).

4.5.2 There is awareness of, and compliance with, all applicable regional and national laws and ratified international treaties

The producer can demonstrate awareness of his responsibilities according to the applicable laws. Applicable laws are being complied with. The company should be familiar with the relevant legislation and should remain informed on changes in legislation.

Bilag 3

4.6 PRINCIPLE 6: Good management practices shall be implemented

4.6.1 A recording system is established for each unit of production. These records must be kept in an ordered and up-to-date condition for at least 3 years

Current records must provide a history of biomass production of all production areas.

4.6.2 Records are kept for the description of the areas in use

The documentation system for the fields of the farms must comply with the following minimal requirements:

(1) The description of the whole agricultural area is carried out along a list of parameters to be assessed:

   a. Lot number

   b. Lot size

   c. Type of crop

(2) Each lot (as part of the whole agricultural area) is depicted as traverse in geographic coordinates with a precision of 20 metres for each measuring point.

   a. The depiction of simple lot shapes can easily be realised with the help of satellite images.

   b. For very complex shapes, the real lot can be approximated by a polygon. The measuring points on each end of the lines framing the polygon then have to meet the required precision of 20 metres.

   c. A small number of measuring points may suffice for the approximation through a polygon as long as the lot size on the map does not deviate from the specification in (1) by more than 10%.

   d. If suitable maps or tables specifying the requested information do not exist, it is permitted to identify lots with the help of tools like Google Earth. The measuring points can be set in the image as place marks manually and the results (geo-coordinates) for these place marks are delivered by the tool for documentation.

4.6.3 In case of the engagement of subcontractors they must comply fully with the ISCC standard and provide the respective documentation and information

Relevant subcontractors as meant in 4.6.3.1 are enterprises that work on behalf of the producer (e.g. seeding, fertilizing, pest control, harvesting).

Relevant subcontractors must be regarded in the audit. The producer must provide evidence of respective contracts with the subcontractor ensuring that the auditor gets access to relevant information. The producer must also accept that ISCC approved certifiers are allowed to verify the assessments through a physical inspection where there is doubt.

Bilag 3

The producer is responsible for observance of the control points applicable to the tasks performed by the subcontractor by checking and signing the assessment of the subcontractor for each task and season contracted.

Bilag 3

Annex 1: Major and Minor Musts

Criterion number	Source	Criterion	Major Must	Minor Must
PRINCIPLE 1: Biomass shall not be produced on land with high biodiversity value or high carbon stock (according to Article 17(3), (4) and (5) of the Directive 2009/28/EC. HCV areas shall be protected.				
1.1	2009/28/EC	Biomass is not produced on land with high biodiversity value	X	
1.2	2009/28/EC	Biomass is not produced on highly biodiverse grassland	X	
1.3	2009/28/EC	Biomass is not produced on land with high carbon stock	X	
1.4	2009/28/EC	Biomass is not produced on land that was peatland in January 2008 or thereafter (Article 17(5) of the Directive 2009/28/EC)	X	
1.5	2009/28/EC	If land was converted after January 1, 2008, the conversion and the use should not run contrary to principle 1	X	
1.6	Sustainability	All other production areas of the farm/ plantation comply with the ISCC Principle 1	X	
PRINCIPLE 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				
2.1 Environmental impact assessment and stakeholder consultation				
2.1.1	Cross Compliance	Environmental aspects are considered if planning buildings, drainage etc.	X	
2.2 Natural water courses				
2.2.1	Sustainability	Natural vegetation areas around springs and natural watercourses are maintained or re-established		X
2.3 Soil conservation and avoidance of soil erosion				
2.3.1	Sustainability	Good agricultural practices must be applied with respect to: Prevention and control of erosion, maintaining and improving soil nutrient balance, soil organic matter, soil pH, soil structure, soil biodiversity and prevention of salinisation. A soil management plan aimed at sustainable soil management, erosion prevention and erosion control must be documented. Annual documentation of applied good agricultural practices with respect to the above-mentioned aspects must be in place		~~X~~
2.3.2	Cross Compliance	Field cultivation techniques used to reduce the possibility of soil erosion	X	
2.4 Soil organic matter and soil structure				
2.4.1	Cross Compliance	Soil organic matter is preserved	X	
2.4.2	Cross Compliance	Organic fertilizer is used according to nutritional requirements of the soil	X	

Bilag 3

2.4.3	Cross Compliance	Burning as part of the cultivation process is not allowed without permission. Burning as part of land clearance is not allowed	X	
2.4.4	Cross Compliance	Techniques have been used that improve or maintain soil structure	X	
2.4.5	Sustainability	The use of agricultural by-products does not jeopardize the function of local uses of the by-products, soil organic matter or soil nutrients balance. Documentation must be available that the use of by-products does not occur at the expense of the soil nutrient balance, soil organic matter balance or important traditional uses (such as fodder, natural fertiliser, material, local fuel etc.) unless documentation is available that similar or better alternatives are available and are applied	X	
2.5 Ground Water and Irrigation				
2.5.1	Cross Compliance	Mineral oil products and Plant Protection Products are stored in an appropriate manner which reduces the risk of contaminating the environment	X	
2.5.2	Cross Compliance (from 2010)	If ground water is used for irrigation, the producer respects existing water rights, both formal and customary, and can justify the irrigation in light of accessibility of water for human consumption. Local legislation is followed.	X	
2.5.3	Sustainability	Documentation of water management plan aimed at sustainable water use and prevention of water pollution. Annual documentation of applied good agricultural practices with respect to: efficient water usage, responsible uses of agro-chemicals, waste discharge must be available		X
2.5.4	Sustainability GAP	The producer can justify the method of irrigation used in light of water conservation		X
2.5.5	Sustainability	To protect the environment, water is abstracted from a sustainable source		X
2.6 Use of Fertilizer				
2.6.1	Cross Compliance	During the application of fertilizers with a considerable nitrogen content care is taken not to contaminate the surface and ground water	X	
2.6.2	Cross Compliance	Fertilizers with a considerable nitrogen content are only applied on absorptive soils	X	
2.6.3	Cross Compliance	Complete records of all fertilizer applications are available (where, what, how much, date)	X	
2.6.4	Cross Compliance (from 2010)	The fertilizer application machinery allows accurate fertilizer application	X	
2.6.5	GAP	Inorganic fertilizers are stored in a covered, clean and dry area		X

Bilag 3

2.6.6	Cross Compliance	Fertilizers are stored in an appropriate manner, which reduces the risk of contamination of water courses	X	
2.6.7	Cross Compliance	Fertiliser is used according to an input/output balance	X	
2.6.8	Cross Compliance	The use of raw sewage sludge is not allowed	X	
2.7 Integrated Pest Management (IPM)				
2.7.1	2009/128/EG	Assistance with implementation of IPM systems has been obtained through training or advice		X
2.7.2	2009/128/EG	The producer can show evidence of implementation of at least one activity that falls in the category of "Prevention"		X
2.7.3	2009/128/EG	The producer can show evidence of implementation of at least one activity that falls in the category of "Observation and Monitoring"		X
2.7.4	2009/128/EG	The producer can show evidence of implementation of at least one activity that falls in the category of "Intervention"		X
2.8 Use of Plant Protection Products (PPP)				
2.8.1	Cross Compliance	Staff dealing with plant protection products is competent	X	
2.8.2	Cross Compliance	Producers only use plant protection products that are registered in the country of use for the target crop where such official registration scheme exists	X	
2.8.3	Cross Compliance	The producer follows the label instructions	X	
2.8.4	Cross Compliance	All application equipment is calibrated	X	
2.8.5	GAP	Invoices of registered plant protection products are kept		X
2.8.6	Cross Compliance	If there are local restrictions on the use of plant protection products they are observed	X	
2.8.7	Cross Compliance	All the plant protection product applications have been recorded (where, when, what, how much, why, who)	X	
2.8.8	Cross Compliance	Surplus application mixes or tank washings is disposed of in a way not to contaminate the ground water	X	
2.9 Plant Protection Product Storage				
2.9.1	Cross Compliance / Local legislation on dangerous substances	Plant protection products are stored in accordance with local regulations in a secure, appropriate storage. Potential contamination of the ground water must be avoided	X	
2.9.2	Cross Compliance	There are facilities for measuring and mixing plant protection products	X	
2.9.3	Cross Compliance / GefahrstoffVO Local legislation on dangerous substances	There are facilities to deal with spillage to avoid contamination of the ground water	X	
2.9.4	GAP	The product inventory is documented and readily available		X

2.9.5	Cross Compliance	All plant protection products are stored in their original package	X	
2.9.6	GAP	Liquids are not stored on shelves above powders		X
2.9.7	GAP	Obsolete plant protection products are securely maintained and identified and disposed off by authorised or approved channels		X

2.10 Empty Plant Protection Product Containers and Waste Disposal

2.10.1	GAP	The re-use of empty plant protection product containers for purposes other than containing and transporting of the identical product is avoided		X
2.10.2	GAP	The disposal of empty plant protection product containers does occur in a manner that avoids exposure to humans and the environment		X
2.10.3	GAP	Official collection and disposal systems are used when available		X
2.10.4	Cross Compliance / GAP	Empty containers are rinsed either via the use of an integrated pressure rinsing device on the application equipment, or at least three times with water. The rinsate from empty containers is returned to the application equipment tank. Local regulations regarding disposal or destruction of containers are followed.	X	
2.10.5	KrW-/abfG Local legislation	The premises have adequate provisions for waste disposal		X
2.10.6	KrW-/abfG Local legislation	There is a farm waste management plan. Waste recycling avoids or reduces wastage and avoids the use of landfill or burning		X

PRINCIPLE 3: Safe working conditions through training and education, use of protective clothing and proper and timely assistance in the event of accidents

3.1 Safe Working conditions

3.1.1	Employer's Liability Insurance Association	The farm has a health, safety and hygiene policy and procedures including issues of the risk assessment		X
3.1.2	VSG 1 First Aid legislation	First Aid kits are present at all permanent sites and in the vicinity of fieldwork		X
3.1.3	Cross Compliance / GAP	Workers (including subcontractors) are equipped with suitable protective clothing in accordance with legal requirements and/or label instructions or as authorised by a competent authority. Protective clothing is cleaned after use and stored so as to prevent contamination of clothing or equipment	X	
3.1.4	ArbeitsstättenVO Local legislation on work place	Potential hazards are clearly identified by warning signs and placed where appropriate		X
3.1.5	Employer's Liability Insurance Association	There are records kept for training activities and attendees		X

Bilag 3

3.1.6	2009/128/EG GefahrstoffVO Local legislation on dangerous substances	All workers handling and/or administering chemicals, disinfectants, plant protection products, biocides or other hazardous substances and all workers operating dangerous or complex equipment as defined in the risk assessment have certificates of competence, and/or details of other such qualifications	X	
3.1.7	2009/128/EG	All workers received adequate health and safety training and they are instructed according to the risk assessment		X
3.1.8	ArbeitsstättenVO Local legislation on work place	Workers have access to clean food storage areas, designated dining areas, hand washing facilities and drinking water		X
3.1.9	ArbeitsstättenVO Local legislation on work place	On site living quarters are habitable and have the basic services and facilities		X

3.2 Plant Protection Product Handling

3.2.1	GAP	The accident procedure is evident within ten meters of the plant protection product/ chemical storage facilities		X
3.2.2	ArbeitsstättenVO Local legislation on work place	There are facilities to deal with accidental operator contamination		X
3.2.3	Cross Compliance / ArbeitsstättenVO Local legislation on work place	There are procedures dealing with re-entry times on the farm	X	

PRINCIPLE 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

The criteria listed here is based on internationally recognized requirements concerning social aspects (International Labour Organization, core ILO standards: ILO 29, 105, 138, 182, 87, 98, 100, 111)

4.1		A self-declaration on good social practice regarding human rights has been communicated to the employees and signed by the farm management and the employees' representative		X
4.2		Employment conditions comply with equality principles	X	
4.3		There is no indication of discrimination (distinction, exclusion or preference) practiced that denies or impairs equality of opportunity, conditions or treatment based on individual characteristics and group membership or association. For example, on the basis of: race, caste, nationality, religion, disability, gender etc.	X	
4.4		There is no indication of forced labour at the farm	X	
4.5		Workers have the freedom to join labour organizations or organize themselves to perform collective bargaining. Workers must have the right to organize and negotiate their working conditions. Workers exercising this right should not be discriminated against or suffer repercussions	X	

Bilag 3

4.6	The farm does pay a living wage which meets at least legal or industry minimum standards	X	
4.7	The person responsible for workers' health, safety and good social practice and the elected individual(s) of trust have knowledge about and/or access to recent national labour regulations/collective bargaining agreements		X
4.8	All impacts for surrounding areas, communities, users and land owners taken into account and sufficiently compensated for		X
4.9	The management does hold regular two-way communication meetings with their employees where issues affecting the business or related to worker health, safety and welfare can be discussed openly		X
4.10	There is at least one worker or a workers' council elected freely and democratically who represent the interests of the staff to the management		X
4.11	There is a complaint form and/or procedure available on the farm, where employees and affected communities can make a complaint		X
4.12	All children living on the farm have access to quality primary school education	X	
4.13	There are records that provide an accurate overview of all employees (including seasonal workers and subcontracted workers on the farm) and indicate full names, a job description, date of birth, date of entry, wage and the period of employment		X
4.14	No minors are employed on the farm	X	
4.15	All employees are provided with fair legal contracts. Copies of working contracts can be shown for every employee indicated in the records. These have been signed by both the employee and the employer		X
4.16	There is a time recording system that shows daily working time and overtime on a daily basis for all employees		X
4.17	The working hours and breaks of the individual worker are indicated in the time records comply with legal regulations and/or collective bargaining agreements		X
4.18	Pay slips document the conformity of payment with at least legal regulations and/or collective bargaining agreements		X
4.19	Other forms of social benefits are offered by the employer to employees, their families and/or community		X
4.20	Mediation is available in case of a social conflict		X
4.21	Fair and transparent contract farming arrangements are in place		X
4.22	Biomass production does not impair food security		X

Bilag 3

PRINCIPLE 5: Biomass production shall take place in compliance with all applicable regional and national laws and shall follow relevant international treaties			
5.1		The producer can proof that the land is used legitimately and that traditional land rights have been secured	X
5.2		There is awareness of, and compliance with, all applicable regional and national laws and ratified international treaties	X
PRINCIPLE 6: Good management practices shall be implemented			
6.1	Cross Compliance	A recording system is established for each unit of production. These records must be kept in an ordered and up-to-date condition for at least 3 years	X
6.2	Cross Compliance	Records are kept for the description of the areas in use	X
6.3	Cross Compliance	In case of the engagement of subcontractors they must comply fully with the ISCC standard and provide the respective documentation and information	X

Bilag 3

Annex 2 Country-specific characteristics relevant for risk management

Country-specific characteristics	EU	Brazil	Argentina	USA	Colombia	Paraguay	Malaysia	Indonesia
Land according to principle 1								
a) land with high biodiversity value								
forest area	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	Brazilian Forest Code, MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes
nature protection area	Natura 2000, WDPA, IBAT	Sistema Nacional de Unidades de Conservação (SNUC), WDPA, IBAT	WDPA, IBAT	WDPA, IBAT	WDPA, IBAT	WDPA, IBAT	WDPA, IBAT	WDPA, IBAT
grassland	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems	Grassland Ecosystems
b) land with high carbon stock								
wetlands	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention	RAMSAR Convention
continuously forested areas	Natura 2000	Brazilian Forest Code, MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	Forstkonver-sionsmonito-rium (Zero Deforestation Law), MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes	MODIS Land Cover Type Yearly, MODIS Vegetation Continuous Fields, World Intact Forest Landscapes
peatland	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO	Harmonized World Soil Database, FAO
degraded land	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation	Harmonized World Soil Database, FAO; Global Assessment of Soil Degradation
land use management	land use planning based on EUREC and national land use planning	Agro-ecological Zoning	so far no centralized land use planning	regional land use planning	land use plan 2005	national land use plan	National Physical Plan (NPP) 2006-2020	National Spatial Plan (BAPPENAS, Gesetz Nr. 17 u. 26/2007)
ILO (forced labour / child labour, core labor standards)								
forced labour	ILO 29, 105 ratified	ILO 29 ratified	ILO 29 ratified	appropriate proof necessary	ILO 29 ratified	ILO 29 ratified	ILO 29 ratified	ILO 29 ratified
child labour	ILO 138, 182 ratified	ILO 138, 182 ratified	ILO 138, 182 ratified	only ILO 182 ratified, appropriate proof necessary	ILO 138, 182 ratified	ILO 138, 182 ratified	ILO 138, 182 ratified	ILO 138, 182 ratified
freedom of association and collective bargaining	ILO 87, 98 ratified	only ILO 98 ratified, appropriate proof necessary	ILO 87, 98 ratified	appropriate proof necessary	ILO 87, 98 ratified	ILO 87, 98 ratified	Nur ILO 98 ratified, appropriate proof necessary	ILO 87, 98 ratified
non-discrimination	ILO 100, 111 ratified	ILO 100, 111 ratified	ILO 100, 111 ratified	appropriate proof necessary	ILO 100, 111 ratified	ILO 100, 111 ratified	only ILO 100 ratified, appropriate proof necessary	ILO 100, 111 ratified
water use	Aquastat FAO	Aquastat FAO	Aquastat FAO	Aquastat FAO	Aquastat FAO	Aquastat FAO	Aquastat FAO	Aquastat FAO
High risk	WDPA-regions, Carpathians	WDPA-regions, Legal Amazonia, Atlantic Forests, Cerrado-Pantanal	WDPA-regions, Gran Chaco	WDPA-regions, Southeastern Rivers and Streams (Florida)	WDPA-regions, Choco Darien, Amazon	WDPA-regions, Gran Chaco, Upper Parana Atlantic Forest, eastern areas	WDPA-regions	WDPA-regions, Sumatra, Kalimantan ("Heart of Borneo"), Papua

Bilag 4

ISCC 203 Requirements for Traceability

Requirements for Traceability

ISCC 11-03-15
V 2.3-EU

Bilag 4

Document title: ISCC 203

Requirements for Traceability

Approved by: **Date:**

Issue date: **11-03-15**

Application date: **11-03-15**

Bilag 4

Content

Bilag 4

1 Introduction

According to ISO the term traceability describes the possibility, to trace production, use or location of a certain element. For final products this can cover the origin of material and parts as well as the production history. Traceability does not only cover the basic requirements that products can be traced back and forth throughout the supply chain from origin to the point of final delivery but also the possibility to specify what their properties are, e.g. what they are made from and how they have been processed. The properties of relevance are the sustainability characteristics which are an important element of a mass balance and traceability system and are assigned to consignments of sustainable products. Sustainability characteristics include the evidence that a product is sustainable, the recognised voluntary scheme, a description of the raw material or product, related greenhouse gas emissions (GHG) and the country of origin of the feedstock except for bioliquids (cf. Article 7a (1)(a) of the Fuel Quality Directive). At any stage of the sustainable supply chain there must be evidence of compliance with the Directive's criteria and a statement that products were obtained in a way that complies with the Directive's 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 1) comply with the Directive's requirements is given by a valid certificate. The validity of certificates and 'group member numbers' (see also ISCC 252 chapter 4) can be checked globally by everybody 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 Directive. These statements which give evidence of the sustainability characteristics of sustainable products are delivery notes issued by certified elements of the supply chain.he origin of the sustainable biomass used for the production of bioliquids (liquid biomass) or biofuels can only be traced back if every stage of the production and delivery process is certified (see also following picture). 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 bioliquids/biofuels into the market can receive a certificate on a voluntary basis (see also ISCC 201 and ISCC 252).

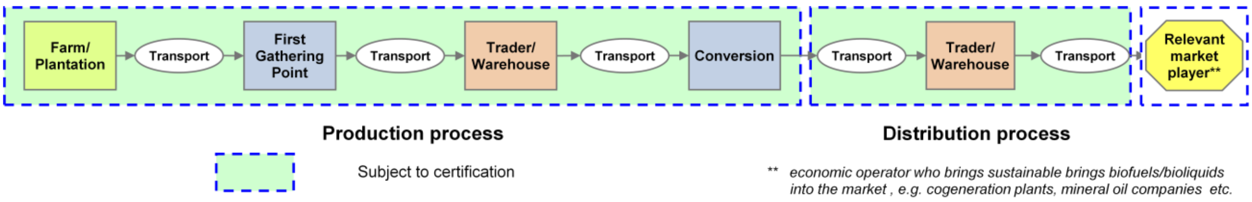


Figure 1: Different elements and sections of the supply chain

Traceability and evidence of the sustainability characteristics of a sustainable product is documented via delivery notes with respective traceability attributes and the corresponding mass balance system (see also ISCC 204 Mass Balance Calculation Methodology). This assures that sustainability characteristics and traceability attributes such as origin, kind of product or raw material, related quantity and greenhouse gas (GHG) emissions can be uniquely identified and assigned to a batch of product or raw material and that the amount

Bilag 4

which has been withdrawn at the respective stage of the supply chain does not exceed the amount supplied. The mass balance system requires that delivery notes and the required information (sustainability characteristics and traceability attributes) must be linked with the sustainable biomass and cannot be handled independently (i.e. book and claim is not allowed).

Risk management is an integral part for every element of the supply chain (see also figure 1). Within the ISCC System it is required to identify the relevant risk factors for every element of the supply chain. Minimum samples (depending on the individual risk factor) are defined for every element of the supply chain, however the auditor may increase the sample size if appropriate.

The rules for the control of the requirements for traceability apply on an international level. It is up to the particular enterprises to provide evidence of traceability by newly developed documents containing all relevant data or to use existing (partly country-specific) documents and amend the missing data in the document or add by means of an annex. Thus the requirement of the RED and other ordinances of EU member states to avoid excessive administrative burden is met.

All certified elements in the supply chain can issue a delivery note. For the delivery note only the data content is mandatory, format and layout can be chosen by the enterprise. This opens at least two alternatives to an enterprise. Alternative one is to develop a new delivery note which includes the required sustainability information on one delivery note. Alternative two is to attach a document with the missing information compared to the information already available on the existing delivery note. Alternative two might be the solution for e.g. Brazil where the existing delivery note i.e. “Nota Fiscal” is an official document, and any amendments must be made by means of an annex.

The different layout of delivery notes within different countries does not result into different risk levels for different countries. The ISCC risk management system regarding traceability is related to the individual enterprise and is applied internationally in the same way. This is an inevitable requirement in order to prevent that for certain regions or countries the ISCC requirements are softened. A country-specific risk evaluation, e.g. if a “Nota Fiscal” may be regarded as more reliable than a “Carta de Porte” (Argentine pendant) therefore is neither leading to the desired results nor is it uncritical (WTO issue).

If an accumulation of misuse emerges during the day-to-day operations in individual countries, ISCC immediately will implement a Technical Work Group for the development of improvement actions. These improvement actions will be designed in a way that they eliminate the root causes. If these improvements are only relevant on regional or national level, they will be incorporated into country specific documents.

2 Scope

This document describes the areas for which the requirements regarding traceability and mass balance or physical segregation have to be applied:

Bilag 4

(1) Management system of an enterprise, plant, factory premises or operation (responsibilities, procedures and reporting with respect to sustainability and traceability/chain of custody)

(2) Relevant elements of the production and distribution chain

a. Farm/plantation (for the purpose of cultivation of sustainable biomass; the entire area of the farm including grasslands, pasture, swamps etc. is subject of the audit)

b. First gathering point (warehouses or traders which source (buy) sustainable biomass from a variety of farms or plantations and sell sustainable biomass to customers)

c. Conversion unit (conversion of sustainable biomass or bioliquids, e.g. oil mill, ethanol plant, biodiesel plant, refinery)

d. Warehouse (Storage of sustainable biomass on demand of the first gathering point, i.e. the warehouse has to be located in the supply chain before the first gathering point and shall not buy biomass from farms and sell it to customers)

e. Trader/warehouse (Storage and/or trade of sustainable biomass, bioliquids or biofuels after the first gathering point

f. Transport of sustainable products (e.g. with truck, train, barge or vessel).

Section 5 of this document contains special provisions which affect the scope.

3 Normative references

As a basic principle, all relevant ISCC documents are valid for the scope. The normative references display the documents whose contents are linked and have to be considered as conjoint points.

Relevant references:

ISCC 201	System basics
ISCC 202	Sustainability Requirements – Requirements for the Production of Biomass (crop cultivation)
ISCC 204	Mass Balance Calculation Methodology
ISCC 205	GHG Calculation Methodology and GHG Audit
ISCC 252	Regulations to carry out audits
ISCC 256	Group certification

Bilag 4

4 Requirements for traceability

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

4.1 Minimum requirements for the management system

The management system (i.e. the framework of processes and procedures used to ensure that an organization can fulfill all tasks required to achieve its objectives) shall ensure that good management practices with respect to sustainability, mass balance and traceability requirements are applied at every critical control point. All elements of the supply chain have to take care that their management system covers all these requirements

Any audit which will control compliance with the requirements shall always be related to a one specific site (defined as the geographical location with precise boundaries within a product can be mixed) and one legal entity. Also registration prior to the audit is only related to one site and one legal entity. Companies which outsource or delegate tasks to a service provider (e.g. transport, storage or production of sustainable products) which are related to sustainability, mass balance calculation and/or traceability must ensure that the service provider complies with ISCC requirements. This includes linking contractually the company management system with those of their service providers.

4.1.1 General requirements

The management system of a company must be in line with the following elements of this standard which guarantee the correct implementation and updating of the procedures on traceability. The management system should be adequate regarding kind, scope and quantity of required activities. The risk management factors (compare ISCC 207 Risk Management) have to be considered when designing the management system.

4.1.2 Responsibility and authority

4.1.2.1 Responsibility of the managements

The management of a company has to commit itself to implement and maintain the requirements for traceability and mass balance in line with this standard and respectively define and document this. The company's obligation has to be shared with employees, suppliers, customers of this company and other interested parties.

The management of a company has to conduct regular inspections regarding compliance with this standard.

4.1.2.2 Responsibility and authority for traceability

The company has to identify and nominate employees whose tasks touch implementation and maintenance of a traceability and mass balance system. These employees have to receive the corresponding authority for the following elements:

(1) Sourcing, first gathering or registration of incoming sustainable products, identification of origin and evaluation of the quantity of sustainable products and related GHG emissions or GHG emissions savings.

(2) Conversion or processing of sustainable products and/or evaluation of the portion quantity of sustainable products and related GHG emissions or GHG reduction potential emissions savings.

(3) Delivery, storage, sales and transport of sustainable products and evaluation of the quantity of sustainable products and related GHG emissions or GHG emissions savings.

(4) Reporting, documentation, issuing delivery notes or other documents within the framework of points (1) to (3),

(5) Planning and/or execution of self assessments, internal audits and conformity surveillance.

Note: Responsibilities and authorities can be merged.

4.1.3 Procedures

The procedures of a company have to be documented in writing. This documentation has to contain the following elements as a minimum:

(1) Description of the material flow within the supply chain of a company.

(2) Organizational structure, responsibilities and authorities with respect to sustainability and chain of custody.

(3) Procedures on traceability and mass balance regarding all requirements of this standard (see also ISCC 204).

4.1.4 Reporting and documentation

The company has to establish and maintain a reporting system which complies with the requirements and operates both effectively and efficiently. Further on, it has to guarantee that records are kept on every stage of the supply chain. These records must ensure at any time a comprehensible link between products and documentation. Companies have to provide, at a minimum, the following records:

(1) Operation permit of the enterprise incl. layout and capacities of storage facilities

(2) Copies of the certificates from all suppliers of sustainable products

(3) Records regarding all incoming sustainable products including information about their origin and related documents (delivery note)..

(4) Records of any internal processing of sustainable products including the respective yields/conversion factors.

(5) Records of all outgoing sustainable products which have been delivered and/or sold and related documents (delivery note).

(6) Records on the periodic mass balance calculations based on the above data for the sustainable quantity of the products. The maximum period is three months (see also ISCC 204)

(7) Contracts related to sustainable products including supplier contracts for services related to sustainable products

(8) Records regarding data transfer to the certification system chosen by this company or to the relevant public authority in charge or to the certification body which conducted the audit with respect to this standard.

(9) Records regarding internal audits, non conformities with these standard, related corrective actions and/or identified discrepancies within documentation.

All companies have to operate a periodic reporting system (e.g. monthly and yearly/calendar year) regarding incoming quantities, storage levels at beginning and end of the period and outgoing quantities of sustainable products.

All companies which will pass sustainable products to subsequent companies, plants and/or suppliers are obliged to provide them with all necessary documents and inform certification system and certification body immediately if any discrepancies within documentation occur.

The company must sign an obligation in writing that it complies with the requirements of this standard.

Further on, the company must keep all relevant records and documents for the period of ten years.

4.1.5 Resource management

4.1.5.1 Employees/personnel

(1) The organization shall ensure that all personnel performing work affecting the implementation and maintenance of the chain of custody shall be competent on the basis of appropriate training, education, skills and experience.

(2) The company shall establish and implement a training plan regarding the critical control points and covering the positions involved in its chain of custody system.

(3) The company shall keep records of the training provided to staff in relation to implementation of the chain of custody controls.

Bilag 4

4.1.5.2 Technical equipment

The organization shall identify, provide and maintain the infrastructure and technical facilities needed for effective implementation and maintenance of the organization's traceability system with the requirements of this standard.

4.1.6 Monitoring and control

The organization shall conduct internal audits at intervals of at least one year covering all requirements of this standard and establish corrective and preventive measures if required.

The report from the internal audit shall be reviewed by the organization's top management at least annually.

4.1.7 Confidentiality

Documents and each kind of information are confidentially treated by all elements of the supply chain and not distributed to third parties.

4.2 Information requirements for sustainable biomass

Information requirements for the identification of sustainable biomass are separated into general and specific requirements. The general requirements must be met by all elements of the supply chain; the specific requirements describe those which exceed the general requirements for individual supply chain elements. The information requirements are separated into two categories. Information requirements for delivery notes regarding sustainability characteristics and traceability attributes and information and documentation requirements for audits. Records and documentation on traceability and mass balance have to be made available completely, actual and accessible for every element of the supply chain for sustainable products.

4.2.1 General requirements

4.2.1.1 Identification of origin (input information)

Audit requirements

Companies have to provide the following records for all **incoming** sustainable products into the company or into internal processes (not applicable for farms/plantation):

- List with name and address of suppliers of sustainable products
- Copies of the certificates from all suppliers of sustainable products (in case of group certification a list of the group members is required)
- Contracts with relevant subcontractors/service providers and suppliers of sustainable products
- Delivery notes for all incoming sustainable goods

Bilag 4

Delivery note requirements (not relevant for farms/plantations) for incoming sustainable product

- Every element of the supply chain must check the information on the delivery notes for every batch of **incoming** sustainable products with respect to sustainability characteristics and corresponding traceability attributes[1]. In case of the certificate number or the 'group member number' this can be achieved by contacting the ISCC database via the ISCC webpage:
  - Name of the certification system
  - Certificate Number
  - If applicable the 'group member number'
  - Unique number of the delivery note (running number)
  - Alternatively a unique batch identification number can be issued ([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate number.] - [8-digit serial number])
  - Name and address of the supplier
  - Name and address of the receiving party
  - Related contract number
  - Kind of incoming sustainable products
  - Date of issue
  - Quantity of sustainable products [in tons or m^3 at 15°C]
  - GHG emissions [kg CO2eq] per quantity of sustainable product [in tons or m^3 at 15°C] (disaggregated default value or actual value)
  - If applicable, indication that the disaggregated default value for transport and distribution or total default value has been used
  - Means of transportation (in case the total default value or disaggregated default value for transport was not applied)
  - Transporting distance from supplier to company in kilometres (in case the total default value or disaggregated default value for transport was not applied)

During each receipt of goods the receiver has to examine by means of the available ISCC data base (ISCC webpage) whether the supplier of sustainable products possesses a certificate which was valid at the time of the issuance of the delivery note or proof of sustainability.

[1] This document is a delivery note or another document which complies with the requirements of the Renewable Energy Directive (2009/28/EC).

4.2.1.2 Company internal information

For company internal processes no delivery notes are issued. The following records have to be maintained for an audit if an element of the supply chain is conducting a process which has an impact on the physical properties of a product:

- Process description of internal process (oil extraction, refining, esterification, dehydration, blending, etc.) and key data
- Records for the quantities of the raw material if not identical with the incoming sustainable product (e.g. fraction of sugar beet syrup used for ethanol production within an integrated sugar mill/ethanol plant)
- Records for the quantities of co-products, if required for GHG calculation or other purposes
- Records for the quantities of residues or waste if required for GHG calculation or other purposes
- Relevant yields/conversion factors
- Allocation factors
- GHG process emissions
- Date of production if needed

Detailed requirements for the mass balance calculation and bookkeeping (physical segregation or mass balance) can be obtained from document ISCC 204.

4.2.1.3 Identification regarding sales and transfer of products

Audit requirements

Companies have to provide the following records for all **outgoing** sustainable products:

- List with name and address of all buyers or receiving parties (subsequent element of the production or distribution chain) of sustainable products
- Contracts with the receiving parties, subsequent conversion units, warehouses and/or buyers of sustainable products
- Copies of all delivery notes for outgoing sustainable goods
- Contracts with relevant subcontractors/service providers
- In case of individual calculation of GHG emissions the GHG calculation itself and the input data used for calculation as described in ISCC 205
- Mass balance calculation or quantity bookkeeping in case of physical segregation as described in ISCC 204 (not relevant for farms/plantations)

Bilag 4

Delivery note requirements

- Every element of the supply chain must provide the following information on the delivery notes for every batch of **outgoing** sustainable products with respect to sustainability characteristics and corresponding traceability attributes[2]:
  - Name of the certification system
  - Certificate Number
  - If applicable the 'group member number'
  - Unique number of the delivery note (running number)
  - Alternatively a unique batch identification number ([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate number.] - [8-digit serial number]),
  - Name and address of the company
  - Name and address of the receiving party
  - Related contract number
  - Kind of sustainable product
  - Date of delivery of the sustainable product
  - Quantity of sustainable products [in tons or m^3 at 15°C]
  - GHG emissions [kg CO2eq] per quantity of sustainable product [in tons or m^3 at 15°C] (disaggregated default value or actual value)
  - If applicable, indication that the disaggregated default value for transport and distribution or total default value has been used
  - Means of transportation (in case the total default value or disaggregated default value for transport was not applied)
  - Transporting distance to the next element in the supply chain in kilometres (in case the total default value or disaggregated default value for transport was not applied)

4.2.1.4 Prevention of double counting

The mass balance system (see also ISCC 204) ensures for every element of the supply chain that the outgoing sustainable quantity does not exceed the incoming sustainable quantity within the maximum period of three months. The integrity of the mass balance quantities (i.e. crosschecked with the quantities from the companies reporting system) and the correct-

[2] This document is a delivery note or another document which complies with the requirements of the Renewable Energy Directive (2009/28/EU).

ness of the mass balance calculation is audited by an independent certification body. In case more sustainable products have been delivered than received, the audit will reveal any inconsistencies caused by mistake, double counting or fraud.

4.2.2 Specific requirements for the stages of the production and distribution chain

4.2.2.1 Farms/ plantations

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 mass balance system or quantity bookkeeping in case of physical segregation. Chain of custody 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. Farms/plantations shall either be audited individually or as part of a group (see also ISCC 256 Group certification) and receive a certificate.

Audit requirements

For traceability purposes the farm/ plantation has to provide following records:

- Statement of field numbers, field sizes, field status, crop, yield for the respective calendar year (normally part of the field/crop report) and the total area of the farm/plantation classified as pasture, cropland and other areas (such as compensation area, set aside land etc.) for the respective calendar year
- List of all first gathering points/warehouse which have been supplied with sustainable biomass with name and address
- Contracts with all first gathering points which have been supplied with sustainable biomass
- Contracts with subcontractors (e.g. harvesting, spraying)

Delivery note requirements

- The documentation requirements for farms/plantations are the following:
    - Name and address of the first gathering point or related warehouse the sustainable biomass is delivered to
    - Name and address of the farm/plantation. Name of the certification system and certificate number of the farm
    - In case the farm belongs to a group (subject to group certification) the ‘group member number’ of the farm
    - Unique number of the delivery note (running number)
    - Kind of biomass and rough estimate of the quantity in tons

- Related contract number
- Means of transportation and transporting distance
- Statement regarding the NUTS2 region(s) where the sustainable biomass was cultivated (EU Member State farms only)

- Farms/plantations shall receive for every delivery of sustainable biomass from the first gathering point a document with the following information:
  - Name and address of the first gathering point
  - Name and address of the farm/plantation which supplied the sustainable biomass
  - Kind of biomass
  - Weight of the biomass in tons
  - Date the sustainable biomass was received
  - In case an individual GHG emission calculation was performed the GHG emissions in kg CO_2eq per ton of biomass, otherwise
  - In case the farm is located within an EU Member State
    - Either disaggregated default value for cultivation in kg CO_2eq per ton of product if the NUTS2 regions are published and the NUTS2 value of the region the farm fields are located are below or equal the default value (see ISCC 205) or
    - Statement on the document 'sustainable biomass only for use in operational units where the grandfathering clause applies' if the NUTS2 regions are not published or the NUTS2 value of the region the farm fields are located are above the default value (see ISCC 205)
  - In case the farm is located outside the EU
    - Either the disaggregated default value for cultivation in kg CO_2eq per ton of product (see ISCC 205) or
    - In case disaggregated default values are not available statement on the document 'sustainable biomass only for use in operational units where the grandfathering clause applies'

4.2.2.2 First gathering point

First gathering points are operational units which buy from farms/plantations sustainable biomass for the first time in order to trade or further distribute this biomass. The determining factor to be regarded as a first gathering point is the contract with a farm or plantation. First gathering points have to comply with the requirements for the management system (4.1.1 to

4.1.3) and reporting and documentation (4.1.4). Every first gathering point shall be audited and will receive a certificate upon a successful audit.

First gathering points must be physically visited for an audit. Collecting points of several farms which are for example equipped with a mobile weighbridge during harvest are not regarded as a first gathering point. The same applies for warehouses which do not hold contracts with farms/plantations and do not trade in and/or sell biomass or raw material, but act on demand of a first gathering point. Warehouse which act on demand of the first gathering point are part of the audit with respect to sampling (see also ISCC 252). These warehouses are part of the logistics network of the first gathering point and shall use a common management system. The audit requirements for warehouses which act on demand of the first gathering point are the same as for trader/warehouses (4.2.2.3). The delivery note requirements are the same as for first gathering points (4.2.2.2)

Audit requirements

In addition to the documentation and information required under 4.2.1 the first gathering point has to document the following:

- List of all farms/plantations supplying sustainable biomass
- Valid certificates of the farms/plantations supplying sustainable biomass List of all warehouses/collecting points which are part of the collecting network of the first gathering point with name and address of the warehouses
- Mass balance calculation and reporting separated for each client in case the first gathering point operates a warehouse which stores and delivers on contract bases for third parties.

Delivery note requirements (incoming sustainable biomass)

- Delivery notes for incoming sustainable biomass from traders, warehouses and other first gathering points shall contain in addition to 4.2.1.1 the following information:
  - Country of origin (voluntary)
  - Quantity of carbon-equivalent as absolute value (accumulated for all upstream operations) in kg CO_2eq per ton of batch of incoming sustainable biomass (either disaggregated default value or actual value according to ISCC 205).
  - Means of transportation (in case the disaggregated default value for transport was not applied)
  - Transporting distance from supplier to company in kilometres (in case the disaggregated default value for transport was not applied)
- Delivery notes for incoming sustainable biomass from farms/plantations shall contain in addition to 4.2.1.1 at least the following information:
  - Name and address of the farm/plantation
  - Name of the certification system and certificate number of the farm

  - In case the farm belongs to a group (subject to group certification) the 'group member number' of the farm
  - Name and address of the first gathering point or related warehouse the sustainable biomass is delivered to
  - Unique number of the of the delivery note (running number)
  - Kind of biomass and rough estimate of the quantity in tons
  - Related contract number
  - Means of transportation and transporting distance
  - Statement regarding the NUTS2 region(s) where the sustainable biomass was cultivated (EU Member State farms only)

- In case the first gathering point does receive only the minimum requirements above, the first gathering point has to return to the farm a document with the following information (this is not necessary if the farm/plantation already delivered the information below):
  - Name and address of the farm/plantation which supplied the sustainable biomass
  - Kind of biomass
  - Weight of the biomass in tons (weighbridge ticket)
  - Date the sustainable biomass was received
  - In case an individual GHG emission calculation was performed (for the biomass received) the GHG emissions in kg CO_2eq per ton of biomass, otherwise
  - In case the farm is located within an EU Member State
    - Either disaggregated default value for cultivation in kg CO_2eq per ton of product if the NUTS2 regions are published and the NUTS2 value of the region the farm fields are located are below or equal the default value (see ISCC 205) or
    - Statement on the document 'sustainable biomass only for use in operational units where the grandfathering clause applies' if the NUTS2 regions are not published or the NUTS2 value of the region the farm fields are located are above the default value (see ISCC 205)
  - In case the farm is located outside the EU
    - Either the disaggregated default value for cultivation in kg CO_2eq per ton of product (see ISCC 205) or

Bilag 4

- In case disaggregated default values are not available statement on the document 'sustainable biomass only for use in operational units where the grandfathering clause applies'

Delivery note requirements (outgoing sustainable biomass)

- Delivery notes for outgoing sustainable biomass shall contain in addition to 4.2.1.1 the following information:
    - Country of origin (voluntary)
    - Quantity of carbon-equivalent as absolute value in kg CO_2eq per ton of batch of sustainable biomass including transport from farm to first gathering point (either based on disaggregated default values or actual value according to ISCC 205) or
    - In case GHG values are not available (see also ISCC 205) statement on the delivery note 'sustainable biomass only for use in operational units where the grandfathering clause applies'
    - In case of a GHG value being available, statement whether the above GHG value already includes the disaggregated default value for transport (e.g. statement 'the disaggregated default value for transport was applied'; in this case elements of the supply chain further downstream do not need to include transportation into the GHG calculation)
    - Means of transportation from first gathering point to recipient of the biomass (in case the disaggregated default value for transport was not applied)
    - Transporting distance first gathering point to recipient of the biomass in kilometres (in case the disaggregated default value for transport was not applied)

4.2.2.3 Trader/warehouse

A trader/warehouse is a warehouse after the first gathering point receiving, storing and dispatching sustainable products and has to comply with the requirements for the management system (4.1.1 to 4.1.3) and reporting and documentation (4.1.4). The warehouse can be the owner of a sustainable product or store or transfer this sustainable product by order of the owner. If a warehouse wants to store or transfer sustainable products it has to comply with the requirements for the management system (4.1.1 to 4.1.3) and reporting and documentation (4.1.4). The requirements for warehouses regarding traceability and mass balance apply to every warehouse. Warehouses are either audited individually or as part of a logistics network (see also ISCC 252) and receive a certificate upon a successful audit. Warehouses being part of the logistics shall use a common management system.

Audit requirements

A positive audit result and the corresponding certificate entitles the warehouse to issue delivery notes. If the warehouse is not owner of the sustainable product it will need an informal statement of entitlement in order to issue delivery notes. This statement of entitlement can be issued for the duration of the validity of the certificate. In this case the warehouse has to conduct mass balance calculations for each client separately.

Delivery note requirements

- Delivery notes for incoming and outgoing sustainable product shall contain in addition to 4.2.1.1 and 4.2.1.3 the following information:
  - Country of origin (voluntary)
  - Quantity of carbon-equivalent as absolute value (accumulated for all upstream operations) in kg CO_2eq per ton of batch of incoming sustainable biomass (either disaggregated default value or actual value according to ISCC 205) or
  - In case GHG values are not available statement on the delivery note 'sustainable biomass only for use in operational units where the grandfathering clause applies'
  - In case of a GHG value being available, statement whether the above GHG value already includes the disaggregated default value for transport (e.g. statement 'the disaggregated default value for transport was applied'; in this case elements of the supply chain further downstream do not need to include transportation into the GHG calculation)
  - Means of transportation (in case the disaggregated default value for transport was not applied)
  - Transporting distance from warehouse to recipient in kilometres (in case the disaggregated default value for transport was not applied)
- In case the trader/warehouse is delivering sustainable biofuels/bioliquids either to a quota obligated party or an electricity production plant or heat production plant or co-generation plant following information has to be added on the delivery note:
  - The GHG emissions in g CO_2eq/MJ according to ISCC 205
  - The relevant fossil fuel comparator in g CO_2eq/MJ according to ISCC 205
  - The GHG emission savings in percent according to ISCC 205. Minimum requirement is that the 35% greenhouse gas saving threshold is achieved

4.2.2.4 Conversion units

Conversion units (such as oil mills, ethanol plants, refining plants etc.) have to comply with the requirements for the management system (4.1.1 to 4.1.3) and reporting and documentation (4.1.4). Every conversion unit shall be audited and will receive a certificate upon a successful audit. Conversion units may also be first gathering points (e.g. oil mill, sugar mill). In this case the audit requirements and requirements for delivery notes for first gathering points have to be applied as well. ETBE plants are not regarded as conversion units. They make their claim based on the delivery note for the quantity of the sustainable input (i.e. bioethanol). Every ETBE shall be audited based on the audit requirements for traders/warehouses and will receive a certificate. Sampling is not possible.

Delivery note requirements

- Delivery notes for incoming and outgoing sustainable product shall contain in addition to 4.2.1.1 and 4.2.1.3 the following information:
    - Country of origin (voluntary)
    - Quantity of carbon-equivalent as absolute value (accumulated for all upstream operations) in kg CO_2eq per ton of batch of sustainable biomass (either disaggregated default value or actual value according to ISCC 205) or
    - In case GHG values are not available statement on the delivery note 'sustainable biomass only for use in operational units where the grandfathering clause applies'
    - In case of a GHG value being available, statement whether the above GHG value already includes the disaggregated default value for transport (e.g. statement 'the disaggregated default value for transport was applied'; in this case elements of the supply chain further downstream do not need to include transportation into the GHG calculation)
    - Means of transportation (in case the disaggregated default value for transport was not applied)
    - Transporting distance from conversion unit to recipient in kilometres (in case the disaggregated default value for transport was not applied)
- In case the conversion unit is delivering sustainable biofuels/bioliquids either to a quota obligated party or an electricity production plant or heat production plant or co-generation plant following information has to be added on the delivery note:
    - The GHG emissions in g CO_2eq/MJ according to ISCC 205
    - The relevant fossil fuel comparator in g CO_2eq/MJ according to ISCC 205
    - The GHG emission savings in percent according to ISCC 205. Minimum requirement is that the 35% greenhouse gas saving threshold is achieved

4.2.2.5 Transport

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. The required documents have to be provided according requirements under 4.1.1 to 4.1.4 by those warehouses and operational units which arrange transportation or are owners of the goods to be transported. In case of transports via ship the delivering enterprises or operational units have to provide in addition to a "Bill of Lading" a document issued by an independent inspector which confirms which quantity of sustainable products was transferred from which warehouse into which ship or ship compartment or hold. In analogy the dispatch of the sustainable product has to be documented. If within a ship compartment or hold several batches of sustainable products are mixed, the receiving party or the owner of the cargo may perform a mass balance calculation with respect to this standard. It must be assured that transport documents can be related to the identity number of the purchasing contract for the sustainable product.

5 Special provisions

In the case of biofuels and bioliquids produced by any installation (includes any processing installation used in the production process, as long as it has not been intentionally added to the production chain only to qualify for the exemption) that was in operation on 23 January 2008, the 35% greenhouse gas saving threshold needs to apply from April 1st 2013, and may also apply before that date (grandfathering clause).

Installations which received a certificate under the grandfathering clause in the past, can only prolong their certificate (validity of the certificate) under the grandfathering clause latest to March 31st 2013. From April 1st 2013 onwards this installation has to comply with the minimum GHG emission savings of 35%.

Bilag 5

Checklist for the Control of the Traceability Requirements

ISCC 10-04-19
V 1.15 10-04-19

Bilag 5

Document title: ISCC 203-01

Checklist for the Control of the Traceability Requirements

Approved by: **Date:**

Issue date:

Application date:

Bilag 5

Content

Bilag 5

Bilag 5

1 Introduction

The checklist for the verification of requirements on traceability gives guidelines to the certification bodies on how to verify the requirements according to ISCC 203. These guidelines are minimal requirements whose framework shall be exceeded by the auditor if required due to Risk Assessment or other noticeable findings. The Management System shall be established on a plant level and, in case of outsourcing, it shall involve relevant suppliers, respectively service providers.

2 Scope

This document describes the principal scopes to be considered for the verification of the requirements on traceability and the mass balance system, respectively the system of physical segregation:

(1) Management System

(2) Relevant elements of production and supply chain

   a. Agricultural company
   b. First gathering point
   c. Conversion (besides last interface)
   d. Conversion (last interface)
   e. Supplier
   f. Storage facility
   g. Transport

3 Normative references

As a basic principal, all relevant ISCC documents are valid for the scope of application. The normative references display the documents whose contents are linked and have to be considered as conjoint points.

Relevant references:

ISCC	201	System Basics
ISCC	202	Sustainability requirements – Requirements for the production of biomass
ISCC	202-01	Checklist for the Control of Requirements for the Production of Biomass
ISCC	203	Requirements for Traceability
ISCC	204	Mass Balance Calculation Methodology

4 Verification of requirements on traceability

In the verification of traceability of sustainable biomass, two scopes shall be considered:

(1) Verification of the Management System

(2) Verification of available documents and information about definite identification of biomass at all levels of the value chain.

4.1 Verification of the management system

The verification of the management system shall be done on the plant level. In case one company is responsible for one or more sectors in the production and supply chain in different plants and locations, the verification for every plant and related relevant service provider shall be carried out.

4.1.1 Verification of general requirements

A verification of the management system of the plant concerning type, complexity and volume of the required operations must take place. In addition, a verification whether the criteria of risk management (see ISCC 207 Risk Management) concerning the configuration of the management system have been considered.

4.1.2 Verification of responsibility and authorization

4.1.2.1 Responsibility of the management

Verification of, whether and in which manner, the administration of the plant documented the implementation of the requirements on traceability (e.g., document/file 'traceability', bulletin, etc.).

Verification of, whether the personnel of the plant, relevant service providers, customers and other interested parties have been provided with this documentation (e.g., visual check of mailing lists and e-mails, demand of documents from personnel, relevant service providers, etc.).

Verification of, whether a verification of traceability concerning the compliance with the requirements (e.g., visual check of inspection reports, interview of personnel, etc.) has been held in regular intervals.

4.1.2.2 Responsibility and authorization for the traceability

Verification of, whether the company nominated an employee responsible for the compliance with the requirements for the traceability on the plant (e.g., visual check of job descriptions, internal information, organigram, personal interview of personnel).

Verification of, whether any individuals (employees of the company or of relevant service providers), responsible for the implementation and maintenance of the traceability system, particularly with regards to the following critical check points (e.g., visual check of job descriptions, internal information, organigram, personal interview of personnel) were nominated:

(1) Acquisition or first gathering of sustainable products and identification of origin considering segregation and/or the determination of sustainable proportion and the according greenhouse gas emissions,

(2) Conversion of sustainable products or their further processing considering segregation and/or the determination of sustainable proportion and the according greenhouse gas emissions, respectively the potential greenhouse gas saving,

(3) Delivery, storage, sale and transport of sustainable products considering their segregation and/or the determination of sustainable proportion and the according greenhouse gas emissions, respectively the potential greenhouse gas saving,

(4) Documentation, issuing of certificates/documents and reporting in conjunction with the topics (1) to (3),

(5) Implementation of internal audits and inspections of conformity.

Note: The responsibility and authorization for the traceability may be combined.

4.1.3 Verification of system procedures

Verification, whether system procedures, respectively work instructions for the following topics are available in written form:

(1) Description of material flows within the production and supply chain of the plant, including the relevant service providers,

(2) Organizational structure, responsibilities and authorizations concerning traceability,

(3) System procedures for the traceability, covering all requirements of this standard..

4.1.4 Verification of reporting system and documentation

Verification, whether the following documents and reports for the relevant period (generally 1 year) are compiled accurately, up to date and complete, as well as easily accessible:

(1) Current and complete list of all suppliers of products according to BioSt-NachV, respectively BioKraft-NachV

(2) Current and complete list of all service providers relevant for the traceability

(3) Delivery notes, proof of compliance with sustainability requirements, respectively partial proof of compliance with sustainability requirements for all incoming products according to BioSt-NachV, respectively BioKraft-NachV

(4) Periodical reporting system about all incoming products according to BioSt-NachV, respectively BioKraft-NachV (period of max. 3 months),

(5) Periodical reporting system about internal processes recorded by a mass balance system (e.g., reports on storage silo, tank top, operating revenue, by-products, process losses, crop yield),

(6) Delivery notes, proof of compliance with sustainability requirements, respectively partial proof of compliance with sustainability requirements for all outgoing products according to BioSt-NachV, respectively BioKraft-NachV

(7) Periodical reporting system about all outgoing products according to BioSt-NachV, respectively BioKraft-NachV (period of max. 3 months)

(8) Documentation of records about the data transfer to the certification system used by the company, to the authorised administration and the certification body that audited the company according to this standard,

(9) Records about internal audits, possibly occurred deviation of conformity, respectively reports about actions and their implementation

Verification, whether the plant keeps all above mentioned relevant records and documents for a period of ten years (reference date shall be the date of issue of the first certificate, respectively the declaration of conformity, evidenced by submission of the certificate, inquiry at the filing department of certification system, etc.).

4.1.5 Verification of the resource management

4.1.5.1 Employees/personnel

Verification of, whether there is a training program about implementation and maintenance of the traceability system (e.g., visual check of training program, training subjects, eventually consultation of training supervisor)

Verification, whether relevant employees (plant, service provider) participated in traceability trainings, or are intended for a participation (visual check of training schedule, list of participants, invitation emails, etc.)

4.1.5.2 Technical equipment

Assessment of the existence of necessary infrastructure and technical facilities for the effective implementation and maintenance of the organization’s traceability system at critical control points (e.g. inspection of weighing equipment/ flow measure at all input and output points of an enterprise, level indicators for storage silos and containers).

4.1.6 Assessment of monitoring and control

Assessment whether the enterprise has conducted internal audits at intervals of at least one year (e.g. inspection of the audit report, action plan and progress report, consultation with the auditor etc.)

Assessing whether the report of the internal audit has been reviewed by the organization’s top management at least annually (e.g. inspection of the review report, review minutes, consultation with the top management etc.).

4.1.7 Assessment of the confidentiality

Assessing whether documents and all kinds of information for traceability - especially regarding suppliers, enterprises and services – have been treated confidentially and not been passed on to third parties (e.g. inspection of address lists and documents that have been passed on to third parties in connection with traceability, consultation of relevant employees about information practices).

Guidance with respect to risk assessment of the verification under 4.1:

If the records and documents described above are kept accurately, up to date and complete as well as easily accessible, the risk must be ranked as regular.
If the records and documents are not kept accurately and not easily accessible, the risk must be ranked as medium.
If the records and documents are not continuously up to date and not kept to full extent, the risk must be ranked as high.

It is up to the auditor's discretion to discontinue the audit if the risk is ranked high and if either the documentation is not easily accessible or the amount of unavailable documentation does not allow for a professional audit.

4.2 Assessment of the information requirements for sustainable biomass

The assessment of the information requirements for sustainable biomass requires the auditor to take into account the risk assessment described above. In general, the documentation for a complete year must be on hand. The auditor must check the mass balance of the complete year (regarding plausibility of the masses as well as regarding the compliance with balancing regulations) and take individual random samples to check whether the documents meet the requirements.

If the risk is ranked regular (see risk assessment above) random samples from three successive months are sufficient to assess whether the general and the specific information requirements are met.

If the risk is ranked medium, random samples from three successive months as well as one complete month should be checked.

If the risk is ranked high, three successive months should be checked completely.

Depending on the risk assessment during the audit, the auditor can decide whether to increase or reduce the scope of the audit and the sample size.

4.2.1 Assessment of the general requirements

4.2.1.1 Identification of origin (input information)

Assessing whether the following records and documents are available and contain the required information:

- List of each supplier of sustainable products according to BioSt-NachV or Biokraft-NachV must be available and contain the following information: name, address, certification system, certification number, person responsible for traceability
- For all **incoming** products delivery orders, proof of compliance or partial proof of compliance with sustainability requirements according to BioSt-NachV or Biokraft-NachV must include the following information:

- The unambiguous identification number of the incoming delivery
- The purchasing contract number for the delivery
- The unambiguous registration number of the certificate and the name of the supplier's certification system
- The type of the incoming sustainable products
- The date of delivery of the sustainable products
- The amount (in tons) or percentage of the incoming sustainable products (percentage of the total amount in tons)
- Indication whether GHG emission value has been calculated individually or whether a default value for the respective process has been used
- Amount of carbon-equivalent as absolute value (accumulated for all upstream operations) in kg CO_2eq per ton of incoming sustainable product
- Modes of transportation and distance from supplier to company in kilometres only in case the CO_2eq emissions are not regarded in the annual CO_2eq emissions of this enterprise.

• Weighing logs of storage facilities (other than conversion facilities) must include the number of the respective storage facility, silo, cell or tank where the products are stored according to BioSt-NachV and BioKraft-NachV

• Weighing logs of storage facilities for different customers must additionally indicate the name of the customer for each stored product according to BioSt-NachV and BioKraft-NachV.

Assessing the existence of a purchasing contract of the audited delivery orders, proof of compliance or partial proof of compliance with sustainability requirements for the **incoming** products according to BioSt-NachV and Biokraft-NachV between the enterprise and upstream interface or enterprise and assessing whether the data are consistent or plausible (e.g. for partial deliveries).

Assessing the existence of contracts with third parties in charge of handling, transportation or storage of sustainable products and assessing whether the data are consistent or plausible (e.g. comparison of commissioned transportation service with delivered amounts).

Assessment of the validity of the certificates of the suppliers of sustainable products at the time of delivery, according to BioSt-NachV and BioKraft-NachV, in support of the ISCC registry.

Bilag 5

4.2.1.2 Company internal information

Assessing whether, with respect to company internal processes, the following records and documents are available and contain the required information:

- Documentation which contains information about the kind of internal processes (extraction of oil, refining, esterification, dehydration, blending, etc.), the kind of incoming and outgoing products incl. by-products and losses in the process (e.g. flow chart, process description).
  Note: In general, a detailed analysis of the company internal sub-processes is not necessary; it is totally sufficient to consider the company as „Black Box".

- Operation permit (issued by the responsible authority) for the entire plant, on which the documentation of the internal processes refers to, and information on the fixed characteristic figures, e.g. maximum capacity.

- Periodic reporting system (maximum period of 3 months) which contains information on the quantities of incoming sustainable products into the overall process according to BioSt-NachV or BioKraft-NachV, and the date, on which they have been fed in, if the incoming sustainable products are only partially relevant for the company's internal process.
  Note: if all incoming products are fed into the overall process, such a reporting system will not be necessary.

- Periodic reporting system about the yield (amount in tons) of company's internal processes for the main products and relevant by-products (in case that they are used for the allocation of emissions in GHG calculation (see also ISCC 205)).

- Periodic reporting system (maximum period of 3 months) which contains information on the quantities of outgoing sustainable products according to BioSt-NachV or BioKraft-NachV, and the date, on which they have left the company's internal process, if they are only partially sold or transferred to subsequent interfaces, plants or suppliers.
  Note: if all products are taken from the overall process and are sold or transferred to subsequent interfaces, plants or suppliers, such a reporting system will not be necessary.

- Document which contains the information on conversion and allocation factors, if they have not been already integrated into the reporting system mentioned above.

  Note: These factors should be based on a long-term calculation of average values and not on daily optimum values (see ISCC 205).

- Information, if the GHG value has been calculated individually or a default value has been used.

- Document which contains information about the average GHG emissions for the entire company internal process for one year (certification period).

- Control of calculation details in case of individual GHG calculations

Note: The quantities and conversion factors used for the GHG calculation should be identical with those in the reporting system mentioned above (see ISCC 205).

4.2.1.3 Identification regarding sales and transfer of products

Assessing whether the following records and documents relevant for the output of sustainable products are available and contain the required information:

- List of all buyers or receiving parties of sustainable products according to the German Ordinances BioSt-NachV or BioKraft-NachV is available and contains information on names and addresses,
- For all **outgoing** products, delivery orders, proof of compliance or partial proof of compliance with sustainability requirements according to the German Ordinances BioSt-NachV or Biokraft-NachV are available and must include the following information:
  - The unambiguous identification number of the delivery
  - The purchasing contract number for the delivery
  - The unambiguous registration number of the certificate and the name of the supplier's certification system
  - The type of outgoing sustainable products
  - The date of delivery of the sustainable products
  - The amount (in tons) or percentage of the outgoing sustainable products (percentage of the total amount in tons)
  - Indication whether a GHG emission value has been calculated individually or whether a default value has been used
  - Indication of the GHG value in kg CO_2eq per ton of outgoing sustainable products
- Weighing logs of storage facilities (others than conversion facilities) must include the number of the respective storage facility, silo, cell or tank where the products are stored according to BioSt-NachV and BioKraft-NachV.
- Weighing logs of storage facilities which are service providers for different customers must additionally indicate the name of the customer for each stored product according to BioSt-NachV and BioKraft-NachV.
- Periodic reporting system (maximum period of 3 months) which contains information on the quantities of outgoing sustainable products according to BioSt-NachV or BioKraft-NachV, and the date, on which they have left the supplier.
- Report at the end of the year which contains information about the quantities of all outgoing sustainable products.

Assessing the existence of a purchasing contract of the audited delivery orders, proof of compliance or partial proof of compliance with sustainability requirements for the **outgoing** products according to BioSt-NachV and Biokraft-NachV between the enterprise and the customer or the subsequent interface, plants or suppliers and assessing whether the data are consistent or plausible (e.g. for partial deliveries).

Assessing the existence of contracts with third parties in charge of handling, transportation or storage of outgoing sustainable products and assessing whether the data are consistent or plausible (e.g. comparison of commissioned transportation service with delivered amounts etc.).

- Periodic reporting system (maximum period of 3 months) containing information on quantities of incoming sustainable products, their GHG emissions, conversion and allocation factors, GHG emissions of the company internal processes as well as quantities of outgoing sustainable products and their GHG emissions.

Control if the mass balance has been calculated correctly for two subsequent periods according to the document ISCC 204.

Control, by means of the report at the end of the year, whether the outgoing quantities of sustainable products do not exceed the amounts of incoming products (taking into account the conversion factors).

Control if the incoming and outgoing quantities of sustainable products described in the periodic reporting system are identical with the quantities described in the report at the end of the year

Control if the amounts described in the reporting system are identical with the sum of amounts described in the detailed documents for the outgoing individual deliveries (delivery orders, proof of compliance or partial proof of compliance with sustainability requirements). In case of a normal risk, sampling is considered as sufficient. In case of a medium risk at least two months should be controlled entirely. In case of a high risk a 100 percent control is appropriate.

4.2.2 Assessing the specific requirements for the stages of the production and distribution chain

4.2.2.1 Farms/plantations

Assessing whether a farm/plantation provides the following records and documents and whether these contain the required information:

- List of all fields which are owned or leased by the enterprise containing the information on field numbers, field sizes, field status, crop and yield for the respective calendar year, classified as pasture, cropland and other areas (such as compensation area, set aside land etc.), if appropriate.

- Proof of the ownership for all fields by means of attestations of the responsible authority (submission of the cadastral register or a comparable official document, attestation about the payment of land taxes) or an equivalent attestation of a solicitor or bank (e.g. a notarised sale contract. In theses documents the fields must be unambiguously identifiable (location map and information on hectares).

- In case of leased fields proof by the leasing contract which has been notarised by a solicitor, a bank or an official authority. In theses documents the owner, leaseholder and the fields must be unambiguously identifiable (names, location map and information on hectares). In case of oral contracts they have to be fixed in a written form ex post.

- Purchasing contracts with all first gathering points or recipients of sustainable products according to the German Ordinances BioSt-NachV or BioKraft-NachV.
- Copies of the weighbridge documents for all deliveries to the first gathering point for the respective calendar year with following information:
  - Name and address of the first gathering point
  - Name and address of the farm/plantation
  - Amount and kind of the delivered crop
  - Identification number of the delivery vehicle (normally the license plate number of truck/ trailer)
  - In case of delivery by a transportation enterprise, its name and address as well
  - Number of the purchasing contract with the first gathering points or the recipient
  - Batch number (can also be running number of the weighbridge document)
  - Indication whether GHG emission value has been calculated individually or whether a default value has been used
  - GHG emission value for GHG emissions from the agricultural production
  - Information on the warehouse, silo or cell number where the delivered amount is stored
  - Modes of transportation and distance from supplier to company in kilometres only in case the CO2eq emissions from transportation are not regarded in the annual CO2eq emissions of this enterprise.
- Copy of the signed self declaration (the original is kept by the first gathering point).

Control whether the yields are identical with the sum of all amounts in the delivery orders.

In case of individual GHG calculations control of the calculation details (Note: The amounts used in the GHG calculations should be consistent with the yields or delivery orders).

Note: If an auditor observes increasing non-conformities by the farms/plantations, the number of enterprises shall be increased by the factor resulting from his risk assessment.

4.2.2.2 First gathering point

Assessing whether the first gathering point provides the following records and documents and whether these contain the required information:

- List of all delivering farms/plantations containing the information on names and addresses,

Bilag 5

- List of all farms/plantation which have been audited so far, in case of the voluntary certification also information on certificate number and certification system as well,
- Completed and signed originals of the self declarations of all supplying farms/plantations, according to the document ISCC 202-02 or 202-03.
- Weighbridge documents for all deliveries by the farms/plantations for the respective calendar year with following information:
    - Name and address of the first gathering point
    - Name and address of the farm/plantation
    - Amount and kind of the delivered crop
    - Identification number of the delivery vehicle (normally the license plate number)
    - In case of delivery by a transportation enterprise its name and address as well
    - Number of the purchasing contract with the first gathering points or the recipient
    - Batch number (can also be running number of the weighbridge document)
    - Indication whether GHG emission value has been calculated individually or whether a default value has been used
    - GHG emission value for GHG emissions from the agricultural production
    - Information on the storage facility, silo or cell number where the delivered amount is stored
    - Modes of transportation and distance from supplier to company in kilometres, only in case the CO_2eq emissions for transportation are not regarded in the annual CO_2eq emissions of this enterprise.
- Document containing the layout of the storage facilities
- Documentation containing information on the number and capacity of the storage facilities
- Operation permit (issued by the responsible authority) for the entire plant
- Report at the end of the year with information on the quantities of all incoming sustainable products
- Information, if the GHG emission value has been calculated individually or a default value has been used (only in case of significant emissions by the enterprise, e.g. by an intensive use of dryers).
- Document which contains information about the average GHG emissions for the company internal process for one year (only in case of significant emissions by the enterprise, e.g. by an intensive use of dryers).

- Control of calculation details in case of individual GHG calculations (Note: The quantities and conversion factors used for the GHG calculation should be identical with those in the reporting system mentioned above).

4.2.2.3 Warehouse

Warehouses are assessed according to 4.2.1.1 and 4.2.1.3. If warehouses act as service providers the purchasing contract must not be controlled, instead it has to be assessed whether the warehouse provides the following records and documents and whether these contain the required information:

- Contracts with the customers who are storing and removing the storage, if the warehouse itself is not owner of the products, containing the following information:
  - Declaration of the customer that he is owner of the sustainable products
  - Declaration of the customer that he authorises the warehouse to conduct mass balances, to issue delivery orders and to apply for partial proofs of compliance with sustainability requirements

Assessment whether the warehouse carries out bookkeeping in the scope of the mass balance calculation and whether the GHG emission values are calculated correctly especially in case of the transition from one period to another.

4.2.2.4 Conversion units

Conversion units have to be assessed according to 4.2.1.1 to 4.2.1.3.

If a warehouse is part of the conversion unit, it has to be assessed where appropriate, if the warehouse carries out bookkeeping in the scope of the mass balance calculation and whether the GHG emission values are calculated correctly especially in case of the transition from one period to another.

If the conversion unit represents the last interface, it has to be assessed whether all proofs of compliance with sustainability requirements have been reported to the responsible authority (database query at the authority for the respective certificate number where appropriate).

In case that waste or residual material is used for the production of bioliquids or biofuels, the following facilitations are possible for the assessment according to 4.2.1.1 to 4.2.1.3:

For incoming material:

- List of all suppliers of sustainable products according to BioSt-NachV or BioKraft-NachV is available and contains information on names and addresses, but not on the certification system, certificate number, personnel responsible for the traceability, because their suppliers are not necessarily subject to certification
- All delivery orders must only include the following information:
  - The unambiguous identification number of the incoming delivery
  - The contract number of the supplies

- The type of incoming products (e.g. animal residual material or used cooking oil)
- The date of delivery of the products
- The amount (in tons)

- Weighbridge documents of warehouses have not to be assessed because they are not relevant

The assessment (remains unchanged) of the existence of a purchasing contract related to the controlled delivery orders for **incoming** products between company and upstream plants or suppliers, and assessing whether the data are consistent or plausible (e.g. for partial deliveries).

The assessment (remains unchanged) of the existence of contracts with third parties in charge of handling, transportation or storage of batches of sustainable products and assessing whether the data are consistent or plausible (e.g. comparison of commissioned transportation service with delivered amounts etc.).

The Assessment of the validity of the certificates of the suppliers of sustainable products according to BioSt-NachV and BioKraft-NachV at the time of delivery in support of the ISCC registry does not apply.

For company internal information the documentation of allocation factors is not necessary.

The optional choice between default values and individual calculation according to 4.2.1.2 and 4.2.1.3 is omitted in case of all vegetable or animal waste oils except for animal oils from animal by-products, which are classified as material of category 3 in the regulation (EC) No 1774/2002 of the European Parliament and of the Council of October 3, 2002 laying down health rules concerning animal by-products not intended for human consumption (ABl. L 273 vom 10.10.2002, S. 1), because the GHG emissions have to be evaluated as Zero.

4.2.2.5 Suppliers

Except for Germany suppliers have to be assessed according to 4.2.1.1 to 4.2.1.3.

In Germany it has to be assessed whether the supplier provides the following records and documents and whether these contain the required information:

- Reporting system which contains information about all incoming proofs of compliance with sustainability requirements and about quantities and the unambiguous identification number.

- Reporting system which contains information about all outgoing proofs of compliance and submitted partial proofs of compliance with sustainability requirements and about quantities and the unambiguous identification number.

Control of the outgoing amounts within a period (maximum 3 months) and verification that they do not exceed the incoming amounts.

Bilag 5

Assessment, whether all proofs of compliance and partial proofs of compliance with sustainability requirements have been reported to the responsible authority (database query at the authority for the respective certificate number where appropriate).

4.2.2.6 Transport

The modes of transportation themselves are not subject to auditing.

Bilag 5

5 Assessing the compliance with the special provisions

Transitional provisions apply to the transition period and to old operational units and may reduce the assessment effort.

5.1 Assessing the transition period

The provisions for the transition period "after July 1st 2010 and prior January 1st 2011" represent facilitations for the whole value chain up to the company which has to fulfil quota obligations or which brings the products into the market. However, in the legal regulations the point of harvest and the point of bringing into market are linked, which is clearly traceable only in simple value chains, in which the batches can be completely traced from the first to the last stage of the value chain (see also ISCC 204 Mass balance calculation methodology, ch. 4.2.2 and 4.3.3) and have determined processing times. This is particularly important for enterprises at the beginning of the value chain which use biomass, which has been harvested prior January 1st 2010, and which do not know when the end product will be brought into the market. This causes a high risk to lose the status "sustainable" after January 1st 2011 especially in case of storable products.

The transitional provisions are of factual significance for all companies reporting the GHG emissions or the GHG minimum reduction potential as well as for farms/plantations and first gathering points which can do without the requirements for the protection of natural habitats and for a sustainable agricultural management (see also ISCC 202). However, in this case a proof that the harvesting was carried out prior January 1st 2010 has to be added throughout the value chain. This results in the following effects on the assessments according to the ISCC system:

- For the farm/plantation there are no effects with respect to the assessment by the auditor.
  However, until the end of 2010 it can sell its "Harvest 2009" as sustainable, although it does not comply with the requirements according to § 3 BioSt-NachV and Biokraft-NachV and although the GHG emission exceed the upper limiting values set by the Sustainability Ordinance and supplementary regulations.

- For the first gathering points: Assessment whether biomass has been declared as sustainable although the farmer had not signed a self declaration and was not listed in the list of the first gathering point according to 4.2.2.2.

  Assessment whether the farmer has documents for this biomass that it had been harvested prior January 1st 2010 (normally by a confirmation of the warehouse where its products were stored).

  Assessment whether the amount of incoming biomass from "Harvest 2009" declared as sustainable is identical with the amount of outgoing sustainable biomass, which has a confirmation about the "Harvest 2009".

  Assessment whether the amount of outgoing sustainable biomass, which has a confirmation about the "Harvest 2009", includes no information about specific GHG emissions.

- For the following elements of the value chain it has to be assessed according to ISCC 203: whether the amount of incoming biomass from “Harvest 2009” declared as sustainable is identical with the amount of outgoing sustainable biomass, which has a confirmation about the “Harvest 2009”.

  Furthermore, assessment whether the amount of outgoing sustainable biomass, which has a confirmation about the “Harvest 2009”, includes no information about specific GHG emissions.

5.2 Assessing old operational units

Old operational units (e.g. oil mills, esterification plants, hydration or co-hydration plants and bioethanol plants which went into operation prior January 23rd 2008 have to fulfil the same requirements as new operational units with respect to traceability, except for GHG emissions or GHG minimum reduction potential.

Reporting the GHG emissions or GHG minimum reduction potential, old operational units can choose whether they want to report no figures or choose the option to state the GHG reduction potential based on default values or derived from actual performance data until March 31st 2013. At the time the certificate is issued the auditor has to document this fact and report it to the ISCC registry.

In case of old operational units which do not want to report on GHG emissions or GHG minimum reduction potential, assessing the calculation of any GHG emissions is omitted (in the scope of the mass balance, too).

However, in theses cases the auditor has to assess whether during the auditing period no GHG emissions or GHG minimum reduction potential have been stated on delivery notes or proofs of compliance with sustainability requirements. Furthermore these operational units do not have to take into account different GHG potentials of the incoming products when calculating the mass balance.

Bilag 6

ISCC 204 Mass balance calculation methodology

Mass balance calculation methodology

ISCC 11-03-15

V 2.3-EU

Bilag 6

Document title: ISCC 204

Mass balance calculation methodology

Approved by: **Date:**

Issue date: **11-03-15**

Application date: **11-03-15**

Bilag 6

Content

Bilag 6

1 Introduction

This document describes the mass balance calculation methodology for physical segregation and mass balance based on the framework conditions laid down in document ISCC 203 „Requirements for traceability“.

2 Scope

This document describes the basic elements which have to be considered for the mass balance calculation:

(1) Farm/plantation (cultivation of sustainable biomass)

(2) First gathering point (warehouses or traders which source (buy) sustainable biomass from a variety of farms or plantations and sell sustainable biomass to customers)

(3) Conversion of sustainable biomass (conversion of sustainable biomass or bioliquids, e.g. oil mill, ethanol plant, biodiesel plant, refinery)

(4) Warehouse (Storage of sustainable biomass on demand of the first gathering point, i.e. the warehouse has to be located in the supply chain before the first gathering point and shall not buy biomass from farms and sell it to customers)

(5) Trader/warehouse (Storage and/or trade of sustainable biomass, bioliquids or biofuels after the first gathering point

(6) Transport of sustainable products (e.g. with truck, train, barge or vessel)

3 Normative references

As a basic principle, all relevant ISCC documents are valid for the scope. The normative references display the documents whose contents are linked and have to be considered as conjoint points.

Relevant references:

ISCC	201	System Basics
ISCC	203	Requirements for Traceability
ISCC	205	GHG Emission Calculation Methodology and GHG Audit

Bilag 6

4 Mass balance calculation methodology

4.1 General requirements

The mass balance system means (According to Article 18(1) of the Renewable Energy Directive (2009/28/EC)) a system in which 'sustainability characteristics' remain assigned to 'consignments'. Sustainability characteristics include the evidence that a product is sustainable, the recognised voluntary scheme, a description of the raw material or product, related Green House Gas (GHG) emissions and the country of origin of the feedstock. Traceability and evidence on the sustainability characteristics and the sustainability of a product will be achieved via delivery notes with respective traceability attributes (s.a. ISCC 203 Requirements for traceability) and the corresponding mass balance system. This assures that origin, quantity, kind of product and related greenhouse gas (GHG) emissions can be uniquely identified and that the amount which has been withdrawn at the respective stage of the supply chain does not exceed the amount supplied.

When consignments with different or no sustainability characteristics are mixed, the separate sizes and sustainability characteristics of each consignment remain assigned to the mixture, e.g. if the characteristics include different figures on GHG emissions they remain separate; these figures cannot be averaged for the purpose of showing compliance with the sustainability requirements. On the other hand, if consignments with the same sustainability characteristics are mixed only the size of the consignment is adjusted accordingly. Sustainability characteristics are likely to be the same where the same feedstock is used and use is made of 'default values' or 'regional actual values'. If raw material or product are processed or losses are involved, appropriate conversion factors should be used to adjust the size of a consignment accordingly.

If a mixture is split up, any consignment taken out of it can be assigned any of the sets of sustainability characteristics. This means that when a sustainability characteristic would be the description of the feedstock, e.g. rapeseed, this characteristic can be different from what the consignment physically contains, e.g. a mix of rapeseed and sunflower oil (accompanied with sizes) as long as the combination of all consignments taken out of the mixture has the same sizes for each of the sets of sustainability characteristics that were in the mixture. A mixture can have any form where consignments would normally be in contact, such as in a container, processing or logistical facility or site (defined as a geographical location with precise boundaries within which products can be mixed).

As within the processing industry the term batch is commonly used for a specific amount of material with the same properties we will use in the following the term 'batch' instead of 'consignment'.

The balance in the system can be continuous in time, in which case a deficit, i.e. that at any point in time more sustainable material has been withdrawn than has been added, is required not to occur. Alternatively the balance could be achieved over an appropriate period of time and regularly verified.

4.1.1 Basic methods of mass balance calculation

With respect to the above requirements and the framework conditions outlined in document ISCC 203 „Requirements for traceability" the following systems can be distinguished:

Bilag 6

(1) Physical segregation

a. Segregation of all batches with different origin and properties (Identity preservation or hard IP)

b. Segregation of sustainable and non sustainable products (Soft IP or bulk commodity)

(2) Mass balance

a. Physical mixing and documentation of quantity credits

4.1.2 Provision of conversion factors

Within the mass balance calculation conversion factors have to be provided for all elements of the production and distribution chain, whose company internal processes include conversion/processing or losses. This has to be applied both for physical segregation and mixing. When using disaggregated default values for calculation, the corresponding conversion factors have to be taken from EU publications or those of its relevant member states. Within individual GHG calculations the conversion factor has to be taken either as an average value of the actual process yield for one period or a shorter time frame from the reporting of the actual yields. The conversion factor for a certain period is defined as follows:

C (%) = Ao/Ai * 100

C: **C**onversion factor
Ai: **A**mount of the process **i**nput material
Ao: **A**mount of **o**utput yielded by the internal process based on input Mi

Under the framework of the mass balance calculation of conversion processes the amount of sold or withdrawn sustainable products within one period should not be larger than the product of the amount Ai going into the process times the conversion factor C.

4.1.3 Greenhouse gas calculation (GHG)

4.1.3.1 Inclusion of GHG values for transport

The requirements for calculating GHG emissions of relevant elements of the production and distribution chain and for transport are documented in ISCC 205 „Calculation methodology for GHG emissions and GHG-Audit".

Accordingly, the recipient of a batch of sustainable product, has to add the GHG value for transport e_{td} to the GHG value of the incoming product as stated in the delivery note unless the disaggregated default value for transport from Annex V RED 2009/28/EC has been used:

$E = e_{\text{delivery note}} + e_{td}$

E: GHG value, as captured as input value by the mass balance calculation.

$e_{\text{delivery note}}$: GHG value of the incoming product, as stated in the delivery note

e_{td} : GHG value for transport of the incoming sustainable product

Bilag 6

4.2 Physical segregation

4.2.1 General requirements for physical segregation

Organizations applying physical segregation shall ensure that the sustainable raw material or product is separated from other products at all stages of the production or distribution process.

Organizations whose sustainable product is not mixed with other products and/or where the sustainable product can be identified as being sustainable during the whole process should use the physical segregation as the preferred option.

4.2.2 Physical segregation of batches

Batches have to be identifiable throughout the entire production and distribution process. This can be achieved by:

(1) Physical segregation of the production, storage and transport equipment (parallel process)

(2) Physical segregation by periodical separation (sequential process)

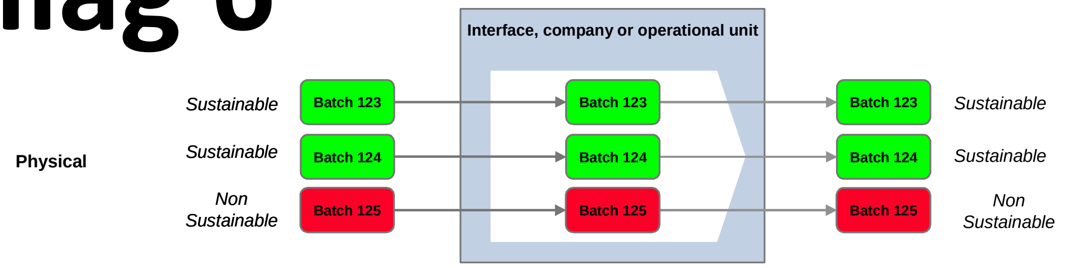
4.2.2.1 Physical segregation of all batches

By using this option all batches with different sustainability characteristics shall be segregated from each other. This applies as well for the segregation of batches of sustainable from non sustainable products as for batches of sustainable products with different origin and different sustainability characteristics (compare with following figure).

Bookkeeping of the batches is identical with the physical status (see also figure 1 where for simplicity reasons a conversion factor of one is applied (C=1)), i.e. batches 123, 124 and 125 are segregated physically and via bookkeeping.

Physical segregation of all batches could be applied if batches 123 and 124 have totally different sustainability characteristics or the same sustainability characteristics apart from one. The sustainability characteristics of the incoming batch are documented on the delivery notes (see ISCC 203 Requirements for traceability).Characteristics include for example the kind of product, the country of origin, the GHG emissions value (see also figure 2).

Bilag 6



Book-keeping

Input		
Batch No.	Kind	Amount (t)
123	sustainable	500
124	sustainable	1500
125	non sustainable	1000
Total		3000

Company internal process		
Batch No.	Kind	Amount (t)
123	sustainable	500
124	sustainable	1500
125	non sustainable	1000
Total		3000

Output		
Batch No.	Kind	Amount (t)
123	sustainable	500
124	sustainable	1500
125	non sustainable	1000
Total		3000

Figure 1: Physical segregation of all batches (C=1)

Within the illustrative example of figure 2 the sustainability characteristics of the incoming batches are the same apart the GHG value. For incoming batch 123 the default value is applied while for batch 124 the individually calculated GHG value is used (for illustrative purposes). Details regarding delivery notes and their information content can be found in ISCC 203.

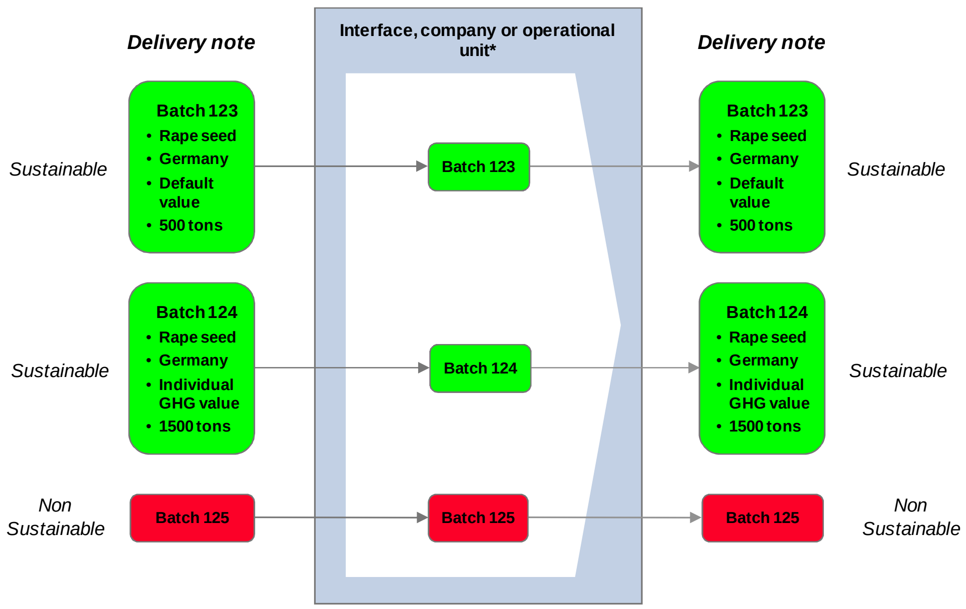


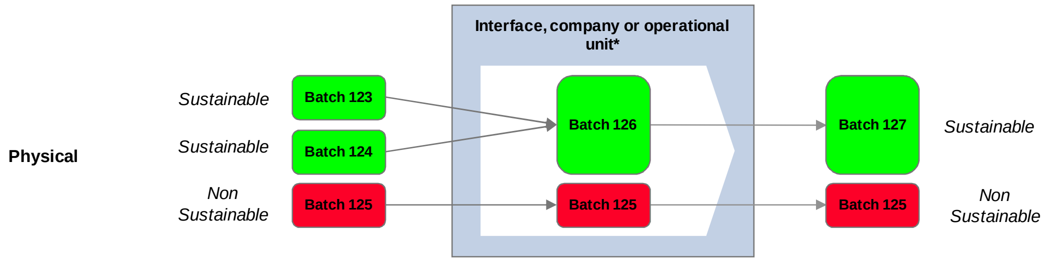
Figure 2: Assigning sustainability characteristics to outgoing batches via delivery notes

With respect to the balance of the system at no point in time more sustainable material can be withdrawn than equivalent material has been added, e.g. the outgoing batch 123 shall not exceed 500 tons in case of the conversion factor being 1. The outgoing batches could be split into sub-batches with different quantities as long as the sum of all sub-batches does not exceed the total quantity (e.g. outgoing batch 123 could be split into 3 sub-batches of 100, 150 and 250 tons with the same sustainability characteristics).

Bilag 6

4.2.2.2 Physical segregation of sustainable and non sustainable batches

Within this option only batches of sustainable products are segregated from non sustainable products (see figure 3). Batches of sustainable products can be physically mixed even if sustainability characteristics may be different.



Book-keeping

Input			Company internal process			Output		
Batch No.	Kind	Amount (t)	Batch No.	Kind	Amount (t)	Batch No.	Kind	Amount (t)
123	sustainable	500	126	sustainable	2000	127	sustainable	2000
124	sustainable	1500						
125	non sustainable	1000	125	non sustainable	1000	125	non sustainable	1000
Total		3000	Total		3000	Total		3000

Figure 3: Physical segregation of sustainable and non sustainable batches (C=1)

Although batches with different sustainability characteristics can be mixed physically, looking at batch 127 of figure 3 (bookkeeping) one may expect that the ingoing batches 123 and 124 should have the same sustainability characteristics. Looking at the illustrative example of figure 4 this is true apart from the country of origin, which is UK and Germany. It is possible to declare different countries of origin under one delivery note if the declaration is related to bioliquids (‘sustainability characteristics would have to include the information on the country of origin of the feedstock, except for bioliquids (cf. Article 7a (1)(a) of the Fuel Quality Directive)’).

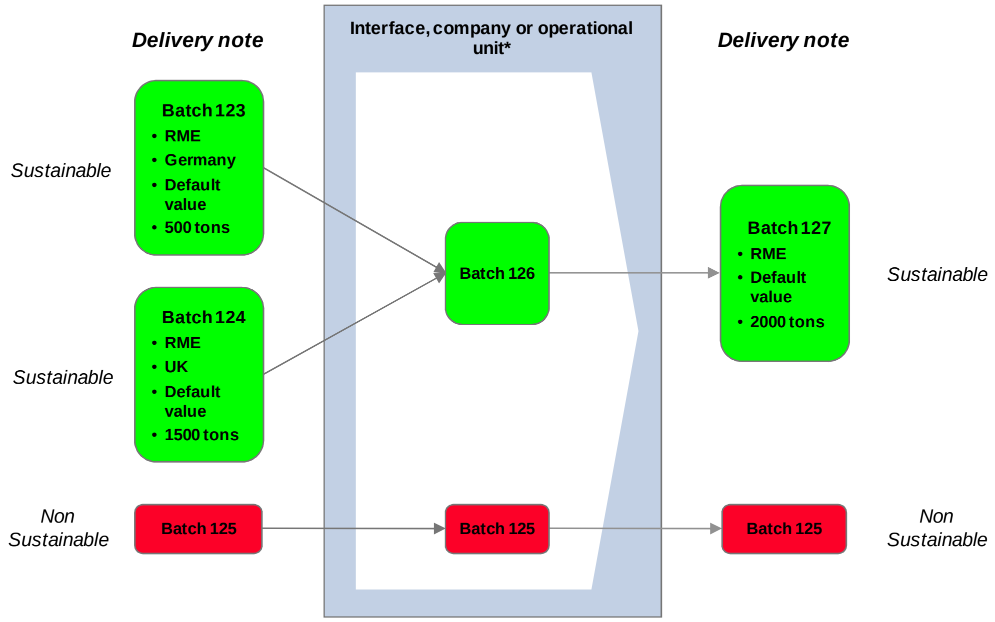


Figure 4: Assigning sustainability characteristics to outgoing batches via delivery notes (C=1)

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If batches 123 and 124 would have different GHG emission values then the delivery notes of the outgoing batches have to carry the same sustainability characteristics as batch 123 and 124 and could not exceed the quantity of 500 respectively 1500 tons of Rape Methyl Ester (RME) in figure 5.

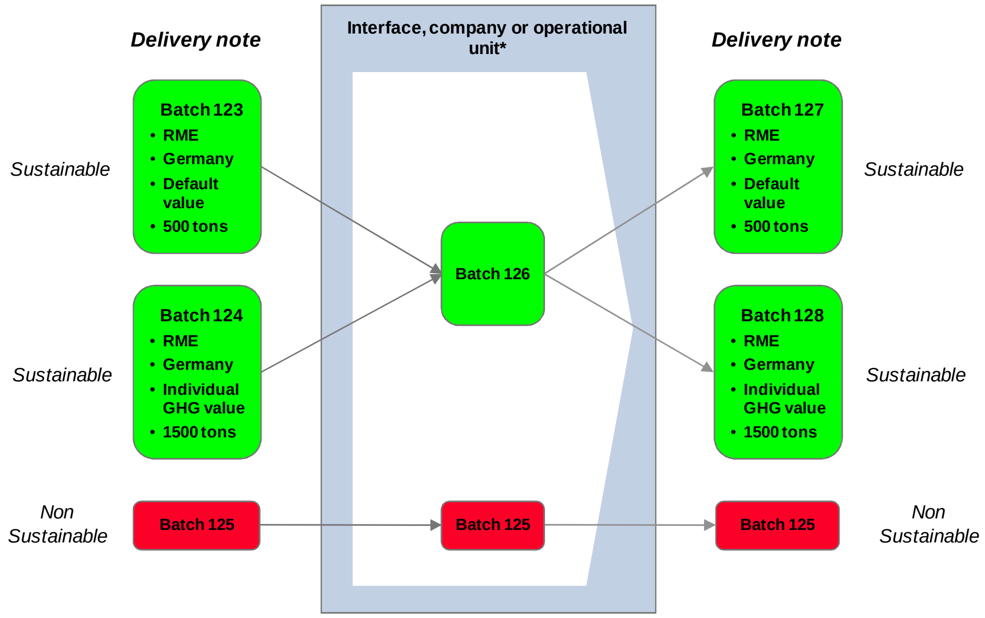


Figure 5: Assigning sustainability characteristics to outgoing batches via delivery notes (C=1)

With respect to the balance of the system at no point in time more sustainable material can be withdrawn than equivalent material has been added, e.g. the outgoing batch 127 in figure 5 shall not exceed 500 tons assuming a conversion factor of 1. The outgoing batches could be split into sub-batches with different quantities as long as the sum of all sub-batches does not exceed the total quantity (e.g. outgoing batch 127 of figure 5 could be split into 3 sub-batches of 100, 150 and 250 tons with the same sustainability characteristics).

Within the bookkeeping sustainable batches with different GHG values cannot be aggregated. If two or more incoming batches have different GHG input values, the highest GHG emission value (of the least performing batch) could also be used consistently for the entire input if other sustainability characteristics are identical, i.e. aggregation is allowed if all batches use the GHG value of the least performing batch. If in figure 5 the individual GHG emissions value of batch 124 is lower than the default value of batch 123 than the default value of batch 123 could be used consistently for all incoming batches (as the other sustainability characteristics are the same).

4.3 Mass balance

Mass balance methodology allows the mixing of batches of sustainable and non sustainable products at every stage of the supply chain. Due to physical mixing the mixture loses its individual properties. The sustainability characteristics of products can therefore only be determined via bookkeeping. This requires calculation of the mass balance and verification of the mass balance calculation with respect to the chosen period for balancing.

Bilag 6

4.3.1 Definition of the timeframe for balancing (period)

The mass balance calculation requires the definition of the timeframe for which the outgoing batches have to be balanced with the incoming batches. The maximum timeframe (period) for the mass balance calculation is [redacted]. Participants in the ISCC scheme may choose a period less than [redacted], e.g. one month. Therefore the mass balance calculation for relevant elements of the supply chain must be balanced within the period for both incoming and outgoing sustainable products according to the RED.

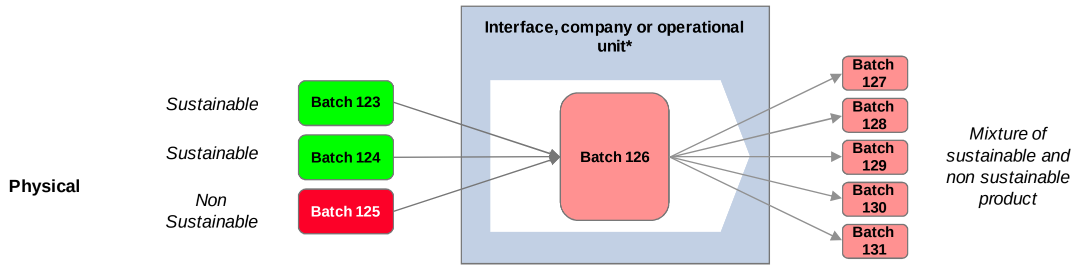
If within one period more sustainable product has been received (including inventory of sustainable product) than dispatched, the surplus of sustainable product is defined as positive credit. The transfer of positive credits from one period to the other is only possible if the credit transfer is covered by the equivalent quantity of physical biomass, bioliquid or biofuel (i.e. it is not possible to carry over more positive credits into the next period than the quantity which is physically in stock at the end of the period).

The rational for the maximum period to be [redacted] is twofold:

- A shorter mass balance calculation period does not offer additional security against fraud
- Reducing the period to much shorter timeframes will increase cost and investment significantly as well as reduce flexibility for the market players without improving security and sustainability within the supply chain

4.3.2 Quantity credit methodology

Batches of sustainable (may have different sustainability characteristics) and non sustainable products can be physically mixed within a company internal process (see figure 6). Within the period, batches of sustainable products with the same sustainability characteristics can be arbitrarily split within the bookkeeping as long as the total amount does not exceed the quantity credit



Book-keeping

Input		
Batch No.	Kind	Amount (t)
123	sustainable	1000
124	sustainable	1000
125	non sustainable	1000
Total		3000

Company internal process		
Batch No.	Kind	Amount (t)
126	Mixture	3000
Total		3000

Output		
Batch No.	Kind	Amount (t)
127	sustainable	200
128	sustainable	800
129	sustainable	1000
130	non sustainable	500
131	non sustainable	500
Total		3000

Figure 6: Quantity credit methodology (C=1)

Within the bookkeeping of the figure 6 batches 130 and 131 (which physically are a mixture of the sustainable and non sustainable incoming batches) will be declared as non sustainable. The outgoing batches 127, 128 and 129 are declared sustainable. An illustrative example on how the different sustainability characteristics (in this example only GHG values) are assigned to outgoing batches via delivery notes is given in figure 7. For details regarding the assignment of sustainability characteristics to delivery notes see ISCC 203 Requirements for traceability.

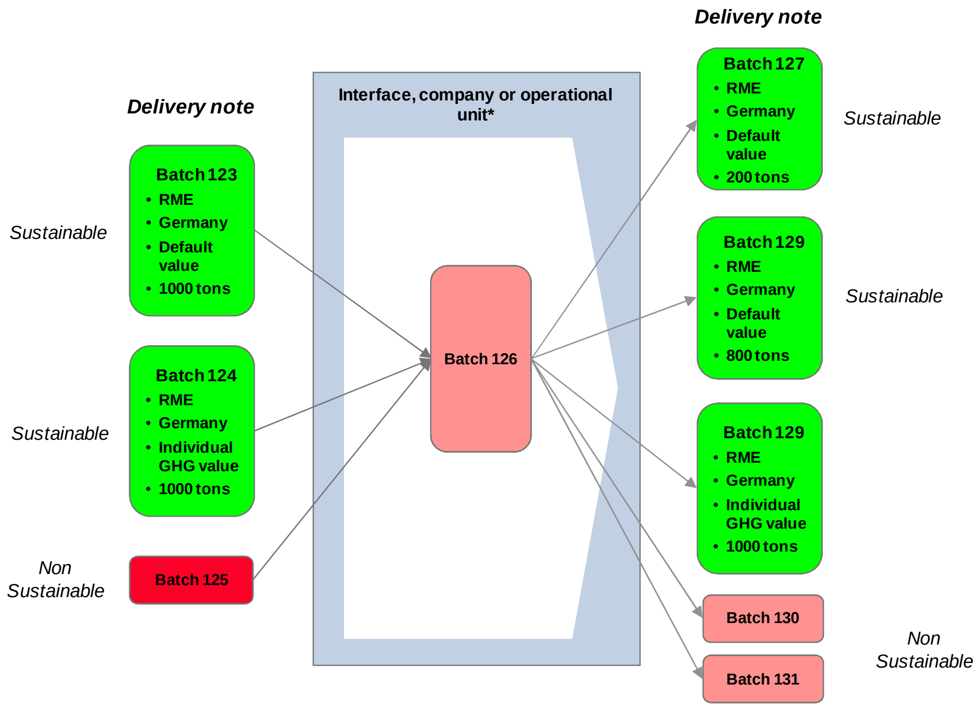


Figure 7: Assigning sustainability characteristics to outgoing batches via delivery notes (C=1)

Within the bookkeeping sustainable batches with different GHG values cannot be aggregated. If two or more incoming batches have different GHG input values, the highest GHG emission value (of the least performing batch) could also be used consistently for the entire input if other sustainability characteristics are identical, i.e. aggregation is allowed if all batches use the GHG value of the least performing batch. If in figure 7 the individual GHG emissions value of batch 124 is lower than the default value of batch 123 than the default value of batch 123 could be used consistently for all incoming batches (as the other sustainability characteristics are the same).

4.3.3 Mixture

Mixture in the context of mass balance calculation is normally a mixture of sustainable and non sustainable products (biomass, bioliquids or biofuels) of the same crop origin. For the mass balance calculation, the definition of the periodical and spatial boundary is of crucial importance. The periodical boundary defines the timeframe for which the mass balance is calculated and the output of sustainable biomass product does not exceed the input. The spatial boundary defines for which spatial entity the mass balance must be applied.

The maximum periodical boundary is [redacted] and the spatial boundary is defined as the site of an operation, processing or logistical facility with the site being the geographical location with precise boundaries within which products can be mixed.

Bilag 7

GHG Emissions Calculation Methodology and GHG Audit

ISCC 10-04-19

V 1.15 10-04-19

Bilag 7

Document title: ISCC 205

GHG Emissions Calculation Methodology and GHG Audit

Approved by: **Date:**

Issue date:

Application date:

Bilag 7

Content

Bilag 7

1 Introduction

The goal of the greenhouse gas (GHG) emissions calculation is the calculation and verification of GHG emissions along the value chain. This includes the emissions from biomass production, conversion processes, and transport.

Information about the generated GHG emissions and about the GHG abatement in comparison to the use of fossil energy is one element of the data that is necessary for the traceability of sustainable biomass.

Members of the value chain that have gone through a successful audit can be assigned an individual GHG emissions value in connection with the sustainability and chain of custody audit. The individual GHG value is expressed in GHG emissions per ton of product and they can provide this information together with their product to their customers.

2 Scope

Specification of the relevant elements of the GHG auditing for the individual elements of the value chain and defines the minimum requirements for the GHG emissions calculation.

In general, the following elements of the supply chain must provide their GHG emission values, either by the use of default values or individually determined values:[1]

(1) Biomass producers

(2) Conversion units (Conversion of solid biomass into liquid biomass or processing of liquid biomass)

(3) Transport

The provision of all values must be audited. At the different elements of the value chain auditors primarily check the following aspects:

(1) Correct application of the default values (based on default values from Directive 2009/28/EC and Biokraft-NachV, BioSt-NachV)

(2) In the case of individual calculations the following elements need to be verified:

   a. Data and data sources for all relevant in- and outputs of the production process

   b. Emission factors and their sources

   c. Lower heating values for the main product and by-products

(3) Method of calculation of the individual GHG emission value and provision of the correct value. Should one element in the value chain have to deal with different individual GHG emission values (e.g. if a biodiesel plant receives inputs of vegetable oils with different GHG emission values), the worst one of these values (the one with the

[1] The "Guideline Sustainable Biomass Production", published by the BLE includes further information.

highest emissions) can be used for the entire production as long as mandatory maximum values are not exceeded (see also ISCC 204, chapter 4.3.8).

3 Normative references

As a basic principle, all relevant ISCC documents are valid for the scope. The normative references display the documents whose contents are linked and have to be jointly considered.

Relevant references:

ISCC	201	System Basics
ISCC	202	Sustainability Requirements – Requirements for the Production of Biomass
ISCC	202-01	Checklist for the Control of the Requirements for the Production of Biomass
ISCC	203	Requirements for Traceability
ISCC	203-01	Checklist for the Control of the Requirements for Traceability
ISCC	204	Mass Balance Calculation Methodology

Bilag 7

4 GHG emissions calculation methodology

4.1 Options for the provision of GHG information

Within ISCC there are three options for GHG information provision:[2]

(1) Use of default value: The Directive 2009/28/EC determines default values for different types of biofuels. These values are feedstock-, region- and partly process-specific. Besides an overall default value for the sum of the emissions for the final product, the Directive also includes default values for cultivation, processing and transport and distribution which could be used by the respective elements of the supply chain.

(2) Use of individually calculated values: Individually calculated values for specific elements of the value chain can be used if they have been calculated based on the calculation methodology from the Directive 2009/28/EC and national requirements of the Member States (see below for calculation methodology).

(3) Combination of default value and individually calculated value: A combination of these values is possible at the different elements of the value chain (for example input of certain amounts of rape with default value and certain amounts with individually calculated value into an oil mill) but also between different elements of the value chain (for example default value for cultivation plus individually calculated value for the oil mill).

It is important to recognise that there is no GHG emissions default value for land use change. If default values are used for cultivation, net emissions from land use change always need to be added.

The relevant elements of the value chain need to declare which one of the three options above is being applied.

Default values need to be taken from the Directive 2009/28/EC, or the German Sustainability Ordinances and from further documents with respect to implementation.

4.2 Calculation based on actual values

4.2.1 Data basis

4.2.1.1 On-site data gathering

The following data for the calculation of GHG emissions must be gathered on-site:

- Amount of main product and by-products,
- Amount of chemicals used (e.g. methanol, NaOH, HCl, hexane, citric acid, fuller's earth, alkali),
- Amount of P_2O_5-, K_2O-, CaO- and N-fertilizer,

[2] These options result from the Directive 2009/28/EC and also from the German Sustainability Ordinances. Please also see "Guideline Sustainable Biomass Production", published by BLE.

- Diesel consumption, electricity consumption,
- Thermal energy consumption,
- Process energy source,
- Amount and use of by-products and wastes, e.g. Palm Oil Mill Effluent (POME) or Empty Fruit Bunches (EFBs).

4.2.1.2 Data gathering from literature

The following data can also be taken from scientifically recognized literature. Sources must be denoted (in particular authors, title, journal, volume, and year of publication).

- Heating values of main product and by-products,
- Emission factors of for example fertilizers, diesel use in agricultural machinery or for transport, chemicals, electricity, POME in its different uses, thermal energy, and
- Emission factor of N_2O.

Data measured and gathered on-site must be documented (e.g. within field record system, delivery orders, invoices, etc.). For data taken from literature or data bases (heating values, emission factors, etc.) the respective source and year of publication must be documented and verified by the auditors.

In addition, the possibility to collect data (e.g. emission factors) by individual measurements also exists. However, the methodology must be made transparent so that measurements can be reproduced.

4.2.2 Requirements for the calculation of GHG emissions from raw materials production

GHG emissions (EM) from cultivation e_{ec}, including the GHG emissions from cultivation itself, and harvest as well as the emissions from the production of the inputs necessary for cultivation must be calculated according to the following formula (EM = emissions; EF = emission factor):

$$e_{ec}' = \frac{EM_{fertilizer}\left[\frac{kg\ CO_2}{ha*yr}\right] + EM_{diesel}\left[\frac{kg\ CO_2}{ha*yr}\right] + EM_{electricity}\left[\frac{kg\ CO_2}{ha*yr}\right] + EM_{inputs}\left[\frac{kg\ CO_2}{ha*yr}\right]}{crop\ yield_{main\ product}\left[\frac{kg\ crop\ yield}{ha*yr}\right]}$$

The main product from cultivation is passed on for processing to the next element in the supply chain that produces the liquid biomass out of it. The liquid biomass is then used directly for energy production or is going through another processing step.

At this element of the value chain (raw materials production) fertilizers, pesticides, diesel or process energy, and probably further inputs which might be used.

Formula components in detail:

Bilag 7

$$EM_{fertilizer} = fertilizer\left[\frac{kg}{ha*yr}\right]*\left(EF_{production}\left[\frac{kgCO_2}{kg}\right]+EF_{field}\left[\frac{kgCO_2}{kg}\right]\right)$$

$$EM_{diesel} = diesel\left[\frac{l}{ha*yr}\right]*EF_{diesel}\left[\frac{kgCO_2}{l}\right]$$

$$EM_{electricity} = electricity\left[\frac{kWh}{ha*yr}\right]*EF_{regional\ electricity\ mix}\left[\frac{kgCO_2}{kWh}\right]$$

$$EM_{input} = input\left[\frac{kg}{ha*yr}\right]*EF_{input}\left[\frac{kgCO_2}{kg}\right]$$

During raw materials production, GHG emissions from the following activities need to be included:

- Cultivation, harvest, processing of the feedstock
- Use of chemicals and other inputs (e.g. diesel)

For the calculation of e_{ec}, as a minimum, the following data needs to be collected on-site, i.e. the respective quantities must be extracted from respective operating documents and must be verified by the auditors:

- Fertilizers (mineral and organic) [kg/(ha*yr)] – total yearly amount of applied fertilizers in the cultivation period (N, P_2O_5, K_2O, CaO-fertilizer)
- Diesel [l/(ha*yr)] – total yearly amount of diesel used per hectare, e.g. for transport machinery or water pumps
- Electricity consumption – total yearly electricity consumption per hectare, e.g. for drying and water pumps
- Crop yield main product [kg crop yield/(ha*yr)] – Yearly crop yield of the main product in kg per hectare. In case of drying the mass of dried product is necessary
- Yield of relevant by-products
- Return of by-products or wastes from the next element in the value chain (first conversion unit) to the fields (for example POME, Empty Fruit Bunches etc.)

In case further emissions from additional inputs occur they must be documented and included in the calculation.

Bilag 7

For the calculation of e_{ec} the following emission factors can be withdrawn from literature or a database. Sources must be documented and verified by auditors:

- Emission factor diesel [kg CO_2/l diesel]
- Emission factor fertilizer production [kg CO_2/kg fertilizer]
- Emission factor for fertilizer emissions from the field [kg CO_2/kg fertilizer]
- Emission factor regional electricity mix [kg CO_2/kWh]

These data must be used for the different elements of the calculation formula.

All GHG emissions data is given in mass units in relation to the main product of the respective element in the value chain (e.g. diesel [l]/ rape seed [kg]).

The carbon dioxide fixation during feedstock cultivation is not considered in the calculation formula.

Estimates of emissions from cultivation may be derived from the use of averages calculated for smaller geographical areas than those used in the calculation of the default values from the Directive 2009/28/EC, as an alternative to using individually calculated values.

In the end, the respective element of the value chain passes on the GHG information in kg CO_2eq-emisisons/t feedstock together with the feedstock itself.[3] In case that by-products which can be subject to allocation of emissions are produced (see below), the allocation of emissions to the main product and by-products already takes place for the element of raw materials production within the value chain.

There are no GHG emissions attached to the production of residues (e.g. starch residues from a starch factory). If these residues come from a factory and are not produced on a farm/ plantation a proof of compliance with sustainability requirements must not take place. However, at the producer of the residues, the mass balance must be verified in the framework of the BioKraft-NachV.

4.2.3 Requirements for the calculation of GHG emissions in case of land use change

Generally, land use changes taking place after the cut-off date of January 1, 2008 must be taken into account. This is also the case when default values are used as they do not include possible GHG emissions or savings from land use change.

We refer to land use change if the carbon stock of the cultivated are has changed after the cut-off date, e.g. through a change between or within the categories of forest, crop land, grassland, wetland, settlement areas, degraded land and any other area. It must be taken into account that based the issue of an ISCC certificate is per se not possible if the conversion of some of these areas has taken place (please see ISCC 202 and 202-01).

The annualized emissions from carbon stock changes caused by land use change e_l are calculated by dividing total emissions equally over 20 years based on the following formula:

[3] Wastes and agricultural crop residues shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials.

Bilag 7

$$e_l' = \frac{CS_R\left[\frac{kgC}{ha}\right] - CS_A\left[\frac{kgC}{ha}\right]}{crop\ yield_{main\ product}\left[\frac{kg}{ha*yr}\right] \mathrm{X}\, 20[yr]} \mathrm{X}\, 3{,}664 - \frac{e_B}{AF\, \mathrm{X}\, CF}$$

AF, CF = product specific allocation and conversion factor to calculate the emissions per kg of product.[4]

For entitlement to the bonus e_B of 29 g CO_2eq/MJ of liquid biomass for cultivation on degraded land, the element in the value chain needs to provide documentation that the respective land:

- was not in use for agriculture or any other activity in January 2008
- is severely degraded land or
- heavily contaminated land.

The bonus e_B is applicable for a period of up to ten years beginning at the point in time when the land has been converted into agricultural land, if

- a continuous rise of the carbon stock and a relevant decline of erosion on heavily degraded land is taking place and
- soil contamination on highly contaminated land is being reduced.

The carbon stock of the land is defined by the mass of carbon in soil and vegetation per unit of land.

CS_R (land carbon stock before conversion into agricultural land) is the carbon stock associated with the reference land per unit of land (measured as mass of carbon per unit of land including both soil and vegetation). The reference land use shall be the land use in January 2008 or 20 years before the raw material was obtained, whichever was the latest.

CS_A (carbon stock per unit of land after conversion into agricultural land) is the carbon stock per unit area associated with the actual land use (measured as mass of carbon per unit of land, including both soil and vegetation). In cases where the carbon stock accumulates over more than one year, the value attributed to CS_A shall be the estimated stock per unit area after 20 years or when the crop reaches maturity, whichever the earliest.

e_B is the bonus of 29 gCO2eq/MJ liquid biomass if biomass is obtained from restored degraded land.

Land that is not excluded from cultivation according to the requirements from the Directive 2009/28/EC or national requirements (e.g. from the sustainability ordinances in Germany) can be converted if the net GHG emissions from the land use change are calculated and added to the other emission values. Therefore, the land use category on January 1, 2008 must be determined.

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[4] For detailed factors please see “Guidelines Sustainable Biomass Production”, published by BLE.

If it is proven that no land use change took place after the reference year, i.e. if the land was classified as agricultural land or falls within one of the exceptions as described in ISCC Document 202, e_l equals zero. Only if this is the case, overall default values or default values for cultivation may be applied.

e_l need not be calculated if the land use change took place before the time reference point.

Heavily contaminated land means land that is not suitable for food and feed production due to soil contamination. Severely degraded land means land that, for a significant period of time, has either been significantly salinated or presented significantly low organic matter content and has been severely eroded. Severely degraded land also includes former agricultural land.

Salinated land which includes salination and sodification exists if:

- Soil horizons at the surface or within 100cm under the surface include secondary accumulations of salts that have a higher solubility than gypsum and generating an electric conductivity within a ground saturation extract >4 dS m-1 and
- The salinated horizons altogether reach a minimum depth of 15 cm

or if

- Soil horizons at the surface or within 100cm under the surface have a saturation of exchangeable sodium percentage (ESP) of at least 15 % and
- The sodified horizons altogether reach a minimum depth of 15 cm.

Such land shall include land that has been the subject of a decision by the European Commission in accordance with the fourth subparagraph of Article 18(4) of the Directive 2009/28/EC. Possible future specifications regarding degraded land by the European Commission will be incorporated.

4.2.4 Requirements for the calculation of GHG emissions from processing

Every processing unit in the value chain must guarantee that all GHG emissions from processing, e_p, GHG emissions from wastes (wastewater) and from the production of all inputs are included in the emissions calculation and that the calculation is based on the following formula:

$$e_p' = \frac{EM_{electricity\ consumption}\left[\frac{kgCO_2}{yr}\right] + EM_{heat\ production}\left[\frac{kgCO_2}{yr}\right] + EM_{inputs}\left[\frac{kgCO_2}{yr}\right] + EM_{waste\ water}\left[\frac{kgCO_2}{yr}\right]}{yield_{main\ product}\left[\frac{kg\ yield}{yr}\right]}$$

Components of the formula in detail

$$EM_{electricity\ consumption} = electricity\left[\frac{kWh}{yr}\right] * EF_{regional\ electricity\ mix}\left[\frac{kgCO_2}{kWh}\right]$$

Bilag 7

$$EM_{heat\ production} = fuel consumption\left[\frac{kg}{yr}\right] * EF_{fuel}\left[\frac{kgCO_2}{kg}\right]$$

$$EM_{inputs} = inputs\left[\frac{kg}{yr}\right] * EF_{additional\ inputs}\left[\frac{kgCO_2}{kg}\right]$$

$$EM_{waste\ water} = waste\ water\left[\frac{l}{yr}\right] * EF_{waste\ water}\left[\frac{kgCO_2}{l}\right]$$

For the calculation of GHG emissions from processing (e_p) as a minimum, the following data needs to be collected on-site, i.e. the respective quantities must be extracted from respective operating documents and must be verified by the auditors.

The use of alternative reference points (month, kg of the main product, etc.) is possible.

- Electricity consumption [kWh/yr] – annual total electricity consumption from external sources, i.e. not produced in an internal combined heat and power production (CHP) plant,
- Heat production – Type of fuel used for steam production, e.g. heating oil, natural gas, crop residues,
- Fuel consumption [kg/yr] – annual total fuel consumption for heat production, e.g. heating oil [kg], natural gas [kg], bagasse [kg],
- Further inputs (operating supplies, e.g. methanol, acids, etc.)
- Yield main product [kg main product/yr] – Annual yield of the main product, e.g. rape oil,
- Yield of by-products,
- Amount of wastewater [l/yr] – Annual amount of wastewater and wastes (e.g. POME),
- Feedstock inputs (Amounts, conversion rates, and GHG value of feedstock inputs)

GHG emissions from wastes are included in the calculation of e_p.

For the calculation of e_p the following emission factors can be taken from a scientifically recognized literature source:

- Emission factor fuel [kg CO_2/kg],
- Emission factor wastewater [kg CO_2/l] and wastes [kg CO_2/l] and
- Emission factor regional electricity mix [kg CO_2/kWh].
- Emission factors for operating supplies

If palm oil mills are operating methane capture devices that can guarantee actual methane capture, the following aspects need to be checked and fulfilled:

- Absorption of total wastewater in a closed system (only short-term storage of fresh POME) and supply to a biogas plant,

- Use of the produced biogas for energy purposes, or in the worst case flaring of the biogas and

- The biogas plant is in good condition, leakages are nonexistent, and the producer provides a guarantee about the maximum methane leakage that does not exceed the current state of the technology.

The GHG emissions are calculated per unit mass of the main product (e.g. CO_2-emissions [kg]/rape oil [kg])

For the calculation of the GHG emissions from electricity consumption in the case that electricity is sourced externally, the emission factor for electricity from the regional electricity mix shall be used.

If wastes like crop residues, straw, bagasse, husks, cobs and nut shells as well as production residues, including crude glycerine are used for the production of biofuels and bioliquids, the GHG emissions of these materials are considered to be zero up to the point of their collection.

Emission savings from surplus electricity from CHP production (e_{ee}) are calculated based on the following formula:

$$e_{ee}' = \frac{excess\ electricity\left[\frac{kWh}{yr}\right] * EF_{fuel}\left[\frac{kgCO_2}{kWh}\right]}{yield_{main\ product}\left[\frac{kg}{yr}\right]}$$

For the calculation it is assumed that the size of the CHP plant is that of the minimum size necessary to supply the needed amount of heat for the production of the liquid fuel.

The amount of GHG emission savings from excess electricity equals the amount of GHG emissions from the production of an equivalent amount of electricity in a power plant using the same fossil fuel as the CHP plant. This is the only case where for the treatment of by-products (excess electricity) the substitution method and, not as for all other by-products, the allocation method based on lower heating values of the main product and the by-products is being used.

For the calculation of e_{ee} the following data is collected on-site:

- Excess electricity [kWh/yr] – Annual amount of electricity produced in an internal CHP plant but fed into an external grid,

- Type of fuel for CHP plant – Type of fuel used within the CHP plant, e.g. heating oil, natural gas, coal and

- Yield$_{main\ product}$ [kg/yr] – Annual yield of the main product, e.g. rape oil [kg/yr]

- Type of CHP plant (e.g. CHP, steam co generation plant, gas-steam power plant).

For the calculation of e_{ee} the following data can be withdrawn from a scientifically recognized source:

- Emission factor$_{fuel}$ [kg CO_2/kWh] – Emission factor for the type of CHP plant that is being used

Emission saving from carbon capture and geological storage e_{ccs}, that have not already been accounted for in e_p, shall be limited to emissions avoided through the capture and sequestration of emitted CO_2 directly related to the extraction, transport, processing and distribution of fuel.

Emission saving from carbon capture and replacement, e_{ccr}, shall be limited to emissions avoided through the capture of CO_2 of which the carbon originates from biomass and which is used to replace fossil-derived CO_2 used in commercial products and services.

At the end of the processing step the respective element in the value chain passes on the GHG information in kg CO_2eq-emisisons/t product together with the product itself.

If by-products that are eligible for the allocation of emissions (see below) are produced, the allocation of emissions to the main product and by-products already takes place for the respective element in the supply chain. The GHG emissions value that is passed on is the value after allocation procedures (see below).

4.2.5 Requirements for the calculation of GHG emissions from transport

All respective elements in the value chain calculate the GHG emissions from transport e_{td} of biomass taking account of all transport steps based on the following formula:

$$e_{td}'\left[\frac{kgCO_2}{kg}\right] = \frac{\left(d_{loaded}[km] * K_{loaded}\left[\frac{l}{km}\right] + d_{empty}[km] * K_{empty}\left[\frac{l}{km}\right]\right) * EF_{fuel}\left[\frac{kgCO_2}{l}\right]}{m_{intermediate\ product}[kg]}$$

GHG emissions already accounted for in feedstock production and harvest need not be considered.

For the calculation of e_{td} the following information needs to be provided:

- Transport distance (d) [in km] loaded/ respectively empty – Distance the biomass is transported to the next element in the value chain, e.g. average distance between plantation and oil mill (return transports that are not taking place empty do not need to be taken into account),
- Mode of transport (e.g. diesel truck, 40 t) and
- Amount of biomass transported.

The following impact factors can be withdrawn from recognized scientific literature or can be measured:

- Emission factor fuel (EF_{fuel}),
- K_{loaded} [l/km] – Fuel consumption of the respective mode of transport per km when loaded and
- K_{empty} [l/km] – Fuel consumption of the respective mode of transport per km when empty.

Bilag 7

The reference unit (m) for transport is always kg of the product transported.

The GHG emissions from transport always need to be documented and included into the GHG calculations by the element in the value chain that is receiving the product.

4.2.6 Allocation based on lower heating values

Generally, an allocation of GHG emissions to the main product and by-products can take place. An allocation is the distribution of emissions to the main product and by-products. This needs to be done in proportion to the lower heating value of the products. The only exception to this rule is the feed-in of excess electricity to an external grid (see 4.3.6).

An allocation takes place at every element in the value chain that in addition to the main product that is passed on in the value chain also produces by-products. All emissions up to that point can then be distributed between the main product and the by-products based on their lower heating values. The GHG value after this allocation product is passed on within the value chain.

The following formula is used for the calculation:

$$e'_{allocated} = sum\ GHG\ emissions * allocation\ factor$$

A by-product is one out of multiple products coming from the same production process and for which an allocation takes place.

Those products from a production process the owner wants to or must get rid off are not considered as by-products but as waste. To such products an allocation is not possible.

The lower heating value is defined as the maximum amount of usable heat from a combustion process that does not cause the condensation of the steam from the exhaust emissions in proportion to the fuel used.

The energy content of by-products that have negative energy content is defined as zero.

For the calculation of the allocation factor, the lower heating values that relate to the dry matter are multiplied with the yield of the dry matter. If lower heating values that relate to the original matter are used, they must be multiplied with the yield of the original matter.

The following formula is used for the calculation of the allocation factor:

$$allocation\ factor = \frac{energy\ content_{main\ product}[MJ]}{energy\ content_{main\ product}[MJ] + energy\ content_{by-product}[MJ]}$$

with

$$energy\ content_{main\ product} = yield_{main\ product}\left[\frac{kg}{yr}\right] * lower\ heating\ value_{main\ product}\left[\frac{MJ}{kg}\right]$$

$$energy\ content_{by-product} = yield_{by-product}\left[\frac{kg}{yr}\right] * lower\ heating\ value_{by-product}\left[\frac{MJ}{kg}\right]$$

Bilag 7

For the calculation of the share of GHG emissions that are allocated to the different products, total GHG emissions up to the production process where the by-product is produced need to be summed up and multiplied with the allocation factor.

All by-products are accounted for in the calculation, except for crop residues (straw, bagasse, husks, cobs and nut shells)

For the calculation of the allocation factor at least the following components must be measured on-site and verified by the auditors:

- Yield main product [kg main product/yr] and
- Yield by products.

4.2.7 Aggregation of GHG emissions

For the aggregation of different batches of sustainable biomass with different GHG values please refer to ISCC document 203 and 204 regarding the requirements for traceability and mass balance calculation.

4.2.8 Requirements for the final interface in the value chain

The final interface in the value chain calculates the overall GHG emissions in g CO_2/MJ (and not only in g/kg product) using the lower heating values from the Directive 2009/28/EC. Another option would be the calculation of overall GHG emissions of the supplied biofuel or bioliquid using the default value from the Directive 2009/28/EC or respective national legislation (e.g. from the German BioSt-NachV and Biokraft-NachV).

The final interface in the value chain calculates into which regions the liquid biomass can be transported without violating the minimum GHG saving potential, unless upstream elements in the value chain have already used the default value for transport and distribution (e_{td}).

The final interface uses the following formula for the calculation of the GHG saving potential:

$$GHG\,saving\ potential\,[\%] = \frac{GHG\,emissions\ fossil fuel - GHG\,emissions\ biomass}{GHG\,emissions\ fossil fuel}\ X\ 100$$

The following fossil comparators must be used:

- Biofuels for transport: 83,8 g CO_2eq/MJ fossil fuel[5],
- Bioliquids used for electricity production: 91 g CO_2eq/MJ fossil fuel,
- Bioliquids used for electricity production in CHP plants: 85 g CO_2eq/MJ fossil fuel and
- Bioliquids used for heat production: 77 g CO_2eq/MJ fossil fuel.

4.3 Documentation

To proof compliance with all the requirements for sustainable production of biofuels and bioliquids all relevant elements in the value chain need to provide documentation on the:

[5] This value shall be used until a new value according to Directive 98/70/EC is available.

Bilag 7

- Calculation of GHG emissions,
- Measured data that is used in the calculation,
- Default, reference values and conversion rates used as well as their sources and
- Data that has to be collected in the framework of the mass balance system.

Bilag 7

5 Calculation formula

Overall GHG emissions of a bioenergy value chain are calculated based on the following formula[6], comprised of emissions and emissions savings:

$E = e_{ec} + e_l + e_p + e_{td} + e_u – e_{sca} – e_{ccs} – e_{ccr} – e_{ee}$

where

E *total emissions from the use of the fuel,*

e_{ec} *emissions from the extraction or cultivation of raw materials,*

e_l *annualized emissions from carbon stock changes caused by land-use change,*

e_p *emissions from processing,*

e_{td} *emissions from transport and distribution,*

e_u *emissions from the fuel in use*,

e_{sca} *emission saving from soil carbon accumulation via improved agricultural practices,*

e_{ccs} *emission saving from carbon capture and geological storage,*

e_{ccr} *emission saving from carbon capture and replacement, and*

e_{ee} *emission saving from excess electricity from cogeneration.*

Emissions from the manufacture of machinery and equipment shall not be taken into account.

The unity of the different variables is g CO_2/MJ final product.

In practice, however, there are normally no clearly defined and closed value chains. Therefore, every element in the supply chain must calculate overall emissions for the product it supplies and must pass on this information together with the product. For the upstream elements in the supply chain must receive this information always from the element one step up.

Every element in the value chain calculates the aggregated GHG emissions, including the upstream process (GHG value comes from the element one step up) and emissions from its own production in kg CO_2eq/t of the product produced before the product is passed on to downstream elements in the value chain.

GHG emissions from transport in between the different elements of the value chain must always be added by the element in the chain that is receiving a product and must be included in overall emissions of the product that is passed on in the value chain.

The respective element in the value chain calculates the GHG emissions (e’) per product output (g CO_2/kg product). Thereby it takes account of the emissions from the inputs (GHG information on their inputs must be provided by the element one step up that provides the

[6] The formula correlates to the one from Directive 2009/28/EC.

Bilag 7

input product) and of emissions from its own production process. The allocation of emissions to the main product and by-products in proportion to their lower heating values always takes place for the products produced by the respective element in the chain. This means that the product it sells to the next element in the chain has a GHG information attached, after an allocation that includes the respective step of production.

Bilag 8

ISCC 207 Risk Management

Risk Management

ISCC 11-03-15
V 2.3-EU

Bilag 8

Document title:	ISCC 207 Risk Management	
Approved by:	**11-03-15**	**Date:**
Issue date:	**11-03-15**	
Application date:		

Bilag 8

Content

Bilag 8

1 Introduction

In order to provide for the requirements of the certification system with high reliability, a risk management procedure is defined. This procedure is an integral part of operations and decisions in the ISCC system and is based upon a number of risk indicators that are monitored and adjusted continuously. ISCC has considered the requirements of ISAE 3000 in it's system set up especially with respect to quality control, risk management by ISCC and the auditor, planning and performing of audits, sampling processes and reporting.

2 Scope

Implementation of certification procedures and monitoring of farms and other relevant elements of the supply chain for sustainable products.

3 Normative references

As a basic principle, all relevant ISCC documents are valid for the scope. The normative references display the documents whose contents are linked and have to be considered as conjoint points.

Relevant references:

ISCC 201 System Basics

ISCC 202 Sustainability Requirements – Requirements for the Production of Biomass

ISCC 203 Requirements for Traceability

ISCC 204 Mass Balance Calculation Methodology

ISCC 205 GHG Emissions Calculation and GHG Audit

ISCC 251 Requirements for Certification Bodies

ISCC 252 Regulations to carry out Audits

ISCC 256 Group Certification

Bilag 8

4 Risk Management

4.1 General principles of the ISCC Risk Management

The following general principles apply for the organization of the risk management:

- Different levels of the risk management guarantee the consistent and reliable implementation of certification procedures within the ISCC system:
  - Level of the participating elements of the supply chain
  - Level of the certification bodies
  - Level of the ISCC system
- The risk management is a component of all decision-making processes within the ISCC System. Wherever relevant, the risk indicators of the system have to be an integral part of the decision-making processes of the elements and institutions of the supply chain.
- The risk indicators listed in this document are subject to continuous monitoring and adjustment, based on the audit results as well as on the general experiences from the ISCC practice.
- In principle, a certificate is only issued to a participating element after an on-site audit.
- The results of the risk management are incorporated in the continuous improvement of the ISCC system and thus, in the refinement of the standards, where appropriate.
- The auditor should obtain an understanding of the subject matter and other audit circumstances, sufficient to identify and assess the risks
- Auditors should plan and carry out the audit with respect to nature, timing and extent of evidence gathering procedures in such a way that a meaningful level of assurance for a decision regarding compliance with the ISCC requirements is available
- Regarding the sustainability requirements, the focus of the risk management is on the farms/plantations which are audited either individually or as a member of a group. Regarding the traceability the focus is on all elements of the supply chain.
- For farms/plantations participating in group certification and warehouses the risk assessment will determine the sample sizes for the audit
- The evaluation of the risk on farm level and of the resultant sample size has to be based on the principles outlined in document ISCC 202. Country specific tools supporting the risk assessment can be found there as well. (ISCC 202, Annex 1). The sample size for the farms (as part of the group certification) is determined according to the detected risk.
- Generally there are no country-specific demands regarding the traceability. If an accumulation of misuse emerges in single countries, ISCC immediately will implement a Technical Work Group for the development of improvement actions. These improve-

ments will look about the specific reasons for the misuse.Only after a careful risk analysis, a well-founded determination of the sample size (which may in certain cases deviate from the standard sample size) and verification of the selected entities it is possible to issue a certificate.

4.2 Levels of the Risk Management

4.2.1 Implementation of the standards through the participants in the ISCC system

Each element of the supply chain that aspires to take part in the ISCC system must start the ISCC standards implementation process by carrying out a self assessment in view of the ISCC risk categories. In analogy to the external evaluation through the certification body, the self assessment is conducted based on the risk indicators listed in this document.

Corresponding to the evaluation result, the element of the supply chain should design its management system in a way to minimise the identified risks.

In their audits, the certification bodies take into account the interconnection of the self assessment's result and the design of the management system.

4.2.2 Activities of the certification bodies

By applying the risk management requirements the certification body ensures that the relevant elements of the supply chain are assessed frequently and intensively enough. Certification bodies control these elements according to the specifications of their risk management and according to the risk-relevant specifications of ISCC.

Prior to each first audit, the certification bodies must conduct a risk assessment for the relevant element of the supply chain and classify it according to the three ISCC risk categories (regular, medium, high).

The risk indicators listed in this document are to be used for such classification.

Corresponding to the result of this assessment the style and frequency of the audits are determined.

Prior to each first certification, the certification bodies may check actual ISCC documents, whether country-specific information is available for the region where the relevant element of the supply chain is located. (see also ISCC 202, Annex 1). The result of this check must be taken into consideration when the audits are carried out.

4.2.3 Activities of ISCC

The risk management is integral part of the quality management of the ISCC system.

For all regions where elements of the supply chain are located, ISCC has started to develop abstracts of country-specific particularities, which have to be considered with regard to the risk management. This is being done by the analysis of global databases, feedback from the fields, the analysis and identification of national protected and high conservation value areas (e.g. on the basis of global maps such as the World Database on Protected Areas, protected areas declarations, laws on nature conservation, collaboration with research institutes etc.).

The demarcation of such an area has to be decided on an individual basis and documented accordingly.

Bilag 8

If a certification body inquires about a region in which elements of the supply chain participating in ISCC or planning to do so are located and none of the information specified above is available, ISCC has to provide this information within six months.

4.3 Risk indicators

The risk indicators form the basis for the assessment and evaluation of the risk on the different levels of the ISCC system. They shall be applied to all relevant elements of the respective company/ site to be audited

As long as not defined by ISCC, a further definition of the indicators shall take place by the certification bodies as a more detailed definition cannot take place a priori.

4.3.1 General risk indicators

- Specification of the responsibilities and decision-making power (decision-maker(s) determined, documented and available)
- Expertise, education and training of all employees
- Proportion of permanent, temporary and seasonal employees as well as communication and language diversity
- Determination, structuring, organization and documentation of the number of work flows and their complexity (in-house processes)
- Number, structuring, organization, expertise, management, involvement and controlling of the subcontractors
- Number and structuring of the workflows that are carried out by subcontractors compared to the ones that are carried out by permanent in-house staff
- In-house quality management system, internal audits
- Transparency (public reporting, involvement of local interest groups, independent audits, Triple Bottom Line)
- Mechanisms for conflict resolution established independently, documented and implemented
- Management of conflicts of interests and corruption prevention
- Risk of corruption (OECD list) – i.e. how serious is the external risk of corruption and how does this influence the implementation
- Yield or conversion factors in internal processes.

4.3.2 Supplementary risk indicators for farms

In addition to the general risk indicators, the following factors must be taken into account when dealing with farms:

(1) Proximity to and/or overlap with no-go areas (forest land, peat land, wetlands, highly biodiverse grassland, etc.)

(2) Land conversion shortly before or after January 1st 2008

(3) Cultivation of sustainable and non-sustainable biomass on the same farm and/or in close proximity.

(4) Factors influencing significantly the output per acreage and the output per ha.

4.3.3 Supplementary risk indicators for the other elements of the supply chain

In addition to the general risk indicators, the following factors must be taken into account when dealing with the risk assessment according to ISCC 203, 4.1

(1) Accuracy of records and documents
(2) Degree of topicality, updating frequency of records and documents
(3) Accessibility of records and documents
(4) Completeness of records and documents

4.4 Assessment, evaluation and management of the risk

The identification, the evaluation and the management of the risk is carried out in four steps:

(1) Identification of the risk

(2) Analysis of the risk

(3) Evaluation of the risk

(4) Management of the risk

These four steps are adjusted to each application level. The results of all four steps must be documented.

4.4.1 Identification of the risk

At first, the relevant risk indicators listed in chapter 4.3 of this document will be assessed for the unit to be evaluated according to its individual conditions. An analysis of the bio geo-graphic conditions and/or the relevant processes may require defining further risk factors which are not specified within the ISCC system.

4.4.2 Analysis of the risk

For the analysis of the risk, the following elements can be taken into consideration:

- Causes and sources of the risk
- Possible consequences from the risk and the probability of its occurrence
- Factors influencing the consequences and the probability
- Differing appraisal of the risk by different stakeholders

4.4.3 Evaluation

After the risk has been specified, the specific situation to be evaluated is designated to one of the three risk categories:

- Regular risk (risk factor 1,0)
- Medium risk (risk factor 1,5)
- High risk (risk factor 2,0)

The designation is based on an estimation how the existing regulations of ISCC must be adjusted in order to account for the respective risk factor. If the risk is not known the highest risk category must be applied.

With respect to ISCC 203, 4.1 following guidance can be given for the risk evaluation:

- If the records and documents according to ISCC 203, 4.1 are kept accurately, up to date and complete as well as easily accessible, the risk should be ranked as regular
- If the records and documents are not kept accurately and not easily accessible, the risk should be ranked as medium
- If the records and documents are not continuously up to date and not kept to full extent, the risk should be ranked as high.

It is up to the auditor's discretion to discontinue the audit if the risk is ranked high and if either the documentation is not easily accessible or the amount of unavailable documentation does not allow for a professional audit.

4.4.4 Management of the risk

After the evaluation and the audit, a management of the risk is undertaken. This is usually by applying the following elements:

- Adjusting the intensity and the frequency of audits
- Carrying out unannounced audits
- Adjusting the tasks of the management of an element of the supply chain, specifically concerning
    - Specification of responsibilities
    - Training of the employees
    - Documentation
    - Duty to report
    - Internal auditing system
- Extending the definition of risk factors for certain areas by ISCC

4.5 Defining the samples

4.5.1 Sample size

Samples are only taken from farms/plantations participating in group certification and warehouses which are part of a company's logistics network (see also ISCC 252). The sample size for farms/plantations is defined in ISCC 256 Group Certification. The audit of warehouses which are part of a company logistics network includes the audit of the logistic centre (hub) plus a minimum sample of the square root of the number of associated warehouses (spokes) which are subject to a risk assessment by the auditor. For medium risk the minimum sample must be multiplied by 1,5. For high risk the minimum sample must be multiplied by 2,0. An increase of the sample size according to the individual situation and based on the auditors risk assessment is possible.

Should one or more of the entities from the sample be non-compliant with respect to the ISCC requirements the sample must always be doubled. For example: If the minimum sample size was 10, the new sample size shall be 20. If again one or more of the audited entities do not comply with the requirements the sample must be doubled, i.e. the new sample size is 40. Already audited entities should be used again within the new sample unless they are needed to achieve the sample quantity. This process could continue until 100% of the entities have been audited. Warehouses that were audited non-compliant are excluded from the scheme. This is valid until each of the respective entities based on their own initiative pass a successful audit earliest one year later.

As long as there are no indications of abuse none of the successfully audited entities from the previous year shall be part of the sample of consecutive audits as long as not all of the entities have already been subject to an audit.

The rational for defining a minimum sample size of the square root of the number of warehouses which are part of a company logistics network is threefold:

- The warehouses which are part of a company's logistics network are integrated into one management system, ERP system and with the same requirements
- The two year ISCC pilot project and current operating experience gave evidence that in cases of regular risks the minimum sample meets the necessary level of confidence
- Warehouses within the global mass commodity market comply since decades with highest quality standards on behalf of their customers because of the high value nature of the goods.

4.5.2 Intensity level of the chain of custody audit

In the case of the chain of custody audit (traceability and mass balance audit) the definition of the risk factor does not only drive the sample size for warehouses (4.5.1) but also the intensity of the audit. Although the entire documentation for a complete year must be available in order evaluate the mass balance calculation and allow for plausibility checks between company reporting and mass balance results, the auditor must not check every documents (e.g. weighbridge tickets). The auditor must be able to take individual random samples to check whether records and documents meet the requirements for traceability. Following guidelines should be taken into account:

- If the risk is ranked regular random document samples from three successive months are sufficient to assess whether the general and the specific information requirements are met.
- If the risk is ranked medium, random document samples from three successive months as well as all documents from one complete month should be checked.

Bilag 8

- If the risk is ranked high, the documents of three successive months should be checked completely.

Depending on the risk assessment during the audit, the auditor can decide whether to increase or reduce the scope of the audit and the sample size

Bilag 9

ISCC 252 Regulations to carry out Audits

Regulations to carry out Audits

ISCC 11-03-15
V 2.3-EU

Bilag 9

Document title:	ISCC 252	
	Regulations to carry out Audits	
Approved by:		**Date:**
Issue date:	11-03-15	
Application date:	11-03-15	

Bilag 9

Content

Bilag 9

1 Introduction

Certification bodies review the compliance with the standard of the ISCC Certification System to provide a basis for the issuance of certificates.

2 Scope

These rules for implementation apply for agricultural producers as well as for the other relevant elements of the supply chain. This document covers all phases of audit and certification, from registration with ISCC before the audit, to the actual audit, surveillance and the imposition of sanctions in case of violations of ISCC requirements.

3 Normative references

As a basic principal, all relevant ISCC documents are valid for the scope of application. The normative references display the documents whose contents are linked and have to be considered as conjoint points.

Relevant references:

ISCC 201	System Basics
ISCC 202	Sustainability Requirements – Requirements for the Production of Biomass
ISCC 203	Requirements for Traceability
ISCC 204	Mass Balance Calculation Methodology
ISCC 205	GHG Calculation Methodology and GHG Audit
ISCC 207	Risk Management
ISCC 208	Requirements for the logo use
ISCC 251	Requirements on Certification Bodies
ISCC 256	Group Certification
ISO 19011:2002	Guidelines for quality and/or environmental management systems auditing
ISAE 3000	International Standard on Assurance Engagements 3000

Bilag 9

4 Regulations to carry out Audits

All elements in the supply chain that register with ISCC and want to receive a certificate are subject to an audit before participating in the scheme. A certificate will be received in four steps (see figure 1).

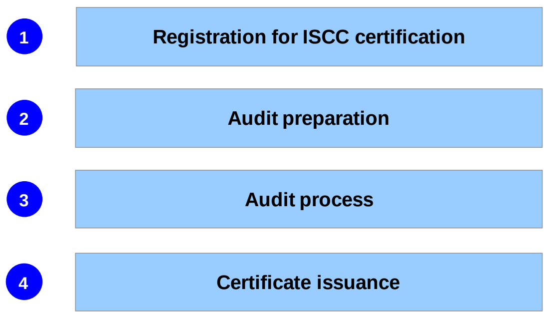

Figure 1: Four steps to receive a certificate

Beside a self assessment which each element of the supply chain that aspires to take part in the ISCC system shall perform prior to the audit (see also ISCC 207 and ISCC 203) no formal requirements of this scheme are related to step 2. This is due to the fact that elements of the supply chain may be familiar with the requirements or not. Companies which are not familiar with the requirements of the Directive and the ISCC scheme should consider that in case of non compliance a certificate will not be issued by the certification body unless the non conformities are amended within 40 days (see also 4.9.1).

Steps 1, 3 and 4 are described in more detail in this document and ISCC 251.

ISCC has considered the requirements of ISAE 3000 in it's system set up especially with respect to quality control, risk management by ISCC and the auditor, planning and performing of audits, sampling processes and reporting.

4.1 Application and registration for certification

All elements of the supply chain that want to be audited according to ISCC and want to receive a certificate must register with ISCC. Registration with ISCC is possible online:

http://www.iscc-system.org/iscc_certification_guidance/registration/index_eng.html

ISCC registration should take place after contractual agreement with the certification body, but before the audit actually takes place. All certification bodies ISCC is cooperating with and their contact details are published at:

http://www.iscc-system.org/certificates_and_cbs/certification_bodies_cbs/recognized_cbs/index_eng.html

Those elements of the supply chain which are not obliged within the ISCC System to receive a certificate and do not actively aspire to receive one on a voluntary basis do not need to register with ISCC. 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 bio-liquids/biofuels into the market can receive a certificate on a voluntary basis (see also ISCC 201 and ISCC 203).

The following elements of the supply chain shall register:

- Farms/ plantations
- First gathering points
- Conversion units (oil mills, refineries, esterification plants, sugar mills, ethanol plants, other conversion units)
- Traders/ warehouses

Elements of the supply chain which are part of a group shall submit a complete list of their group members. Groups can either be farms/plantations or warehouses. Groups of farms/plantations are subject to group certification (see also ISCC 256). Warehouses can be part of a first gathering point or logistics networks. These warehouses shall use a common management system. Members of such a group will receive a unique 'group member number' which is added to the registration number in order to allow unique identification of group members.

After registration the respective element of the supply chain that registered and the certification body that was chosen will receive a confirmation of registration and a registration number via email from ISCC.

4.2 General provisions

The general provisions for audits do not depend on the supply chain element which is being audited. The same provisions apply for all elements. All elements in the supply chain that register with ISCC and want to receive a certificate are subject to an audit before participating in the scheme.

Auditors should comply with the requirements of the ISAE 3000 when performing an ISCC audit. The auditor should plan and carry out the audit with respect to nature, timing and extent of evidence gathering procedures in such a way that a meaningful level of assurance for a decision regarding compliance with the ISCC requirements is available.

4.2.1 Types of audits

4.2.1.1 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.

4.2.1.2 Surveillance audit

4.2.1.2.1 Appointment of the surveillance by a competent authority

In case of reasonable suspicion, especially due to the results of precedent surveillances, the competent authority may induce the surveillance of the element of the supply chain in shorter than annual intervals.

Bilag 9

4.2.1.2.3 Unannounced surveillance audits

Certification bodies can use unannounced surveillance audits as an instrument of risk management.

4.2.2 Audit frequency

The audit frequency is always one year.

4.2.3 Contents of the audits

The contents of the audits result from the different ISCC Documents for sustainability, traceability, mass balance and GHG.

4.2.4 Process flow

The performance of audits is geared to the general provisions, described in ISO 19011:2002. The following illustration gives an overview.

Bilag 9

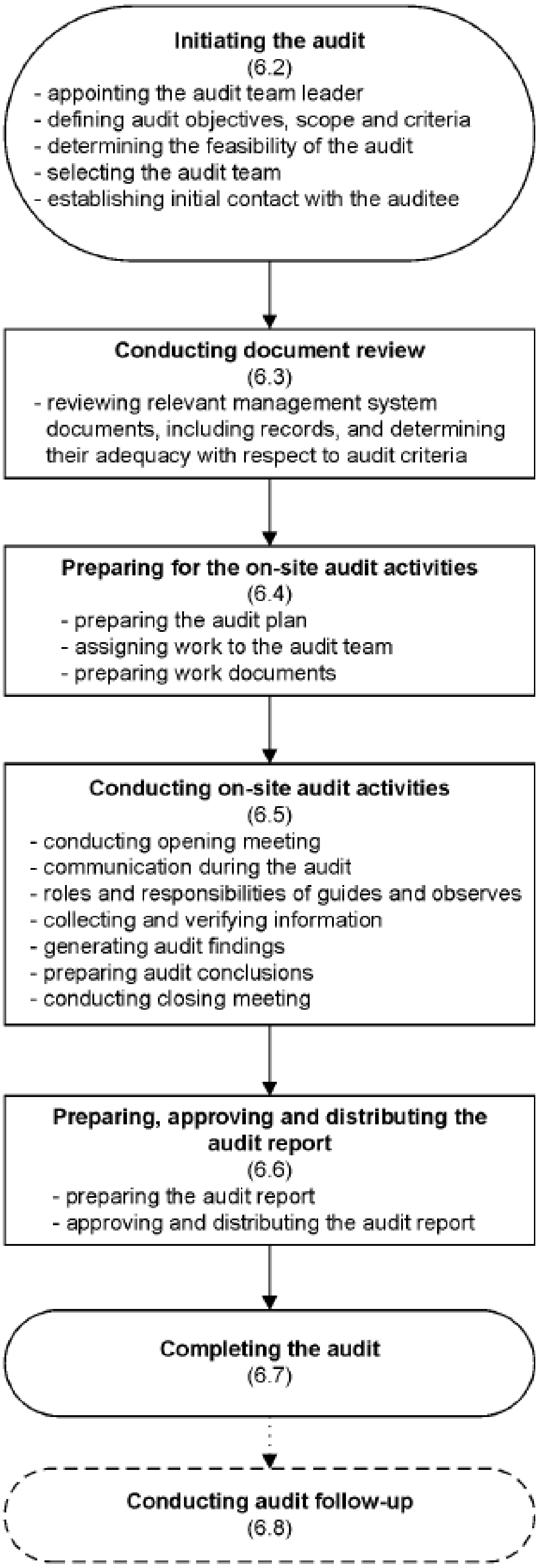

Figure 1: Overview of typical audit activities (Source: ISO 19011:2002)

Bilag 9

4.3 Audit intensity

The following table provides an overview on the characteristics of the relevant elements of the supply chain. Details can be found in the following chapters.

Supply chain element	Registration as	Certificate issued	Sample size
Farm/planation	Single entity	Yes	Every farm/plantation
Farm/planation	Group	Yes	Risk factor multiplied with SQRT[number of group members]
First gathering point	Single entity	Yes	Every first gathering point
Warehouses/collecting points belonging to a first gathering point	Part of the first gathering point (no additional registration)	No (included under the certificate of the first gathering point	Risk factor multiplied with SQRT[number of warehouses]
Trader/warehouse	Single entity	Yes	Every trader/ warehouse
Trader/warehouse	Logistics network	Yes	Every logistics center plus risk factor multiplied with SQRT[number of warehouses]
Conversion unit	Singel entity	Yes	Every conversion unit
Transport	No registration	No	N.a.

Table 1: Characteristics of the relevant elements of the supply chain

As outlined in table 1 above **every** first gathering point and the logistics center (of a logistics network) and conversion unit must be audited in order to receive a certificate (which is a pre-requisite to participate in the scheme). The other elements of the supply chain have the choice whether they prefer to be audited as a single entity or based on a sample as part of a group or logistics network. These elements will receive a certificate for the group which is a prerequisite to participate in the scheme.

The audit intensity of farms/plantations participating in group certification is determined by the minimum sample size (the square root of the number of farms belonging to a group) multiplied by the risk factor (depends on the risk assessment results of the auditor). For details see also 4.4 and ISCC 256 Group Certification and ISCC 207 Risk Management.

The audit intensity of warehouses which belong either to a first gathering point or are part of a company's logistics is determined by the minimum sample size (the square root of the number of warehouses belonging to a first gathering point or logistics network) multiplied by the risk factor (depends on the risk assessment results of the auditor). For details see also 4.5, 4.6 and 4.7 and ISCC 207 Risk Management.

4.4 Audits of farms

4.4.1 Certification audits of farms

The farm or plantation audit shall always include the entire area of a farm including grasslands, pasture, swamps and other areas. Certification audits are carried out on farms which are either audited as a single entity or as part of a group (see also ISCC 256 Group certification). Farms/plantations will receive a certificate upon a positive audit. It is the choice of the farm/plantation to decide whether to be audited as a single entity or as part of a group.

The General Provisions (4.2) and requirements of chapter 4.3 are valid.

Based on appropriate criteria and indicators, the certification bodies inspect, whether the farms comply with the sustainability requirements defined in this certification system.

Bilag 9

The certification body audits the part, relevant for the farms, especially the following standards:

- ISCC 202 Sustainability Requirements – Requirements for the Production of Biomass
- ISCC 203 Traceability Requirements
- ISCC 204 Mass Balance Calculation Methodology
- ISCC 205 GHG Emissions Calculation Methodology and GHG Audit
- ISCC 207 Risk Management
- ISCC 256 Group Certification

4.4.2 Sample size and risk management

The sample size for farms/plantations is defined in ISCC 256 Group Certification.

The sample size can be influenced by the risk assessment. The guidelines in document ISCC 207 Risk Management shall be considered.

Should one or more of the entities from the sample be non-compliant with respect to the ISCC requirements the sample must always be doubled. For example: If the minimum sample size was 10 the new sample size shall be 20. If again one or more of the audited entities do not comply with the requirements the sample must be doubled, i.e. the new sample size is 40. Already audited entities should not be used again within the new sample unless they are needed to achieve the sample quantity. This process could continue until 100% of the entities have been audited.

Farms that were audited non-compliant are excluded from the scheme. This is valid until each of the respective entities based on their own initiative pass a successful audit earliest one year later. In order to avoid misuse and delivery of sustainable biomass from these farms under the group certificate number, the certificate number of a group is supplemented by a 'group member number'. The 'group member number' of farms that were audited non-compliant must be sent to the ISCC system. ISCC will delete these 'group member numbers' within their database. Thus first gathering points and other receiving parties can check with the ISCC database via the ISCC webpage whether a farm/plantation is covered by the certificate for the group.

As long as there are no indications of abuse none of the successfully audited entities from the previous year shall be part of the sample of consecutive audits as long as not all of the entities have already been subject to an audit.

4.4.3 Sampling process for group audits

The certification bodies, conducting the group audit must consider at least the following factors when determining the random sample:

- Type of supplied raw material (if applicable these should be represented appropriately in the random sample)
- Different size of suppliers

Bilag 9

- Geographical location

At least 25% of the selected farms should be determined per random process.

4.5 Audits of warehouses delivering to a first gathering point

Warehouses or collecting points which store sustainable biomass on demand of the first gathering point, i.e. which are located in the supply chain before the first gathering point and do not buy biomass from farms and sell it to customers shall also be audited. In this case a sample of a minimum of the square root (based on the risk assessment according to ISCC 207 by the auditor) of the numbers of warehouses belonging to a first gathering point must be audited. The requirements with respect to traceability and mass balance are valid for all warehouses The audit of these warehouses is part of the audit of the first gathering point. Therefore these warehouses will have the same certificate number as the first gathering point.

The certification body audits the part of the ISCC standard, relevant for warehouses supplying a first gathering point, especially the following standards:

- ISCC 203 Traceability Requirements
- ISCC 204 Mass Balance Calculation Methodology
- ISCC 207 Risk Management

At the re-certification audit already audited warehouses shall not be part of the sample again.

Should one or more of the warehouses from the sample be non-compliant with respect to the ISCC requirements the sample must always be doubled (see ISCC 207 Risk Management). Already audited warehouses should not be used again within the new sample unless they are needed to achieve the sample quantity. This process could continue until 100% of the warehouses delivering to a first gathering point have been audited. Warehouses that were audited non-compliant are excluded from the scheme. This is valid until each of the respective warehouses based on their own initiative pass a successful audit earliest one year later. In order to avoid misuse and delivery of biomass (with a sustainability claim) from these warehouses under the certificate number of the first gathering point, the certificate number of the first gathering point is supplemented by a 'group member number'. The 'group member number' of warehouses that were audited non-compliant must be sent to the ISCC system. ISCC will delete these 'group member numbers' within their database. Thus other first gathering points and receiving parties can check with the ISCC database via the ISCC webpage whether a warehouse is covered by the certificate of the first gathering point.

4.6 Audits of first gathering points

All first gathering points that want to deliver sustainable biomass must be audited. No sampling or group audit of first gathering points is possible. Warehouses or collecting points which store sustainable biomass on demand of the first gathering point, i.e. which are located in the supply chain before the first gathering point and do not buy biomass from farms and sell it to customers are covered by the certificate of the first gathering point (see also 4.5).

The certification body audits the part of the ISCC standard, relevant for first gathering points, especially the following standards:

Bilag 9

- ISCC 203 Traceability Requirements
- ISCC 204 Mass Balance Calculation Methodology
- ISCC 205 GHG Emissions Calculation Methodology and GHG Audit
- ISCC 207 Risk Management

4.7 Audits of warehouses after the first gathering point

All warehouses after the first gathering point that a company wants to use for delivering sustainable biomass must be audited. If the warehouses belong to a company logistics network the logistic centre plus a minimum of the square root of the number of associated warehouses shall be audited (based on the risk assessment according to ISCC 207 by the auditor). The requirements with respect to traceability and mass balance are valid for all warehouses.

The certification body audits the part of the ISCC standard, relevant for warehouses after the first gathering point, especially the following standards:

- ISCC 203 Traceability Requirements
- ISCC 204 Mass Balance Calculation Methodology
- ISCC 207 Risk Management

At the re-certification audit already audited warehouses shall not be part of the sample again.

Should one or more of the warehouses (logistics network) from the sample be non-compliant with respect to the ISCC requirements the sample must always be doubled (see ISCC 207 Risk Management). Already audited warehouses should not be used again within the new sample unless they are needed to achieve the sample quantity. This process could continue until 100% of the warehouses have been audited. Warehouses that were audited non-compliant are excluded from the scheme. This is valid until each of the respective warehouses based on their own initiative pass a successful audit earliest one year later. In order to avoid misuse and delivery of products (with a sustainability claim) from these warehouses under the certificate number of the logistics network, the certificate number of the logistics network is supplemented by a 'group member number'. The 'group member number' of warehouses that were audited non-compliant must be sent to the ISCC system. ISCC will delete these 'group member numbers' within their database. Thus receiving parties of sustainable goods can check with the ISCC database via the ISCC webpage whether a warehouse is covered by the certificate of the logistics network.

4.8 Audits of conversion units

All conversion units (e.g. oil mills, oil refineries, biodiesel plants, ethanol plants) that want to deliver sustainable biomass must be audited. No sampling or group audit of conversion units is possible.

The certification body audits the part of the ISCC standard, relevant for conversion units, especially the following standards:

- ISCC 203 Traceability Requirements

- ISCC 204 Mass Balance Calculation Methodology
- ISCC 205 GHG Emissions Calculation Methodology and GHG Audit
- ISCC 207 Risk Management

4.9 Audits of other elements of the supply chain

Audits are carried out at other elements of the supply chain that applied for an audit according to ISCC at any certification body.

The General Provisions (4.1) are valid.

Based on appropriate criteria, the certification bodies inspect whether the relevant certification criteria are followed.

The relevant parts of the following standards are audited in particular:

- ISCC 203 Requirements for Traceability
- ISCC 204 Mass Balance Calculation Methodology
- ISCC 205 GHG Emissions Calculation Methodology and GHG Audit
- ISCC 207 Risk Management

4.10 Imposition of sanctions

4.10.1 Corrections of non conformities

As a general rule, there can be supplements, corrections and replacements of documents, records, reports, protocols and other information and data showing compliance with the ISCC principles 1 to 6 and with the ISCC traceability, mass balance and GHG requirements. This can take place during the audit or afterwards. However, before a certificate can be issued all existing non-conformities must be solved. All missing documents and proofs must be made available to the auditor the latest 40 days after the date of audit. Otherwise the issue of a certificate is not possible.

4.10.2 Sanctions in the case of violations of ISCC principle 1

In the case any violations of ISCC principle 1 occur, i.e. there is any land use change, which violates ISCC principle 1, the issue of a certificate is not possible. If violations of ISCC principle 1 become evident during a re-certification audit the certificate must be withdrawn immediately. No future certification is possible, as this would violate major ISCC requirements and the requirements from the Directive 2009/28/EC. An immediate notification to ISCC is required. In addition other recognized and cooperating certification systems must be informed via email. In addition withdrawn certificates (based on violation of principle 1) are published on the ISCC webpage.

4.10.3 Sanctions in the case of violations of ISCC principles 2 to 6 and of traceability, mass balance and GHG requirements

In the case of violations of ISCC principles 2 to 6, the farm/ plantation has again the possibility to correct this and proof compliance within 40 days after the audit. Before the issue of a certificate all major musts must be complied with and at least 60% of the minor musts have to be fulfilled (see ISCC Document 202).

Should the auditor within EU countries notice obvious violations of Cross Compliance regulations this must be notified to the respective national or regional authority and to ISCC.

Non-conformities in the area of traceability, mass balance and GHG calculation must also be corrected within 40 days after the audit. Otherwise the issue of a certificate is not possible.

4.10.4 Sanctions in the case of conscious and systematic violations of ISCC principle 2 to 6 or of traceability, mass balance or GHG requirements

Should any conscious and/ or systematic violations of any of the ISCC requirements occur, the certificate must be withdrawn immediately. Afterwards, a re-certification of the respective supply chain element is not possible for one year. In this case the respective competent authority and ISCC must be informed immediately. In addition, other recognized certification systems must be informed via email. In addition withdrawn certificates (based on conscious and/ or systematic violations of any of the ISCC requirements) are published on the ISCC webpage.

4.10.5 Self-indictment

In cases where the company realizes unintended violations of ISCC, which would be regarded by a certification body during the cause of an audit as conscious and systematic violations, the company has the option to report this incident to ISCC and the respective certification body. The certification body will take this into account for the forthcoming audit. However, a judgment of the self-indicted violation will be put into the context of the overall audit findings.

4.10.6 Complaints, appeals and arbitration

Should any conflicts occur with respect to the sanctions the ISCC Document 253 on Complaints, Appeals and Arbitrations applies.

4.11 Preparation of Audit reports

Certification bodies shall prepare a report after the termination of each audit, which shall contain the surveillance results in detail. This report must be provided to ISCC in a timely manner.

In case the audit showed that the relevant element of the supply chain did not meet the requirements of the certification system, the report shall be submitted electronically to ISCC immediately after termination of surveillance. If elements of the supply chain (which are part of a sample) were audited non-compliant the certification body must sent the ‘group member numbers’ to the ISCC system. ISCC will delete these ‘group member numbers’ within their database. Thus receiving parties of sustainable products can check with the ISCC database via the ISCC webpage whether a warehouse is covered by the certificate of the logistics network.

Bilag 10

International Sustainability & Carbon Certification

Group Certification

ISCC 11-03-15
V 2.3-EU

Bilag 10

Document title:	ISCC 256
	Group Certification
Approved by:	**Date:**
Issue date:	11-03-15
Application date:	11-03-15

Bilag 10

Content

Bilag 10

1 Introduction

Group certification is permitted for the producers of raw material. For other economic operators in the supply chain it is not allowed. Group auditing can be applied in particular for smallholder farmers, producer organisations and cooperatives.

Group certification is based on the concept that an extensive part of the inspections required is carried out by internal auditors. The external certification body assesses and evaluates the effectiveness of the internal audit system, carries out an audit of a sample, and certifies the group as a whole.

2 Scope

The processes described hereafter are to be applied only for producers of raw material.

3 Normative references

As a basic principal, all relevant ISCC documents are valid for the scope of application. The normative references display the documents whose contents are linked and have to be considered as common points.

Relevant references:

ISCC	201	System Basics
ISCC	202	Sustainability Requirements – Requirements for the Production of Biomass
ISCC	203	Traceability Requirements
ISCC	204	Mass Balance Calculation Methodology
ISCC	205	GHG Calculation Methodology
ISCC	207	Traceability requirements
ISCC	252	Regulations to carry out Audits

Bilag 10

4 Group Certification

4.1 Fundamentals

Group certification can be applied for homogeneous groups of agricultural producers. In several cases, an individual audit of each single producer of raw material would impose disproportional financial costs and efforts on the entity and the overall certification process. By joining a group, farmers can reduce the certification efforts considerably. The group must set up a central office taking care of the group management and carrying out the necessary internal audits.

Group auditing for compliance with the scheme's land related criteria is only acceptable when the areas concerned are near each other and have similar characteristics. Group auditing for the purpose of calculating greenhouse gas savings is only acceptable when the units have similar production systems and products.

These criteria are normally met by the suppliers of a first gathering point. Therefore, based on an assessment of the criteria indicated above, the farmers supplying a first gathering point can be considered as a group.

External audits must take place on a yearly basis. The group’s central office is also audited. The size of the sample is determined by the group risk.

In order to avoid misuse and delivery of biomass with a sustainability claim from farmers not complying with ISCC, the group member number of the individual farmer audited non-compliant must be sent to the ISCC system. ISCC will delete these members within their database. Thus first gathering points and other receiving parties can check with the ISCC database via the ISCC webpage whether a delivery is covered by the certificate of the first gathering point.

4.2 Management requirements

The group is represented by the central office. The office has rights and duties as follows:

- To run a register of members
- To plan and organise internal audits
- To initiate preventive and corrective actions
- To issue annual reviews
- To inform the members
- To compile the necessary documentation
- To register new members
- To exclude members
- To initiate preventive and corrective actions in member operations.

Bilag 10

The rights and duties concerning the members shall be documented and defined in a regulating contract between the group members and the central office.

First gathering points can operate as central office.

As indicated, group certification is only possible for homogenous groups of agricultural producers. A group is considered as homogeneous if the following criteria are met:

- The members are located in the same region
- The climatic conditions for agricultural production are similar
- Similar production systems are applied
- The risk assessment has shown a similar risk exposure for the group members.

The number of the members of the group can be limited by the certification body depending on the audit results and the performance of the group.

Farms that do not fulfil these conditions can still be member of a group. In the course of a certification, however, they will be treated as autonomous enterprise and cannot be part of the random sampling of the group.

The following rights and duties apply for members:

- Commitment to the central office to meet the requirements of the standards
- Provide information and access for the central office
- Commitment to the implementation of amendments and corrective actions.

4.3 Documentation

The processes required by the ISCC standard must be documented in the group. The following must be considered:

- Register of farms related fields
- Process instructions
- Contracts between the central office and the group members
- Audit results
- Review.

An appropriate instrument for the documentation of processes and contents is a management handbook.

Bilag 10

4.4 Internal audit system

The group must introduce an internal audit system monitoring the performance of the group management and controlling the compliance with the ISCC standard.

The audits shall ensure the compliance with the certification criteria of the ISCC system. A plan must be developed containing at least:

- The auditors in charge
- The participants
- The time frame
- Audit emphasis
- The procedure.

All group members must be audited at least once a year.

Prior to a first certification, all members and the group as a whole must be subject to an internal audit.

The auditors in charge must be qualified for judging the relevant questions professionally. Before they start auditing, they must be trained regarding the requirements of the ISCC system. They must repeat these trainings on a regular basis.

An audit report shall fix the results of the internal audits. The audit report will be made accessible for the external certification body. The audit report must include an action plan for improvement.

4.5 Review

The group must carry out an annual review. As a minimum requirement this review must contain the evaluation

- of the audit results
- of possible inputs of a third party.

4.6 Registration procedure for new members

The group agrees on a procedure to take in new members.

Before a new member can be registered, it must first be internally audited

Bilag 10

4.7 External audits

External group audits are conducted by an independent certification body cooperating with ISCC. The central office is audited each time (certification and monitoring). The external audit must take place on a yearly basis.

Furthermore, the implementation of the ISCC standard is assessed by random sampling.

The group shall submit a complete list of their members. Members will receive a unique 'group member number' which is added to the registration number in order to allow unique identification of group members.

After registration the group that registered and the certification body that was chosen will receive a confirmation of registration and a registration number via email from ISCC.

4.8 Certificate issuance

A certificate is issued to the group. Each member of the group can obtain a sub-certificate.

4.9 Random sampling

The size of the sample is determined by the following formula:

$s = r \times \sqrt{n}$

s: sample size

r: risk factor

n: number of group members.

The formula ensures a control density of the group, following in principle the control requirements set by the European Commission for Cross Compliance. The formula reflects the typical homogeneity of agricultural operations. The sample size has been also confirmed by experience gained in pilot and regular certifications.

A risk factor has to be applied based on the relevant factors listed in Document ISCC 207 Risk Management. Based on the risk assessment, the auditor defines the risk factor:

- Regular risk factor: 1
- Medium risk factor: 1.5
- High risk factor: 2

In the case that the auditor detects group members not complying with the standard requirements, the audit sample must be doubled. If in the new sample group members are detected again not fulfilling the standard requirements, the sample has to be doubled again and so forth.

The lowest possible size of the sample is one.

Bilag 10

The following factors bear specific relevance for group certification and must be considered by the auditors[1]:

a) Factors related to the size:

- Size of the farm
- Value of the products

b) Factors related to the characteristics:

- Degree of similarity of the production systems and the crops within the group
- Risks of intermingling and/or contamination

c) Experience gained:

- Number of years the group has functioned
- Number of new members registered yearly
- Nature of the problems encountered during audits in the previous years and results of previous evaluations of the effectiveness of the internal audit system
- Management of potential conflicts of interests of the internal auditors
- Staff turnover.

In exceptional cases, ISCC can determine additional specific regulations for certain regions / areas.

[1] These factors are formulated in correspondence to the *Guidance document for the evaluation of the equivalence of organic producer group certification schemes applied in developing countries* (EEC November 6th 2003).

Bilag 11

Mid August, Kingsman attended the fifth **ISCC** (International Sustainability & Carbon Certification) training in Cologne, Germany. Most of the 40 participants were auditors of certification bodies, coming from different European and some non-European countries. Some of them have certified many kinds of agricultural goods and fossil fuels before turning to biofuels. A couple of European producers and traders were also present.

From our readers' inquiries and from the discussions had during this intense seminar, we gathered some frequently asked questions, which we aim to answer in the following lines.

1. What is a certification system in the framework of the Renewable Energy Directive (RED)?

Certification systems establish specific rules and standards for compliance with the requirements of the 2009/29/ EC Renewable Energy Directive **(RED)** and its subsequent national transposition. In Germany, two certification systems have been approved by the Federal Agency for Agriculture and Food: ISCC and Red-Cert.

2. What is ISCC? Is it a global system?

International Sustainability & Carbon Certification (ISCC) is a certification system approved by the German Federal Agency for Agriculture and Food (BLE).

It is a global system in the sense that ISCC certification can take place in European countries and abroad and that sustainable biomass and biofuels can then be sourced from these countries and sold within Europe under the RED. ISCC has applied for recognition with the European Commission to be an acceptable system for the entire European Union, meaning that – if recognized - any European Member State could adopt it as a national system. ISCC is also in the benchmarking process of its system with other European Member States, like the RFA standard in the UK or the NEN standard in the Netherlands.

3. What is a certification body (CB)?

A certification body is an independent company, which conducts audits according to the rules of a certification system, and if the audit is successful, can issue a certificate. CB's should be external to the economic operator and certification system, and independent from the activity being audited. In Germany, CB's are approved and supervised by the Federal Agency for Agriculture and Food. A CB can cooperate with different certification systems.

4. Which are the criteria that will be covered in an audit, and upon compliance, be entitled to certification?

- Proof of sustainability of biomass: no production from no-go areas, sustainability of production and operations, and social sustainability.
- GHG savings: biofuels and bio-liquids must yield a GHG emission savings of at least 35%.
- Traceability and mass balance must be assured

5. What is a no-go area?

According to the RED, a no-go area is an area with high biodiversity or high carbon stocks. The communication from the European Commission released in June 2010 states that raw material should not be obtained from wetlands, continuously forested areas, from areas with 10-30% canopy cover, nor from peatlands, if the status of the land has changed compared to its status in January 2008. In the course of 2010, the EC intends to establish the criteria and geographic ranges for determining which grasslands can be considered highly biodiverse.

6. How are GHG emissions calculated?

There are three options for the calculation of the GHG emissions. First, using the default value as defined in the RED, according to the specific production pathway. A second option is that each element in the supply chain calculates its individual GHG emissions and forwards the figures to the next step in the chain. We expect that this option will be the most preferred when EU de-carbonization targets are in place, or when a specific supply chain pathway can offer particularly good GHG emission savings. The third option combines both default and individual values. The auditor will have to check if the default values are correctly applied or in the case of individual calculations, he will need to verify that the GHG values on raw material production, land use change, processing and transport applied in the formula defined by the RED are correct.

7. **What happens to those existing biofuel facilities that do not meet the minimum 35% GHG saving requirement by default value; can they still get certified?**

Yes, they can. Individual GHG calculations must be carried out in those cases. These calculations must show minimum savings of 35%. In the case of biodiesel conversion units that were operational before January 23rd 2008, they are not obliged to demonstrate GHG emissions until April 2013. They just need to state that they are a “grandfathered” conversion unit.

8. **Why is traceability needed?**

The origin, quantity and the related GHG emissions of biomass, biofuels and bioliquids must be identifiable through the different stages of the supply chain through a system that offers traceability. This allows mixing sustainable and non-sustainable biomass, bio-liquids and biofuels (with the condition that none of the mixed products exceeds the maximum GHG emission values).

9. **Are certificates volume-dependent, according to the German Biofuels Ordinance?**

No. A certificate is not granted to a quantity of biomass/biofuels, but to certain units in the supply chain. Once a unit is certified, it can produce or supply as much sustainable biomass/biofuel as needed as long as the producer has a valid certificate.

10. **Which parties in the supply chain will be audited, according to the ISCC system?**

- **First gathering point (FGP):** Receives the biomass from farmers or warehouses for further trading or processing. Will be audited regarding traceability and mass balance. FGP’s also need to provide evidence of the farmers’ self-declarations regarding sustainability.
- **Warehouses:** Store biomass/biofuel. Random samples of the warehouses will be audited regarding traceability and mass balance. Need to provide complete evidence on incoming and outgoing products’ sustainability.
- **Conversion Units:** Oil or sugar mills, refineries, esterification plants, ethanol plants and other plants processing the liquid biomass/biofuel. Will be audited on traceability and mass balance as well as on the GHG calculations of its process. The last conversion unit needs to issue the proof of compliance with sustainability requirements
- **Farm/Plantation:** Produce the biomass. Not obliged to be certified, but certification bodies carry out random sample audits in some of them.
- **Suppliers/ Traders:** Elements of the supply chain which are not followed by any further processing. The only further step is trading, storage and/or transport to the final user/distributor. They should also be certified.

11. **Do plantations/ farms need to get a certificate in the ISCCC system?**

Plantations or farms (both in and outside the EU) are not required to receive a certificate, but must fill in a self-declaration to confirm that biomass produced and supplied by them complies with the requirements of the RED in the form of the ISCC certification system. Plantations/ farms need to fill in one self-declaration for each of the traders they deal with (not for each contract they close). According to German legislation and within the ISCC system, random audits will be carried out to at least 5% of the non-EU farmers and to 3% of the farmers in the EU.

12. **How many certificates does an integrated company require (FGP and conversion unit(s))?**

If it is one legal entity, with all factory premises (oil mill/refinery/esterification or others) in the same location, then there is only need for one single certificate. This is not only an ISCC pre-requisite; but is also a requirement of the German regulation.

13. **Does an ISCC certificate have an expiration date?**

Yes, an ISCC certificate is valid for one year. Six months after issuing the first certificate, a surveillance audit will be carried out. Unannounced surveillance audits as an instrument of risk management can also be carried out by CB’s. Self-declarations are also valid for one year.

14. **What happens if the CB encounters that the unit to be certified doesn’t fulfill the requirements?**

Minor non-conformities can still be corrected within 40 days after the first audit.

Bilag 11

KINGSMAN
energy from nature

15. How much does an ISCC certificate cost?

The certificate fee has two components: a yearly fixed fee that is a function of the turnover/production per annum of the interface, and a quantity-dependent fee. The latter means that, the volume of sustainable biomass/biofuel produced by the interface has an impact on the sum paid to ISCC.

The Certification Body will also charge an audit fee, which according to some market sources, could hoover close to $800-1,000/day. During the first year, an interface could be paying $1,600-2,000 for its auditing. Depending on the level of yearly production, this fee results, indeed, in a relatively small amount per tonne.

KINGSMAN ISCC Fees Structure		Condition	Fee
Farm/Plantation and Warehouses delivering to 1st gathering point (FGP)	*Self declaration of sustainability. Certification is voluntary.	-	-
FGP (cooperative, trader) and Warehouses after the FGP	* One time registration fee in function of yearly production (payed to ISCC via CB)	< 2,000 mt	€50
		<10,000 mt	€100
		<50,000mt	€150
		<100,000mt	€200
		<200,000 mt	€250
		<500,000mt	€300
		>500,000mt	€500
Interfaces (oil mill, refinery and other processors)	* Fee per certificate in function of yearly turnover (payed to ISCC via CB)	< €0.6 mln	€50
		< €3 mln	€100
		< € 15 mln	€150
		< €30 mln	€200
		< €60 mln	€250
		< €150 mln	€300
		> €150 mln	€500
	*Quantity dependent fee per tonne (payed to ISCC)	ISCC Member	€0.02
		NonMember	€0.03

16. What are the main challenges for the auditor?

We believe that it is the assessment and verification of no-go areas due to the difficulty to find updated and consistent maps/ data. Binding data bases may bring more safety to all involved parties.

17. What are the main challenges for the auditees?

We believe that it is the lack of clear, "ready to use" checklists and guidelines for the auditees. Many companies are not yet familiar with the implications of the German Sustainability Ordinances (requirements for traceability, mass balance, GHG calculation, document design etc.). Auditees need to understand the system in order to provide the necessary documents and proofs to the auditors. Non-compliance may require a second audit to obtain certification, increasing the total cost of the certification process. ISCC has already made available procedures and document checklists which could give guidance for audit preparation.

18. Must the certification process start January 1, 2011?

No. From January 1, 2011, fossil fuel companies will have to provide certified biofuels, German legislation and also to the RED. This means that certifications in earlier stages of the supply chain, like in the first gathering points or in conversion units, are required already and must be issued in Q3/Q4 2010 in order to be ready for the January 1, 2011 starting date.

19. How many tonnes of biofuels have been certified up to today?

For the moment, there is no way to know the volume of sustainable biofuel that has been produced up to date. We do know how many supply chain interfaces in Germany and abroad have received a sustainability certificate by a recognized system and, consequently, how many are potentially able to deliver sustainable biomass/biofuels. ISCC, has certified more than 6 mln mt of processing capacity. For the German case; final volumes are only known when the BLE receives the proofs of compliance with sustainability requirements.

20. Will imported biofuel blends like B19/E90 require certification?

Yes, blended biofuel must also come from sustainable production, i.e. from a unit which has received a certificate and is by that entitled to issue proofs of compliance with sustainability requirements. Otherwise that biodiesel and ethanol cannot be accounted for meeting blending obligations in Europe.

Bilag 12a

ISCC EU Audit Procedures point of origin of waste and residues

No.	Template	Remarks	Page
1	Basic data	Basic data of the point of origin of waste and residues to be audited	1
2	Point of origin	Template for companies where waste and residues originate and which provide more than 10 tons of waste and residue material per month to a first gathering point/collecting point. Control of plausibility and proportion of incoming and outgoing materials	2
3	Action plan	List of non-conformities and definition of corrective actions	5

Template No. 1: Basic data		
1	**Company name**	Oleki NV
2	**Address of the operating unit (audited site)**	Industrielaan 13A, 2250 Olen
3	**Country**	Belgium
4	**Name of the responsible unit manager**	Mr. Patrick De Cooman
5	**Name of certification body**	PCU Germany
6	**Number of certification body**	105
7	**Name of auditor(s)**	Glenn Feryn
8	**Date of audit**	24-09-2014

General guideline

These audit procedures for points of origin must be used for all companies subject to an audit during the certification of a collecting point. The procedures apply to companies, where more than ten metric tons of waste and residues occur per month. The basis to calculate if a company provides more or less then ten metric tons per month, is the total amount of waste and residues produced during the previous year. If during the previous year more than 120 tons of waste and residues occurred at the point of origin, it needs to be audited during the certification of a collecting point.

Bilag 12a

Audit Procedures	Point of origin of waste and residues	Template No. 2:	Point of origin

Requirements	Verification guideline	Evidence/ Documents	Findings	Conformity? No	Conformity? Yes
Are the following documents available and documented?	Check if the following documents are available and accessible during the audit.	ISCC EU self-declaration for waste/residues (signed) Contract with the Collecting Point Documents about incoming raw material (invoices, delivery notes etc.) Delivery notes for outgoing waste/residues	All documents present. Oleki NV is the collecting point. invoices and delivery notes present. Self declaration is not applicable as the company itself is certified as PoO.		x
Did the company sign the self-declaration for waste and residues under ISCC EU before the first batch of waste/residues was collected?	Compare the date of the self-declaration with the date of the first delivery of waste/residues	Self-declaration, delivery documents	Self declaration is not applicable as the company itself is certified as PoO.		x
Is the amount of input material documented and can be checked?	Check if the amount of input materials is documented and accessible.	Invoices, production reports etc.	All incoming material is getting weight before entering the company. Weigh tickets present. Production reports can be asked at any time via the administration system.		x
Is the amount of output (main product, by-products and waste and residues) documented and can be checked?	Check if the amounts of output material are documented and can be checked. Check if it is possible to distinguish between main product, by-product and waste/residues.	Amounts are available and can be checked.	All outgoing material is recorded and can be checked. Via the administration system all information can be checked. From the raw material (Poultry CAT 3 material), there is the 'production' of tallow which can be sold as ISCC EU material.		x

Bilag 12a

Requirements	Verification guideline	Evidence/ Documents	Findings	Conformity? No	Conformity? Yes
Has a plausibility check been realised, validating the quantities provided to a collecting point?	Compare the incoming (raw) material (e.g. virgin oil) with the conversion rate and the occurring amounts of waste/residues.	Delivery notes for incoming and outgoing material, invoices, conversion rates, waste transfer notes etc. The documentation validates the quantities provided.	Several documents checked, good administration system). Oleki NV is collecting point for CAT 3 material (from poultry). Tallow can be sold as ISCC EU material. Amounts can be checked.		x
Is it ensured that waste/residues are not produced on purpose and that raw material is not transformed to waste on purpose (e.g. by adding waste materials to raw materials)?	Check if the incurring quantities correspond to the size and type of the point of origin and the sales realised at the point. Check if the quantities are comparable to points of origin of similar size and type.	Production reports, sales volume of main products, quantities of raw material used, incurring quantities of waste/residues, delivery documents, invoices	Production reports available with all incoming and outgoing material. All weighbridge tickets are present.		x
Is ensured that the requirement to avoid waste according to national legislation is met?	Check if the avoiding of waste according to the provisions of the applicable national regulations is met.	It can be validated that the requirement to avoid waste according to the applicable national legislation is met.	Unit purpose is to treat waste. It can be verified. Prefectural authorisations of operation in relation with the declared activity.		x
Is it ensured that an unusually short usage of vegetable fats and oils (e.g. in order to declare these fats and oils as used cooking oil) does not take place (if applicable)?	Check if vegetable oils and fats are used within the usual conditions. The following criteria have to be considered, among others: • Usage in the gastronomic or in the industrial sector • Different thermal resilience or capacity of the vegetable fats and oils	Relevant criteria have been checked in a well-balanced way. Vegetable fats and oils are used under usual conditions.	Poultry fat, cat 3 is being collected. There are full records of volumes collected via the administration system.		x

Requirements	Verification guideline	Evidence/ Documents	Findings	Conformity? No	Conformity? Yes
	• Ratio of the surface and the depth of the deep fryer • deep-frying quantities • Addition of fresh fat and oil • Different fat absorption rates of food • Addition of additives				
Do the provided quantities correspond with the quantities documented by the collector?	Check the total quantities delivered to the collector, on the basis of delivery notes, invoices, waste transfer notes etc. Compare the result with the incoming quantities documented at the collector.	Delivery documents, invoices, waste transfer notes etc. The outgoing quantities at the point of origin correspond to the documented incoming quantities at the collector.	The company collects the material itself or it gets delivered by the slaughterhouse from poultry. All material gets weight at the company before entering the production process.		x

Bilag 12a

Audit Procedures	Point of origin of waste and residues	Template No. 3: Action plan

No.	Requirement/finding	Action/Measure	Implementation until when (within 40 days)	Measure implemented	
				no	yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Oleki NV, 24-09-2014
Place, Date, Signature Auditor

Oleki NV, 24-09-2014
Place, Date, Signature Client

Ir. Patrick De Cooman

Bilag 12a

ISCC EU Audit Procedures for Conversion units

Conversion Units for the Production of Biofuels and Bioliquids

No.	Template	Remarks	Risk level	Audit intensity	Page
1	Basic data			Not relevant	2
2	Management system	Risk assessment according to ISCC 207		Not relevant	4
3	Traceability and mass balance	Within Template No. 3 the risk of a flawed documentation has to be evaluated. The risk level determines the audit intensity	High	The documents of three successive months should be checked completely	10
			Medium	The documents of one month should be checked completely and random samples should be taken from three successive months	
			Regular	Documents taken from random samples of three successive months should be checked	
4	Greenhouse gas (GHG) emissions	Within Template No. 4 the declaration of default values and, if applicable, the individual calculation of GHG emissions has to be evaluated.		See No. 3. Not relevant for individual GHG calculations where yearly data has to be verified	18
5	Non-conformity list	Defined list of all points marked „no" in the column Conformity?		Not relevant	23

Bilag 12a

Audit procedures	Conversion units	Template No. 1:	Basic data

Conversion Units for the Production of Biofuels and Bioliquids		
1	**Country**	Belgium
2	**Company name**	Oleki NV
3	**Location and address**	Industrielaan 13A, 2250 Olen
4	**Geo coordinates (voluntary)**	50.149603,4.876684
5	**ISCC registration No.**	ISCC-Reg-3306
6	**Type of conversion unit**	Rendering plant, animal fat Cat 3.
7	**Production capacity**	6000 ton/ year
8	**Individual calculation of own processing emissions**	yes: ☐ emissions from processing: ________________ kg CO2eq/ per ton mass of the main product no: x (use of default values)
9	**Recertification**	yes: x Total amount of biomass/ product declared as sustainable since previous audit (in metric tons): 1300 mt Amount of biomass/product declared as sustainable since 01.01.2013 until date of audit (in metric tons): 1300 mt no: ☐ (initial audit)
10	**Name of the responsible unit manager**	Mr. Patrick De Cooman
11	**Name of certification body**	PCU Germany
12	**Registration No. certification body**	105
13	**Name of auditor(s)**	Glenn Feryn
14	**Date of audit**	24-09-2014

24-09-2014________________
Date

Signature of the auditor

Signature of the second auditor

Bilag 12a

General guidelines

The audit procedures for conversion units include five templates which should be used by the auditor when conducting the audit. The risk of a flawed documentation will be evaluated in terms of risk levels high, medium and regular based on the procedure described at the end of template 2. The risk level will drive audit intensity. If GHG default values are used, only section 4.1 of template 4 needs to be applied. Some requirements of the templates will not or only be partly relevant since at the time of the first audit a document history (e.g. proofs of sustainability, sustainability declarations or delivery notes for sustainable biomass) may not be available and therefore reporting, mass balance calculation and other elements can only be checked with respect to methodology and „calculation mechanics“. These requirements are marked with „(x)” for „requirements partly relevant” and „x” for „requirements not relevant”. It is mandatory to mark under the category „conformity?” either the column „yes“ (conformity) or „no“ (non-conformity) of the template. In every case of “no” the auditor has to explain his decision in column „findings“. Every “no” requires the definition of corrective measures (s.a. template 5). Major musts shall be implemented within 40 days. Implementation has to be verified by the auditor and is a prerequisite for issuance of the certificate. If the requirements are not fulfilled the certification body is obliged to send a copy of the audit report to ISCC without delay.

Bilag 12a

ISCC International Sustainability & Carbon Certification

Audit procedures	Conversion units	Template No. 2:	Management system

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
4.1.1, ISCC 207	Is the management system appropriate with respect to type, complexity and volume of the required operations and takes risk factors into account?	Verify whether there is a management system (documents, intranet etc.), whether the system covers sustainability requirements within all relevant operations and languages and risk factors like expertise, education and training of employees and service providers, subcontractors (s.a. ISCC 207).	Documentation of the management system and interviews of personnel			There is good administrative system via the administration system. A list with the amounts in and out can be taken out of the system at any time.		x
4.1.2.1	Have relevant information and documentation been distributed to the relevant personnel, related collecting points, warehouses and service providers, subcontractors and other interested parties?	Verify distribution lists (email, paper etc.) and demand documents from personnel, collecting points, warehouses, subcontractors and service providers	Distribution list, relevant management system documents		x	Production proces flow chart present. Staff is aware.		x
4.1.2.2	Have employees been appointed by the company that are responsible for the implementation of the sustainability requirements	Verify responsibilities for critical control points like incoming and outgoing materials, warehouse bookkeeping, weighbridge,	Organization chart, job descriptions, task and responsibility descriptions within the management system, interview of personnel		x	Mr. P. De Cooman is responsible, organization chart present.		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
	at all critical control points?	logistics, sales and distribution, quality control etc.						
4.1.2.2	Have employees been appointed that are responsible for the development and updating of the management system and the documents?	Verify responsibilities and authorizations	Documents and distribution lists, updating procedures, organization charts, job descriptions, description of responsibilities in the management system		x	Responsible staff is appointed. Mr. P. De Cooman is responsible together with Mr. Delsiene Werner.		x
4.1.2.2	Have employees been appointed that are responsible for the internal verification of the sustainability requirements?	Verify responsibilities and authorizations	Organization chart, job descriptions, task and responsibility descriptions, distribution lists, interview of personnel		x	Mr. De Cooman is responsible together with plant manager.		x
4.1.2.2	Has an internal audit taken place by the employees named above?	Visual inspection of audit report (inspection should take place at least once a year)	Verification report, action plan, progress report	(x)		Internal audits are performed by Mr. De Cooman. Data is being verified weekly and monthly by responsible staff. Registrations present.		x
4.1.6	Did reviews of the internal audit report take place?	Verification whether the management has verified the audit report (should take place at least once a year)	Review report, Review minutes, Interview management	(x)		Done with management.		x
4.1.2.2, ISCC 203, 204 and	Are sufficient procedure descriptions with respect to sustainability requirements available for	Verification of procedures (e.g. regarding traceability, mass balance, GHG calculation etc.) at critical control points	Material flow charts, standard operating procedures, job descriptions, task/responsibility descriptions, contractual		x	Sufficient manual is present, set up by QM. Company is also GMP certified. ISCC		x

Bilag 12a

ISCC
International Sustainability & Carbon Certification

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
205	all critical control points?	(e.g. raw material sourcing, conversion process, logistics, inventory control, sales and distribution, quality assurance etc.)	agreements with service providers/ subcontractors			requirements are implemented. Organisation chart present.		
4.1.5.1	Did trainings take place appropriate to the needs of the critical control points?	Verify training material, course planning documents and whether the relevant employees participated in the training.	Training course planning, training documents, distribution lists, emails, participant lists, interviews participants	(x)		Training given by MR. De Cooman, no new staff involved.		x
4.1.5.2	Is the technical equipment and infrastructure available and in operation for the critical control points?	Verify whether weighbridges, flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, warehouse, conversion process, etc.	Weighbridge ticket, sensor display, computer system reports, display, computer reports regarding process parameters, filing status, etc.		x	Calibration report present from the weighbridge. Good administration system and nice overview processing parameters (sturingsysteem).		x
4.1.4	Are following documents, records, reports, information, and data available?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge tickets) are not ready of the shelf, it should be possible to deliver them during the audit in a timely manner	Latest and signed ISCC terms of use, check: http://www.iscc-system.org		x	Document present and signed.		x
			Plant operation permit, plant layout plan, silo plan, tank plan, silo capacity, tank capacity		x	Plan is present.		x
			Weighbridge tickets, delivery notes, bill of lading and other shipment documents (license, loading order, inspections etc.) for incoming and outgoing sustainable biomass		x	Weighbridge tickets present		x
			List of all suppliers for incoming sustainable raw material and	(x)		List is present		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
			biomass					
			Periodical reporting on incoming sustainable material (periodical, annually)	(x)	x	Periodic report can be asked at any time via the administration system that is set up.		x
			Periodical reporting on opening and closing stock for incoming sustainable and non-sustainable raw material	(x)	x	Reports are set up, Weekly reports are sent to the responsible manager (Mr. De Cooman).		x
			Contracts with suppliers of incoming sustainable raw material	(x)		Contracts present		x
			List of all recipients of outgoing sustainable material	(x)		Lists present, material has been sold to 2 clients (Eurofat and BAT services).		x
			Contracts with recipients of outgoing sustainable products	(x)		Contract present		x
			Periodical reporting on outgoing sustainable products (periodically, yearly)	(x)	x	Periodical production reports present. Yield of 10%.		x
			Periodical reporting of opening and closing stock for outgoing sustainable and non-sustainable products	(x)	x	Reports present		x
			Production report (periodically, annually) including conversion and allocation factor (if not provided within GHG calculation) and description of residues/waste, losses and co-products (if relevant)		x	Production reports present		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
			Contracts with relevant subcontractors			N/A no subcontractor.		x
			Delivery notes, sustainability declarations or proofs of sustainability on outgoing sustainable material	(x)	x	Delivery notes present and contain the required information.		x
			Delivery notes, sustainability declarations for incoming sustainable raw material or biomass	(x)	x	Delivery notes for the Cat 3 material		x
			Mass balance system/ calculation	(x)	x	Mass balance system present.		x
			GHG calculation (only in case default values are not used)		x	N/A default value		x
			Report and action plan of the last audit	x		Reports present.		x
			Report and action plan of the last internal audit	(x)		Report present		x
4.1.4	Are the above-mentioned documents kept for at least ten years?	Compare the “oldest” and latest documents with data from the ISCC registry (in cases of doubts)	ISCC Registry, Documents are from the first audit or at least ten years old	x		All documents present		x
4.1.7	Are documents and information treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Distribution lists, emails and access authorizations to data bases	(x)		All information is treated confidential		x
4.1	Did the risk assessment take place based on the above mentioned	Is done by the auditor. Regular risk: above-mentioned documents are accurately	Evaluation and declaration of regular, medium or high risk		x	Regular risk		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
	documents, reports, information and data?	managed, up to date, complete and accessible without problems. Medium risk: above mentioned documents are not managed accurately and are not accessible without problems. High risk: above mentioned documents are not up to date and not complete.						

Bilag 12a

Audit procedures	Conversion units	Template No. 3:	Traceability and mass balance

Risk level (s.a. template 2)	Audit intensity
High	Documents of three successive months should be checked completely
Medium	Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	Random samples should be taken from three successive months

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
4.2.1, 4.2.2.4	Is the information on the list of suppliers and recipients of sustainable materials/ products complete?	Check whether required information contains name, address, certification system, certification number, person responsible for sustainability	List of suppliers and recipients does contain the required information	(x)		List present with 'suppliers". All information present.		x
4.2.1, 4.2.2.4	Do the information from delivery notes, sustainability declarations, proofs of sustainability of the incoming and outgoing sustainable materials/products match with the information from the reporting system? Is the capacity of the plant consistent?	Verify according to risk category. Compare delivery notes, sustainability declarations, proofs of sustainability and data in the plant operation permit with reported amounts in the reporting system.	Quantities of delivery notes and reporting for sustainable raw material consistent	x	x	Quantities are consistent		x
4.2.1, 4.2.2.4	Does information from weighbridge tickets match with information from delivery notes, bill of	Compare the weighbridge tickets, bill of ladings and delivery notes, sustainability declarations or proofs of	Amounts and data on both documents are consistent.	(x)	x	All amounts on documents that are checked are consistent.		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1. Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
	ladings, sustainability declarations or proofs of sustainability?	sustainability for sustainable raw material/products, in particular with respect to amounts and data from the supplier (deviations up to 0,5% will be accepted. Deviations above 0,5% will require explaining documentation)						
4.2.1, 4.2.2.4	Do the dates of the delivery notes, sustainability declarations, proofs of sustainability for sustainable material/products match with the validity of the certificate of the supplier?	Compare dates on “latest” and “oldest” delivery note with validity of the certificate	Dates are within the validity of the certificate	x	x	Dates are within the validity of the certificate. Certified for one year now.		x
4.2.1, 4.2.2.4	Are the quantities of the supplied and delivered sustainable materials/products consistent with the amounts fixed in contracts?	Compare quantities from reporting with contract details. Take into account that contract quantities can be split into several batches or that one batch may consist of different contracts. Surplus or smaller amounts (based on a respective accounting) are also possible.	Quantities are consistent	(x)		Quantities are consistent.		x
4.2.1. 4.2.2.4	Is data from subcontractor contracts consistent with	Compare data with commissioned services e.g.	Contract data (from tables, calculations etc.) and invoiced	(x)		Contracts present		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
	actually accounted services?	commissioned transportation services with actual kilometres, if relevant	services provided are consistent					
4.2.1, 4.2.2.4	Does the information on delivery notes, sustainability declarations or proofs of sustainability of incoming and outgoing sustainable material/products fulfil the requirements? Is the information consistent with information in production reports?	Verify whether the documents contain the following information: - If applicable, the unique identification number ([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate-No.] - [8-digit serial No.]), alternatively No. of certificate, ID of certification body and unique running number - Country of origin of the biomass - Contract number - Name and address of the supplier - Name and address of the recipient - Type of sustainable product - Statement whether produced from residue or waste - Date of issue	Delivery note for sustainable raw material and products contain the required information. (The following details may be given instead of the unique identification number: • Name of the certification system • Certificate number • Serial number of the delivery note)	(x)	x	Tallow is produced from incoming Cat 3 material. All required information is present on outgoing documents.		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes

		- The amount in tons or m^3 of sustainable product
		- Statement whether the default value or the disaggregated default value is used or whether actual calculation is used.
		- Greenhouse gas emissions in kg CO_{2eq} per tonne of product
		  ○ Absolute value of quantity of carbon-equivalent (allocated for all upstream elements) in kg CO_2eq per ton of batch of sustainable product
		  ○ Mode of transport (if applicable)
		  ○ Transport distance (not applicable if transport emission are already included in GHG calculation)
		- If conversion unit is last conversion unit the following information are required for sustainability declarations or proofs of						

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
		sustainability additionally: ○ Energy content in MJ ○ Statement that the sustainable product fulfils the requirements of the RED ○ GHG emissions in gCO2eq/MJ ○ Fossil reference in gCO2eq/MJ ○ Regions to which the product can be delivered without violating the GHG emission savings (not required if the default value is applied)						
4.2.1.2	Is the internal process of the conversion plant documented?	The information should include a brief process description, the main product, co-products, residues and losses within the process, flow charts etc.	Relevant information, documents, etc. are available		x	There a flowchart present.		x
4.2.1.2	Does the periodic production report or another relevant reporting system contain the necessary information?	Quantities of sustainable raw material	The reporting system contains the necessary information	(x)	x	Quantities present		x
		Conversion factors/yields				Yield is 10-11%		x
		Quantities of produced sustainable main product				Tallow, amounts are known via administration system,		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
						weighbridge tickets present		
		Quantities of co-products (if necessary for determining the allocation factor and not available from other sources)				Quantities of Meat and Bone meal is present		x
		Quantities of residues, losses etc. (if necessary and not available from other sources)				Residues and losses are quantified		x
		Production date (if necessary or dedicated batches need to be identified)				Present in production reports		x
		Allocation factor (if not available from other sources)				N/A		x
		Declaration whether GHG default value or individual GHG calculation was applied				Default value		x
4.2.1, 4.2.2.4 and ISCC 204, 4.3	Is the quantity of products declared as sustainable since the previous audit available and consistent?	Identify the relevant quantities for the period since the previous audit from reporting and compare with quantities on delivery notes or mass balance calculation (please state the exact quantity under "findings")	Quantities identified and consistent for the respective period	(x)		Quantities are consistent.		x
4.2.2.4 and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculation based on the respective reporting: Add the quantity of	Result B is equal or smaller result A	(x)	x	Production reports present		x

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
		sustainable material in stock (at the beginning of the period) and the incoming sustainable material for the entire period. Multiply this sum with the conversion factor for this period and add the stock (at the beginning of the period) of the sustainable product (biofuel or bioliquid). This is result A. Determine the quantity of outgoing sustainable products during this period (Result B)						
4.2.1, 4.2.2.4 and ISCC 204, 4.3	Was the credit for sustainable biomass to be transferred into the next period calculated correctly?	Check credit calculation based on above mass balance calculation figures. Subtract B from A (A-B=C) and compare with inventory level D of sustainable and non-sustainable biomass.	Credit is equal C, when C is equal or smaller D; Credit is equal D if C is larger than D	(x)	x	Only a small amount of the CAT 3 material is sold as ISCC EU material for the biodiesel market.		x
ISCC 204, 4.1.3.1	Were the GHG emissions from transport of sustainable product from supplier to conversion unit included in to the calculation?	Not necessary if GHG default values for transport were applied. In cases of individual GHG calculations or if disaggregated default values are used, the GHG emissions must be calculated based on transport distance, fuel	Emission factors for modes of transport are selected correctly and related emissions are calculated correctly	(x)		Default value		x

Bilag 12a

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
		consumption and fuel emission factor (see also ISCC 205). Transport emissions must be added to GHG emissions of incoming sustainable material (s.a. statement on delivery note).						
ISCC 204, 4.2.2.2	Did no aggregation of different GHG values of incoming raw materials take place within the bookkeeping, even if of the same kind or from the same origin?	Check incoming batches in documents of bookkeeping for disaggregated GHG values. Note that also the highest GHG emission value (of the least performing batch) can be used for the entire input (if other sustainability characteristics are identical).	No aggregation of GHG values or highest value for all batches		x	Default value		x

Bilag 12a

Audit procedures	Conversion units	Template No. 4:	Greenhouse gas emissions

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
4.1 (1)	Were default values applied?	Is it obvious from the documentation of GHG emissions whether they are based on default values, individual calculations or a combination of both?	Documentation GHG value, documents for GHG calculation, explanation which of the three options were applied			Default value		x
4.1 (2)	Were individual values calculated?				x	Default value		x
4.1 (3)	Was a combination of default and individual values applied?				x	Default value		x
4.1	In case of default values were used: Have the correct default values been applied according to the Directive 2009/28/EU?	Verify whether the conversion unit fits into the category from which the default value was chosen (e.g. kind of power generation) and if default value is not lower than the required GHG emission savings. Example palm oil (applicable default value is related to methane capturing); verification and check whether methane capturing is in place on site and in good condition	Reporting for sustainable raw material inputs and biofuel produced; documentation regarding plant layout, power generation etc., production steps and processes transparent. Example palm oil : Methane capturing visible, no leakages visible, state of the art technology and maintenance proven by producer manuals, service reports etc.	(x)	x	Default value		x
4.2.1	Does the collected data comply with the requirements on data basis?	Have the following data been collected on site or are available; verification of data plausibility; verification	Reporting of incoming and outgoing material, delivery documents, flow meters, invoices, by site visit, plant layout and process descriptions,	(x)	x	Default value		x

Bilag 12a

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
		whether further inputs and outputs do exist: - Amount of main- and co-products p.a. - Amount and type of raw materials used p.a. - Amount of chemicals used p.a. - Diesel consumption and used raw material - Electricity and thermal energy ○ Consumption p.a. ○ Source (external, own process) ○ In case of own process: used raw material - Amount of wastes (e.g. palm oil mill effluent (POME), waste water) - GHG emission value of the raw material input Lower Heating Values (LHVs) and emission factors should always come from 2009/28/EC, the “ISCC list of emission factors” (ISCC 205) or scientifically peer-reviewed literature)	meters and corresponding documentation etc.					

Bilag 12a

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.2.5	Were emissions calculated according to the formula ISCC 205, 4.2.5	Verification whether the calculation of GHG emissions for conversion was conducted according to the formula with taking all relevant inputs into account. Verification whether methodology was kept consistent for units of inputs, intermediate results and final results.	Transparent documentation of calculations and results.	(x)	x	Default value		x
4.2.5	Was excess electricity produced from combined heat & power generation (cogeneration) implying that a credit for the related emission savings can be granted (subtracted from the total GHG emissions of the plant)?	Verification whether a combined heat & power generation unit was used which produced more electricity than consumed by the conversion plant. The assumption is that the size of the cogeneration unit is equivalent to the minimum size which is necessary to provide the thermal energy needed for the production of fluid biomass. This requires verification of the following by checking on site or based on documents: - Electricity consumption conversion plant (kWh/yr) - Excess electricity (kWh/yr)	- Documentation of the total electricity consumption of the cogeneration unit (meter, technical data, etc.) - Proof of consumption by meters, technical data of the unit, etc. - Documentation of electricity production of the cogeneration unit and determination of the excess electricity based on technical data or documentation of meter status - Setup, description and technical data regarding the cogeneration unit (fuel, type, size, etc.)			Default value		x

Bilag 12a

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
		- Kind of fuel used for the cogeneration unit - Yield of the main product (kg/yr) (s. also 4.2.1.1) - Type of cogeneration unit - Emission factor of the fuel for the cogeneration unit						
4.2.6	Were the relevant GHG emissions for transport determined correctly? See also 4.2.6 and ISCC 204, 4.1.3.1 within template 3 (traceability and mass balance).	Verification whether following data is available and plausible: - Transport distance loaded and unloaded - Mode of transport - Quantity of transported intermediate product	- List of suppliers and addresses - List of recipients and addresses - Delivery notes - Weighbridge tickets - Information from suppliers or transporters and documentation regarding unloaded distances	(x)	x	Default value		x
	If no sustainable material with GHG values has been transported up to now (1. audit) a respective calculation procedure for determining transport emissions must have been implemented	Verification whether following data is available and plausible: - Emission factor fuel - Fuel consumption loaded - Fuel consumption unloaded Data can be taken from literature or gathered.	Documentation of information, sources and publication date as far as the data is from literature sources. Transparent documentation of individual data (e.g. fuel consumption) and data collection	(x)	x	Default value		x
4.2.7	Was the allocation (if relevant) of emissions and the allocation factor calculated correctly? In case no sustainable raw materials with GHG value have been processed up to	Verification whether the allocation of emissions is allowable: - No allocation of waste and residues was performed - No allocation of harvest residues was performed	- Transparent and traceable documentation of calculation and calculation methodology of the allocation factor - Documentation of the lower heating values for main and by products and their sources and	(x)	x	Default value		x

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
	now, is the corresponding calculation procedure available?	Verification of the calculation of the allocation factor according to the required methodology: - Lower heating values for main and by products are available - The yearly yields for main and by products are available - The calculation was performed according to the methodological requirements from ISCC 205	publication dates - Annual yields of main and co-products (proofs see also 4.2.1 and template 3 (traceability and mass balance)					
4.2.8	In case of the conversion unit being the last conversion unit - Were the overall GHG emissions and GHG saving potential calculated correctly and were transport emissions to final market taken into account	Verification whether the; - Correct fossil reference according to Directive 2009/28/EU was selected - Conversion from GHG emissions per kg of end product into emissions per MJ took place by using the heating values from Directive 2009/28/EC	Values chosen and calculations performed comply with requirements	(x)	x	No last conversion unit, rendering plant.		x

Bilag 12a

Audit procedures	Conversion units	Template No. 5	Non-conformity list

No.	Requirement/Finding	Measure	Implementation until when (within 40 days)	Measure implemented	
				No	Yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Oleki NV, 24-09-2014__________
Place, Date, Signature Auditor

Oleki NV, 24-09-2014 ____________
Place, Date, Signature Client

Bilag 12b

ISCC International Sustainability & Carbon Certification

ISCC EU Audit Procedures for First Gathering Point/Collecting point of wastes and residues

Verification of the requirements for First Gathering Point and Collecting points/warehouses

No.	Template	Remarks	Risk level	Audit Intensity	Page
1	Basic data			Not relevant	2
2	Management system	Risk assessment according ISCC 207		Not relevant	3
3	Traceability and mass balance (First Gathering Point)	Within Template No. 2 the risk of a flawed documentation has to be evaluated. The risk level determines the audit intensity	High	The documents of three successive months should be checked completely	9
			Medium	The documents of one month should be checked completely and random samples should be taken from three successive months.	
			Regular	Documents taken from random samples of three successive months should be checked	
4	Greenhouse gas emissions			Not relevant	17
5	Traceability and mass balance (Dependent Collecting points/warehouses)	Should only be applied if the First Gathering Point receives raw material from collecting points and/or warehouses acting on behalf of the certified FGP. Within Template No. 2 the risk of a flawed documentation has to be evaluated. The risk level determines the audit intensity	High	2 x square root of all collecting points/warehouses belonging to First Gathering Point. Documents of three successive months should be checked completely	20
			Medium	1.5 x square root of all collecting points/warehouses belonging to First Gathering Point. Documents of one month should be checked completely and random samples should be taken from three successive months	
			Regular	Square root of all collecting points/warehouses belonging to First Gathering Point. Documents taken from random samples of three successive months should be checked	
6	Non-conformity list	Defined list of all points marked „no“ in the column Conformity		Not relevant	26

Bilag 12b

Audit procedures	First Gathering Point	Template No. 1:	Basic data

First gathering point		
1	**Country**	Danmark
2	**Company name**	NC Miljø A/S
3	**Location and address**	Industrivej 9, 5853 Ørbæk
4	**Geo coordinates {degrees (°)/ minutes (‘) / seconds (“)}**	N55°15.897 E10°40.266
5	**ISCC registration No.**	ISCC-Reg-3152
6	**Individual calculation of greenhouse gas emissions**	yes: ☐ {emissions: kg CO2eq/ per ton raw material} no: ☒
7	**Name of responsible unit manager**	Niels Christian Nielsen
8	**Name of relevant service providers/subcontractors**	no subcontractor
9	**Name of certification body**	TÜV Rheinland Cert GmbH
10	**Registration No. certification body**	DE-B-BLE-BM-ZSt-113
11	**Name of auditor(s)**	Dr. Rüdiger Meier
12	**Date of audit**	11/12.08.2014

12.08.2014 Rüdiger Meier

____________________ ____ ____

Place, Date Signature of the auditor Signature of the second auditor

General guidelines:

The procedures for First Gathering Points/Collecting Points of waste/residues contain six templates, which should be used by the auditor when conducting the audit. The audit of points of origin providing more than 10 metric tons of waste/residues per month and the audit of collecting points/warehouses are part of the audit of the First Gathering Point and have to take place at the same time.If applicable, points of origin should be verified based on the respective procedure “Point of origin”. The outcome of the audit of the points of origin influences the risk assessment and thus the sample size of the points of origin. The risk of a flawed documentation will be evaluated in terms of risk levels high, medium and regular based on the procedure described at the end of Template 2 according to document ISCC 207. The risk level will drive audit intensity and the sample size of collecting points/warehouses delivering to the First Gathering Point.
Some requirements of the templates will be not or only partly relevant as at the time of the first audit a document history may not be available. Therefore reporting, mass balance calculation and other elements can only be checked with respect to methodology and “calculation mechanics“. These requirements are marked with „(x)“ for „requirements partly relevant“ and „x“ for „require-ments not relevant“. It is mandatory to mark under the category „conformity?” either the column „yes“ (conformity) or „no“ (non-conformity) of the template. In every case of “no” the auditor has to explain his decision in column „findings“. Every “no” requires the definition of corrective measures. Major musts shall be implemented within 40 days. Implementation has to be verified by the auditor and is a prerequisite for issuance of the certificate. If the requirements are not fulfilled, the certification body is obliged to send a copy of the audit report to ISCC and the competent authority without delay.

Bilag 12b

Audit procedures	First Gathering Point/Collecting Point	Template No. 2:	Management system

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.1.1, ISCC 207	Is the management system appropriate with respect to type, complexity and volume of the required operations and takes risk factors into account?	Check whether there is a management system (paper, intranet etc.), whether the system covers sustainability requirements within all relevant operations and languages and risk factors like expertise, education and training of employees and service providers, subcontractors (s. a. ISCC 207).	Management system documentation, documents, interview of personnel			Managing Director: Niels Christian Nielsen Administration: Helle Nøgaard Nielsen 9 full employeed people		x
4.1.2.1	Has relevant information and documentation been distributed to the relevant personnel, related collecting points, warehouses and service providers and other parties?	Check distribution lists (email, paper etc.) and demand documents from personnel, collecting points, warehouses, relevant subcontractors and service providers	Mailing lists, relevant management system documents		x			x
4.1.2.2	Have employees been appointed by the company that are responsible for the implementation of the sustainability requirements at all critical control points?	Check responsibilities for critical control points like sourcing, logistics, inventory, sales and distribution, quality assurance etc.	Organisation charts, job descriptions, task and responsibility descriptions within the management system, interview of personnel		x	Production Manager responsible for mass balance, traceability (DE / EU)		X
4.1.2.2	Have employees been ap-	Verify responsibilities and	Documents and mailing lists,		x			X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
	pointed that are responsible for the development and updating of the management system and the documents as well as for the control of the sustainability requirements?	updating procedures	updating procedures, organisation charts, job descriptions, description of responsibilities in the management system					
4.1.2.2	Have employees been appointed that are responsible for the internal verification of the sustainability requirements at the company?	Verify responsibilities and authorizations	Organization chart, job descriptions, task and responsibility descriptions, distribution lists, interview of personnel		x	Interview with Production Manager.		X
4.1.2.2	Has an internal audit been conducted by the employees named above?	Visual inspection of audit report (inspection should take place at least once a year) for First Gathering Point, related collecting points/warehouses, subcontractors and service providers	Verification report, action plan, progress report	(x)		Internal Audits are part of the daily business (Continuous improvement process). Attendants list available (KW 40/2013)		X
4.1.6	Did reviews of the audit report take place?	Verification whether the management has reviewed the audit report (should take place at least once a year)	Review report, Review minutes, interview of management	(x)				X
4.1.2.2, ISCC 203, 204 and 205	Are procedures available and appropriate with respect to sustainability requirements for all critical control points?	Check procedures (e.g. regarding traceability, mass balance, GHG calculation etc.) at critical control points (e.g.sourcing, logistics, inventory control,	Material flow charts, standard operating procedures, job descriptions, task/responsibility descriptions, contractual agreements with service pro-		x			X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
		sales and distribution, quality assurance etc.)	viders/subcontractors					
4.1.5.1	Did appropriate trainings take place covering the sustainability requirements of the critical control points?	Check training material, training planning documents and whether the relevant personnel of the First Gathering Point and collecting points, warehouses did participate in the trainings	Training planning documents, training material, mailing lists, emails, lists of participants, interviews of the participants	(x)		Attendants: Henning Chistiansen (Trainer) Bent Pedersen Ivan Jochumsen Frank Jensen Niels S. Espersen Jan Madsen		X
4.1.5.2	Is the relevant technical equipment and infrastructure available and in operation for the critical control points?	Check whether weighbridges, flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, warehouse etc.	Weighbridge ticket, sensor display, computer system reports, display, computer reports regarding process parameters, filing status, etc.		x			X
4.1.4	Are the following documents, records, reports, information and data available for the First Gathering Point and dependent collecting points/warehouses?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge tickets) are not directly available due to the large amount of documents, it should be possible to deliver a sample during the audit in a timely manner.	Plant operation permit or operating licence, plant layout plan, silo plan, tank plan, silo/warehouse capacity, tanks capacity		x	CVR-Nr.: 2630 5141 since the 07-12-2012. Kommune Nyborg		X
			Latest and signed ISCC terms of use, check: www.iscc-system.org		x			X
			List and corresponding self-declarations of all points of waste and residue origination delivering material		x			X
			List of dependent collecting points/warehouses	(x)	x	BI Miljo Marius Pedersen A/S, Ferritslev		
			Weighbridge tickets, delivery	(x)	x			X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
			notes, bill of lading and other shipment documents for in-coming and outgoing waste and residues					
			Periodical reporting of the in-coming waste/residues (period-ically, annually)	(x)	x	Reporting on a monthly base.		X
			Periodical reporting of opening and closing stock of the ware-house for waste/residues	(x)	x			X
			Contracts with suppliers of waste/residues	(x)	x			X
			List of and corresponding con-tracts with all recipients of out-going waste/residues	(x)	x			X
			Periodical reporting of the out-going waste/residues (periodi-cally, annually)	(x)	x			X
			Contracts with relevant service providers, subcontractors	(x)	x			X
			Mass balance sys-tem/calculation	(x)	x	Since 12/2013 no EU-Material		X
			Written commitment to comply with the requirements of the ISCC system	x	x			X
			Report and action plan of the last audit	x				X
			Report and action plan of the last internal audit	(x)				X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.1.4	Are the above-mentioned documents, records, reports, information, data kept for at least 10 years?	Ask for the "oldest" documents and compare with ISCC registry data (only in case of doubts)	ISCC registry, documents are from the first audit or at least 10years old	x				X
4.1.7	Are documents and information treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Mailing lists, emails and access authorizations to data bases	(x)				x
4.1	Has a risk assessment been carried out based on the above mentioned documents, reports, information and data?	Evaluate the risk, taking into account the following guidance: Regular risk: above-mentioned documents are accurately managed, up to date, complete and accessible without problems. Medium risk: above mentioned documents are not managed accurately and are not accessible without problems. High risk: above mentioned documents are not up to date and not complete.	The risk has been evaluated in a well-balanced way. The risk category of regular, medium or high risk has been documented properly.		x			x
	Is ensured, that no hopping between certification schemes is performed with the intention to cover violations of other recognized	Verify if the audited site has a previous history of certification under one or more different recognized voluntary schemes. Check for signs of	Previous certificates of the audited site under other schemes, websites/blacklists of other recognized certification schemes, audit reports of other		x			x

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
	certification schemes and/or violations against regulations laid down in the Renewable Energy Directive?	violation of regulations under other schemes e.g. check if a certificate has been withdrawn by the issuing certification body. Note: Companies are allowed to use more than one certification scheme.	relevant schemes					

Bilag 12b

Audit procedures	First Gathering Point	Template No. 3:	Traceability and mass balance

Risk level (s.a.Template No. 2)	Audit intensity
High	Documents of three successive months should be checked completely
Medium	Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	Random samples should be taken from three successive months

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
4.2.1, 4.2.2.4	Is the information on the list of suppliers (points of origin, certified collectors or certified trad-ers/warehouses) and recip-ients of waste/residues complete?	Check whether required in-formation contains name, address, certification system, certificate number, person responsible for sustainability	List of suppliers and recipients does contain the required in-formation	(x)				x
ISCC 201 / WR 4.2.5	Is ensured, that delivery notes or sustainability dec-larations related to waste/residues and/or material eligible for dou-ble- or quadruple-counting which are issued under other certification systems are not accepted (only exception: ISCC has ap-proved the equivalence of the system based on an equivalence benchmark)	Check certificates of suppliers. Check delivery notes and sus-tainability declarations. Note: This requirement ap-plies from 01 September 2013.	Certificates, delivery notes, list of suppliers	(x)	x			X

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
ISCC 201 / WR 4.2.1	Is ensured, that waste/residues are only collected from points of origin, which have filled in and signed the appropriate self-declaration?	Check whether the appropriate self-declaration has been filled in and signed. Compare dates of incoming deliveries with the date the self-declaration has been signed. Compare deliveries, self-declarations and the list of points of origin. Verify the information on the self-declaration (e.g. does the point of origin really exist at the address provided?).	Delivery notes, waste transfer notes, self-declarations, contracts, list of points of origin		X			
4.2.1, 4.2.2.2	Does the information and quantities from weighbridge tickets, delivery notes or sustainability declarations, of the incoming and outgoing waste/residues match with the information of the reporting system of the company?	Compare quantities of the reporting with incoming/ outgoing weighbridge tickets, delivery notes or sustainability declarations. Deviations up to 0,5% are acceptable. Deviations above 0,5% will require explaining documentation (e.g. weight loss due to drying/cleaning documented by drying protocols etc.)	Quantities of delivery notes, weighbridge tickets and reporting for sustainable raw material consistent	x	x			X
4.2.1, 4.2.2.2	Are the quantities of the supplied and delivered waste/residues consistent with the amounts fixed in contracts?	Compare quantities from reporting with contract details. Take into account that contract quantities can be split into several batches or that	Quantities are consistent	(x)				X

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
		one batch may consist of different contracts. Surplus or smaller amounts (based on a respective accounting) are also possible.						
	Is ensured, that waste and residues are not produced intentionally by the supplying points of origin?	Compare the collected amounts with the size and the type of point origin. Compare the amounts collected with the amounts of other points of origin that are similar in size and type.	Contracts, invoices, weighbridge tickets, delivery notes for collected amounts, Self-declarations					X
ISCC 201 / WR 4.2.5	Is ensured, that delivery notes are only accepted from certified suppliers?	Check certificates of suppliers. Note: This does not apply to points of origin and to dependent collecting points.	Delivery notes, certificates, certificate databases	(x)	x			X
4.2.1, 4.2.2.2	Do the dates of the delivery notes or sustainability declarations for incoming/outgoing waste/residues match with the period of validity of the certificate of the supplier?	Compare dates on “latest” and “oldest” delivery note with the period of validity of the certificate	Dates are within the period of validity of the certificate	(x)	x			X
4.2.1 4.2.2.2	Is data from subcontractor contracts consistent with actually accounted services?	Compare data with commissioned services e.g. commissioned transportation services with actual kilometres, if relevant	Contract data and actual services provided are consistent	(x)				X
4.2.1	Does the information on	Verification whether delivery	Delivery notes or weighbridge	(x)	x			X

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
4.2.2.2 and ISCC 201 / WR 4.1.5	delivery notes and sustainability declarations for incoming and outgoing waste/residues comply with the requirements?(From points of origin no delivery note is necessary as the weighbridge protocol of the First Gathering Point and its collecting points can substitute the delivery note. It must contain all data mentioned in the next column. If the point of origin issues delivery notes, the consistency with the weighbridge protocols must be verified.)	notes (supplied by points of origin, collecting points or warehouses) contain the following information: (during the first audit, this only needs to be checked in case material has already been delivered): - Unique batch identification number ([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate-No.] - [8-digit serial No.]), alternatively No. of certificate, ID of certification body and unique running number - Country of origin of the waste/residue - Contract number - Name and address of the supplier (point of origin, collecting point, warehouse) (only for incoming deliveries) - Name and address of the recipient (only for outgoing deliveries) - Type of waste/residue - Date of issue (date when	tickets for incoming or outgoing waste/residues contain the required information.					

Bilag 12b

ISCC
International Sustainability & Carbon Certification

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
		material was physically dispatched/delivered) - The amount in tons or m^3 of sustainable product - Statement if the disaggregated default value for greenhouse gases is used - Greenhouse gas emissions of the waste/residues (in kg CO_2eq per ton)for the outgoing material - Means of transport (only if individual calculation is applied) - Distance of transport from the point of waste or residue origination to the First Gathering Point in kilometres (only if individual calculation is applied)						
4.2.1	Have the delivery notes for outgoing batches been issued within the validity period of the certificate of the First Gathering Point?	Compare the "oldest" and the "most recent" delivery note with the validity period of the certificate of the First Gathering Point.	Dates are within the validity period of the certificate	(x)	x			X
	Is ensured, that for one batch not more than one delivery note or proof of sustainability is issued?	Verify that not more than one delivery note or proof of sustainability has been issued for one batch of outgoing prod-	Mass balance, delivery notes, proof of sustainability		x			X

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major musts	Findings	Conformity? No	Conformity? Yes
		uct. Check especially that no blue ISCC proof has been issued together with the issuance of a proof in a database of a Member State.						
4.2.1and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculation based on the respective reporting: Add the quantity of material in stock (at the beginning of the period) and the in coming-material for the entire period. This is result A. Determine the quantity of outgoing sustainable products during this period (Result B)	Result B is equal or smaller result A	(x)	x			X
4.2.1, 4.2.2.2 and ISCC 204, 4.3	Was the credit for waste/residues to be transferred into the next period calculated correctly for all sites?	Check credit calculation based on above mass balance calculation figures. Subtract B from A (A-B=C) and compare with inventory level D of sustainable <u>and</u> non-sustainable material.	Credit is equal C, when C is equal or smaller D; Credit is equal D if C is larger than D	(x)	x			X
	Is ensured, that points of origin providing more than 10 metric tons of waste/residues per monthare audited?	Check the list of points of origin and delivery documentation for points of origin providing more than 10 metric tons of material per month. Basis for the 10 metric tons	List of points of origin, delivery documentation, delivered quantities,		x			X

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
		per month is the output of-waste/residues during the last year (if more than 120 tons of waste/residues have been produced during the previous year an audit is necessary). Depending on the nature of the point of origin, sampling can be applied. The sample Note: Points of origin provid-ing less than 10 metric tons per month may be checked by a certification body if there is indication of non-conformities. For all audits of points of origin, the respective ISCC procedure shall be ap-plied.						
	Have points of origin providing more than 10 metric tons of waste/residues per month been selected for an on-site audit?	Select a minimum of the sort of the number of points of origin taking into account the following criteria: • type of material • type of operation (e.g. res-taurant, industrial operator) • amount of provided material • location/country of the point of origin • indication of non-	Points of origin have been se-lected. Audits are documented in audit reports.			No client at this moment. n. a.		

Bilag 12b

Ref. No. ISCC 203 and 201 / WR	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
		conformities The selected points of origin should represent operations with different criteria if applicable.						
	Is ensured, that all points of origin comply with the ISCC requirements?	Verify self-declarations. Check if all audited points of origin comply with the requirements.	Audit reports, self-declarations					X

Bilag 12b

Audit procedures **First Gathering Point** **Template No. 4:** **Greenhouse gas emissions**

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
4.1	Are all GHG values of in-coming waste/residues documented at the First Gathering Point? Note: Only transport emis-sions are relevant, as waste/residues do not have own emissions.	Verify whether for all incoming waste/residues the GHG val-ue(disaggregated default value or actual value) is available.	Delivery documents; doc-umentation of GHG values	(x)		default		X
4.1 (1)	Is the GHG information for incoming material entirely based on disaggregated default values?	Check if the GHG information-clearly shows on which type of value it is based on (disaggregat-ed default value or actual value). Verify whether the disaggregated default values are applied cor-rectly according to the incoming material and the respective val-ues are taken from Directive 2009/28/EC. Verify that the dis-aggregated default values are provided in emissions per ton of product.	Documentation of GHG values for incoming mate-rial on delivery documents, self declarations of the points of waste or residue origination	(x)		No disaggregated values.		X
4.1 (2)	Is the GHG information for incoming material entirely based on actual values?			(x)				X
4.1 (3)	Is the GHG information for incoming material based on a combination of actual values and disaggregated default values and is this documented properly?			(x)				X
4.2.5	Have the GHG emission values from transport of sustainable biomass from	Verify whether the following information is available: - Transport distances loaded and	- List of supplier and their addresses - Delivery documents	(x)	x			X

Bilag 12b

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major musts	Findings	Conformity? No	Conformity? Yes
	companies been taken into account and were they calculated correctly according to the respective methodology (see also ISCC 204, 4.1.3.1 in Template No. 4, Traceability and Mass Balance)? If no sustainable material with GHG values has been transported up to now (1. audit) a respective calculation procedure for determining transport emissions must have been implemented	empty - Mode of transport - Amount of transported material	- Weighbridge documents - Statements from suppliers or transport company and documentation on distances of transport unloaded					
		Verify whether the following information is available: - Emission factor fuel - Fuel consumption loaded - Fuel consumption empty Data can be taken from literature or gathered. Emission factors should always come from 2009/28/EC or the "ISCC list of emission factors" (ISCC 205).	Documentation of the information and their sources and year of publication if data comes from literature. Transparent documentation of actual data (e.g. fuel consumption) and their detection	(x)	x			X
ISCC 204, 4.1.3.1	Were the GHG emissions for transport of waste/residuespoint of waste or residue origination to First Gathering Points or from collecting points/warehouses to First Gathering Points taken into account?	In case of the individual calculation of GHG emissions or the use of disaggregated default values it should be checked whether the GHG emissions from transport were calculated based on transport distance, fuel consumption and fuel emission factor (see also ISCC 205). GHG emissions from transport must be added to the GHG emissions stated on the delivery order.	The emission factor and fuel consumption were correctly chosen and the calculation is performed correctly.	(x)				X
ISCC	Did no aggregation of dif-	Check incoming batches in doc-	No aggregation of GHG					X

Bilag 12b

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major musts		No	Yes
204, 4.2.2.2	ferent GHG values of incoming materials take place within the bookkeeping of the First Gathering Point even if of the same type or from the same origin?	uments of bookkeeping for disaggregated GHG values. Note that also the highest GHG emission value (of the least performing batch) can be used for the entire input (if other relevant characteristics are identical).	values or highest value for all batches					

Bilag 12b

Audit procedure	Collecting points/warehouses	Template No. 6:	Traceability and mass balance

Risk level	Audit intensity
High	2 x square root of all collecting points/warehouses belonging to First Gathering Point. Documents of three successive months should be checked completely
Medium	1,5 x square root of all collecting points/warehouses belonging to First Gathering Point. Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	The square root of all collecting points/warehouses delivering sustainable biomass to the First Gathering Point. Documents taken from random samples of three successive months should be checked

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.1.2.1	Have the sustainability requirements been provided to all relevant employees and subcontractors of the respective site?	Request for the documents for example at employees, relevant service providers.	Relevant documents of the management system		x			X
4.1.2.2	Is there at least one person in charge for the implementation of the sustainability requirements?	Verify responsibilities	Organizational chart, job description, if necessary interviews of employees		x			X
4.1.2.2, ISCC 203, 204 and 205	Are procedures and process descriptions with respect to sustainability requirements available for all critical control points?	Verify procedures and process descriptions (e.g. with respect to traceability, mass balance system, GHG calculation) at critical control points like intake, storage, outgoing goods	Material flow chart, procedures and process descriptions, job descriptions, responsibilities		x			X
4.1.5.2	Are the essential infra-	Verify whether weighbridges,	Weighbridge protocol, sensor		x			x

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
	structure and technical facilities in place and running at the critical control points?	flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, warehouse etc.	information/ reports, measurement reports, process computer displays, computer report on process parameters, filling levels etc.					
4.1.4	Are the following documents, papers, reporting system, information and data available?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge protocols) should not be available continuously due to the large amounts, it should be ensured that availability of a sample is guaranteed promptly.	Plant operation permit or operating licence, plant layout plan, silo plan, tank plan, silo/warehouse capacity, tanks capacity		x			X
			Weighbridge tickets, delivery notes, bill of lading and other shipment documents for incoming and outgoing waste and residues		x			X
			Delivery notes for outgoing waste and residues	(x)		n.a.		
			List of all recipients of wastes and residues	(x)	x			X
			Periodical reporting on outgoing waste and residues (periodical, annual)	(x)	x			X
			Periodical reporting on opening and ending inventory in the storage for outgoing waste and residues	(x)	x			X
			Contracts with relevant service providers					X
			Mass balance system/ calcula-	(x)	x			X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
			tion					
			Report and action list from last internal verification	(x)				X
4.1.4	Are the above mentioned documents kept for at least ten years?	Compare the “oldest” and latest documents with data from the ISCC registry (in cases of doubts)	ISCC Registry, Documents are from the first audit or at least ten years old	x				X
4.1.7	Are documentations treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Distribution lists, Emails and Access authorizations to data bases	(x)				X
4.2.1.1	Do amounts and data from weighbridge protocols for incoming and outgoing waste and residues match with the periodical reporting system?	Compare amounts from the reporting system and weighbridge protocols; variations of 0.5% are allowed. Higher variations must be substantiated by documents (e.g. weight loss due to drying, cleaning/ purification via drying protocols, calculation tables etc.).	Amounts are consistent	(x)	x			X
4.2.1.1	Does information on delivery notes for waste and residues gathered for the first time match with the required information? (From points of origin no delivery note is necessary as the weighbridge protocol of the First Gathering	Verify whether weighbridge protocols for first gathering of waste/residues contains the following information (during the first audit this must only be verified if material is already available): - Unique batch identification number	Delivery notes and weighbridge protocols of waste/residues contain the required information. If necessary, delivery notes can be assigned to the weighbridge protocols	(x)	x			X

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
	Point and its collecting points can substitute the delivery note. It must contain all data mentioned in the next column. If the point of origin issues delivery notes, the consistency with the weighbridge protocols must be verified.)	([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate-No.] - [8-digit serial No.]), alternatively No. of certificate, ID of certification body and unique running number - Country of origin - Contract number - Name and address of the supplier - Name and address of the First Gathering Point - Type of waste/residues - Date of issue (date when material was physically dispatched/delivered) - The amount in tons or m^3 - Quantity of carbon-equivalent as absolute value (in kg CO_2eq per ton). - Mode of transport (if applicable) - Transport distance from point of origin to First Gathering Point in kilometres (if relevant) If necessary, verification						

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
		whether delivery notes match with the weighbridge tickets.						
4.2.1.3 and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculations based on the reporting system: Add to the inventory of sustainable product at the beginning of a period to the incoming sustainable product (for the entire period) (result A). Determine the amount of the outgoing sustainable products leaving the collecting point during this period(result B).	Result B is smaller or equal to result A	(x)	x			X
4.2.1, 4.2.2.3 and ISCC 204, 4.3	Was the credit for the transfer of waste/residues to the next period calculated correctly?	Carry out respective control calculations based on the mass balance result: Subtract B from A (result C) and compare to the inventory D of sustainable and unsustainable material.	Credit is equal to C if C is smaller or equal to D, Credit is equal to D if C is bigger than D					X
ISCC 204, 4.1.3.1	Have the GHG emissions for transport of waste/residues from point of origin to the collecting point/warehouse been taken into account (see also Template No. 4: 4.1.3.1)?	In cases of static supply chains where GHG emissions for transport are summarized in an annual average for all incoming material the verification is taking place according to Template No. 5. In cases of the calculation of actual GHG	Emission factor and fuel consumption has been chosen correctly and value was calculated correctly.	(x)				x

Bilag 12b

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
		values or if disaggregated default values are used, the GHG emissions from transport must be calculated based on transport distance, fuel con-sumption and fuel emission factor (see also ISCC 205).						

Bilag 12b

No.	Requirement/Finding	Measure	Implementation until when (within 40 days)	Measure implemented	
				No	Yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

No findings.

Ørbæk the 12th of August 2014
Rüdiger Meier
____
Place, Date, Signature Auditor

Ørbæk the 12th of August 2014
____
Place, Date, Signature Client

Bilag 12c

ISCC EU Audit Procedures for Conversion units

Conversion Units for the Production of Biofuels and Bioliquids

No.	Template	Remarks	Risk level	Audit intensity	Page
1	Basic data			Not relevant	2
2	Management system	Risk assessment according to ISCC 207		Not relevant	4
3	Traceability and mass balance	Within Template No. 3 the risk of a flawed documentation has to be evaluated. The risk level determines the audit intensity	High	The documents of three successive months should be checked completely	10
			Medium	The documents of one month should be checked completely and random samples should be taken from three successive months	
			Regular	Documents taken from random samples of three successive months should be checked	
4	Greenhouse gas (GHG) emissions	Within Template No. 4 the declaration of default values and, if applicable, the individual calculation of GHG emissions has to be evaluated.		See No. 3. Not relevant for individual GHG calculations where yearly data has to be verified	18
5	Non-conformity list	Defined list of all points marked „no" in the column Conformity?		Not relevant	23

Bilag 12c

ISCC International Sustainability & Carbon Certification

Audit procedures	Conversion units	Template No. 1:	Basic data

Conversion Units for the Production of Biofuels and Bioliquids		
1	**Country**	Netherlands
2	**Company name**	IOI Loders Croklaan Oils B.V.
3	**Location and address**	Hogeweg 1, 1521 AZ Wormerveer
4	**Geo coordinates (voluntary)**	52.4846161, 4.808871
5	**ISCC registration No.**	ISCC-Reg-2645
6	**Type of conversion unit**	Refinery
7	**Production capacity**	329000 mt/year
8	**Individual calculation of own processing emissions**	yes: x emissions from processing: 101,62 kg CO2eq/ per ton mass of the main product no: (use of default values)
9	**Recertification**	yes: x☐ Total amount of biomass/ product declared as sustainable since previous audit (in metric tons): 0 mt Amount of biomass/product declared as sustainable since previous audit until 31.12.2013 (in metric tons): 0 mt Amount of biomass/product declared as sustainable since 01.01.2014 until date of audit (in metric tons): 0 mt no:
10	**Name of the responsible unit manager**	Mr. M. Schneider and Mr. E. Geusebroek
11	**Name of certification body**	Peterson Control Union Deutschland GmbH
12	**Registration No. certification body**	DE-B-BLE-BM-ZSt-105
13	**Name of auditor(s)**	Mr. J. Lotgerink
14	**Date of audit**	29-10-2014

29-10-2014 Date	______________________ Signature of the auditor	______________________ Signature of the second auditor

Bilag 12c

General guidelines

The audit procedures for conversion units include five templates which should be used by the auditor when conducting the audit. The risk of a flawed documentation will be evaluated in terms of risk levels high, medium and regular based on the procedure described at the end of template 2. The risk level will drive audit intensity. If GHG default values are used, only section 4.1 of template 4 needs to be applied. Some requirements of the templates will not or only be partly relevant since at the time of the first audit a document history (e.g. proofs of sustainability, sustainability declarations or delivery notes for sustainable biomass) may not be available and therefore reporting, mass balance calculation and other elements can only be checked with respect to methodology and „calculation mechanics“. These requirements are marked with „(x)” for „requirements partly relevant” and „x” for „requirements not relevant”. It is mandatory to mark under the category „conformity?” either the column „yes“ (conformity) or „no“ (non-conformity) of the template. In every case of “no” the auditor has to explain his decision in column „findings“. Every “no” requires the definition of corrective measures (s.a. template 5). Major musts shall be implemented within 40 days. Implementation has to be verified by the auditor and is a prerequisite for issuance of the certificate. If the requirements are not fulfilled the certification body is obliged to send a copy of the audit report to ISCC without delay.

Bilag 12c

Audit procedures	Conversion units	Template No. 2:	Management system

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
4.1.1, ISCC 207	Is the management system appropriate with respect to type, complexity and volume of the required operations and takes risk factors into account?	Verify whether there is a management system (documents, intranet etc.), whether the system covers sustainability requirements within all relevant operations and languages and risk factors like expertise, education and training of employees and service providers, subcontractors (s.a. ISCC 207).	Documentation of the management system and interviews of personnel			ISO 14000 / FSCC 22000 / HACCP / GMP+ / RSPO / Sedex/ in Procedures are documented in the 'Insight' Employees are aware of their task with regard to sustainability		x
4.1.2.1	Have relevant information and documentation been distributed to the relevant personnel, related collecting points, warehouses and service providers, subcontractors and other interested parties?	Verify distribution lists (email, paper etc.) and demand documents from personnel, collecting points, warehouses, subcontractors and service providers	Distribution list, relevant management system documents		x	Mr. Schneider and Mr. Geusebroek have trained all the employees of IOI about general requirements. Colleagues involved in critical control points have been trained 1:1 about their jobs.		x
4.1.2.2	Have employees been appointed by the company that are responsible for the implementation of the sustainability requirements	Verify responsibilities for critical control points like incoming and outgoing materials, warehouse bookkeeping, weighbridge,	Organization chart, job descriptions, task and responsibility descriptions within the management system, interview of personnel		x	A clear organisation structure with names and jobs was shown online.		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
	at all critical control points?	logistics, sales and distribution, quality control etc.						
4.1.2.2	Have employees been appointed that are responsible for the development and updating of the management system and the documents?	Verify responsibilities and authorizations	Documents and distribution lists, updating procedures, organization charts, job descriptions, description of responsibilities in the management system		x	Mr. Schneider and Mr. Geusebroek are responsible for updating the management system regarding ISCC and RSPO.		x
4.1.2.2	Have employees been appointed that are responsible for the internal verification of the sustainability requirements?	Verify responsibilities and authorizations	Organization chart, job descriptions, task and responsibility descriptions, distribution lists, interview of personnel		x	On line organigram seen in intranet pages version Daily updated.		x
4.1.2.2	Has an internal audit taken place by the employees named above?	Visual inspection of audit report (inspection should take place at least once a year)	Verification report, action plan, progress report	(x)		Internal audits are done on 14-10-2014 for ISCC EU and RSPO		x
4.1.6	Did reviews of the internal audit report take place?	Verification whether the management has verified the audit report (should take place at least once a year)	Review report, Review minutes, Interview management	(x)		See previous topic. Are discussed during the management review		x
4.1.2.2, ISCC 203, 204 and 205	Are sufficient procedure descriptions with respect to sustainability requirements available for all critical control points?	Verification of procedures (e.g. regarding traceability, mass balance, GHG calculation etc.) at critical control points (e.g. raw material sourcing, conversion process, logistics,	Material flow charts, standard operating procedures, job descriptions, task/responsibility descriptions, contractual agreements with service providers/ subcontractors		x	On the intranet 'Insight' for all critical control points it's described how to act. People involved are aware.		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
		inventory control, sales and distribution, quality assurance etc.)						
4.1.5.1	Did trainings take place appropriate to the needs of the critical control points?	Verify training material, course planning documents and whether the relevant employees participated in the training.	Training course planning, training documents, distribution lists, emails, participant lists, interviews participants	(x)		Trainings took place on 7-10-2014 and are scheduled for 2015 for15-9-2015		x
4.1.5.2	Is the technical equipment and infrastructure available and in operation for the critical control points?	Verify whether weighbridges, flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, warehouse, conversion process, etc.	Weighbridge ticket, sensor display, computer system reports, display, computer reports regarding process parameters, filing status, etc.		x	Calibration report VH 11 VH 9 VH 11 and VH 2, Aquarant all valid. Including weighbridge calibration report Wormerveer 06-06-2014		x
4.1.4	Are following documents, records, reports, information, and data available?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge tickets) are not ready of the shelf, it should be possible to deliver them during the audit in a timely manner	Latest and signed ISCC terms of use, check: http://www.iscc-system.org		x	last terms of use were signed and available for inspection during the audit		x
			Plant operation permit, plant layout plan, silo plan, tank plan, silo capacity, tank capacity		x	License to operate and tankplan dated 04-07-2014 seen		x
			Weighbridge tickets, delivery notes, bill of lading and other shipment documents (license, loading order, inspections etc.) for incoming and outgoing sustainable biomass		x	There has not been an ISCC transaction set up is shown during the audit		x
			List of all suppliers for incoming sustainable raw material and biomass	(x)		Overview seen in the administrative system		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
			Periodical reporting on incoming sustainable material (periodical, annually)	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Periodical reporting on opening and closing stock for incoming sustainable and non-sustainable raw material	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Contracts with suppliers of incoming sustainable raw material	(x)		There has not been an ISCC transaction set up is shown during the audit		x
			List of all recipients of outgoing sustainable material	(x)		There has not been an ISCC transaction set up is shown during the audit		x
			Contracts with recipients of outgoing sustainable products	(x)		There has not been an ISCC transaction set up is shown during the audit		x
			Periodical reporting on outgoing sustainable products (periodically, yearly)	(x)	x	set up is shown during the audit		x
			Periodical reporting of opening and closing stock for outgoing sustainable and non-sustainable products	(x)	x	Na no ISCC product traded until now set up seen		x
			Production report (periodically, annually) including conversion and allocation factor (if not provided within GHG calculation) and description of residues/waste, losses and co-products (if relevant)		x	Na no ISCC product traded until now set up seen		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st Audit	Major must		No	Yes
			Contracts with relevant subcontractors			Contract seen with Koole valid 25-06-2012 till 24-06-2016		x
			Delivery notes, sustainability declarations or proofs of sustainability on outgoing sustainable material	(x)	x	Na no ISCC product traded until now set up seen		x
			Delivery notes, sustainability declarations for incoming sustainable raw material or biomass	(x)	x	Na no ISCC product traded until now set up seen		x
			Mass balance system/ calculation	(x)	x	Na no ISCC product traded until now set up seen		x
			GHG calculation (only in case default values are not used)		x	Na no ISCC product traded until now set up seen		x
			Report and action plan of the last audit	x		Report of the last audit was available for inspection during the audit		x
			Report and action plan of the last internal audit	(x)		no nc's were detected during the previous audit		x
4.1.4	Are the above-mentioned documents kept for at least ten years?	Compare the "oldest" and latest documents with data from the ISCC registry (in cases of doubts)	ISCC Registry, Documents are from the first audit or at least ten years old	x		Docs are kept for 10years		x
4.1.7	Are documents and information treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Distribution lists, emails and access authorizations to data bases	(x)		Is discussed there is restricted access to the buildings and systems all computers are blocked with passwords		x
4.1	Did the risk assessment	Is done by the auditor.	Evaluation and declaration of		x	Regular risk		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
	take place based on the above mentioned documents, reports, information and data?	Regular risk: above-mentioned documents are accurately managed, up to date, complete and accessible without problems. Medium risk: above mentioned documents are not managed accurately and are not accessible without problems. High risk: above mentioned documents are not up to date and not complete.	regular, medium or high risk					

Bilag 12c

Audit procedures	Conversion units	Template No. 3:	Traceability and mass balance

Risk level (s.a. template 2)	Audit intensity
High	Documents of three successive months should be checked completely
Medium	Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	Random samples should be taken from three successive months

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
4.2.1, 4.2.2.4	Is the information on the list of suppliers and recipients of sustainable materials/ products complete?	Check whether required information contains name, address, certification system, certification number, person responsible for sustainability	List of suppliers and recipients does contain the required information	(x)		Data can be found in Word and Excel.		x
4.2.1, 4.2.2.4	Do the information from delivery notes, sustainability declarations, proofs of sustainability of the incoming and outgoing sustainable materials/products match with the information from the reporting system? Is the capacity of the plant consistent?	Verify according to risk category. Compare delivery notes, sustainability notes, sustainability declarations, proofs of sustainability and data in the plant operation permit with reported amounts in the reporting system.	Quantities of delivery notes and reporting for sustainable raw material consistent	x	x	Set up seen no ISCC deliveries made since the initial audit		x
4.2.1, 4.2.2.4	Does information from weighbridge tickets match with information from delivery notes, bill of	Compare the weighbridge tickets, bill of ladings and delivery notes, sustainability declarations or proofs of	Amounts and data on both documents are consistent.	(x)	x	Set up seen no ISCC deliveries made since the initial audit		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
	ladings, sustainability declarations or proofs of sustainability?	sustainability for sustainable raw material/products, in particular with respect to amounts and data from the supplier (deviations up to 0,5% will be accepted. Deviations above 0,5% will require explaining documentation)						
4.2.1, 4.2.2.4	Do the dates of the delivery notes, sustainability declarations, proofs of sustainability for sustainable material/products match with the validity of the certificate of the supplier?	Compare dates on "latest" and "oldest" delivery note with validity of the certificate	Dates are within the validity of the certificate	x	x	Expected suppliers certificates are available for inspection		x
4.2.1, 4.2.2.4	Are the quantities of the supplied and delivered sustainable materials/products consistent with the amounts fixed in contracts?	Compare quantities from reporting with contract details. Take into account that contract quantities can be split into several batches or that one batch may consist of different contracts. Surplus or smaller amounts (based on a respective accounting) are also possible.	Quantities are consistent	(x)		Set up seen		x
4.2.1. 4.2.2.4	Is data from subcontractor contracts consistent with	Compare data with commissioned services e.g.	Contract data (from tables, calculations etc.) and invoiced	(x)		To be checked during the audits after the first		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
	actually accounted services?	commissioned transportation services with actual kilometres, if relevant	services provided are consistent			production		
4.2.1, 4.2.2.4	Does the information on delivery notes, sustainability declarations or proofs of sustainability of incoming and outgoing sustainable material/products fulfil the requirements? Is the information consistent with information in production reports?	Verify whether the documents contain the following information: - If applicable, the unique identification number ([2 -digit cert.-system ID] - [3-digit certification body-ID] - [8-digit certificate-No.] - [8-digit serial No.]), alternatively No. of certificate, ID of certification body and unique running number - Country of origin of the biomass - Contract number - Name and address of the supplier - Name and address of the recipient - Type of sustainable product - Statement whether produced from residue or waste - Date of issue	Delivery note for sustainable raw material and products contain the required information. (The following details may be given instead of the unique identification number: • Name of the certification system • Certificate number • Serial number of the delivery note)	(x)	x	To be checked during the audits after the first production		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes

		- The amount in tons or m³ of sustainable product
		- Statement whether the default value or the disaggregated default value is used or whether actual calculation is used.
		- Greenhouse gas emissions in kg CO_{2eq} per tonne of product
		  ○ Absolute value of quantity of carbon-equivalent (allocated for all upstream elements) in kg CO_2eq per ton of batch of sustainable product
		  ○ Mode of transport (if applicable)
		  ○ Transport distance (not applicable if transport emission are already included in GHG calculation)
		- If conversion unit is last conversion unit the following information are required for sustainability declarations or proofs of						

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1. Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
		sustainability additionally: ○ Energy content in MJ ○ Statement that the sustainable product fulfils the requirements of the RED ○ GHG emissions in gCO_2eq/MJ ○ Fossil reference in gCO_2eq/MJ ○ Regions to which the product can be delivered without violating the GHG emission savings (not required if the default value is applied)						
4.2.1.2	Is the internal process of the conversion plant documented?	The information should include a brief process description, the main product, co-products, residues and losses within the process, flow charts etc.	Relevant information, documents, etc. are available		x	A flowchart of the process has been shown. Part of the intranet system "Insight"		x
4.2.1.2	Does the periodic production report or another relevant reporting contain the necessary information?	Quantities of sustainable raw material	The reporting system contains the necessary information	(x)	x	Production report is part of the mass balance, sustainable raw materials is mentioned		x
		Conversion factors/yields				Production report is part of		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1. Audit	Category: Major must	Findings	Conformity? No	Conformity? Yes
						the mass balance, conversion factors and yields are mentioned and part of the calculations		
		Quantities of produced sustainable main product				Production report is part of the mass balance, contains produced sustainable main product		x
		Quantities of co-products (if necessary for determining the allocation factor and not available from other sources)				Production report is part of the mass balance		x
		Quantities of residues, losses etc. (if necessary and not available from other sources)				See previous point		x
		Production date (if necessary or dedicated batches need to be identified)				Production data is part of the mass balance		x
		Allocation factor (if not available from other sources)				Not applicable		x
		Declaration whether GHG default value or individual GHG calculation was applied				default value is used		x
4.2.1, 4.2.2.4 and ISCC 204, 4.3	Is the quantity of products declared as sustainable since the previous audit available and consistent?	Identify the relevant quantities for the period since the previous audit from reporting and compare with quantities on delivery notes or mass balance calculation	Quantities identified and consistent for the respective period	(x)		Mass Balance set up seen		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
		(please state the exact quantity under "findings")						
4.2.2.4 and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculation based on the respective reporting: Add the quantity of sustainable material in stock (at the beginning of the period) and the incoming sustainable material for the entire period. Multiply this sum with the conversion factor for this period and add the stock (at the beginning of the period) of the sustainable product (biofuel or bioliquid). This is result A. Determine the quantity of outgoing sustainable products during this period (Result B)	Result B is equal or smaller result A	(x)	x	Mass Balance set up seen		x
4.2.1, 4.2.2.4 and ISCC 204, 4.3	Was the credit for sustainable biomass to be transferred into the next period calculated correctly?	Check credit calculation based on above mass balance calculation figures. Subtract B from A (A-B=C) and compare with inventory level D of sustainable and non-sustainable biomass.	Credit is equal C, when C is equal or smaller D; Credit is equal D if C is larger than D	(x)	x	Mass Balance set up seen		x
ISCC 204,	Were the GHG emissions from transport of	Not necessary if GHG default values for transport were	Emission factors for modes of transport are selected correctly and	(x)		Transport is part of the GHG calculation		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1. Audit	Major must		No	Yes
4.1.3.1	sustainable product from supplier to conversion unit included in to the calculation?	applied. In cases of individual GHG calculations or if disaggregated default values are used, the GHG emissions must be calculated based on transport distance, fuel consumption and fuel emission factor (see also ISCC 205). Transport emissions must be added to GHG emissions of incoming sustainable material (s.a. statement on delivery note).	related emissions are calculated correctly					
ISCC 204, 4.2.2.2	Did no aggregation of different GHG values of incoming raw materials take place within the bookkeeping, even if of the same kind or from the same origin?	Check incoming batches in documents of bookkeeping for disaggregated GHG values. Note that also the highest GHG emission value (of the least performing batch) can be used for the entire input (if other sustainability characteristics are identical).	No aggregation of GHG values or highest value for all batches		x	No aggregation of GHG values		x

Bilag 12c

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.1 (1)	Were default values applied?	Is it obvious from the documentation of GHG emissions whether they are based on default values, individual calculations or a combination of both?	Documentation GHG value, documents for GHG calculation, explanation which of the three options were applied			The individual values were applied		x
4.1 (2)	Were individual values calculated?				x	Individual values are calculated per inbound		x
4.1 (3)	Was a combination of default and individual values applied?				x	Default for transport is applied		x
4.1	In case of default values were used: Have the correct default values been applied according to the Directive 2009/28/EU?	Verify whether the conversion unit fits into the category from which the default value was chosen (e.g. kind of power generation) and if default value is not lower than the required GHG emission savings. Example palm oil (applicable default value is related to methane capturing); verification and check whether methane capturing is in place on site and in good condition	Reporting for sustainable raw material inputs and biofuel produced; documentation regarding plant layout, power generation etc., production steps and processes transparent. Example palm oil : Methane capturing visible, no leakages visible, state of the art technology and maintenance proven by producer manuals, service reports etc.	(x)	x	5 g/MJ is used for palm		x
4.2.1	Does the collected data comply with the requirements on data basis?	Have the following data been collected on site or are available; verification of data plausibility; verification	Reporting of incoming and outgoing material, delivery documents, flow meters, invoices, by site visit, plant layout and process descriptions,	(x)	x	In the software system is clearly mentioned what amounts are purchased and sold.		x

Bilag 12c

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes

		whether further inputs and outputs do exist:
		- Amount of main- and co-products p.a.
		- Amount and type of raw materials used p.a.
		- Amount of chemicals used p.a.
		- Diesel consumption and used raw material
		- Electricity and thermal energy
		  o Consumption p.a.
		  o Source (external, own process)
		  o In case of own process: used raw material
		- Amount of wastes (e.g. palm oil mill effluent (POME), waste water)
		- GHG emission value of the raw material input
		Lower Heating Values (LHVs) and emission factors should always come from 2009/28/EC, the "ISCC list of emission factors" (ISCC 205) or scientifically peer-reviewed literature)
			meters and corresponding documentation etc.			The Electricity is taken from the public grid and is mentioned in the Sustainable overview which is made once a year.		

Bilag 12c

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
4.2.5	Were emissions calculated according to the formula ISCC 205, 4.2.5	Verification whether the calculation of GHG emissions for conversion was conducted according to the formula with taking all relevant inputs into account. Verification whether methodology was kept consistent for units of inputs, intermediate results and final results.	Transparent documentation of calculations and results.	(x)	x	There was a clear and correct calculation since the last audit in 2013.		x
4.2.5	Was excess electricity produced from combined heat & power generation (cogeneration) implying that a credit for the related emission savings can be granted (subtracted from the total GHG emissions of the plant)?	Verification whether a combined heat & power generation unit was used which produced more electricity than consumed by the conversion plant. The assumption is that the size of the cogeneration unit is equivalent to the minimum size which is necessary to provide the thermal energy needed for the production of fluid biomass. This requires verification of the following by checking on site or based on documents: - Electricity consumption conversion plant (kWh/yr) - Excess electricity (kWh/yr)	- Documentation of the total electricity consumption of the cogeneration unit (meter, technical data, etc.) - Proof of consumption by meters, technical data of the unit, etc. - Documentation of electricity production of the cogeneration unit and determination of the excess electricity based on technical data or documentation of meter status - Setup, description and technical data regarding the cogeneration unit (fuel, type, size, etc.)			Na no own power production. Electricity bill can be checked during the audit		x

Bilag 12c

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
		- Kind of fuel used for the cogeneration unit - Yield of the main product (kg/yr) (s. also 4.2.1.1) - Type of cogeneration unit - Emission factor of the fuel for the cogeneration unit						
4.2.6	Were the relevant GHG emissions for transport determined correctly? See also 4.2.6 and ISCC 204, 4.1.3.1 within template 3 (traceability and mass balance).	Verification whether following data is available and plausible: - Transport distance loaded and unloaded - Mode of transport - Quantity of transported intermediate product	- List of suppliers and addresses - List of recipients and addresses - Delivery notes - Weighbridge tickets - Information from suppliers or transporters and documentation regarding unloaded distances	(x)	x	There was a clear and correct calculation since the last audit in 2013.		x
	If no sustainable material with GHG values has been transported up to now (1. audit) a respective calculation procedure for determining transport emissions must have been implemented	Verification whether following data is available and plausible: - Emission factor fuel - Fuel consumption loaded - Fuel consumption unloaded Data can be taken from literature or gathered.	Documentation of information, sources and publication date as far as the data is from literature sources. Transparent documentation of individual data (e.g. fuel consumption) and data collection	(x)	x	There was a clear and correct calculation since the last audit in 2013.		x
4.2.7	Was the allocation (if relevant) of emissions and the allocation factor calculated correctly? In case no sustainable raw materials with GHG value have been processed up to	Verification whether the allocation of emissions is allowable: - No allocation of waste and residues was performed - No allocation of harvest residues was performed	- Transparent and traceable documentation of calculation and calculation methodology of the allocation factor - Documentation of the lower heating values for main and by products and their sources and	(x)	x	There was a clear and correct calculation since the last audit in 2013.		x

Bilag 12c

Ref. No. ISCC 205	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity?	
				Not relevant 1st audit	Major must		No	Yes
	now, is the corresponding calculation procedure available?	Verification of the calculation of the allocation factor according to the required methodology: - Lower heating values for main and by products are available - The yearly yields for main and by products are available - The calculation was performed according to the methodological requirements from ISCC 205	publication dates - Annual yields of main and co-products (proofs see also 4.2.1 and template 3 (traceability and mass balance)					
4.2.8	In case of the conversion unit being the last conversion unit - Were the overall GHG emissions and GHG saving potential calculated correctly and were transport emissions to final market taken into account	Verification whether the; - Correct fossil reference according to Directive 2009/28/EU was selected - Conversion from GHG emissions per kg of end product into emissions per MJ took place by using the heating values from Directive 2009/28/EC	Values chosen and calculations performed comply with requirements	(x)	x	Included in the disaggregated default value		x

Bilag 12c

Audit procedures	Conversion units	Template No. 5	Non-conformity list

No.	Requirement/Finding	Measure	Implementation until when (within 40 days)	Measure implemented	
				No	Yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Wormerveer 29-10-2014
Place, Date, Signature Auditor

Wormerveer 29-10-2014
Place, Date, Signature Client

E. GEUSEBROEK

Bilag 12c

ISCC Audit Procedures for Warehouses/ Suppliers

Warehouses or suppliers that store or transfer biomass, liquid biomass or biofuels

<table>
<tr><th>No.</th><th>Template</th><th>Remarks</th><th>Risk level</th><th>Audit Intensity</th><th>Page</th></tr>
<tr><td>1</td><td>Basic data</td><td></td><td></td><td>Not relevant</td><td>2</td></tr>
<tr><td>2</td><td>Management system</td><td>Risk assessment according ISCC 207</td><td></td><td>Not relevant</td><td>3</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">Traceability and mass balance</td><td rowspan="3">Within the risk assessment the risk of a flawed documentation has to be evaluated The risk level determines the audit intensity.</td><td>High</td><td>The documents of three successive months should be checked completely</td><td rowspan="3">8</td></tr>
<tr><td>Medium</td><td>The documents of one month should be checked completely and random samples should be taken from three successive months</td></tr>
<tr><td>Regular</td><td>Documents taken from random samples of three successive months should be checked</td></tr>
<tr><td>4</td><td>Non-conformity list</td><td>Defined list of all points marked „no” in the column Conformity.</td><td></td><td>Not relevant</td><td>15</td></tr>
</table>

Bilag 12c

Audit procedures	Warehouses/ Suppliers	Template No. 1:	Basic data

Warehouses or suppliers that store or transfer biomass, liquid biomass or biofuels		
1	**Country**	Netherlands
2	**Company name**	IOI Group Loders Croklaan Europe
3	**Location and address**	Hogeweg 1, 1521 AZ Wormerveer
4	**Geo coordinates**	52.4846161, 4.808871
5	**ISCC registration No.**	ISCC-Reg-2645
6	**Name of responsible manager**	Mr. M. Schneider and Mr. E. Geusebroek
7	**Name of relevant service providers/ subcontractors**	N/A
8	**Name of certification body**	Peterson Control Union Deutschland GmbH
9	**Warehouse concept**	X Single warehouse ☐ Logistics network (audit logistics center plus minimum of SQRT of number of related warehouses)
10	**Registration No. certification body**	DE-B-BLE-BM-ZSt-105
11	**Name of auditors**	Mr. J. Lotgerink

29-10-2014
Date of the audit

Signature of the auditor ________________________

____
Signature of the auditor

General guidelines:

The procedures for warehouses/ suppliers contain three Templates which should be used by the auditor when conducting the audit. The risk of a flawed documentation will be evaluated in terms of risk levels high, medium and regular based on the procedures described in Template 2. The risk level will drive audit intensity. If the warehouse is working on behalf of different customers, all relevant requirements (e.g. calculation of mass balance) must be done separately for each customer. It is also possible to only audit the warehouse for one particular customer. For all warehouses/ suppliers of all steps in the value chain after the first gathering point a minimum of square root of number of all related warehouses must be physically audited by the certification body.

Some requirements of the templates will not or only be partly relevant as at the point in time of the first audit a document history (e.g. proofs of sustainability, sustainability declarations or delivery notes for sustainable biomass) may not be available and therefore reporting, mass balance calculation and other elements can only be checked with respect to methodology and „calculation mechanics“. These requirements are marked with „(X)“ for „requirements partly relevant“ and „X“ for „requirements not relevant“.

It is mandatory to mark under the category „conformity“ either the column „yes“ (conformity) or „no“ (no conformity). In every case of „no” the auditor has to explain his decision in column „findings“. Every „no” requires the definition of corrective measures (see template 4). Major musts shall be implemented within 40 days. Implementation has to be verified by the auditor and is a prerequisite for issuance of the certificate. If the requirements are not fulfilled the certification body is obliged to send a copy of the audit report to ISCC without delay.

Bilag 12c

Audit procedures	Warehouses/ Suppliers	Template No. 2:	Management System

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.1.1, ISCC 207	Is the management system sufficient with respect to type, complexity and amount of work that needs to be conducted and are the factors of risk management considered within the design of the management system?	Verify whether the management system (documents, intranet etc.) covers all sustainability requirements for all relevant procedures and languages and whether risk factors like for example expertise, qualification and training of employees and suppliers are sufficiently taken into account.	Documentation of the management system and interviews of personnel			ISO 14000 / ISO 22000 / HACCP / GMP+ / RSPO / Sedex in Procedures are documented in the 'Insight' Employees are aware of their task with regard to sustainability		x
4.1.2.1	Have sustainability requirements been made available to all relevant employees of the site, service providers and other interested parties?	Verification of distribution lists and emails, requests of documents at employees and relevant service providers	Distribution lists, relevant documents of the management system		x	Mr. Schneider and Mr. Geusebroek have trained all the employees of IOI about general requirements. Colleagues involved in critical control points have been trained 1:1 about their jobs.		x
4.1.2.2	Have employees been appointed by the company that are responsible for the implementation of the sustainability requirements at all critical control points?	Verify responsibilities for critical control points like incoming and outgoing materials, warehouse bookkeeping, weighbridge, logistics, sales and distribution, quality control	Organization chart, job descriptions, description of responsibilities in the management system, interview of personnel		x	A clear organisation structure with names and jobs was shown online.		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		etc.						
4.1.2.2	Have employees been appointed that are responsible for the development and updating of the management system and the documents?	Verify responsibilities and updating procedures	Documents and distribution lists, updating procedures, organization charts, job descriptions, description of responsibilities in the management system		x	Mr. Schneider and Mr. Geusebroek are responsible for updating the management system regarding ISCC and RSPO.		x
4.1.2.2	Have employees been appointed that are responsible for the internal verification of the sustainability requirements?	Verify responsibilities and authorizations	Organization charts, job description, description of responsibilities in the management system, interviews of personnel		x	On line organigram seen in intranet pages version Daily updated.		x
4.1.2.2	Has an internal verification taken place by the employees named above?	Visual inspection of verification report (inspection should take place at least once a year)	Verification report, action plan, progress report	(x)		Internal audits are done on 14-10-2014 for ISCC EU and RSPO		x
4.1.6	Did reviews of the verification report take place?	Verification whether the management has verified the verification report (should take place at least once a year)	Review report, review protocols, interview management personnel	(x)		See previous topic. Are discussed during the management review		x
4.1.2.2, ISCC 203, 204 and 205	Are sufficient procedure descriptions with respect to sustainability requirements available for all critical control points?	Verification of procedure descriptions (e.g. with respect to traceability, mass balance etc.) at critical control points like intake, off take, warehouse bookkeeping, weighbridge, logistics, sales	Material flow charts, procedure descriptions, job descriptions, responsibilities, task descriptions, general tasks and conditions in contracts with service providers		x	On the intranet ‘Insight’ for all critical control points it’s described how to act. People involved are aware.		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		and distribution, quality assurance						
4.1.5.1	Did trainings take place that cover the sustainability requirements at critical control points?	Verify training material and plans and whether the relevant employees participated in the trainings	Training plans, training material, distribution lists, emails, list of participants, interview personnel	(x)		Trainings took place on 7-10-2014 and are scheduled for 2015 for15-9-2015		x
4.1.5.2	Are the essential infrastructure and technical facilities in place and running at the critical control points?	Verify whether weighbridges, flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, tanks, warehouse etc.	Weighbridge protocol, sensor information/ reports, measurement reports, process computer displays, computer report on process parameters, filling levels etc.		x	Calibration report VH 11 VH 9 VH 11 and VH 2, Aquarant all valid. Including weighbridge calibration report Wormerveer 06-06-2014		x
4.1.4	Are the following documents, papers, reporting system, information, and data available?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge protocols) should not be available continuously due to the large amounts, it should be ensured that availability of a sample is guaranteed promptly.	Operating licence, warehouse layout, silo layout, tank layout, silo capacity, tank capacity		x	License to operate and tankplan seen		x
			Weighbridge protocol, bill of lading or other transit documents for incoming and outgoing sustainable material		x	There has not been an ISCC transaction set up is shown during the audit		x
			List of all suppliers of incoming sustainable products	(x)		Overview seen in the administrative system		x
			Periodical reporting on incoming sustainable material (periodical, annually)	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Periodical reporting on opening and ending inventory in the storage for sustainable material	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Contracts with suppliers of	(x)		There has not been an ISCC		x

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
			incoming sustainable material			transaction set up is shown during the audit		
			List of all recipients of outgoing sustainable material	(x)		There has not been an ISCC transaction set up is shown during the audit		x
			Periodical reporting on outgoing sustainable material (periodical, annually)	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Periodical reporting on opening and ending inventory in the storage for outgoing sustainable material	(x)	x	There has not been an ISCC transaction set up is shown during the audit		x
			Contracts with recipients of outgoing sustainable material	(x)		There has not been an ISCC transaction set up is shown during the audit		x
			Contracts with relevant service suppliers			Contract seen with Koole valid 25-06-2012 till 24-06-2016		x
			Delivery notes, sustainability declarations or proofs of sustainability on outgoing sustainable material	(x)	x	Na no ISCC product traded until now, set up seen		x
			Delivery notes, sustainability declarations or proofs of sustainability on incoming sustainable material	(x)	x	Na no ISCC product traded until now, set up seen		x
			Mass balance system/ calculation	(x)	x	Na no ISCC product traded until now, set up seen		x
			Report and action plan from last audit	x		Report of the last audit was available for inspection during		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
						the audit		
			Report and action plan of the last internal verification	(x)		report was available		x
4.1.4	Are the above mentioned documents kept for at least ten years?	Compare the “oldest” and latest documents with data from the ISCC registry (in cases of doubts)	ISCC Registry, Documents are from the first audit or at least ten years old	x		Docs are kept for 10years		x
4.1.7	Are documentations treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Distribution lists, Emails and Access authorizations to data bases	(x)		Is discussed there is restricted access to the buildings and systems		x
4.1	Did the risk assessment take place based on the above mentioned documents, reports, information and data?	Is done by the auditor. Regular risk: above-mentioned documents are accurately managed, up to date, complete and accessible without problems. Medium risk: above mentioned documents are not managed accurately and are not accessible without problems. High risk: above mentioned documents are not up to date and not complete.	Evaluation and declaration of regular, medium or high risk		x	Regular risk		x

Bilag 12c

Audit Procedures	Warehouses/ Suppliers	Template No. 3:	Traceability and Mass Balance System

Risk level	Audit intensity
High	Documents of three successive months should be checked completely
Medium	Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	Random samples should be taken from three successive months

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.2.1, 4.2.2.3	Is the information on the list of suppliers and recipients of sustainable products complete?	Verify whether the list includes name, address, certification system, system ID number	List of suppliers and recipients includes the relevant information	(x)		Data can be found in Word and Excel.		x
4.2.1, 4.2.2.3	Does the information from delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability of the incoming and outgoing sustainable products match with the information from the reporting system?	Verify according to risk category. Compare delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability with reported amounts in the reporting system.	Amounts from reporting system and information on delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability are consistent.	x	x	Na no ISCC product traded until now set up seen		x
4.2.1, 4.2.2.3	Does the information from weighbridge protocols match with information from delivery notes, sustainability declarations, proofs of sustainability or	Compare weighbridge protocols and delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products, in	Amounts and data on both documents are consistent.	(x)	x	Na no ISCC product traded until now set up seen		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
	partial proofs of sustainability?	particular with respect amounts and data from the supplier (deviation of 0.5% is allowed, larger deviations will require explaining documentation)						
4.2.1, 4.2.2.3	Do the dates of the delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products match with the validity of the certificate of the supplier?	Compare dates on "latest" and "oldest" delivery order with validity of the certificate	Dates are within the validity of the certificate	x	x	Expected suppliers certificates are available for inspection		x
4.2.1, 4.2.2.3	Are the quantities of supplied and delivered sustainable products consistent with the amounts fixed in contracts?	Compare quantities from the reporting system with contract details. Consider that contract amounts can be split up to different batches and that surplus or smaller amounts (based on a respective accounting) are possible.	Stated amounts are consistent	(x)		To be checked during the audits after the first production		x
4.2.1, 4.2.2.3	Do statements about relevant service providers match with actual payments to service providers?	Compare statements on service providers with invoiced services, e.g. distances for GHG calculation and invoiced transport service	Information (from table, calculations etc.) and invoiced services are consistent	(x)		To be checked during the audits after the first production		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
		etc., if applicable.						
4.2.1, 4.2.2.3	Does the information on delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products fulfil the requirements?	Verify whether the documents contain the following information: – If applicable, the unique identification number ([2-digit certification system ID]-[3-digit certification body ID]-[8-digit certificate*-No.]-[8-digit serial No.], alternatively No. of certificate, ID of certification body and unique running number – Country of origin of the biomasss (currently voluntary) – Contract number – Name and address of the supplier – Name and address of the recipient – Date of issue – Type of sustainable product – Statement whether produced from wastes or residues – The amount in tons or m^3	Delivery orders for sustainable products contain the required information (the following details may be given instead of the unique identification number: • Name of the certification system • Certificate number • Serial number of the delivery note)	(x)	x	Na no ISCC product traded until now, set up seen		x

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
		of sustainable product – Statement whether the default value or the disaggregated default value is used, whether grandfathering clause is applied or whether actual calculation is used. – Greenhouse gas emissions in kg CO_{2eq} per tonne of product ○ Absolute value of quantity of carbon-equivalent (allocated for all upstream elements) in kg CO_2eq per ton of batch of sustainable product ○ Mode of transport (if applicable) ○ Transport distance (not applicable if transport emission are already included in GHG calculation – For sustainability declarations or proofs of sustainability the following information is required:						

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		○ Energy content in MJ ○ Statement that the sustainable product fulfils the requirements of the RED ○ GHG emissions in g CO_{2eq} /MJ ○ Fossil reference value in gCO_{2eq}/MJ						
4.2.1, 4.2.2.3 and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculations based on the reporting system: Add to the inventory of sustainable product at the beginning of a period multiplied with the conversion factor for this period the incoming sustainable product (for the entire period) multiplied by the conversion factor for this period and add the inventory of sustainable product at the beginning of the period (result A). Determine the amount of the outgoing sustainable products leaving the interface (result B).	Result B is smaller or equal to result A	(x)	x	Mass Balance set up seen. To be checked during the audits after the first production		x

Bilag 12c

<table>
<tr><th rowspan="2">Ref. No. ISCC 203</th><th rowspan="2">Requirements</th><th rowspan="2">Verification guidance</th><th rowspan="2">Evidence/ documents</th><th colspan="2">Category</th><th rowspan="2">Findings</th><th colspan="2">Conformity</th></tr>
<tr><th>Not relevant 1st Audit</th><th>Major must</th><th>No</th><th>Yes</th></tr>
<tr><td>4.2.1, 4.2.2.3 and ISCC 204, 4.3</td><td>Was the credit for sustainable biomass to be transferred into the next period calculated correctly?</td><td>Check credit calculation based on above mass balance calculation figures. Subtract B from A (A-B=C) and compare with inventory level D of sustainable <u>and</u> non-sustainable biomass.</td><td>Credit is equal C, when C is equal or smaller D;
Credit is equal D if C is larger than D</td><td>(x)</td><td>x</td><td>Mass Balance set up seen. To be checked during the audits after the first production</td><td></td><td>x</td></tr>
<tr><td>ISCC 204, 4.1.3</td><td>Were GHG emissions from transport of the sustainable product from the supplier to the interface taken into account?</td><td>Not necessary if GHG default values for transport were applied.
In cases of individual GHG calculations or if disaggregated default values are used, the GHG emissions must be calculated based on transport distance, fuel consumption and fuel emission factor (see also ISCC 205). Transport emissions must be added to GHG emissions of incoming sustainable material (s.a. statement on delivery note).</td><td>Emission factor (Biograce where available) and fuel consumption correctly chosen, correct calculation</td><td>(x)</td><td>x</td><td>Transport is part of the GHG calculation</td><td></td><td>x</td></tr>
<tr><td>ISCC 204, 4.2.2.2</td><td>Did no aggregation of different GHG values of incoming raw materials take place within the bookkeeping, even if of the same kind or from the</td><td>Check incoming batches in documents of bookkeeping for disaggregated GHG values. Note that also the highest GHG emission value (of the least performing batch) can be</td><td>No aggregation of GHG values or highest value for all batches</td><td>x</td><td>x</td><td>No aggregation of GHG values</td><td></td><td>x</td></tr>
</table>

Bilag 12c

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
	same origin?	used for the entire input (if other sustainability characteristics are identical).						

Bilag 12c

Procedures	Warehouses/ Suppliers	Template No. 4	Non-conformity list

No.	Requirement/ Finding	Measure	Implementation until when	Measure implemented	
				No	Yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

29-10-2014

Place, Date, Signature Auditor

29-10-2014

Bilag 12d

ISCC Audit Procedures for Warehouses/ Suppliers

Warehouses or suppliers that store or transfer biomass, liquid biomass or biofuels

No.	Template	Remarks	Risk level	Audit Intensity	Page
1	Basic data			Not relevant	2
2	Management system	Risk assessment according ISCC 207		Not relevant	3
3	Traceability and mass balance	Within the risk assessment the risk of a flawed documentation has to be evaluated The risk level determines the audit intensity.	High	The documents of three successive months should be checked completely	8
			Medium	The documents of one month should be checked completely and random samples should be taken from three successive months	
			Regular	Documents taken from random samples of three successive months should be checked	
4	Non-conformity list	Defined list of all points marked „no" in the column Conformity.		Not relevant	15

Bilag 12d

Audit procedures	Warehouses/ Suppliers	Template No. 1:	Basic data

Warehouses or suppliers that store or transfer biomass, liquid biomass or biofuels		
1	**Country**	The Netherlands
2	**Company name**	Koole Tankstorage Pernis
3	**Location and address**	Tankhoofd 2 Rotterdam
4	**Geo coordinates**	51.89.24.38N 4.33.84.3 O
5	**ISCC registration No.**	ISSC-reg- 0879
6	**Name of responsible manager**	Mr. Martijn Joon
7	**Name of relevant service providers/ subcontractors**	NA
8	**Name of certification body**	Control Union Deutschland
9	**Warehouse concept**	x☐ Single warehouse ☐ Logistics network (audit logistics center plus minimum of SQRT of number of related warehouses)
10	**Registration No. certification body**	DE-B-BLE-BM-ZSt-105
11	**Name of auditors**	Mr. Joost Lotgerink

11-11-2014
Date of the audit

____
Signature of the auditee

____
Signature of the auditor

General guidelines:
The procedures for warehouses/ suppliers contain three Templates which should be used by the auditor when conducting the audit. The risk of a flawed documentation will be evaluated in terms of risk levels high, medium and regular based on the procedures described in Template 2. The risk level will drive audit intensity. If the warehouse is working on behalf of different customers, all relevant requirements (e.g. calculation of mass balance) must be done separately for each customer. It is also possible to only audit the warehouse for one particular customer. For all warehouses/ suppliers of all steps in the value chain after the first gathering point a minimum of square root of number of all related warehouses must be physically audited by the certification body.
Some requirements of the templates will not or only be partly relevant as at the point in time of the first audit a document history (e.g. proofs of sustainability, sustainability declarations or delivery notes for sustainable biomass) may not be available and therefore reporting, mass balance calculation and other elements can only be checked with respect to methodology and „calculation mechanics". These requirements are marked with „(X)" for „requirements partly relevant" and „X" for „requirements not relevant".
It is mandatory to mark under the category „conformity" either the column „yes" (conformity) or „no" (no conformity). In every case of „no" the auditor has to explain his decision in column „findings". Every „no" requires the definition of corrective measures (see template 4). Major musts shall be implemented within 40 days. Implementation has to be verified by the auditor and is a prerequisite for issuance of the certificate. If the requirements are not fulfilled the certification body is obliged to send a copy of the audit report to ISCC without delay.

Bilag 12d

Audit procedures	Warehouses/ Suppliers	Template No. 2:	Management System

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.1.1, ISCC 207	Is the management system sufficient with respect to type, complexity and amount of work that needs to be conducted and are the factors of risk management considered within the design of the management system?	Verify whether the management system (documents, intranet etc.) covers all sustainability requirements for all relevant procedures and languages and whether risk factors like for example expertise, qualification and training of employees and suppliers are sufficiently taken into account.	Documentation of the management system and interviews of personnel			The management system is covering all relevant jobs to be done within the organisation. Procedures 04.01+04.02+04.04+04.03		x
4.1.2.1	Have sustainability requirements been made available to all relevant employees of the site, service providers and other interested parties?	Verification of distribution lists and emails, requests of documents at employees and relevant service providers	Distribution lists, relevant documents of the management system		x	All procedures are stored in the online portal of the Koole Group all documents are revised since the last audit.		x
4.1.2.2	Have employees been appointed by the company that are responsible for the implementation of the sustainability requirements at all critical control points?	Verify responsibilities for critical control points like incoming and outgoing materials, warehouse bookkeeping, weighbridge, logistics, sales and distribution, quality control etc.	Organization chart, job descriptions, description of responsibilities in the management system, interview of personnel		x	Mr Martijn Joon is responsible for the ISCC implementation		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.1.2.2	Have employees been appointed that are responsible for the development and updating of the management system and the documents?	Verify responsibilities and updating procedures	Documents and distribution lists, updating procedures, organization charts, job descriptions, description of responsibilities in the management system		x	Martijn Joon is responsible to update and maintain the management system of the Koole Group.		x
4.1.2.2	Have employees been appointed that are responsible for the internal verification of the sustainability requirements?	Verify responsibilities and authorizations	Organization charts, job description, description of responsibilities in the management system, interviews of personnel		x	Martijn Joon is now resp. for the audits		x
4.1.2.2	Has an internal verification taken place by the employees named above?	Visual inspection of verification report (inspection should take place at least once a year)	Verification report, action plan, progress report	(x)		Internal audit is made at 04-03-2014 for Pernis		x
4.1.6	Did reviews of the verification report take place?	Verification whether the management has verified the verification report (should take place at least once a year)	Review report, review protocols, interview management personnel	(x)		reports are discussed on 17-4-2014		x
4.1.2.2, ISCC 203, 204 and 205	Are sufficient procedure descriptions with respect to sustainability requirements available for all critical control points?	Verification of procedure descriptions (e.g. with respect to traceability, mass balance etc.) at critical control points like intake, off take, warehouse bookkeeping, weighbridge, logistics, sales and distribution, quality	Material flow charts, procedure descriptions, job descriptions, responsibilities, task descriptions, general tasks and conditions in contracts with service providers		x	In the webbased portal the internal procedures are described all documents are revised since the last audit.		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		assurance						
4.1.5.1	Did trainings take place that cover the sustainability requirements at critical control points?	Verify training material and plans and whether the relevant employees participated in the trainings	Training plans, training material, distribution lists, emails, list of participants, interview personnel	(x)		personnel is trained on 25-9-2014 for ISCC		x
4.1.5.2	Are the essential infrastructure and technical facilities in place and running at the critical control points?	Verify whether weighbridges, flow meters, sensors, measuring devices etc. are available and fully functional, in particular in the area of site gate, silos, tanks, warehouse etc.	Weighbridge protocol, sensor information/ reports, measurement reports, process computer displays, computer report on process parameters, filling levels etc.		x	The weighbridges are calibrated. Certificates seen for all 9 weighbridges. Most recent the Weighbridge number 7 +9 +3 (for rail transport) calibrated seen and Weightanks 51+58.		x
4.1.4	Are the following documents, papers, reporting system, information, and data available?	Documents should be requested prior to the audit. If certain documents (e.g. weighbridge protocols) should not be available continuously due to the large amounts, it should be ensured that availability of a sample is guaranteed promptly.	Operating licence, warehouse layout, silo layout, tank layout, silo capacity, tank capacity		x	All these documents were available and could be shown. Operating Licence: Milieuvergunning dated 18-09-2007 . KVK number: 24250858; Tank layout is available for inspection. There is an overview available of the capacity per tank		x
			Weighbridge protocol, bill of lading or other transit documents for incoming and outgoing sustainable material		x	All these documents were available in hard copy in files and could be shown on request.		x
			List of all suppliers of incoming sustainable products	(x)		This overview could be shown form Navision		x
			Periodical reporting on incoming sustainable material (periodical,	(x)	x	Navision can produce detailed overviews to report to the		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
			annually)			clients. Audit trail made on party nr 299041+299008+299650+300 016		
			Periodical reporting on opening and ending inventory in the storage for sustainable material	(x)	x	Navision can produce detailed overviews to report to the clients. Audit trail made on party nr 299041+299008+299650+300 016		x
			Contracts with suppliers of incoming sustainable material	(x)		Not applicable, only storage, no physical possession (trading)		x
			List of all recipients of outgoing sustainable material	(x)		In Navision the list of recipients can be found		x
			Periodical reporting on outgoing sustainable material (periodical, annually)	(x)	x	Navision can produce detailed overviews to report to the clients. Audit trail made on party nr 299041+299008+299650+300 016		x
			Periodical reporting on opening and ending inventory in the storage for outgoing sustainable material	(x)	x	Navision can produce detailed overviews to report to the clients. Audit trail made on party nr 299041+299008+299650+300 016		x
			Contracts with recipients of outgoing sustainable material	(x)		Not applicable, only storage, no physical possession		x

Bilag 12d

ISCC
International Sustainability & Carbon Certification

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
						(trading)		
			Contracts with relevant service suppliers			na		
			Delivery notes, sustainability declarations or proofs of sustainability on outgoing sustainable material	(x)	x	These docs are supplied by the owner of the goods, not by the warehouse		x
			Delivery notes, sustainability declarations or proofs of sustainability on incoming sustainable material	(x)	x	Not verifiable, Koole is keen to receive these documents once ISCC parcels will be stored.		x
			Mass balance system/ calculation	(x)	x	Mass Balance is made per parcel .		x
			Report and action plan from last audit	x		last report is available		x
			Report and action plan of the last internal verification	(x)		last report is available		x
4.1.4	Are the above mentioned documents kept for at least ten years?	Compare the "oldest" and latest documents with data from the ISCC registry (in cases of doubts)	ISCC Registry, Documents are from the first audit or at least ten years old	x		Documents are kept for 10 years.		x
4.1.7	Are documentations treated confidentially and not made accessible to third parties?	Verify that no access of third parties to confidential documents, information, data bases etc. is possible	Distribution lists, Emails and Access authorizations to data bases	(x)		The premises are only accessible after a strong ISPS check. This includes also a personal identification. Next to this all computers are locked with passwords which needs to be changed every Q		x
4.1	Did the risk assessment	Is done by the auditor.	Evaluation and declaration of		x	regular risk		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
	take place based on the above mentioned documents, reports, information and data?	Regular risk: above-mentioned documents are accurately managed, up to date, complete and accessible without problems. Medium risk: above mentioned documents are not managed accurately and are not accessible without problems. High risk: above mentioned documents are not up to date and not complete.	regular, medium or high risk					

Bilag 12d

Audit Procedures	Warehouses/ Suppliers	Template No. 3:	Traceability and Mass Balance System

Risk level	Audit intensity
High	Documents of three successive months should be checked completely
Medium	Documents of one month should be checked completely and random samples should be taken from three successive months
Regular	Random samples should be taken from three successive months

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.2.1, 4.2.2.3	Is the information on the list of suppliers and recipients of sustainable products complete?	Verify whether the list includes name, address, certification system, system ID number	List of suppliers and recipients includes the relevant information	(x)		Every batch in Navision system is identified with an unique number which enables Koole to trace every parcel.		x
4.2.1, 4.2.2.3	Does the information from delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability of the incoming and outgoing sustainable products match with the information from the reporting system?	Verify according to risk category. Compare delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability with reported amounts in the reporting system.	Amounts from reporting system and information on delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability are consistent.	x	x	Audit trail made on party nr 299041+299008+299650+300 016		x
4.2.1, 4.2.2.3	Does the information from weighbridge protocols match with information from delivery notes, sustainability declarations, proofs of sustainability or	Compare weighbridge protocols and delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products, in	Amounts and data on both documents are consistent.	(x)	x	Audit trail made on party nr 299041+299008+299650+300 016		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
	partial proofs of sustainability?	particular with respect amounts and data from the supplier (deviation of 0.5% is allowed, larger deviations will require explaining documentation)						
4.2.1, 4.2.2.3	Do the dates of the delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products match with the validity of the certificate of the supplier?	Compare dates on "latest" and "oldest" delivery order with validity of the certificate	Dates are within the validity of the certificate	x	x	Not applicable. no trading, only storage.		x
4.2.1, 4.2.2.3	Are the quantities of supplied and delivered sustainable products consistent with the amounts fixed in contracts?	Compare quantities from the reporting system with contract details. Consider that contract amounts can be split up to different batches and that surplus or smaller amounts (based on a respective accounting) are possible.	Stated amounts are consistent	(x)		Not applicable. no trading, only storage.		x
4.2.1, 4.2.2.3	Do statements about relevant service providers match with actual payments to service providers?	Compare statements on service providers with invoiced services, e.g. distances for GHG calculation and invoiced transport service	Information (from table, calculations etc.) and invoiced services are consistent	(x)		Not applicable, company acts as service provider itself		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
		etc., if applicable.						
4.2.1, 4.2.2.3	Does the information on delivery notes, sustainability declarations, proofs of sustainability or partial proofs of sustainability for sustainable products fulfil the requirements?	Verify whether the documents contain the following information: – If applicable, the unique identification number ([2-digit certification system ID]-[3-digit certification body ID]-[8-digit certificate*-No.]-[8-digit serial No.], alternatively No. of certificate, ID of certification body and unique running number – Country of origin of the biomasss (currently voluntary) – Contract number – Name and address of the supplier – Name and address of the recipient – Date of issue – Type of sustainable product – Statement whether produced from wastes or residues – The amount in tons or m³	Delivery orders for sustainable products contain the required information (the following details may be given instead of the unique identification number: • Name of the certification system • Certificate number • Serial number of the delivery note)	(x)	x	Audit trail made on party nr 299041+299008+299650+300 016		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		of sustainable product – Statement whether the default value or the disaggregated default value is used, whether grandfathering clause is applied or whether actual calculation is used. – Greenhouse gas emissions in kg CO_{2eq} per tonne of product ○ Absolute value of quantity of carbon-equivalent (allocated for all upstream elements) in kg CO_2eq per ton of batch of sustainable product ○ Mode of transport (if applicable) ○ Transport distance (not applicable if transport emission are already included in GHG calculation – For sustainability declarations or proofs of sustainability the following information is required:						

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category: Not relevant 1st Audit	Category: Major must	Findings	Conformity: No	Conformity: Yes
		○ Energy content in MJ ○ Statement that the sustainable product fulfils the requirements of the RED ○ GHG emissions in g CO_{2eq} /MJ ○ Fossil reference value in gCO_{2eq}/MJ						
4.2.1, 4.2.2.3 and ISCC 204, 4.3	Was the mass balance calculated correctly?	Conduct respective control calculations based on the reporting system: Add to the inventory of sustainable product at the beginning of a period multiplied with the conversion factor for this period the incoming sustainable product (for the entire period) multiplied by the conversion factor for this period and add the inventory of sustainable product at the beginning of the period (result A). Determine the amount of the outgoing sustainable products leaving the interface (result B).	Result B is smaller or equal to result A	(x)	x	Audit trail made on party nr 299041+299008+299650+300016		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
4.2.1, 4.2.2.3 and ISCC 204, 4.3	Was the credit for sustainable biomass to be transferred into the next period calculated correctly?	Check credit calculation based on above mass balance calculation figures. Subtract B from A (A-B=C) and compare with inventory level D of sustainable and non-sustainable biomass.	Credit is equal C, when C is equal or smaller D; Credit is equal D if C is larger than D	(x)	x	Audit trail made on party nr 299041+299008+299650+300016		x
ISCC 204, 4.1.3	Were GHG emissions from transport of the sustainable product from the supplier to the interface taken into account?	Not necessary if GHG default values for transport were applied. In cases of individual GHG calculations or if disaggregated default values are used, the GHG emissions must be calculated based on transport distance, fuel consumption and fuel emission factor (see also ISCC 205). Transport emissions must be added to GHG emissions of incoming sustainable material (s.a. statement on delivery note).	Emission factor (Biograce where available) and fuel consumption correctly chosen, correct calculation	(x)	x	Not applicable. no trading, only storage.		x
ISCC 204, 4.2.2.2	Did no aggregation of different GHG values of incoming raw materials take place within the bookkeeping, even if of the same kind or from the	Check incoming batches in documents of bookkeeping for disaggregated GHG values. Note that also the highest GHG emission value (of the least performing batch) can be	No aggregation of GHG values or highest value for all batches	x	x	Not applicable. no trading, only storage.		x

Bilag 12d

Ref. No. ISCC 203	Requirements	Verification guidance	Evidence/ documents	Category		Findings	Conformity	
				Not relevant 1st Audit	Major must		No	Yes
	same origin?	used for the entire input (if other sustainability characteristics are identical).						

Bilag 12d

Procedures	Warehouses/ Suppliers	Template No. 4	Non-conformity list

No.	Requirement/ Finding	Measure	Implementation until when	Measure implemented	
				No	Yes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Rotterdam 11-11-2014
Place, Date, Signature Auditor

Rotterdam 11-11-2014
Place, Date, Signature Client
Rotterdam 11/11/14

Bilag 13

Self-declaration for cross-compliance farms

Farm name ____

Street ____

Country ____

Post code, city ___________________________ **NUTS2 region*** _____________________________

for sustainable biomass in accordance with Directive 2009/28/EC or the German Biofuels Sustainability Ordinance (Biokraft-NachV) and the German Biomass Electricity Sustainability Ordinance (BioSt-NachV)

Recipent:____

The biomass grown and supplied by me and described in more detail under item 1 which was harvested in the year ________ fulfils the requirements of Directive 2009/28/EC (or the Sustainability Ordinances); the respective verification is available. (Please check the items that apply)

1.	☐ **or** ☐	The declaration applies to all crops (e.g. rapeseed, wheat) produced on my farm. The declaration is submitted for the following types of crops: ____ ___________________________ (please list!) Areas to be excluded, plot designation (item 2): ____
2.	☐	The biomass originates from cropland that was already classified as such prior to 01.01.2008. It also does not originate from protected areas (Art. 17 of Directive 2009/28/EC or Art. 4-6 of the Sustainability Ordinances) that were converted to cropland after 01.01.2008. If permissible land-use changes were made after 01.01.2008, the respective areas were either explicitly excluded under item 1 or the resulting emissions were included in our own greenhouse gas calculations (default values can then not be used).
3.	☐	The biomass originates from areas within protected areas (nature conservation areas only – not water conservation areas) where farming is permitted. The requirements for protected areas have been complied with.
4.	☐ ☐ ☐	I am subject to cross compliance as a recipient of payments from direct support schemes. The biomass thus satisfies the requirements for agricultural management (Art. 17 of Directive 2009/28/EC and Art. 7 and 51 of the Sustainability Ordinances). I participated in EU direct support schemes during the last calendar year. The notification of participation in such schemes is available. I will apply to receive payments from a direct support scheme this calendar year.
5.	 ☐ **or** ☐	The documentation on the location of biomass cultivation (verification by means of polygon pursuant to Article 26 of the Sustainability Ordinances or similar verification of the area via field blocks, plots or parcels) is available with me and can be viewed at any time. is kept with the first gathering point of the biomass I supply.
6.	☐	The default value (Art. 17/19 of Directive 2009/28/EC or Article 8 and Annex 2 of the Sustainability Ordinances) - if there is one and is permissible - the officially approved estimate, or the NUTS2 value should be used to calculate the greenhouse gas balance.

Note: With this declaration, the farmer acknowledges that auditors of accredited certification bodies may verify whether the relevant requirements stipulated in Directive 2009/28/EC or the Sustainability Ordinances have been satisfied. It must be kept in mind that the auditors of the certification bodies may be accompanied by BLE inspectors who monitor their activities.

_____________________________________ ____

Place, Date Signature

* NUTS2 regional designation if known, to be filled out by the first gathering point if necessary

Bilag 14

Self-declaration for the supply of waste and residual materials for biofuel production

Supplying operation:____

Street: ____

Post code, city:____

State:____

for sustainable biomass in accordance with Directive 2009/28/EC

Recipient: ____

(Please check the items that apply)

1.	☐	The supplied waste or residual materials only contain biomass that complies with Directive 2009/28/EC
2.	☐	The waste or residual material originates from agriculture, forestry and fishing or from aquacultures.
	☐	If yes: The waste or residual material fulfils the requirements set forth in Art. 17 of Directive 2009/28/EC
3.	The waste or residual material supplied is the following*:	
	______________________________ ______________________________ ______________________________ Please list every waste or residual material supplied. Please clearly identify them and indicate the waste code in accordance with the relevant national legislation - as long as you are eligible. The respective category must be specified in accordance with Ordinance (EC) No. 1774/2002 or 1069/2009 for animal by-products.	
4.	☐	The regulations for identification and transport including shipping documents are satisfied. If there are veterinary certificates, these are kept with the shipping documents.
5.	☐	The respective waste or residual materials are at no time mixed with biomass of a different origin.

Note: With this declaration, the waste producer acknowledges that auditors of accredited certification bodies may verify whether the relevant requirements of Directive 2009/28/EC and the REDcert system have been satisfied.

______________________________ ______________________________

Place, Date Signature

* In case used cooking oil (UCO) is supplied, it is mandatory to specify if the UCO is based on animal fats or vegetable oils.

Bilag 15a

Checklist for the inspection of interfaces, storage facilities and suppliers

Participant no.	Inspection organisation	Internal inspection report no. of the inspection organisation

Please enter all information legibly !!!

Operation/operating site (hereinafter referred to as operation):
(Stamp if applicable)

Company name: ____________________

Address: ____________________

____

Person responsible: ____________________

Inspection information

Inspection date: .... from .... o'clock to .... o'clock

Inspection type: ☐ Scheduled system inspection ☐ Follow-up inspection to inspect ....

Name of the inspector: ____________________

Result of the inspection

Inspection result	Classification	Measures
100%	☐ **No non-conformities** REDcert requirements are completely satisfied	No corrective measures required
75 - 99%	☐ **Minor non-conformities** REDcert requirements are largely satisfied	Routine documentation, agree on corrective measures, check implementation
< 75 % or KO	☐ **Major non-conformity(ies)** REDcert requirements are not fulfilled	Send inspection report to REDcert and BLE (within 24h after the inspection) **Follow-up inspection required**

Follow-up inspection required? No ☐ Yes ☐ Proposed date: ....

☑ Copy received

Signature of the inspector

Signature of the system participant (person responsible)

For accuracy:

Date

Signature of the person responsible at the certification body

Bilag 15a

Checklist for the inspection of interfaces, storage facilities and suppliers

1. Information about the operation	
Company	
Group certification of warehouses/silos (sites) (please also fill out 3!)	☐
Group certification of farms (please also fill out 4!)	☐
2. Scope of application	
first gathering point	☐
collection point waste/ residues	☐
conversion unit (intermediate products/semi-finished products)	☐
oil mill/fat refinery (pure fuel / bioliquids)	☐
sugar mill	☐
esterification plant	☐
hydrogenation unit	☐
bioethanol plant	☐
biogas plant	☐
biogas upgrading plant	☐
pulp factory	☐
others	☐
supplier/dealer (chain of conversion)	☐
supplier/dealer (after the last interface)	☐
3. Number of affiliated warehouses/silos/ sites :	
Inspected as part of the random inspection (square root of sites):	

		Name, Street, Post code, city	**Inspection date**
Sites visited (operating site and inspection date) Expand list if necessary or attach as an enclosure!	1		
	2		
	3		
	4		
	5		
	6		

Bilag 15a

	7		
	8		
4. Number of farms supplying biomass / waste producers:			
Inspected as part of the random inspection (square root of farms / waste producers):			
Farms / waste producers visited (farm / waste producers and inspection date) Expand list if necessary or attach as an enclosure!		**Farm Name, Street, Post code, city**	**Inspection date**
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
5. Amount of biomass (t) (solid /liquid) traded within the last calendar year:			

Note: All fields are mandatory!

Bilag 15a

Key: A=Complete compliance; B=Almost complete compliance, C=System requirements only partially satisfied, D=System requirements not satisfied, N/A=System requirements not applicable							
Name of the operation:		**Inspection date:**					
Consec. no.	**Criterion/requirement**	**Score**					**Comments/description of the inspected documents/records/certificates**
		A	**B**	**C**	**D/KO**	**N/A**	
1	**System principles**						
1.1	**General system requirements**						
1.1.1	Is there a written pledge to comply with the system requirements in the scope of application? (e.g. in the form of a certificate or contract with REDcert)						
1.1.2	Are there contracts with third parties (sub-contractors, external service providers, intermediaries) that ensure that all of the information necessary to meet the requirements has been passed on?						
1.1.3	In case of use of transfer sites for waste and residues, was the status as a transfer site checked on-site at least once by the responsible certification body?						
1.1.4	Do no activities take place at the relevant transfer site (waste and residues), which would classify it as an operational unit (warehouse,/silo)? (N/A in case the transfer site was verifiably checked already in an earlier audit)						
1.2	**Organisational structure**						
1.2.1	Are the rights and duties clearly regulated and documented in writing?						
1.2.2	Are the people affected aware of their responsibilities?						
1.2.3	Has the operation appointed someone responsible for implementing and maintaining the QM system in relation to REDcert?						

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
1.3	**Staff qualification and training**						
1.3.1	Is it ensured that the people affected are aware of the legal requirements (requirements of Directive 2009/28/EC and the REDcert requirements) and have the knowledge (qualification) necessary to fulfil these requirements?						
1.3.2	Have the employees received the appropriate training (verification)?						
1.4	**Mass balance system**						
1.4.1	Has the operation introduced a suitable mass balance system that guarantees that the requirements of Directive 2009/28/EC are satisfied?						
1.4.2	Does balancing of sustainable biomass occur at permissible intervals defined by the operation?						
1.4.3	Is balancing of sustainable biomass documented and does it include the records necessary for the supplied biomass which has been changed in the internal process and forwarded?						
1.5	**GHG calculation**						
1.5.1	Are all required documents up-to-date and complete?						
1.5.2	Does GHG calculate correspond to the methodology specified in Directive 2009/28/EC?						
1.5.3	Is the GHG calculation correct and transparent?						
1.6	**Documentation**						
1.6.1	Are the necessary records checked that they are up-to-date and complete and kept in a safe place?						
1.6.2	Are the records legible and is there a transparent link between the biomass and the records?						

Bilag 15a

Consec. no.	Criterion/requirement	Score A	B	C	D/KO	N/A	Comments/description of the inspected documents/records/certificates
1.6.3	Are the records kept in line with the valid inspection intervals and can they be provided?						
1.7	**Dealing with non-conformities**						
1.7.1	Is there a documented procedure for dealing with non-conformities and is it followed? Are corrective measures undertaken as quickly as possible?						
1.7.2	Are preventative measures formulated and implemented to prevent future non-conformities from occurring?						
1.8	**Reporting and passing on information**						
1.8.1	Are the purchasers of sustainable biomass provided with all required data and information?						
1.8.2	Is it guaranteed that this data is handled confidentially when passing on sensitive company-related information to downstream operations?						
1.9	**Group organisation and group administration (Only if the prerequisites for group certification are fulfilled!)**						☐ **N/A**
1.9.1	Is there a central group administration responsible for the organisation and internal inspection of the group members?						
1.9.2	Is there an up-to-date and complete site registry?						
1.9.3	Is the group homogenous? Do the group members have similar production systems and products?						
1.9.4	Are the supply relationships transparent through agreements/ contracts/invoices?						
1.9.5	Is an internal check performed to determine whether new members fulfil system requirements before they can join the group?						

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
2	**Process step-specific requirements**						
2.1	**General requirements**						
2.1.1	Has the operation identified/defined and documented the sequence of processes in its own scope of application?						

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
2.2	**Incoming biomass**						
2.2.1	Is it clear from the records who conducted the inspection and verified the data and quantities upon receipt of sustainable biomass in the operation?						
2.2.2	Do the delivery documents contain the following for every quantity of sustainable biomass: - the name and address of the supplier/upstream operation - the certificate number and the name of the certification system - the type of incoming sustainable biomass - the quantity of sustainable biomass - the date of receipt of the sustainable biomass - the GHG emissions in grams of carbon dioxide equivalents per kilogram of sustainable biomass received (for individual calculation or when requested by the biomass recipient) OR an indication whether disaggregated or default values are to be applied to the sustainable biomass received						
2.2.3	Are there purchasing contracts or other industry-relevant documents or documents similar to purchasing contracts?						
2.3	**Internal processes (processing and mixing)**						
2.3.1	Is every newly produced quantity of biomass from internal processes recorded in a mass balance system?						

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
2.3.2	Is the following data recorded: - type of internal process (e.g. pressing, refining, mixing in tank storage, etc), - quantity of sustainable biomass that went into the process - quantity of sustainable biomass that went out of the process - process and facility-specific conversion rates/conversion factors/losses - GHG emissions - allocation of the GHG emissions						

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
2.4	**Outgoing biomass**						
2.4.1	Is the following data recorded at a minimum and passed on to the downstream operation: - certificate number and name of the certification system - type of sustainable biomass supplied - date sustainable biomass left the premises - quantity of sustainable biomass - the GHG emissions in grams of carbon dioxide equivalents per kilogram of sustainable biomass received (for individual calculation or when requested by the biomass recipient) OR an indication whether disaggregated or default values are to be applied to the sustainable biomass received						
2.4.2	Do these records make it possible to establish a connection to the documented incoming biomass?						
2.4.3	Are the incoming and outgoing quantities of biomass plausible?						
3	**Step-specific requirements**						
3.1	**First gathering point / collection point waste and residues**						☐ **N/A**
3.1.1	Were the declarations of the farms / waste producers checked by the first gathering point /collection point for plausibility and completeness?						
3.1.2	Is the assignment from the biomass to the respective farm / waste producers transparent?						
3.1.3	When the biomass is delivered from a farm, is the respective location of cultivation of the biomass documented?						
3.1.4	Does delivery from private households only take place under supervision through trained employees?						
3.1.5	Are the amounts collected from private households documented and are they plausible?						

Bilag 15a

Consec. no.	Criterion/requirement	Score A	B	C	D/KO	N/A	Comments/description of the inspected documents/records/certificates
3.1.6	Is it ensured in exclusive mechanical processing of wastes/residues, that the waste declaration (waste code, AVV-No.) is identical for incoming and outgoing biomass?						
3.2	**Other interfaces (oil mills, esterification facility, hydrogenation or co-hydrogenation facility, bioethanol/biogas plants**						☐ **N/A**
3.2.1	Are the system requirements satisfied when sustainability certificates are issued?						
3.2.2	Are the certificates issued complete and correct? Do they correspond to the predefined template?						
3.2.3	Are the sustainability certificates and the documents required for their issuance kept for at least 10 years?						
3.2.4	Does the last interface calculate the greenhouse gas emission savings? Are the calculations complete and transparent? Are all required records available upon request?						
3.3	**Suppliers after the last interface (optional certification)**						☐ **N/A**
3.3.1	Is a partial sustainability certificate issued for every delivery of biomass after the last interface?						
3.3.2	Does the mass balance system of the supplier ensure that the information from the sustainability certificates received is correctly transferred when issuing partial sustainability certificates (both when biomass is divided up into smaller quantities as well as mixed)?						
Evaluation of the inspection results		**A**	**B**	**C**	**D**	**N/A**	**KO (no certificate)**

Bilag 15a

Consec. no.	Criterion/requirement	Score					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
Number of evaluations		0	0	0	0	0	
Total of all evaluations (not including N/A evaluati		0					
Inspection results as a %							
Number of points		0	0	0	0	0	0
Total of all points		0					
Max. number of points		0					
Inspection result as a % (total of all points		#DIV/0!					

Bilag 15a

Action plan

No.	Criterion/ requirement	Score			Comments	Agreed corrective measures	Deadline for implementation	Inspection of implementation of the corrective measures by the auditor	
		B	C	D/KO				Date	Result (fulfilled / not fulfilled)

Bilag 15b

Checklist for inspection of operations that supply waste and residual materials (waste producers)

Key:
A=Complete compliance; B=Almost complete compliance, C=System requirements only partially satisfied, D=System requirements not satisfied, N/A=System requirements not applicable

Name of operation:		**Inspection date:**					
No.	**Criterion/requirement**	**Evaluation**					**Comments/description of the inspected documents/records/certificates**
		A	**B**	**C**	**D/KO**	**N/A**	
1	**General system requirements**						
1.1	The supplied waste or residual materials only contain biomass that complies with Directive 2009/28/EC.						
1.2	If the waste or residual material originates from agriculture, forestry and fishing or from aquacultures, the requirements stipulated in Art. 17 of Directive 2009/28/EC are satisfied.						
1.3	The declaration of the supplied waste or residual material is complete and correct.						
1.4	The respective waste or residual materials are at no time mixed with biomass of a different origin.						
1.5	Waste and residual materials were not only generated for the purpose of double crediting.						
1.6	The self-declaration(s) submitted to the collection point is/are legible, complete and correct.						
2	**GHG calculation (when required)**						☐ **N/A**
2.1	All required documents and records are up-to-date and complete.						
2.2	The GHG calculation is carried out in line with the methodology specified in Directive 2009/28/EC.						

Bilag 15b

No.	Criterion/requirement	Evaluation					Comments/description of the inspected documents/records/certificates
		A	B	C	D/KO	N/A	
2.3	The GHG calculations are correct and transparent.						
3	**Records and documentation**						
3.1.	All of the records and shipping documents required to check the requirements above are up-to-date, complete and available.						
Evaluation of the audit results		**A**	**B**	**C**	**D**	**N/A**	**KO (no certificate)**
Number of evaluations		**0**	**0**	**0**	**0**	**0**	**0**
Total of all evaluations (not including N/A evaluations)		**0**					
Inspection results as a %							
Score (A=20 pts, B=15 pts, C=5 pts, D=0 pts, N/A=0 pts, KO = no certificate)		**0**	**0**	**0**	**0**	**0**	**0**
Total of all points		**0**					
Max. number of points		**0**					
Inspection result as a % (total of all points divided by the max. number of points * 100)		**#DIV/0!**					

Checklist for the inspection of farms

Bilag 15c

Random inspection based on the supply relationship to the following REDcert system participant		Inspection organisation	Internal inspection report no. of the inspection organisation
Name of operation	Participant no.		

Please enter all information legibly !!!

Operation/operating site (hereinafter referred to as operation): (Stamp if applicable)

Company name: ______________________

Address: ______________________

____

Person responsible: ______________________

Inspection information

Inspection date: .... from .... o'clock to .... o'clock

Inspection type: ☐ Scheduled system inspection ☐ Follow-up inspection ....

Name of inspector: ....

Result of the inspection

Inspection result	Classification	Measures
100%	☐ **No non-conformities** REDcert requirements are completely satisfied	No corrective measures required
75 - 99%	☐ **Minor non-conformities** REDcert requirements are largely satisfied	Routine documentation, agree on corrective measures, check implementation
< 75 % or KO	☐ **Major non-conformities** REDcert requirements are not fulfilled	Send inspection report to REDcert and BLE (within 24h after the inspection) **Follow-up inspection required**

Follow-up inspection required? No ☐ Yes ☐ Proposed date: ....

☑ Copy received

Signature of the inspector

Signature (person responsible)

Verification of accuracy:	
Date	Signature of the person responsible at the certification body

Version: EU 3; Date: 15.02.2012

Bilag 15c

Key: A=Complete compliance; B=Almost complete compliance, C=System requirements only partially satisfied, D=System requirements not satisfied N/A=System requirements not applicable							
Company name:		**Inspection date:**					
No.	**Criterion/requirement**	**Score**					**Comments/description of the inspected documents/ records/certificates**
		A	**B**	**C**	**D/KO**	**N/A**	
1	**System principles**						
1.1	The biomass is from land categorised as cropland prior to 01.01.2008.						
1.2	If land was converted after 01.01.2008, conversion and use does not conflict with the requirements set forth in Article 17 of Directive 2009/28/EC.						
1.3	The operation can document that it receives EU payments in a direct support scheme.						
1.4	The sustainable biomass can be clearly assigned to the cropland using the area verification and any additional documentation.						
1.5	The biomass was not produced on land with high biodiversity value after 01.01.2008.						
1.6	In the event that the biomass was produced on land within protected areas with a permit for farming, there is no indication that these requirements were not complied with.						
1.7	The biomass is not from land with high above-ground or underground carbon stock (reference date: 01.01.2008).						

Bilag 15c

No.	Criterion/requirement	Score					Comments/description of the inspected documents/ records/certificates
		A	B	C	D/KO	N/A	
2	**Additional requirements for operations not subject to cross compliance**						☐ **N/A**
2.1	**Requirements for handling and storing substances hazardous to water**						
2.1.1	The substances contained in List I and List II of Directive 80/68/EEC are handled in the operation in such a way that they are not drained directly or indirectly into the groundwater.						
2.1.2	The substances contained in List I and List II of Directive 80/68/EEC are disposed of properly, the groundwater is not at risk.						
2.2	**Requirements for applying fertilisers containing nitrogen**						
2.2.1	Farm complies with application restrictions and closed periods.						
2.2.2	Fertiliser is only applied to soil capable of uptake.						
2.2.3	Farm complies with the specific requirements for applying fertiliser on steep slopes.						
2.2.4	Fertiliser is prevented from entering surface water when applied.						
2.2.5	A nutrient comparison is created and documented once a year.						
2.2.6	Farm complies with the structural requirements for storage and filling facilities.						
2.2.7	Fertiliser containing nitrogen are stored properly in appropriate facilities and containers, drainage and overflow are prevented.						
2.2.8	Only the appropriate, state-of-the-art equipment is used for applying the fertiliser.						
2.2.9	Fertilisers are only applied by qualified employees.						
2.2.10	Documentation about the type of crop, time, area, type and amount of fertiliser is available and complete.						

Bilag 15c

No.	Criterion/requirement	Score					Comments/description of the inspected documents/ records/certificates
		A	B	C	D/KO	N/A	
2.3	**Requirements for the use of sludge**						
2.3.1	Farm complies with application bans and restrictions.						
2.4	**Requirements for applying and handling pesticides**						
2.4.1	Only approved pesticides are used, farm complies with areas of application (culture and harmful organism) and the defined application requirements.						
2.4.2	Appropriate documentation about the type of crop, time, area of PPP application as well type, amount and origin of PPPs is available and complete.						
2.4.3	All users have been properly trained and have the appropriate knowledge.						
2.4.4	Protective clothing is available for the employees affected.						
2.4.5	Pesticides are only applied with the appropriate spreading and spraying equipment. The equipment is inspected and calibrated regularly.						
2.4.6	When pesticides are used, they are prevented from directly entering the surface water.						
2.4.7	Leftover pesticides and pesticide packaging is handled in accordance with the valid national or regional regulations.						
2.5	**Integrated pest management**						
2.5.1	Farmer can provide evidence of IPM activities.						
2.5.2	The production process uses the best available technology and covers the relevant requirements.						
2.6	**Prevention of soil erosion**						
2.6.1	Required erosion protection measures are implemented.						

Bilag 15c

No.	Criterion/requirement	Score					Comments/description of the inspected documents/ records/certificates
		A	B	C	D/KO	N/A	
2.7	**Preservation of organic matter and structure of soils**						
2.7.1	Proof can be provided that the organic substance in the soil is retained and the soil structure is protected through farming.						
2.7.2	Land not used for agricultural production is properly cared for. National or regional regulations are satisfied.						
2.7.3	Farm complies with applicable removal bans for landscape elements hedges, ponds, ditches, trees in line, in groups or isolated and field margins.						
2.8	**Water protection and management**						
2.8.1	The farm has a licence to remove water for irrigation purposes from groundwater and surface water.						
2.9	**Social responsibility**						
2.9.1	The following basic ILO core conventions are valid at a minimum in the country and are respected in the operation: ILO 29, 87, 98, 100, 105, 111, 138, 182						
3	**GHG calculation**						
3.1	Are all required documents up-to-date and complete?						
3.2	Does GHG calculate correspond to the methodology specified in Directive 2009/28/EC?						
3.3	Is the GHG calculation correct and transparent?						
Evaluation of the inspection results		**A**	**B**	**C**	**D**	**N/A**	**KO (no certificate)**
Number of evaluations		**0**	**0**	**0**	**0**	**0**	**0**
Total of all evaluations (not including N/A eva		**0**					

Bilag 15c

No.	Criterion/requirement	Score					Comments/description of the inspected documents/ records/certificates
		A	B	C	D/KO	N/A	
Inspection results as a %							
Number of points (A=20 pts, B=15 pts, C=5 pts, D=0 pts, N/A=0 pts, KO = no certificate)		**0**	**0**	**0**	**0**	**0**	**0**
Total of all points		**0**					
Max. number of points		**0**					
Inspection result as a % (total of all points divided by the max. number of points * 100)		**#DIV/0!**					

Bilag 15c

Action plan

No.	Criterion/ requirement	Score			Comments	Agreed corrective measures	Deadline for implementation	Inspection of implementation of the corrective measures by the auditor	
		B	C	D/KO				Date	Result (fulfilled / not fulfilled)

BBH Becker Büttner Held
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Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

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Bilag 16

Biomethan als Kraftstoff: Eine Handlungsempfehlung zur Biokraft-NachV für die Praxis

Bilag 16

Herausgeber

ifeu - Institut für Energie- und Umweltforschung Heidelberg GmbH
Wilckensstraße 3, D-69120 Heidelberg,
Fon: +49 (0) 6221 / 47 67 -0, Fax: +49 (0) 6221 / 47 67 -19
Internet: www.ifeu.de, E-Mail: ifeu@ifeu.de

Becker Büttner Held
Rechtsanwälte Wirtschaftprüfer Steuerberater
Magazinstraße 15-16, D-10179 Berlin,
Fon: +49 (0) 611 284 0-0, Fax: +49 (0) 611 284 099
Internet: www.bbh-online.de, E-Mail: berlin@bbh-online.de

Die vorliegende Publikation ist Teil des Projektes „Biomethan im Kontext der Biokraft-NachV" und wurde unter dem Kennzeichen 03MAP19 durch eine Zuwendung des Bundesministeriums für Umwelt, Naturschutz und Reaktorsicherheit (BMU) gefördert.

Autoren

Dipl.-Biologe Horst Fehrenbach, ifeu Heidelberg
Dipl.-Ing. Regine Vogt, ifeu Heidelberg
RA Dr. Martin Altrock, Mag. rer. publ., BBH Berlin
RA Dr. Hartmut Kahl, LL.M. (Duke), BBH Berlin

Die Autoren danken dem Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU) und dem Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMELV) für ihre fachliche Unterstützung sowie dem Projektträger Jülich (PTJ) für die sachliche Begleitung des Zuwendungsprojektes.

Hinweis

Gestaltung

stud. iur. Max Narr, BBH Berlin

Druck

Baier Digitaldruck GmbH, Heidelberg

Bildnachweis

Oberes Bild Titelseite: Fachagentur Nachwachsende Rohstoffe e.V. (FNR)
Unteres Bild Titelseite: Copyright: BMU / Brigitte Hiss

Heidelberg/Berlin, Oktober 2010

Bilag 16

Teil 1 Umgang mit den Anforderungen aus der Biokraft-NachV

A. Einleitung

Nach der europäischen Richtlinie zur Förderung Erneuerbarer Energien (2009/28/EG) müssen bei der energetischen Nutzung von Biomasse bestimmte Nachhaltigkeitsanforderungen eingehalten werden. Die Vorgaben dieser Richtlinie werden in Deutschland u.a. durch die sog. Biokraftstoff-Nachhaltigkeitsverordnung (Biokraft-NachV) in nationales Recht umgesetzt. Die dort aufgestellten Nachhaltigkeitsanforderungen gelten dabei auch für gasförmige Biomasse, also für auf Erdgasqualität aufbereitetes Biogas, sog. Biomethan.

Zwar spielt Biomethan im Vergleich zu Bioethanol oder Biodiesel auf dem Biokraftstoffmarkt bisher nur eine geringe Rolle. Jedoch wird der Zuwachs des Biomethananteils bei den Kraftstoffen entscheidend davon abhängen, ob die Produkteigenschaften auch tatsächlich den gesetzlichen Vorgaben entsprechen. Zu beachten ist hier insbesondere, dass der Gesetzgeber für nachhaltiges Biomethan eine Entlastung bei der Energiesteuer vorsieht und auch die Anrechnung auf die sog. Biokraftstoffquote nur erfolgen kann, wenn die Biomasse die Nachhaltigkeitsanforderungen erfüllt.

Aus der Biokraft-NachV ergeben sich für alle Stufen entlang der Wertschöpfungskette Anforderungen sowohl an die Biomasse selbst, als auch an die Dokumentation und Nachweisführung ihrer nachhaltigen Eigenschaften. Um den Umgang mit der Biokraft-NachV für die Biomethan-Branche in der Praxis möglichst transparent zu machen, möchte diese Handlungsempfehlung die einzelnen Regelungen der Verordnung auf einen Blick zusammenfassen und erläutern.

B. Anwendungsbereich der Verordnung

Wie eingangs erläutert, ist der Nachweis über die Nachhaltigkeit der Biomasse zwingende Voraussetzung für die Anrechenbarkeit auf die sog. Biokraftstoffquote als auch für die Entlastung von der Energiesteuer. Demnach kann zwar auch Biomethan auf den Kraftstoffmarkt gebracht werden, das über keinen Nachhaltigkeitsnachweis verfügt, allerdings setzen sich die Anbieter solcher Produkte dann entsprechend schlechteren Wettbewerbsbedingungen aus.

I. Biokraftstoffquote

Um einen Mindestanteil von Biokraftstoffen am Gesamtkraftstoffverbrauch sicherzustellen, hat der Gesetzgeber Unternehmen, die gewerbsmäßig Otto- oder Dieselkraftstoffe in Verkehr bringen, im Bundesimmissionsschutzgesetz (BImSchG) die Verpflichtung auferlegt, jährlich eine bestimmte Biokraftstoffquote zu erfüllen. So muss der Biokraftstoffanteil bei Diesel 4,4% und bei Ottokraftstoffen 2,8% betragen; die Gesamtquote muss bei 6,25% liegen. Wird die Quote nicht erfüllt, muss der Verpflichtete eine Pönale entrichten.

Der vorgeschriebene Mindestanteil an Biokraftstoffen kann dabei auch erfüllt werden, indem fossilem Erdgas-Kraftstoff Biomethan zugemischt wird, welches die Anforderungen für Erdgas erfüllt. Diese Beimischung von Biomethan zu Erdgaskraftstoff wird dann gemäß § 37a Abs. 4 Satz 1 BImSchG so behandelt, als wäre eine Beimischung von Biokraftstoff zu Ottokraftstoff erfolgt, sodass eine entsprechende Anrechnung auf die Einzelquote für Ottokraftstoff als auch auf die Gesamtquote erfolgen kann.

Gemäß § 1 Nr. 1 Biokraft-NachV ist die Einhaltung der in der Verordnung niedergelegten Vorgaben Voraussetzung dafür, dass Biokraftstoffe auf die jährliche Beimischungsquote angerechnet werden können. Der Nachweis über die Erfüllung der Nachhaltigkeitsanforderungen ist gegenüber der sog. Biokraftstoffquotenstelle zu führen, die zentral für ganz Deutschland beim Hauptzollamt Frankfurt/O., Standort Cottbus eingerichtet wurde.

Marktakteure, die nachhaltiges Biomethan als Kraftstoff einspeisen, sind selbst nicht verpflichtet, die vorgeschriebene Biokraftstoffquote zu erfüllen, weil diese Pflicht – wie gesagt – ausschließlich für diejenigen Unternehmen besteht, die Diesel- und Ottokraftstoffe in Verkehr bringen. Da nachhaltiges Biomethan aber auf die Quote anrechenbar ist, eröffnet sich diesbezüglich für Biomethan-Einspeiser ein neues Geschäftsfeld. Das BImSchG sieht nämlich ausdrücklich die Möglichkeit vor, dass ein Dritter die Quote für den Verpflichteten erfüllen kann. Unternehmen, die Diesel- und Ottokraftstoffe in Verkehr bringen, können also ein Unternehmen, welches nachhaltiges Biomethan als Kraftstoff einspeist, damit beauftragen, ihre Quote durch die Einspeisung von Biomethan zu erfüllen.

II. Steuerentlastung

Der Gesetzgeber hat sich daneben entschieden, Biokraftstoffe steuerlich zu privilegieren. In diesem Rahmen ist auch Biomethan steuerentlastungsfähig. Entsprechend heißt es in § 50

Abs. 1 Nr. 4 des Energiesteuergesetzes (EnergieStG), dass dem Steuerschuldner auf Antrag eine Steuerentlastung gewährt wird für *„Energieerzeugnisse, die durch Vergärung oder synthetisch aus Biomasse erzeugtes und auf Erdgasqualität aufbereitetes Biogas (Biomethan) sind oder enthalten“.* Weitere Voraussetzung ist, dass das so erzeugte Biomethan den Anforderungen an die Beschaffenheiten und Qualitäten von Kraftstoffen entspricht.[1]

Aus § 1 Nr. 2 Biokraft-NachV folgt nun, dass die Einhaltung der in der Verordnung niedergelegten Vorgaben Voraussetzung für die Steuerentlastungsfähigkeit von Biokraftstoffen nach § 50 EnergieStG ist. Will ein Unternehmen die Steuerentlastung in Anspruch nehmen, muss es die Erfüllung der Nachhaltigkeitsanforderungen aus der Verordnung gegenüber dem regional zuständigen Hauptzollamt nachweisen.

Zu beachten ist hier, dass die Steuerentlastung gemäß § 50 Abs. 1 Satz 4 EnergieStG nur für die Biokraftstoffe gewährt wird, die noch nicht auf die Biokraftstoffquote angerechnet wurden. Dadurch will der Gesetzgeber eine Doppelförderung vermeiden.

III. Zeitpunkt des Inverkehrbringens

Die Biokraft-NachV ist nicht auf Biokraftstoffe anzuwenden, die vor dem 1. Januar 2011 in den Verkehr gebracht werden. Damit wird die Verordnung erst ein halbes Jahr später als ursprünglich vorgesehen „scharf“ gestellt.

Allerdings definiert die Verordnung nicht selbst, was unter der Formulierung „in den Verkehr bringen“ zu verstehen ist. Es empfiehlt sich aber eine Anlehnung an die Regelung zur Biokraftstoffquote in § 37a Abs. 1 S. 2 BImSchG, wonach Kraftstoff mit dem Entstehen der Energiesteuer als in Verkehr gebracht gilt. Für flüssige Kraftstoffe entsteht die Steuer nach dem EnergieStG mit Entfernung aus dem Steuerlager; hingegen entsteht die Steuer auf Erdgas erst, wenn es zum Verbrauch aus dem Leitungsnetz entnommen wird. Da gasförmige Biokraftstoffe im Grundsatz dem Steuersatz für Erdgas unterliegen, wird man also für das Entstehen der Steuer auf die Entnahme aus dem Erdgasnetz abstellen müssen.

Damit gelten gasförmige Biokraftstoffe als in den Verkehr gebracht, wenn sie dem Erdgasnetz als Kraftstoff entnommen werden.

[1] Vgl. § 6 der Verordnung über die Beschaffenheit und die Auszeichnung der Qualitäten von Kraftstoffen, welcher wiederum auf die DIN 51624 verweist.

Der Biokraftstoff, der zu Beginn des Jahres 2011 in Verkehr gebracht wird und deshalb den Nachhaltigkeits-Anforderungen der Verordnung genügen muss, kann denknotwendig nur aus den Pflanzen hergestellt worden sein, die 2010 bereits geerntet waren. Das bedeutet faktisch, dass alle produktionsbezogenen Voraussetzungen, deren Einhaltung die Verordnung ab 2011 verlangt, tatsächlich schon vorher erfüllt und entsprechend dokumentiert sein müssen.

C. Anforderungen der Verordnung an Biomethan

Die Biokraft-NachV stellt eine ganze Reihe von Anforderungen für nachhaltige Biokraftstoffe auf, die auch für Biomethan gelten. Diese betreffen zum einen die Anbaufläche für die verarbeiteten Pflanzen und zum anderen das Treibhausgas-Minderungspotenzial der Biomasse und des Biokraftstoffs.

I. Schutz natürlicher Lebensräume (§§ 4 bis 6 Biokraft-NachV)

Die Anforderungen an den Schutz natürlicher Lebensräume sollen sicherstellen, dass der Leitgedanke des Biokraftstoffeinsatzes, der Umwelt- und Naturschutz, nicht schon durch die Herstellung der Biomasse ad absurdum geführt wird. Dementsprechend werden natürliche Lebensräume durch die Verordnung dadurch geschützt, dass ab einem bestimmten Zeitpunkt die Umwandlung solcher ökologisch wertvoller Flächen in landwirtschaftliche Flächen für den Biomasseanbau nicht gestattet ist. Als Referenzzeitpunkt für Biokraftstoff gilt der 1. Januar 2008. Falls für dieses Datum keine hinreichenden Daten vorliegen, kann ein anderer Tag im Januar 2008 gewählt werden.

Als Flächen mit einem hohen Naturschutzwert nach § 4 Biokraft-NachV gelten Flächen, die einen hohen Wert für die biologische Vielfalt haben. Zu solchen Flächen zählen insbesondere bewaldete Flächen (Primärwälder und sog. naturbelassene Flächen), dem Naturschutz dienende Flächen (als solche definiert durch Gesetz, eine Behörde oder die EU-Kommission) sowie Grünland mit großer biologischer Vielfalt (natürliches oder künstliches Grünland).

Als gleichfalls geschützte Flächen gelten zudem solche mit einem hohen Kohlenstoffbestand nach § 5 Biokraft-NachV, also Feuchtgebiete und kontinuierlich bewaldete Gebiete, sowie Torfmoore nach § 6 Biokraft-NachV.

Diese flächenbezogenen Anforderungen gelten dabei auch für Biokraftstoffe, die aus Reststoffen hergestellt worden sind, sofern die Reststoffe aus der Landwirtschaft, der Forst- und Fischwirtschaft oder aus Aquakulturen stammen. Relevant werden könnte dies bei der Biomethanerzeugung etwa für Kartoffelkraut, Rübenblatt oder Stroh.

II. Nachhaltige landwirtschaftliche Bewirtschaftung (§ 7 Biokraft-NachV)

Beim Anbau der Biomasse zur Biokraftstoffherstellung muss sichergestellt sein, dass neben dem Schutz der oben beschriebenen Flächen auch die in den EU-Mitgliedstaaten geltenden Cross-Compliance Bestimmungen der Verordnung (EG) Nr. 73/2009 bei landwirtschaftlichen Tätigkeiten eingehalten werden. Nachhaltige Biomasse kann also nur im Einklang mit den Mindestanforderungen an den guten landwirtschaftlichen und ökologischen Zustand im Sinne von Art. 6 Abs. 1 der Verordnung (EG) Nr. 73/2009 angebaut werden. Diese Vorgabe besteht allerdings nur für Biomasse, die innerhalb der EU angebaut wird.

III. Treibhausgas-Minderungspotenzial (§ 8 Biokraft-NachV)

Schließlich müssen Biokraftstoffe weniger Treibhausgase (THG) emittieren als fossile Kraftstoffe. So schreibt die Verordnung vor, dass nachhaltige Biokraftstoffe gegenüber flüssigen fossilen Kraftstoffen ein THG-Minderungspotenzial von mindestens 35% aufweisen. Dieser Wert wird sich ab 2017 auf mindestens 50% und für Erzeugungsanlagen, die nach dem 31. Dezember 2016 in Betrieb genommen wurden, ab 2018 auf mindestens 60% erhöhen. Stammt der Biokraftstoff und damit auch Biomethan allerdings aus einer Anlage, die vor dem 23. Januar 2008 in Betrieb genommen worden ist, sind die 35% THG-Minderung erst ab dem 1. April 2013 einzuhalten. Das heißt andererseits, dass Biomethan aus Anlagen, die ab dem 23. Januar 2008 in Betrieb genommen wurden, schon zum 1. Januar 2011 das 35%-Kriterium erfüllen müssen. Dies trifft auf die weitaus meisten Biogasaufbereitungsanlagen in Deutschland zu.

Für die Berechnung der THG-Bilanzierung sieht die europäische Richtlinie eine komplexe Methodik vor, die v. a. mit Blick auf die flüssigen Biokraftstoffe entwickelt wurde. Die Methode gilt aber für alle Biokraftstoffe gleichermaßen, was insbesondere für Biomethan zunächst erhebliche Schwierigkeiten in der praktischen Umsetzung aufwirft. Im Rahmen eines seitens BMU geförderten Projektes wurde vom IFEU Heidelberg und BBH Berlin gemeinsam mit den beteiligten Behörden eine Vorgehensweise entwickelt, welche die Umsetzung in der Praxis erleichtert und für typisch betriebene Biogasanlagen teilweise überhaupt erst möglich macht. Die Vorgehensweise wird in Teil 2 näher beschrieben. Teilweise kann zum Nachweis des THG-Minderungspotenzials auf in der Verordnung festgelegte Standardwerte zurückgegriffen werden, diese gelten allerdings nur für Biomethan aus organischen Siedlungsabfällen, Gülle und Trockenmist. Werte für nachwachsende Rohstoffe, also die typischerweise in Biogasanlagen verwendeten Pflanzensubstrate, sind dort bisher nicht zu finden. Demnach müssen Biomethan-Hersteller die entsprechenden Werte für die von ihnen eingesetzten Substrate selbst berechnen.

Eine besondere Schwierigkeit, die nach der europäischen Richtlinie vorgegebene Methode auf Biomethan anzuwenden, liegt darin, dass Biogasanlagen typischerweise Substratgemische einsetzen[2]. Verschiedene Substrate bzw. Pflanzen weisen unterschiedliche THG-Werte für ihren Anbau auf. Damit können diese zwar vermischt werden, aber ihre einzelnen THG-Werte dürfen zunächst nicht zusammengefasst (saldiert) werden. Eine Saldierung verschiedener THG-Werte bei einer Mischung von verschiedenen Biomassen erlaubt die Verordnung nur dann, wenn für den Arbeitsschritt der Herstellung ein entsprechender festgelegter Wert (THG-Höchstwert) nicht überschritten wird. Existieren solche Werte nicht, kann zwar eine Vermischung von Substraten stattfinden, allerdings muss dann das THG-Minderungspotenzial für jedes einzelne eingesetzte Substrat separat nachgewiesen werden. Da der Gasertrag aus Substratgemischen nicht für einzelne Substrate gemessen werden kann, wird in Teil 2 auch geklärt, wie eine Aufteilung des Gasertrages auf einzelne Substrate erfolgen soll. Des Weiteren wurden THG-Höchstwerte für den Arbeitsschritt der Herstellung für üblicherweise zur Biogaserzeugung eingesetzte Substrate abgeleitet. Die Höchstwerte als Bemessungsgröße für eine Saldierung sollen sicherstellen, dass THG-Werte von Substraten mit einer ungenügenden THG-Bilanz nicht mit THG-Werten von Substraten mit einer ausreichenden THG-Bilanz saldiert werden und somit nur im Durchschnitt das Minderungspotential von 35% erreichen.

Um den spezifischen Herausforderungen der THG-Bilanzierung bei Biomethan gerecht zu werden, wird das Bundesministerium für Umwelt (BMU) von seiner in der Biokraft-NachV ausdrücklich vorgesehenen Kompetenz Gebrauch machen und Höchstwerte festlegen, welche im Bundesanzeiger bekannt gemacht werden. Der hierfür zunächst erforderliche Notifizierungsprozess auf europäischer Ebene endet Mitte Oktober 2010, so dass die Höchstwerte

[2] Monovergärungen sind zwar möglich, aber aus verschiedenen Gründen nicht anzustreben (s. Teil 2)

voraussichtlich zu diesem Zeitpunkt veröffentlicht werden können. Näheres zu den Höchstwerten findet sich in Teil 2.

D. Nachweisführung

Die Biokraft-NachV verlangt einen Nachweis über die einzelnen Eigenschaften des Biomethans. Hierfür schreibt sie eine bestimmte Nachweisführung vor, deren Einhaltung Voraussetzung für die Anerkennung des Nachweises ist.

Ausgestellt wird dieser Nachhaltigkeits-Nachweis von der sog. letzten Schnittstelle in der Wertschöpfungskette, also von der Biogasaufbereitungsanlage. Zu erbringen ist der Nachweis gegenüber der Biokraftstoffquotenstelle bzw. dem Hauptzollamt von demjenigen, der den Kraftstoff in den Verkehr bringt, also aus dem Erdgasnetz entnimmt.

I. Zertifizierungssysteme und Zertifizierungsstellen

In der Umsetzungspraxis hat sich der Verordnungsgeber für eine weitgehend privatwirtschaftliche Organisation der Nachweisführung entschieden (vgl. Abb. 1). Danach soll die Umsetzung der Nachhaltigkeitsanforderungen im Einzelnen durch Zertifizierungssysteme ausgestaltet werden, die für die Schnittstellen entsprechend detaillierte Vorgaben machen. Dazu müssen sich die Schnittstellen einem Zertifizierungssystem anschließen, dessen Vorgaben für diese dann verbindlich sind. Die Überprüfung der Einhaltung dieser Vorgaben vor Ort übernehmen wiederum die Zertifizierungsstellen, die als von den Zertifizierungssystemen organisatorisch eigenständige Dienstleister im Auftrag der Schnittstellen tätig werden und entsprechende Audits durchführen. Erfüllt eine Schnittstelle die Anforderungen des Zertifizierungssystems, dem es sich angeschlossen hat, so wird ihr dies von der Zertifizierungsstelle mit einem Zertifikat bestätigt. Auf eine solche Weise zertifizierte Schnittstellen müssen eine Kopie ihres Zertifikates der ihnen nachgelagerten Schnittstelle vorlegen. Nur die zertifizierte letzte Schnittstelle ist berechtigt, Nachhaltigkeitsnachweise auszustellen.

In der Wertschöpfungskette ist der Landwirt, der die Biomasse für die Biogaserzeugung lediglich anbaut und erntet, selbst keine Schnittstelle. Er muss aber eine schriftliche Selbsterklärung abgeben, in der er bestätigt, dass die von ihm angebaute Biomasse die Anforderungen der Biokraft-NachV erfüllt. Damit erkennt der Landwirt zugleich an, dass sein Anbaubetrieb von Auditoren einer anerkannten Zertifizierungsstelle auf die Einhaltung der Vorgaben überprüft werden kann. Dabei wird es sich aber nicht um flächendeckende, sondern allenfalls um stichprobenartige Kontrollen handeln. Unabhängig davon ist der Landwirt jedenfalls angehalten, die anbauspezifischen Daten, die für den späteren Nachweis der Nachhaltigkeitseigenschaften und insbesondere für die Berechnung des THG-Minderungspotenzials benötigt werden, vorzuhalten, damit er sie den folgenden Gliedern der Wertschöpfungskette zur Verfügung stellen kann. Liegen diese Daten nicht vor, wird er für die Biomasse im Kraftstoffpfad auch keine Abnehmer finden können.

Als erste Schnittstelle gilt derjenige Betrieb oder Betriebsteil, der die Biomasse als sog. Ersterfasser zum Zweck des Weiterhandelns oder der Weiterverarbeitung aufnimmt. Diese erste Schnittstelle kann die Biogasanlage sein, in der die Biomasse zur Vergärung eingesetzt wird. Denkbar ist aber auch, dass etwa ein Maschinenring die Rolle der ersten Schnittstelle einnimmt, wenn er die Biomasse (möglicherweise schon bei der Ernte) zum Zweck des Weiterhandels erstmals auf eigene Rechnung – also nicht im Auftrag des Landwirts – aufnimmt. Dabei kommt es nicht auf die gesellschaftsrechtliche Organisation der an dem Wertschöpfungsprozess Beteiligten an. Für die Bestimmung der Schnittstellen ist vielmehr die tatsächliche betriebliche Struktur entscheidend, die in dem jeweiligen Betrieb oder der Betriebsstätte anzutreffen ist. Abzustellen ist insofern also darauf, ob die Biomasse tatsächlich an eine andere Betriebsstätte weitergegeben wurde. Die letzte Schnittstelle, die den Nachhaltigkeitsnachweis ausstellen muss, ist in jedem Fall die Biogasaufbereitungsanlage (BGAA), denn diese bildet in der Wertschöpfungskette des Biomethans das letzte Glied und produziert das eigentliche Fertigprodukt, welches mit der entsprechenden Qualität in das Erdgasnetz eingespeist werden kann. Um den Nachhaltigkeitsnachweis verordnungskonform ausstellen zu können, muss die letzte Schnittstelle die Daten aller ihr vorgelagerten (zertifizierten) Schnittstellen vorliegen haben. Nur so kann eine verlässliche und lückenlose Zuordnung der Nachhaltigkeitseigenschaften zu dem jeweiligen Biokraftstoffprodukt erfolgen. Fallen mit der Biogasanlage und der Biogasaufbereitungsanlage die erste und die letzte Schnittstelle als eine Betriebsstätte zusammen (sog. Superschnittstelle), so benötigt diese – obwohl es sich faktisch um nur eine Schnittstelle handelt – sowohl ein Zertifikat als erste wie auch als letzte Schnittstelle.

Die Kontrolle über die Zertifizierungssysteme und Zertifizierungsstellen wiederum liegt in den Händen der Bundesanstalt für Landwirtschaft und Ernährung (BLE). Das heißt, die BLE muss die Zertifizierungssysteme und -stellen anerkennen und kann diese Anerkennung ggf.

auch widerrufen. Letztlich wacht die BLE also darüber, dass die privatwirtschaftlich organisierten Zertifizierungssysteme und Zertifizierungsstellen die Vorgaben der Verordnung korrekt umsetzen.

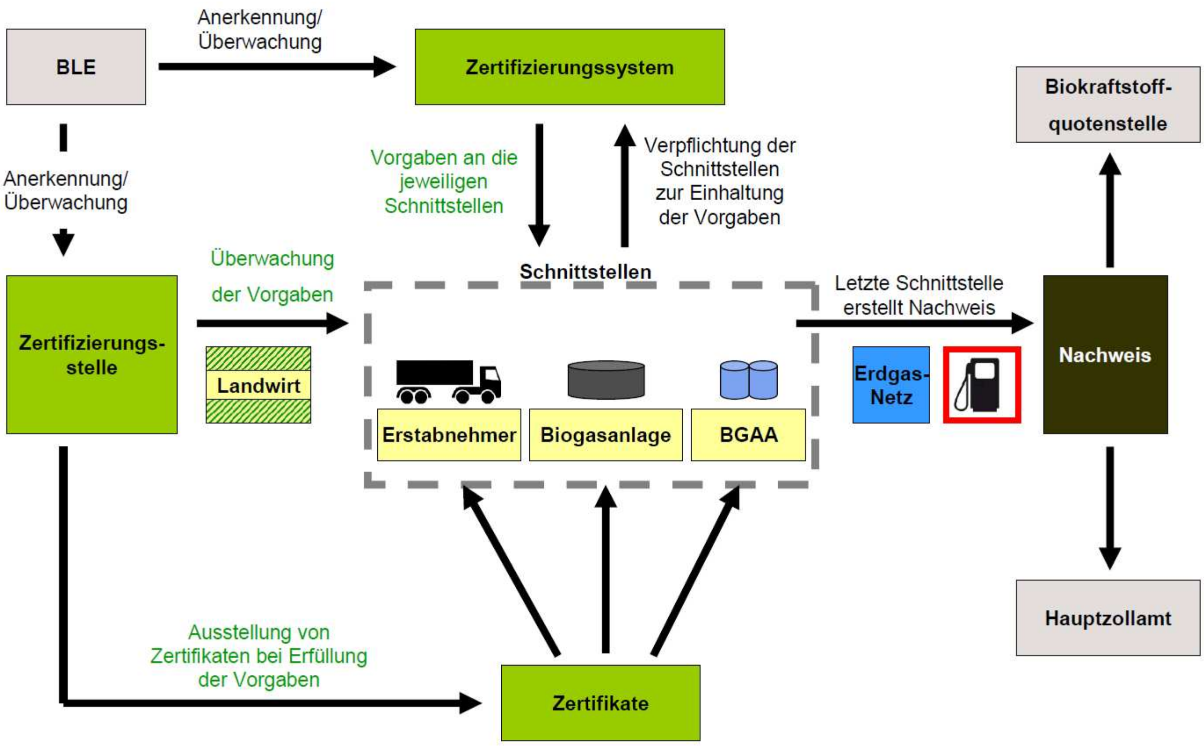

Abbildung 1: Nachweiserbringung

II. Massenbilanzsystem

Um die Herkunft der Biomasse lückenlos für den Herstellungsweg nachzuweisen, sind die Schnittstellen entlang der Wertschöpfungskette und die Lieferanten nach der letzten Schnittstelle verpflichtet, die Eigenschaften der Biomasse bzw. des Biokraftstoffs in einem Massenbilanzsystem zu dokumentieren.

Ein Massenbilanzsystem soll zum einen erlauben, Biomasse bzw. Biokraftstoffe mit unterschiedlichen Nachhaltigkeitseigenschaften vermischen zu können. Zum anderen darf die Menge nachhaltiger Biomasse oder nachhaltigen Biokraftstoffs, die dem Gemisch später entnommen wird, aber nicht größer sein als die Menge, die ihm zuvor als verordnungskonform zugemischt wurde. Das bedeutet, dass alle Mengen, die dem Gemisch zugegeben oder entnommen werden, mit den ihnen anhaftenden Nachhaltigkeitseigenschaften jeweils zu dokumentieren sind. Nur so kann sichergestellt werden, dass die Bilanz der Mengen verordnungskonformer Biomasse am Ende des Bilanzierungszeitraums von maximal drei Monaten keinen Soll aufweist. Hieraus ergibt sich zugleich, dass jede Schnittstelle selbst dafür verantwortlich ist, die notwendigen Informationen bezüglich der aufgenommenen Biomasse von den vorgelagerten Betrieben, Betriebsstätten oder Schnittstellen zu erhalten. Erforderlich ist also eine lückenlose Dokumentation über die Herkunft der Biomasse und ihre Nachhaltigkeitseigenschaften. Die genauen Anforderungen an ein solches Massenbilanzsystem, die die Schnittstellen einzuhalten haben, ergeben sich aus den Vorgaben des jeweiligen Zertifizierungssystems, dem sie sich angeschlossen haben.

Die Lieferanten nach der letzten Schnittstelle müssen bei der Massenbilanzierung nicht zwingend den Vorgaben eines Zertifizierungssystems folgen. Ausreichend ist hier auch eine genaue Erfassung der aufgenommenen und abgegebenen Mengen Biomethans, sowie der zugehörigen Nachweise über deren Eigenschaften. Hierfür können firmeninterne Datenbanken genutzt werden, die einer regelmäßigen Kontrolle der Hauptzollämter unterliegen, aber auch die speziell zu diesem Zweck von der BLE entwickelte Datenbank, die den Nutzern als Web-Anwendung „nabisy" kostenlos zur Verfügung steht.

Bei der Verwendung von Biomethan im Kraftstoffpfad erfolgt der Transport nach der letzten Schnittstelle meistens über das Erdgasnetz[3]. Das bedeutet, dass auch das Erdgasnetz die Voraussetzungen an ein Massenbilanzierungssystem erfüllen muss. Unproblematisch dürfte insofern sein, dass das eingespeiste nachhaltige Biomethan im Netz zwangsläufig mit fossilem Erdgas und eventuell auch mit nicht-nachhaltigem Biomethan vermischt wird. Denn eine solche Vermischung muss ein Massenbilanzsystem schon nach den europarechtlichen Vorgaben ermöglichen.

Im Übrigen beschreibt die Europäische Kommission den Ort, an dem die Mischung stattfinden kann, wie folgt: *„A ‚mixture' can have any form where consignments would normally be in contact, such as in a container, processing or logistical facility or site (defined as a geographical location with precise boundaries within which products can be mixed)."*[4] Diese Formulierung erlaubt recht unproblematisch eine Einordnung des Erdgasnetzes unter die

[3] In wenigen Fällen wird das Biomethan auch über Druckflaschen abgefüllt und zu Biomethan- bzw. Erdgas-Tankstellen verbracht.
[4] Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquid sustainability scheme (2010/C 160/01), Ziff. 2.2.3.

genannten Kriterien: Zum einen deutet die offene Formulierung *„any form where consignments would normally be in contact“* darauf hin, dass der Aufbau von Parallelstrukturen zum Zweck der Mischung weder gewollt noch erforderlich ist. Zum anderen dürfte das deutsche Erdgasnetz auch eine *„logistical facility“* sein, die als *„geographical location with precise boundaries“* definiert werden kann.

Von entscheidender Bedeutung ist aber, dass die Mengen nachhaltigen und nicht-nachhaltigen Biomethans, die in das Erdgasnetz eingespeist und an anderer Stelle wieder entnommen werden, eigenschaftsscharf zu dokumentieren sind. Erforderlich ist insofern zwar nicht, dass das als Biokraftstoff entnommene Gas im Sinne einer stofflichen Identität dem zuvor eingespeisten nachhaltigen Biomethan entspricht. Jedoch muss sichergestellt sein, dass dem Erdgasnetz am Ende des jeweiligen Bilanzierungszeitraums von maximal drei Monaten nicht mehr nachhaltiges Biomethan entnommen worden ist als zuvor eingespeist wurde. Dies lässt sich nur durch eine eigenschaftsscharfe Gegenüberstellung der eingespeisten und entnommenen Mengen Biomethans am Ende des Bilanzierungszeitraums gewährleisten. Das bedeutet, dass die Massenbilanz des eingespeisten und entnommenen nachhaltigen Biomethans am Ende des Bilanzierungszeitraums also wenigstens eine „schwarze Null“ aufweisen muss. Branchenüblich wird der Transport der eingespeisten und entnommenen Mengen Biomethans über Bilanzkreise abzuwickeln sein.

Der Bilanzierungszeitraum von maximal drei Monaten resultiert aus dem nationalen Rechtsrahmen.[5] Die Europäische Kommission verlangt in Umsetzung der eingangs zitierten Richtlinie lediglich eine Bilanzierung innerhalb eines „angemessenen“ Zeitraums.[6] Die Biokraft-NachV stellt damit eine strengere Anforderung auf als die Gasnetzzugangs-Verordnung (GasNZV), welche für die sonstigen Nutzungspfade einen Bilanzierungszeitraum von immerhin einem Jahr zulässt.

In diesem Zusammenhang sei auch darauf hingewiesen, dass die von der Biokraft-NachV vorgeschriebene Massenbilanzierung keinen Flexibilitätsrahmen erlaubt, wie ihn die GasNZV für Biomethan in anderen Nutzungspfaden mit einer Marge von 25% am Ende des einjährigen Bilanzierungszeitraums vorsieht. Eine solche Kreditfunktion des Erdgasnetzes ist im Biokraftstoffpfad gerade nicht möglich, da sonst die Gefahr bestünde, dass dem Erdgasnetz

[5] Vgl. Ziff. 3.1.4.2 Biokraft-NachVwV.
[6] Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquid sustainability scheme (2010/C 160/01), Ziff. 2.2.3.

mehr nachhaltiges Biomethan entnommen wird als zuvor eingespeist wurde. Ein späteres „Auffüllen“ eines Defizits der Massenbilanz im jeweils folgenden Bilanzierungszeitraum ist damit nicht möglich.

III. Übergangsbestimmung: Bescheinigung durch Umweltgutachter

In einer Übergangsphase bis Ende 2011 besteht die Möglichkeit, die Verordnungskonformität des Biokraftstoffs lieferungsbezogen auch durch die Bescheinigung eines Umweltgutachters nachzuweisen. Damit will der Verordnungsgeber auf die mögliche Situation reagieren, dass es in der Anlaufphase noch keine ausreichende Anzahl an Zertifizierungssystemen und Zertifizierungsstellen gibt. Die Bescheinigung eines Umweltgutachters über die Nachhaltigkeit einer bestimmten Menge Biokraftstoffs kann der Biokraftstoffquotenstelle oder dem Hauptzollamt wie ein Nachhaltigkeitsnachweis vorgelegt werden und wird als gleichwertig anerkannt.

Für Biomethan als Kraftstoff ist diese Option der Nachweisführung nicht unrelevant, solange es noch kein anerkanntes Zertifizierungssystem gibt, das Vorgaben speziell für Biomethan macht. Bis zur Entwicklung eines Zertifizierungssystems mit spezifischen biomethanbezogenen Vorgaben werden die Nachweise für Biomethan im Kraftstoffpfad also vorerst durch die Bescheinigungen von Umweltgutachtern erbracht werden müssen. Dies bedeutet für die Landwirte und Schnittstellen entlang der Wertschöpfungskette, dass sie die notwendigen Angaben über Anbau, Transport und Verarbeitung der Biomasse dokumentieren und vorhalten müssen, um den beauftragten Umweltgutachter die Datengrundlage für dessen Prüfung zur Verfügung stellen zu können. Angesichts der recht überschaubaren Lieferstrukturen vom Anbaubetrieb bis hin zur Biogasaufbereitungsanlage wird dies mit einem geringeren tatsächlichen Aufwand einhergehen können als bei flüssigen Biokraftstoffen, deren pflanzlicher Ursprung nicht selten auch einen Auslandbezug aufweist.

Für die Überwachung der Umweltgutachter ist nicht die BLE, sondern die Deutsche Akkreditierungs- und Zulassungsstelle für Umweltgutachter mbH (DAU) zuständig, die auch ein Verzeichnis über alle zugelassenen Umweltgutachter führt. Bei ihrer Prüfung sind die Umweltgutachter allerdings angehalten, sich an den Vorgaben der bereits anerkannten Zertifizierungssysteme zu orientieren.[7] Dies heißt insbesondere, dass für die Massenbilanzierung

[7] Vgl. § 58 Abs. 3 BiokraftNachV i.V.m. Ziff. 3.1.4.2 Biokraft-NachVwV.

nach der letzten Schnittstelle auch der für Zertifizierungssysteme vorgegebene maximale Bilanzierungszeitraum von drei Monaten zu beachten ist. In der Praxis wird es sich aber empfehlen, wenn die Ausstellung der Bescheinigungen über einen deutlich kürzeren Bilanzierungszeitraum als den dreimonatigen erfolgt, da insofern eine bessere Zuordnung der Nachhaltigkeitseigenschaften zu den einzelnen bescheinigten Liefermengen möglich ist. Zu beachten ist in diesem Zusammenhang auch, dass die Datenbank der BLE für Liefermengen, die über keinen Nachhaltigkeitsnachweis, sondern nur eine Bescheinigung eines Umweltgutachters verfügen, nicht zur Verfügung steht.

Teil 2 Berechnung des Treibhausgas-Minderungspotenzials

A. Allgemeines

In Teil 1 wurde unter C III bereits erläutert, dass Biokraftstoffe künftig ein THG-Minderungspotenzial von 35% gegenüber dem fossilen Referenzsystem einhalten müssen, wenn eine Anrechnung auf die Biokraftstoffquote oder eine Steuerermäßigung gewünscht ist. Das fossile Referenzsystem besteht aus einer Mischung von Otto- und Dieselkraftstoffen. Die mit deren Bereitstellung verbundenen Treibhausgasemissionen bzw. der zu vergleichende Wert (Komparator) ist in der Nachhaltigkeitsverordnung vorgegeben und beträgt 83,8 g CO_2-Äquivalente/MJ Kraftstoff. CO_2-Äquivalente (CO_2-Äq) bezeichnet dabei Kohlendioxidemissionen (CO_2) und die weiteren klimarelevanten Emissionen Distickstoffmonoxid (N_2O) und Methan (CH_4), die mittels Äquivalenzfaktoren auf die Wirkung von CO_2 umgerechnet wurden. Auch die Äquivalenzfaktoren zur Umrechnung sind in der Verordnung vorgegeben (N_2O = 296; CH_4 = 23)[8]. Mit dem einzuhaltenden THG-Minderungspotenzial von 35% dürfen damit Biokraftstoffe in ihren THG-Aufwendungen einen Wert von 54,5 g CO_2-Äq/MJ nicht überschreiten.

Um nun die Einhaltung des THG-Minderungspotenzials nachzuweisen, gibt es grundsätzlich zwei Möglichkeiten:

1) Verwendung eines in der Verordnung vorgegebenen Standardwertes
2) Berechnung des THG-Minderungspotenzials anhand tatsächlicher Werte

Standardwerte sind in der Biokraft-NachV nur für Biomethan aus organischen Siedlungsabfällen, Gülle und Trockenmist enthalten (Anlage 2, Biokraft-NachV), für alle anderen Substrate muss das THG-Minderungspotenzial berechnet werden. Dabei ist der nach Anlage 1, Biokraft-NachV vorgegebenen Methode zu folgen, auf die im Weiteren kurz eingegangen wird.

I. Methode zur Berechnung des Treibhausgas-Minderungspotenzials (Anlage 1, Biokraft-NachV)

Nach Anlage 1, Biokraft-NachV sind die THG-Emissionen bei der Herstellung, Lieferung und Verwendung von Kraftstoffen nach der in Abbildung 2 gezeigten Formel zu berechnen. Die

[8] Die Werte entsprechen den vorgegebenen Werten nach (IPCC 2001). Die aktuelleren Werte nach (IPCC 2007) wären hier vorzuziehen und werden ggf. im Rahmen des Komitologieprozesses übernommen.

einzelnen Elemente der Formel bestehen zum einen aus Emissionen, die sich aus sämtlichen Prozessschritten der Erzeugung von Biokraftstoffen ergeben und zum anderen aus Emissionseinsparungen, die angerechnet werden dürfen.

Formel Biokraft-NachV:

$$E = \underbrace{e_{ec} + e_{l}}_{\text{Anbau und Landnutzungsänderung}} + \underset{\downarrow\ \text{Produktion}}{e_{p}} + \underset{\downarrow\ \text{Transport}}{e_{td}} + \underset{\downarrow\ \text{Nutzung}}{e_{u}} - \underbrace{e_{sca} - e_{ccs} - e_{ccr}}_{CO_2\text{-Abscheidung Speicherung}} - \underset{\downarrow\ \text{Stromgutschrift}}{e_{ee}}$$

Abbildung 2: Formel der Biokraft-NachV zur Berechnung des THG-Minderungspotenzials

Treibhausgasemissionen der Erzeugung

Die Emissionen aus den Prozessschritten der Erzeugung werden hier bezogen auf Biomethan kurz näher erläutert:

- Emissionen bei der Gewinnung der Rohstoffe (e_{ec}): Emissionen aus Anbau und Ernte von Anbaubiomasse; bei Einsatz von Abfällen, Ernterückständen und Produktionsrückständen sind vorgelagerte Emissionen bis zur Sammlung mit null festgesetzt (Nr. 18, Anlage 1, Biokraft-NachV)
- Emissionen durch Kohlenstoffbestandsänderungen infolge Landnutzungsänderung (e_l) (sofern gegeben)[9]
- Emissionen bei der Verarbeitung (e_p): Emissionen aus der Biogasanlage und aus der Aufbereitungsanlage
- Emissionen bei der Lieferung (e_{td}): Emissionen aus dem Transport der Anbaubiomasse von den landwirtschaftlichen Flächen zur Biogasanlage, Emissionen der Sammlung und Anlieferung zur Biogasanlage von Abfällen, Ernterückständen oder Produktionsrückständen, Emissionen aus dem Transport des Biogases zur Aufbereitungsanlage (sofern gegeben), Emissionen aus der Nutzung des Erdgasnetzes als

[9] Dies beinhaltet auch den Fall, dass der Kohlenstoffbestand durch Landnutzungsänderung erhöht wird, bei Anbau auf wiederhergestellten degradierten Flächen.

Transportmedium oder anderweitige Emissionen aus dem Transport des Biomethans ab Aufbereitungsanlage bis zur Tankstelle.

- Emissionen bei der Nutzung des Kraftstoffs (e_u) werden bei Biokraftstoffen auf null gesetzt (Nr. 13, Anlage 1, Biokraft-NachV)

Der Begriff Emissionen umfasst dabei alle prozessbedingten THG-Emissionen, wie z.B. diffuse Methanemissionen aus der Biogas- oder der Aufbereitungsanlage, N_2O-Emissionen beim Biomasseanbau oder Emissionen, die sich aus dem Einsatz von Energie (elektrisch, mechanisch, thermisch) oder von Hilfsmitteln bzw. Zusatzstoffen (z.B. Additive, Düngemittel) ergeben. Umfasst sind bei Energie- oder Stoffeinsatz sowohl Emissionen aus der Nutzung als auch Emissionen aus der Bereitstellung der Energie bzw. der Stoffe. Wird z.B. Netzstrom eingesetzt, so ist dieser mit dem THG-Emissionsfaktor für den „Strom in einer bestimmten Region“, also z.B. in Deutschland mit dem Wert für das nationale Stromnetz zu bewerten[10]. Stammt der Strom dagegen von einer einzelnen Stromerzeugungsanlage, die nicht an das Stromnetz angeschlossen ist, kann für diese Anlage ein eigener Durchschnittswert verwendet werden (Nr. 11, Anlage 1, Biokraft-NachV).

Generell finden sich Emissionsfaktoren für verschiedene Energien und Stoffe auch im Leitfaden Nachhaltige Biomasseherstellung der BLE. Diese Emissionsfaktoren werden mittlerweile fortgeschrieben und im Rahmen der europaweiten Harmonisierung (BioGrace)[11] angepasst. Da zum einen entsprechende Anpassungen nach dem Stand des Wissens erleichtert werden sollen, v. a. aber um Akteuren eine weitergehende Rechenhilfe an die Hand zu geben, werden derzeit am IFEU im Rahmen eines Zuwendungsprojektes[12] THG-Rechner entwickelt. Bereits online gestellt ist ein THG-Rechner für Palmöl[13], der auch die o. g. harmonisierten Emissionsfaktoren enthält, in Entwicklung befindet sich ein THG-Rechner für Biomethan. In Auszügen wird dieser THG-Rechner in seiner jetzigen Entwurfsfassung auch für die weiteren Erläuterungen in den nachfolgenden Kapiteln herangezogen.

Einen schematischen Überblick über die Prozessschritte der Erzeugung von Biomethan zeigt Abbildung 3. Darin sind insbesondere die Prozessschritte ab der Biogasanlage detaillierter enthalten. Gezeigt werden v. a. die Stellen, an denen unvermeidbare Methanemissionen

[10] Aktueller Wert für den nationalen Strommix (D): 0,626 kg CO_2-Äq/kWh Strom (IFEU)
[11] „BioGrace - Align biofuel GHG emission calculations in Europe“; vom Intelligent Energy Europe Programme gefördertes Projekt, Vertragsnummer: IEE/09/736/SI2.558249; www.biograce.net
[12] „BioNachTHG - Erstellung einer praxistauglichen Rechenhilfe zur Treibhausgasberechnung im Rahmen der BioSt-/Biokraft-NachV“, Zuwendungsprojekt 03MAP199, in Bearbeitung.
[13] http://www.ifeu.org/index.php?bereich=nac&seite=nachhaltige_biomasse

auftreten, die in der Bilanzierung zu berücksichtigen sind. Ebenfalls gezeigt ist die „Systemgrenze" für den als Nebenerzeugnis anfallenden Gärrest, der nach Vorgaben der Norm zu allozieren ist (vgl. Kap. C VI). Die Abbildung enthält des Weiteren Zahlenangaben für die Erzeugung von einem Gigajoule (GJ) Biomethan. Die Zahlen beziehen sich auf das Beispiel Biomethan aus Silomais und geben an wie viel GJ Biogas bzw. kg Mais eingesetzt werden muss, um ein GJ Biomethan zu erzeugen. Dabei bedeuten die Methanverluste über den Produktionsweg, dass mehr Biogas erzeugt bzw. mehr Silomais eingesetzt und angebaut werden muss.

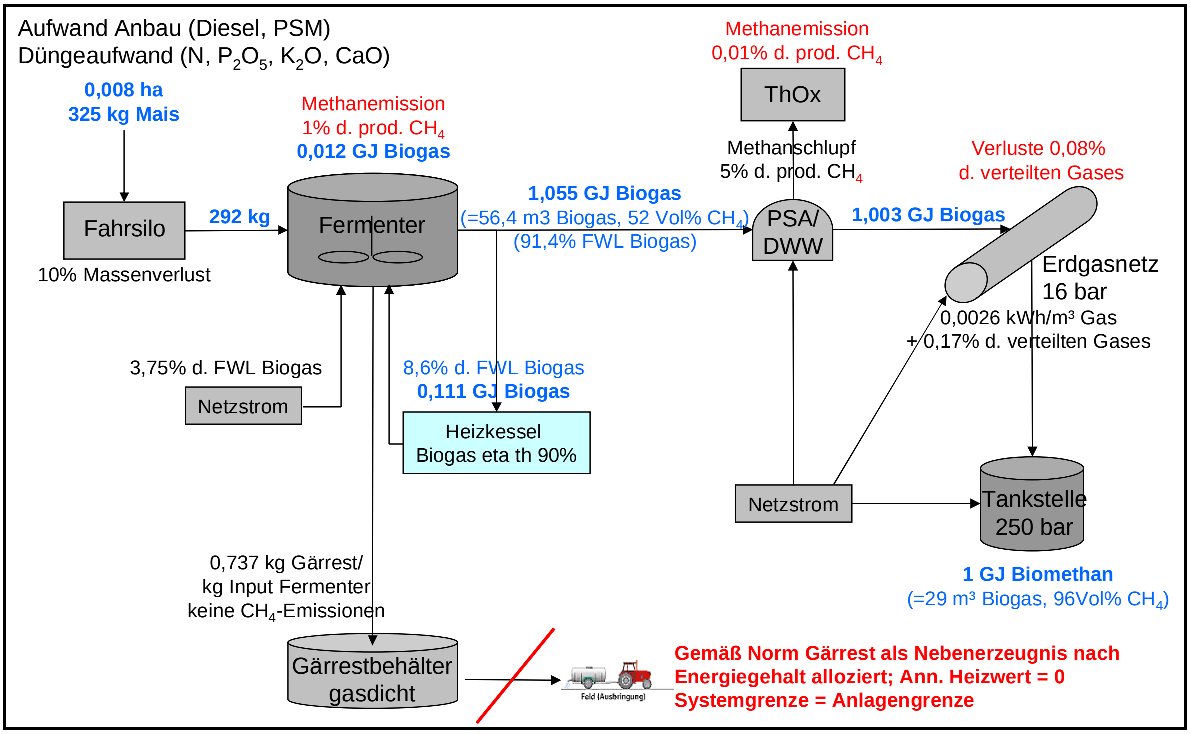

Abbildung 3: Schematische Darstellung der Prozessschritte zur Erzeugung von Biomethan und der damit verbundenen Emissionen am Beispiel Silomais

Der gezeigte Systemraum bildete auch die Grundlage für die Ableitung der in Kapitel B III beschriebenen Höchstwerte. Da diese nach der gleichen Systematik zu entwickeln waren wie die Standardwerte der Verordnung, stellt der gezeigte Systemraum einen konservativen Fall für die Erzeugung von Biomethan dar (eingesetzte Energie Netzstrom, Biogasheizkessel). Für bestimmte Aspekte wurde allerdings ein bestimmter Stand der Technik vorausgesetzt. So das Vorhandensein eines gasdichten Gärrestlagers mit Restgasnutzung auf der Biogasanlage, die Verwendung regenerativer Wärme zur Deckung des Eigenbedarfs sowohl bei der Biogasanlage als auch der Aufbereitungsanlage und zudem bei den Aufbereitungsverfahren, die unter Druck arbeiten, eine thermische Abluftbehandlung (s. a. Kap. C und D)

Emissionseinsparungen

Die in Anlage 1, Biokraft-NachV beschriebene Methode beinhaltet neben Vorgaben zur Berechnung der THG-Emissionen aus der Erzeugung von Biokraftstoffen auch Vorgaben, welche Emissionseinsparungen angerechnet werden dürfen. Im Wesentlichen handelt es sich dabei um Emissionseinsparungen durch verschiedene Wege der Kohlenstoffabscheidung bzw. -speicherung (durch bessere Bewirtschaftungspraktiken in der Landwirtschaft[14], durch geologische CO_2-Speicherung, durch Nutzung von biogenem CO_2 statt fossilem).

Ansonsten ist auch die Anrechnung der Emissionseinsparung erlaubt, die durch überschüssigen Strom aus Kraft-Wärme-Kopplung (KWK) erreicht wird, wobei die KWK-Anlage wärmegeführt betrieben werden muss. An diesem Punkt ergeben sich einige Unstimmigkeiten: Zum einen stimmt die deutsche Übersetzung der europäischen Erneuerbare-Energien-Richtlinie (2009/28/EG), deren Anforderungen 1:1 in die Biokraft-NachV überführt wurden, nicht mit dem englischen Original überein, zum anderen muss aber in beiden Versionen als Referenzsystem für die Emissionseinsparung ein Kraftwerk herangezogen werden, das den *gleichen* Brennstoff einsetzt wie die KWK-Anlage (Nr. 16, Anlage 1, Biokraft-NachV). Das bedeutet, dass, wenn z.B. auf der Biogasanlage zur Deckung des Eigenenergiebedarfs Biogas in einem wärmegeführten BHKW eingesetzt und der Überschussstrom eingespeist wird, streng genommen nur die Emissionsminderung angerechnet werden darf, die sich aus dem Einsatz von Biogas in einem Kraftwerk zur Erzeugung der gleichen Strommenge ergäbe. Abgesehen davon, dass dies wenig Sinn macht, ist hier entweder die Formulierung ungewollt oder es wurde nicht bedacht, dass Energie für den Eigenbedarf aus Erneuerbaren Energien gewonnen werden könnte.

Die Problematik, die sich aus der Formulierung ergibt, ist sowohl auf nationaler als auch auf EU-Ebene bekannt und wird voraussichtlich im Rahmen des Komitologieprozesses angepasst. Denkbar ist dabei eine methodische Anpassung, nach der Überschussstrom nicht als

[14] Die Verordnung enthält keinen Hinweis darauf, welche Praktiken gemeint sind bzw. wann oder wo diese in Erfahrung gebracht werden können. Auch auf EU-Ebene wurden bislang keine weiteren Erläuterungen hierzu veröffentlicht. Insofern kann eine entsprechende Emissionsminderung bisher nicht in Anrechnung gebracht werden.

Gutschrift angerechnet wird, sondern durch die Allokationsmethode berücksichtigt wird[15]. Eine kurzfristige Lösung, die bereits ab dem 01.01.2011 angewendet werden kann, ist damit allerdings nicht gegeben. Den zuständigen Stellen wird jedoch empfohlen, die Anrechnung der Emissionseinsparung durch überschüssigen Strom mittels einer Gutschrift für ersetzten Netzstrom zuzulassen (THG-Emissionsfaktor für das nationale Stromnetz Deutschland, s. Fußnote 10). Voraussetzung ist, wie in der Norm gefordert, dass nur der Strom angerechnet werden darf, der maximal anfallen kann, wenn das Biogas-BHKW auf die Deckung des Prozesswärmebedarfs ausgelegt ist.

Praktisch wurde bei der Ableitung der drei bestehenden Standardwerte für Biomethan (Anlage 2, Biokraft-NachV) nach Kenntnissen des IFEU Heidelberg eine ebensolche Gutschrift (Substitution von Netzstrom) angerechnet. Dadurch erklären sich auch die vergleichsweise hohen THG-Minderungspotenziale von 73% für Biomethan aus org. Siedlungsabfällen, 81% für Biomethan aus Gülle und 82% für Biomethan aus Trockenmist. Diese Werte dürfen für das THG-Minderungspotenzial herangezogen werden. Langfristig ist aber auch hier mit einer Anpassung zu rechnen, da die dahinter stehende Annahme, Biogasanlagen, die Biogas zur Aufbereitung abgeben, würden generell ihren Eigenbedarf über ein Biogas-BHKW decken und eine entsprechende Gutschrift für Überschussstrom erzielen, nicht konservativ ist.

Über die genannten und in der Formel enthaltenen (Abbildung 2) anrechenbaren Emissionseinsparungen hinaus, gibt es derzeit keine weiteren Bereiche, die berücksichtigt werden dürfen. Wünschenswert wäre allerdings, dass vermiedene Methanemissionen, die sich aus der Vergärung von Wirtschaftsdüngern statt deren offener Lagerung ergeben, ebenfalls als Emissionseinsparung aufgenommen würden. Dieser Aspekt kann allerdings nur langfristig im Rahmen des Komitologieprozesses auf EU-Ebene eingebracht werden. Erst mit Änderung der Erneuerbare Energien Richtlinie 2009/28/EG ist auch eine entsprechende Anpassung der Biokraft-NachV möglich.

II. Besonderheiten der Berechnung für Biomethan

Die Erzeugung von Biomethan stellt insofern eine Besonderheit dar, als dass Biogasanlagen üblicherweise mit Substratmischungen betrieben werden. Typischerweise werden zwischen zwei bis fünf verschiedene Substrate gleichzeitig eingesetzt. Dagegen ist es für die Erzeu-

[15] In einer Mitteilung der europäischen Kommission über die nachhaltige Nutzung von gasförmiger und fester Biomasse ist eine entsprechende Allokation nach Exergie bereits enthalten (EU COM 2010). Die darin beschriebene Rechenregel wäre dann alternativ zur Gutschrift zu befolgen.

gung von flüssigen Biokraftstoffen weder nötig noch üblich mehr als einen Rohstoff einzusetzen. Die Gegebenheiten des Biogasprozesses als Multi-Input-Prozess waren bei der Normgebung nicht relevant. Wichtig aber war, sicherzustellen, dass die Anforderung, 35% besser sein zu müssen als das fossile Referenzsystem, nicht dadurch unterlaufen wird, dass Zwischenprodukte oder Produkte, die das THG-Minderungspotenzial nicht einhalten, mit solchen, die es einhalten zusammengefasst würden. Insofern dürfen zwar verschiedene Zwischenprodukte und Produkte vermischt werden (so wie eine Vermischung mit fossilen Kraftstoffen möglich ist), aber die THG-Werte dürfen nicht zusammengefasst (saldiert) werden, außer es gibt einen Höchstwert, dessen Unterschreitung geprüft werden kann.

Dies gilt in gleicher Weise für die Biomethanerzeugung, was bedeutet, dass ohne eine Höchstwertregel für jedes einzelne eingesetzte Substrat eine eigene THG-Berechnung durchgeführt werden muss, da eine Saldierung nicht zulässig wäre (vgl. Kap. B III). Ansonsten bleibt als weitere Problematik, dass das erzeugte Biogas messtechnisch nur als Gasgemisch, also als Summe der Einzelerträge erfasst werden kann. D.h. es bedarf einer Konvention, wie das gesamt erzeugte Biogas ggf. auf einzelne eingesetzte Substrate aufzuteilen ist. Lösungen für diese Aspekte wurden im Rahmen des durch IFEU und BBH durchgeführten Zuwendungsvorhabens erarbeitet und abgestimmt und sind in den nachfolgenden Kapiteln erläutert.

Grundsätzlich sei hier noch angemerkt, dass eine Lösung bzw. Vereinfachung auch darin bestehen könnte, auf Monovergärung umzustellen, die grundsätzlich unter Zusatz von Additiven möglich ist und teils auch praktiziert wird. Allerdings würde damit auf eine Vielzahl von Vorteilen verzichtet, die nachfolgend aufgeführt sind.

Vorteile Substratgemische

- Substratmischungen wirken prozessstabilisierend, da sie i.d.R. homogenere Bedingungen für der Biologie bieten wie: ausgewogene Nährstoffverhältnisse, optimale Verfügbarkeit von Spurenelementen, Vermeidung von einseitigen Schadstoffbelastungen; insbesondere Gülle hat zudem eine Pufferwirkung (höhere Toleranz der Mikroorganismen bzgl. z.B. pH-Änderungen)
- Substratmischungen bewirken einen Synergieeffekt; die optimierte Mischung erreicht eine höhere Gasausbeute als die Monochargen

- Mischungen dienen der Risikostreuung gegenüber Ernteausfällen z.B. bei Trockenperioden
- Der Einsatz mehrerer Substrate bedeutet eine Entlastung von Arbeitsspitzen, während sich der Arbeitsaufwand bei einem Monosubstrat auf die Aussaat und den Erntezeitpunkt konzentriert
- Mehrere Substrate erlauben ein besseres Gärrestmanagement, der Ausbringungszeitraum kann freier gewählt werden (verschiedene Saattermine, Möglichkeiten der Düngung); auch müssen weniger Lagerkapazitäten vorgehalten werden
- Der Einsatz und Anbau mehrerer Substrate ermöglicht den Erhalt der Biodiversität, während Monokulturen diesem, in Deutschland festgelegten Ziel, entgegenstehen
- Ein verstärkter Übergang in Richtung Monokulturen hätte steigenden Widerstand gegen Biogas- bzw. Biomethananlagen zur Folge; aus Sicht des Naturschutzes wird bereits eine Begrenzung des Maisanteils bei der Biogaserzeugung gefordert

Die folgenden Kapitel entsprechen der Reihenfolge nach der Akteurskette zur Erzeugung von Biomethan. Für jeden Bereich werden die Aspekte beschrieben, die insbesondere zu beachten sind.

B. Anbaufläche und Gewinnung der Rohstoffe

Für die Anbaufläche und die Gewinnung der Rohstoffe muss der Anbaubetrieb bzw. Landwirt die THG-Berechnung durchführen bzw. zumindest die dafür erforderlichen Daten vorhalten. Die Richtigkeit der Angaben hat er durch eine schriftliche Selbsterklärung zu bestätigen. (Zusammenfassende Informationen für den Anbaubetrieb s. a. Teil 3).

I. Emissionen aus Landnutzungsänderung und Landnutzung

Bei der Gewinnung der Rohstoffe ist die allererste Frage, die zu stellen ist, die nach der Fläche auf der die Substrate angebaut wurden. Hier ist zunächst zu beantworten, ob die flächenbezogenen Nachhaltigkeitsanforderungen eingehalten wurden (s. Teil 1, Kap. C I).

Für die THG-Berechnung ist im ersten Schritt zu prüfen, ob seit Januar 2008 eine **Landnutzungsänderung** vorgenommen wurde, z.B. Grünland, (sofern dies als „Grünland mit großer biologischer Vielfalt“ gemäß 4 (2) Nr. 3 Biokraft-NachV nicht bereits ausgeschlossen ist) in Ackerland umgewandelt wurde. In diesem Fall muss die daraus resultierende Kohlenstoffbestandsänderung in der THG-Berechnung berücksichtigt werden (s. „e_l“ in Abbildung 2). Wie die THG-Emissionen infolge Landnutzungsänderungen zu berechnen sind, ist grundsätzlich im Leitfaden Nachhaltige Biomasseherstellung der BLE beschrieben. Darüber hinaus wurden mittlerweile Leitlinien für die Berechnung des Kohlenstoffbestands im Boden von der EU Kommission beschlossen[16], die heranzuziehen sind. Der THG-Rechner für Biomethan wird wie der Palmöl-THG-Rechner eine darauf basierende Berechnungssystematik vorsehen. Aber um das Risiko zu vermeiden, das THG-Minderungspotenzial ggf. nicht zu erreichen, sollte eine Landnutzungsänderung unterbleiben.

Ein wichtiger Aspekt bei der **Landnutzung** ist die Frage nach dem Bodentyp auf dem angebaut wird. Insbesondere im Norden Niedersachsens aber auch im Alpenrandgebiet in Bayern gibt es in Deutschland organische Böden (Niedermoore). Insofern auf diesen Böden bereits vor Januar 2008 Biomasse angebaut wurde, sind zwar die flächenbezogenen Anforderungen erfüllt, aber als organisch definierte Böden ist die Bewirtschaftung dieser mit sehr hohen treibhauswirksamen Emissionen verbunden. Zum einen unterliegen sie einem fortwährenden Abbau organischer Substanz, da sie permanent entwässert werden, zum anderen gilt nach (IPCC 2006), dass Stickstoffdünger, der auf diese Böden ausgebracht wird, zu 80% als N_2O-N in die Atmosphäre freigesetzt wird. Mit dieser hohen Freisetzungsrate ist die Einhaltung des THG-Minderungspotenzials bei ansonsten üblicher Stickstoffdüngung ausgeschlossen. Die betroffenen Böden sind genau kartiert und die aus ihnen resultierenden THG-Emissionen werden im Rahmen der Nationalen Berichterstattungspflichten zum Kyoto-Protokoll ausgewiesen. Informationen dazu sind entweder über das Umweltbundesamt erhältlich, das für die Nationale Berichterstattung zuständig ist, oder über das Johann Heinrich von Thünen-Institut (vTI), das die Berechnungen durchführt.

II. Emissionen aus Anbau und Ernte

Die eigentlichen Aufwendungen für Anbau und Ernte der Biomasse bestehen im Wesentlichen aus den Maschinenarbeiten – hierfür ist die verbrauchte Dieselmenge in l/(ha*a) zu ermitteln – und aus dem Einsatz von Saatgut, Düngemengen und ggf. Pflanzenschutzmitteln. Die genannten Werte sind in kg/(ha*a) zu ermitteln und anzugeben. Im Weiteren ist der zugehörige Ernteertrag in kg/(ha*a) bzw. der Trockensubstanz(TS)-Ertrag oder der zugehörige TS-Gehalt anzugeben (vgl. Abbildung 4).

[16] Beschluss der Kommission vom 10. Juni 2010 über Leitlinien für die Berechnung des Kohlenstoffbestands im Boden für die Zwecke des Anhang V der Richtlinie 2009/28/EG (bekannt gegeben unter Aktenzeichen K(2010) 3751) (2010/335/EU); Amtsblatt der Europäischen Union L 151/19, 17.6.2010

Schritt 2 - THG Emissionen durch Anbau		
Bitte Ernteertrag eingeben (Frischmasseertrag und TS-Gehalt)		
Frischmasseertrag	kg Substrat/(ha*a)	40.000
TS-Gehalt	% Frischmasse	35
Bitte eingesetzte Saatgutmenge eingeben		
	kg Saatgut/(ha*a)	26
Bitte eingesetzte Düngemengen eingeben für jeden einzelnen Dünger		
N-Dünger	kg N/(ha*a)	152,0
P2O5-Dünger	kg P_2O_5/(ha*a)	64,2
K2O-Dünger	kg K_2O/(ha*a)	178,3
CaO-Dünger	kg CaO/(ha*a)	11,0
Bitte eingesetzte Menge an Pflanzenschutzmitteln (PSM) eingeben		
PSM	kg/(ha*a)	3,0
Bitte vebrauchte Dieselmenge eingeben		
Diesel	l/(ha*a)	98,0

Abbildung 4 Eingabemaske Entwurf THG-Rechner mit erforderlichen Daten zur Ermittlung der Emissionen aus der Gewinnung von Biomasse, mit beispielhaften Werten

Die Bestimmung des TS-Gehaltes sollte bei Anlieferung der Biomasse bei der Biogasanlage erfolgen. Dies sollte mit der Praxis insofern in Einklang stehen, als dass typischerweise Lieferungen nach Trockensubstanzmasse abgerechnet werden. Der TS-Gehalt muss erfasst werden, um einen Vergleich mit den Höchstwerten durchführen zu können, soweit diese gegeben sind, da die Höchstwerte für jedes Substrat in g CO_2-Äq/kg TS festgelegt sind.

III. Höchstwerte für den Verfahrensschritt Anbau von Biomasse

Nach § 16 (2) 2b Biokraft-NachV darf Biomasse mit unterschiedlichen THG-Werten nur dann zusammengefasst (saldiert) werden, wenn die THG-Werte einen für diesen Arbeitsschritt festgelegten maximalen Wert nicht überschreiten. Für die Erzeugung von Biomethan gibt es bislang keine entsprechenden Höchstwerte. Im Rahmen des Zuwendungsprojektes wurden durch das IFEU für insgesamt 13 Pflanzensubstrate Höchstwerte für den Verfahrensschritt „Anbau von Biomasse“ abgeleitet und nach erfolgter Ressortabstimmung durch das Bundesministerium für Umwelt bei der Europäischen Union zur Notifizierung vorgelegt. Die Stillhaltefrist endet Mitte Oktober, so dass ab diesem Zeitpunkt mit einer Bekanntmachung der Höchstwerte für den Anbau von Biomasse bei der Erzeugung von Biomethan im elektronischen Bundesanzeiger zu rechnen ist.

Zur Ableitung der Höchstwerte hat das IFEU für alle 13 Pflanzensubstrate THG-Berechnungen durchgeführt. Unterschiede zwischen den Substraten ergeben sich aus ihren

Aufwendungen für den Anbau und dem substratspezifischen Methanertrag. Für die Emissionen aus der Biogasanlage und der Aufbereitung wurde einheitlich der in Abbildung 3 dargestellte Fall betrachtet, der einem konservativen Ansatz entspricht (Netzstrom, Biogaswärme). Damit folgt die Ableitung der Höchstwerte dem Grundsatz, der auch für die Standardwerte aus der Erneuerbaren Energien Richtlinie verfolgt wurde. Die Werte sollen den ungünstigsten in der Praxis zu erwartenden Fall berücksichtigen. Allerdings wurden einige Aspekte als Stand der Technik vorausgesetzt. Deswegen müssen die Biogas- und Aufbereitungsanlagen bestimmte Mindestanforderungen erfüllen (s. a. Kap. C und D).

Die Höchstwerte dürfen nur angewendet werden, wenn keine Landnutzungsänderung stattgefunden hat, die Biogasanlagen mit einem gasdichten Gärrestlager mit Restgasnutzung ausgestattet sind, Prozesswärme generell regenerativ gedeckt wird und Biogasaufbereitungsanlagen, die ein unter Druck arbeitendes Verfahren einsetzen, die Abluft thermisch nachbehandeln.

Die abgeleiteten und zur Notifizierung eingereichten Höchstwerte sind in Tabelle 1 aufgeführt. Mit diesen sind die real ermittelten Anbaudaten zu vergleichen. Liegt der für den Anbau des jeweiligen Substrats errechnete THG-Wert über diesem Wert, so kann in dem konservativen, in Abbildung 3 gezeigten Fall der Biomethanerzeugung das THG-Minderungspotenzial durch das Biomethan nicht erreicht werden. Der Sinn dieser Werte liegt aber darin, bei Einhaltung eine Saldierung von verschiedenen Substraten mit verschiedenen THG-Werten zu erlauben und damit eine erhebliche Erleichterung für die Praxis bieten.

Manche der in Tabelle 1 aufgeführten Werte liegen deutlich höher als die THG-Werte, die sich mit realen Anbaudaten berechnen. Dies wird z.B. bei Silomais, GPS und Ackergras-Leguminosen-Grasgemenge der Fall sein. Das bedeutet, dass bei Einsatz solcher Substrate das THG-Minderungsziel sicher erreicht und übertroffen wird. Allerdings gibt es auch Substrate, für die der angegebene Höchstwert nach verfügbarer Datenlage nur schwierig oder gar nicht unterschritten werden kann. Damit ist insbesondere bei Graskulturen zu rechnen, sofern sie keine Leguminosen enthalten. Ursache ist, dass insbesondere Gräser einen vergleichsweise hohen Stickstoffdüngeraufwand erfordern, da sie einen hohen Stickstoffgehalt haben, der dem Boden entzogen wird. Dies wirkt sich deutlich nachteilig auf die THG-Bilanz aus. Zudem können die höheren Emissionen aus dem Anbau nicht durch einen höheren Methanertrag wettgemacht werden. Typischerweise liegt dieser bei Gräsern eher im mittleren bis niedrigen Bereich. Besagtes gilt insbesondere für Weidelgras als Zwischenfrucht, in ähnlicher Form aber auch für Grünroggen als Vorfrucht.

Tabelle 1: Höchstwerte für den Verfahrensschritt Anbau von Biomasse bei der Erzeugung von Biomethan

Zwischenerzeugnis	Höchstwert in g CO_2-Äq/kg TS
Mais	215
Ganzpflanzensilage (GPS)	210
Körner	280
Dauergrünland	196
Ackergräser/Leguminosen-Grasgemenge[1)]	190
Gras	190
Corn-Cob-Mix (CCM)	255
Zuckerrübe	220
Zuckerhirse	180
Sudangras	170
Weidelgras (Zwischenfrucht)	190
Grünroggen (Vorfrucht)	175
Landschaftspflegegras	90

1) 50:50-Mischung

Damit ergibt sich für Biomethan eine weitere Besonderheit, die bei der bisherigen Normgebung für Biokraftstoffe nicht relevant war. Der Multi-Input-Prozess Biogasanlage erlaubt die Mitbehandlung von Zwischen- und Vorfrüchten und damit im eigentlichen Sinne, die Nutzung von Früchten, die dem Zweck der guten landwirtschaftlichen Praxis dienen. Ihre Aufgabe liegt im Wesentlichen darin, den Boden zu schonen, dessen Fruchtbarkeit zu erhalten, die Erosionsgefahr zu minimieren und für ein ausgewogenes Verhältnis der Nährstoff- und Humusgehalte zu sorgen. Sie sind nicht als Hauptsubstrate für die Biogaserzeugung gedacht und sind in der Regel auch durch geringere Gaserträge gekennzeichnet, was in einzelnen

Fällen dazu führt, dass diese Substrate, würden sie als Monosubstrate bewertet, im konservativen Fall das THG-Minderungspotenzial von 35% nicht erreichen. Dennoch sollten Landwirte die Möglichkeit haben, diese Substrate auch wirtschaftlich zu vermarkten, in dem sie gemeinsam mit den Hauptsubstraten in Biogasanlagen eingesetzt werden können. Andernfalls besteht das Risiko, dass Landwirte aus Kostengründen auf den Anbau von Vor- und Zwischenfrüchten zu Lasten des Bodenschutzes und zu Lasten des Erhalts der Biodiversität verzichten. Eine Lösungsmöglichkeit besteht in einer Positivliste, in der bestimmte Substrate geführt sind, die dem Zweck der guten landwirtschaftlichen Praxis dienen und die von der Nachweispflicht ausgenommen sind. Der Einsatz solcher Substrate sollte jedoch auf einen maximalen Massenanteil im gesamten Inputgemisch beschränkt sein (z.B. 10%). Eine solche Positivliste lässt sich allerdings nur langfristig im Rahmen des Komitologieprozesses auf EU-Ebene einbringen. Die Anpassung der Erneuerbaren Energien Richtlinie ist die Voraussetzung für eine mögliche Änderung der Biokraft-NachV. Kurzfristig besteht keine entsprechende Lösung.

Allerdings schließt das Überschreiten der in Tabelle 1 aufgeführten Höchstwerte den Einsatz eines Pflanzensubstrates keinesfalls aus. Es dürfen lediglich nicht die THG-Werte mit anderen zusammengefasst werden und ggf. kann das aus diesen Substraten anteilig erzeugte Gas keinen Nachhaltigkeitsnachweis erhalten (vgl. Kap. C). Aber selbst letzteres ist trotz Überschreiten der Höchstwerte möglich, wenn die Biomethanerzeugung mit geringeren E-missionen verbunden ist als dies im konservativen Fall angenommen werden musste. Im Folgenden wird beschrieben wie die THG-Berechnung unter Verwendung der Höchstwerte in der Praxis erfolgen kann.

C. Biogasanlage

Eine Zusammenfassung der wichtigsten, die Biogasanlage betreffenden Aspekte findet sich in Teil 3. In einem Zertifizierungssystem stellt die Biogasanlage bei der Biomethanerzeugung eine Schnittstelle (in der Regel die erste) dar und muss sich zertifizieren lassen. Es ist zu vermuten, dass die im Weiteren beschriebene Vorgehensweise künftig auch im Rahmen von Zertifizierungssystemen vorgegeben wird.

I. Erfassung von Substraten

Als ersten Schritt muss sich die Biogasanlage von dem Anbaubetrieb, von dem sie Pflanzensubstrate bezieht, die Selbsterklärung aushändigen lassen, die auch die zu den gelieferten

Substraten gehörigen THG-Werte aus dem Anbau der Biomasse in g CO_2-Äq/kg TS umfasst. Diese Informationen müssen dokumentiert werden z.B. in einer Lieferantenliste, in der auch Substratherkunft und TS-Gehalt bzw. TS-Masse aufgeführt sind, sowie die Transportaufwendungen für die Lieferung. Im Entwurf des THG-Rechners für Biomethan ist eine entsprechende Seite vorgesehen in der auch die spezifischen THG-Emissionen aus dem Transport der Biomasse von der landwirtschaftlichen Fläche zur Biogasanlage berechnet werden können (Abbildung 5).

II. Übergabe: Akteur Biomasseanbau --> Akteur Biogasanlage

Daten für die gelieferten Mengen bitte in die grün markierten Felder eintragen

Für gleiche Substratarten, die jeweils den Höchstwert einhielten, dürfen Mittelwerte gebildet werden

Liefernr.#	**Herkunft** Betrieb	**NawaRo** Bezeichnung	**Menge NawaRo** in t FS	**Menge NawaRo** in t TS	**THG-Wert** g CO2-Äq/kg TS		**Anlieferung** km	**THG-E Transport** g CO2-Äq/kg FS
1	Landwirt 1	Mais	8.100	2.835	150,8		10	0,8
2	Landwirt 2	Mais	6.900	2.415	155		20	1,6
3	Landwirt 1	Getreidekörner	300	261	277,3		10	0,8
4	Landwirt 3	Gras	1500	525	320,7		15	1,2
5								0,0
6								0,0
7								0,0
8								0,0
9								0,0
10								0,0

Abbildung 5: Eingabemaske Entwurf THG-Rechner mit Daten zu Lieferungen und Berechnung der spezifischen Transport-THG-Emissionen der Lieferung

II. Lagerung und Saldierung

Bei der Lagerung ist zu beachten, dass die angelieferten Substrate jeweils mit unterschiedlichen THG-Werten verbunden sind (Abbildung 5). Nach gegebener Rechtslage dürfen diese zwar vermischt werden, aber ihre THG-Werte dürfen nur saldiert werden, wenn ein Höchstwert vorliegt und dieser unterschritten wird. Ist dies nicht der Fall, müssten bei einer Vermischung die einzelnen Mischungsanteile sehr genau dokumentiert sein und gut weiter verfolgt werden können, da dann die THG-Berechnung für die Mischungsanteile separat erfolgen muss[17]. In der Praxis kann sich dies sehr kompliziert gestalten. Um Fehler zu vermeiden, müsste jedes Silo bzw. Lager zu jeder Zeit genau beschriftet sein bzgl. der enthaltenen Mischung und bzgl. aller Informationen für die Mischungsanteile. Hinzu kommt, dass nicht un-

[17] Das heißt, dass die jeweils anteiligen Mengen mit ihrem THG-Wert über die gesamte Prozesskette bis zur Einspeisung separat abgebildet werden müssen.

bedingt eine vollkommen homogene Mischung erreicht wird, so dass ggf. sowohl Biogasprozess als auch die THG-Bilanz unvorhersehbare Abweichungen aufweisen könnten. Aus den genannten Gründen wird dringend empfohlen unterschiedliche Substratarten generell nicht bei der Lagerung zu vermischen, selbst dann nicht, wenn Höchstwerte eingehalten werden (deren Saldierung empfiehlt sich erst nach Einbringung in den Fermenter, vgl. Kap. C III). Im Allgemeinen werden in der Praxis aber auch nur gleiche Substratarten gemeinsam eingelagert, so dass dieser Aspekt erfüllbar sein müsste (Ausnahmen s. Kap. C III).

Bei gleichen Substratarten ist dagegen mit gleichen Eigenschaften zu rechnen. Halten diese die Höchstwerte ein, ist es sinnvoll diese gemeinsam einzulagern und ihre THG-Werte zu saldieren. Im Beispiel in Abbildung 5 ist dies für die beiden Maislieferungen der Fall. Nach Tabelle 1 gibt es einen Höchstwert für Mais (215 g CO_2-Äq/kg TS), der von beiden Lieferungen unterschritten wird (150,8 bzw. 155 g CO_2-Äq/kg TS). Entsprechend dürfen die Liefermengen und ihre THG-Werte saldiert werden (Summenprodukt). Die Berechnung ist aus Abbildung 6 ersichtlich: Für die Summe gelieferten Mais (5.250 t TS) saldieren sich 152,7 g CO_2-Äq/kg TS.

II. Akteur Biogasanlage: Lagerverluste der Substrate

Daten für Lagerung in die grün markierten Felder eintragen

Für Verluste durch Silierung vorgegebene Werte eingeben, geringere Werte sind nur zulässig, wenn nachweisbar

Liefernr.#	**Herkunft** Betrieb	**NawaRo** Bezeichnung	**Menge NawaRo** in t FS	**Menge NawaRo** in t TS	**THG-Wert** g CO2-Äq/kg TS	**Silierverluste** %	**Ergebnis THG-E** g CO2-Äq/kg TS
1+2	Landwirt 1+2	Mais	15.000	5.250	152,7	10	169,7
3	Landwirt 1	Getreidekörner	300	261	277,3	0	277,3
4	Landwirt 3	Gras	1500	525	320,7	10	356,3
5							0,0
6							0,0
7							0,0
8							0,0
9							0,0
10							0,0

Abbildung 6: Eingabemaske Entwurf THG-Rechner saldierte Lagermengen und Berücksichtigung Silierverluste

Abbildung 6 zeigt im Weiteren die zu berücksichtigenden Silierverluste, die bei der Lagerung von Pflanzensubstraten im Falle einer Silierung auftreten. Als Mindestverluste sind i.d.R. 10% der Masse anzusetzen. In der Praxis sind auch geringere Verlustraten möglich, die fallweise nachzuweisen wären. Nach Berücksichtigung von 10% Silierverlusten ergibt sich für das im Beispiel saldierte Maisgemisch der für die weitere Berechnung zu verwendende THG-

Wert von 169,7 g CO_2-Äq/kg TS („Ergebnis THG-E“ in Abbildung 6). Für Getreidekörner ergibt sich keine Änderung, da keine entsprechenden Lagerverluste anfallen.

Im Betriebstagebuch sind die Ergebnis-THG-Werte nach Berücksichtigung der Silierverluste den arbeitstäglich eingebrachten Substratmengen zuzuordnen und parallel aufzuzeichnen. Die weiteren mitzuführenden Angaben betreffen wie erwähnt die Substratherkunft bzw. die Liefernummer und den bei Lieferung dokumentierten TS-Gehalt. Die Dokumentationspflicht gilt auch für Substrate, die ihren Höchstwert nicht einhalten, wie z.B. bei Gras im Beispielfall in Abbildung 5 und Abbildung 6.

Diese Substrate dürfen zwar keinesfalls saldiert werden, ihre THG-Bilanz kann aber separat weiter betrachtet werden. Wie in Kapitel B III erwähnt, ist nicht auszuschließen, dass bei einer anderen Anlagenkonstellation als der, die für den konservativen Fall zu definieren war (Abbildung 3), das THG-Minderungspotenzial eingehalten werden kann. Ist dies nicht der Fall erübrigt sich die weitere Berechnung der THG-Bilanz. Auch Substrate für die kein Höchstwert verfügbar ist, können mitbehandelt werden. Sie dürfen zwar ebenfalls nicht saldiert werden, aber mittels separater Dokumentation und THG-Berechnung kann ggf. dennoch der Nachhaltigkeitsnachweis erbracht werden.

Die Einhaltung des THG-Minderungspotenzials kann auch nur für einen Teil des erzeugten Biogases bzw. Biomethans nachgewiesen werden. Das heißt, nicht vorhandene Höchstwerte oder Überschreitung von Höchstwerten sind kein Ausschlussgrund für die Mitbehandlung.

Wie der Nachweis auch für einen Teil des erzeugten Gases erfolgen kann, ist in den nachfolgenden Kapiteln beschrieben. Grundsätzlich bedeutet die separate Betrachtung von einzelnen Substraten einen höheren Aufwand in der THG-Berechnung, zumal erst am Ende der Produktionskette, also mit dem erzeugten Biomethan, geprüft werden kann, ob das THG-Minderungspotenzial eingehalten wird. Insbesondere für diese Situationen soll der THG-Rechner eine Hilfestellung bieten, in dem durch Hochrechnungen das voraussichtliche Ergebnis vorab eingeschätzt werden kann.

III. Einbringung in den Fermenter und Saldierung

Die Einbringung von Substraten in den Fermenter wird üblicherweise arbeitstäglich im Betriebstagebuch aufgezeichnet und umfasst meist verschiedene Substrate. Trotz gegebenem Wiegesystem der Einbringung bleibt die Angabe, wie viel Einzelsubstratmasse tatsächlich eingebracht wurde, i.d.R. eine Schätzung des Anlagenbetreibers, da über die Wiegeeinheit nur die gesamt eingebrachte Menge des Substratgemischs bestimmt werden kann. Üblicherweise kann hier jedoch von guten Schätzungen ausgegangen werden. Dennoch sollten Anlagenbetreiber in regelmäßigen Abständen – mindestens aber einmal pro Monat – eine Selbstprüfung vornehmen, bei der die im Betriebstagebuch eingetragenen Mengen mit dem Lagerbestand abgeglichen werden. Im Verlaufe der Abstimmungsgespräche mit den Behörden erging die Übereinkunft, dass dies ein sinnvolles Vorgehen darstellt und dass Zertifizierungssysteme vorgeben sollten, dass die Zertifizierungsstelle diese Selbstprüfung einmal jährlich kontrolliert.

Nach bzw. mit der Einbringung in den Fermenter und der Aufzeichnung dieser im Betriebstagebuch ist es möglich, Saldierungen für verschiedene Substratarten vorzunehmen, sofern Höchstwerte vorliegen und unterschritten sind.

Die Problematik, die sich ggf. ergeben würde, wenn verschiedene Substratarten bereits bei der Lagerung vermischt und ggf. bereits saldiert werden, ist im vorhergehenden Kapitel erläutert. Dennoch gibt es in der Praxis Fälle, bei denen eine Vermischung bereits bei der Lagerung ggf. nicht vermieden werden kann. So kann es z.B. vorkommen, dass schwer silierbare Substrate wie die Zuckerrübe gemeinsam mit Mais siliert werden sollen. Das entsprechende Mischungsverhältnis wäre dann genau zu hinterlegen und im Betriebstagebuch einzutragen, wenn die Mischung in den Fermenter eingebracht wird. Eine Saldierung ist nur zulässig, wenn für die vermischten Substrate Höchstwerte vorliegen und eingehalten werden. Andernfalls sind die vermischten Substrate im Betriebstagebuch entsprechend ihres Mischungsverhältnisses mit den ihnen jeweils zugehörigen Informationen getrennt zu führen. Ebenfalls denkbar ist auch der gemeinsame Anbau und damit eine gemischte Ernte verschiedener Substrate (z.B. Sonnenblumen und Mais) auf einer Fläche. Hierfür gibt es jedoch nur wenig Erfahrungswerte, sodass Höchstwerte nicht abgeleitet werden konnten. Somit muss hier, wie für alle Substrate ohne Höchstwert, eine separate THG-Berechnung durchgeführt werden.

Abbildung 7 zeigt die entsprechende Saldierung am Beispiel von Mais und Getreidekörnern unter Fortsetzung der Beispielwerte aus Abbildung 5 und Abbildung 6. Als Bilanzzeitraum ist ein Monat angesetzt[18]. Aus dem Summenprodukt der Trockenmassen und den zugeordneten THG-Werten nach Berücksichtigung der Silierverluste ergibt sich die zusammengefasste

[18] Der Bilanzzeitraum soll nach nationalem Rechtsrahmen maximal drei Monate betragen (vgl. Teil 1, Kap. D II). Nach Auffassung der zuständigen Behörde werden kürzere Zeiträume von z.B. einem Monat oder weniger als sinnvoll angesehen.

Trockenmassemenge (im Beispiel 451 t TS) und der zugehörige saldierte THG-Wert (173,8 g CO_2-Äq/kg TS), der für die Berechnung der THG-Emissionen aus Anbau und Lagerung der saldierten Menge heranzuziehen ist. Die saldierte Frischmassemenge berechnet sich auf 1.260 t.

Bilanzzeitraum:			**01.06. - 30.06.09**	
II. Akteur: Biogasanlage - Input				
Inputmenge gesamt	**1.900 t**			
davon saldiert	**1.260 t**			
Saldierung	**Gesamtmenge**	**TS-Gehalt**	**Gesamtmenge**	**Saldierter Wert**
	t Frischmasse	%	t Trockenmasse	g CO2-Äq/kg TS
	1.260	36	451	173,8
Inputmengen und TS-Gehalt Fermenter sowie Übertrag THG-Wert nach Silierung				
Substratwerte, die saldiert werden dürfen				**ÜBERTRAG**
Biomassesubstrat	**Input Fermenter** t Frischmasse	**TS-Gehalt** %	**Input Fermenter** t Trockenmasse	**Ergebnis THG-E** g CO2-Äq/kg TS
Mais	1.240	35	434	169,7
Getreidekörner	20	87	17	277,3

Saldierter Wert für die Berechnung der THG-Emissionen aus Anbau und Lagerung der saldierten Menge

Abbildung 7: Eingabemaske Entwurf THG-Rechner Saldierung verschiedener Substrate nach Input Fermenter

In Abbildung 7 ist diese Menge im oberen Bereich der Abbildung unter „Inputmenge" „davon saldiert" ausgewiesen. Die „Inputmenge gesamt" ist darin mit 1.900 t ausgewiesen, da im gezeigten Beispiel angenommen wurde, dass neben den 1.260 t Mais und Getreidekörner auch 140 t Gras und 500 t Rindergülle über den Bilanzzeitraum eingesetzt wurden. Die Grasmenge darf im Beispiel nicht saldiert werden, da der Höchstwert überschritten wurde. Die Menge Rindergülle bleibt von der Saldierung unberührt, da kein Aufwand für die Gewinnung der Rohstoffe gegeben ist.

IV. Zuordnung und Aufteilung Gasertrag

Um verschiedene, über einen Bilanzzeitraum eingebrachte Substrate in der Bilanzierung getrennt betrachten zu können – wie im Beispielfall die saldierte Menge (Mais und Getreidekörner) und die Grasmenge (und ggf. die Menge Rindergülle) – ist es erforderlich eine erzeugte Gasmenge aufzuteilen. Eine Aufteilung ist aber erst nach Zuordnung einer Gasmenge zu eingesetzten Substraten möglich. Die Zuordnung erfordert eine formale Berechnungsregel, weil eine physikalisch kausale Zuordenbarkeit von Gasertrag zu Substrat nicht möglich ist. Im Rahmen der Abstimmungsgespräche mit den zuständigen Stellen erging die Übereinkunft, die **Zuordnung einer Gasmenge** über einen Bilanzzeitraum **analog der Vorgehensweise bei der Abrechnung der EEG-Vergütung** durchzuführen.

Das bedeutet, die im Bilanzzeitraum erfasste Gas- bzw. Methanmenge wird der insgesamt in diesem Zeitraum eingesetzten Substratmenge zugeordnet. Entsprechend ist im Betriebstagebuch neben den bisher genannten Angaben auch der zugehörige Methanertrag zu dokumentieren.

Hierbei besteht in der Praxis die Schwierigkeit, dass eine mit dem Eichrecht konforme Messung des Methanertrages an der Biogasanlage üblicherweise nicht erfolgt, da dies eine aufwendige Messeinrichtung erfordern würde. Allerdings erfolgt eine solche Messung bei der Einspeisung des erzeugten Biomethans. Erfasst wird dabei der Energiegehalt des eingespeisten Gases, der über den Heizwert (35,9 MJ/m³) in Kubikmeter Methan umgerechnet werden kann. Die zeitliche Verzögerung zwischen Biomethaneinspeisung und Biogaserzeugung ist dabei sehr gering, so dass diese messtechnische Erfassung des Methanertrages als nahezu identisch mit einer Erfassung an der Biogasanlage gelten kann.

In der Praxis wird sich voraussichtlich eine online-Erfassung für die Einspeisung etablieren, so dass eine Rückmeldung der Aufbereitungsanlage an die Biogasanlage unmittelbar erfolgen kann[19]. Für diese gemeldete Methanmenge sind allerdings rückwirkend die Methanverluste der Aufbereitung zu berücksichtigen (vgl. Kap. D). Der vorgesehene THG-Rechner für Biomethan wird der gegebenen Praxis folgen und eine entsprechende Rückrechnung beinhalten. Abgesehen davon soll der THG-Rechner auch hier für Hochrechnungen dienen können, um Unsicherheiten einzugrenzen, da die geschilderte erforderliche Vorgehensweise nochmals verdeutlicht, dass das abschließende THG-Minderungspotenzial erst mit der Einspeisung, also am Ende der Produktionskette, ermittelt und geprüft werden kann (s. a. Kap. C II).

Die oben geschilderte Konvention zur Zuordnung der Methanmenge setzt einen gleichmäßigen Anlagenbetrieb voraus, der in der Praxis auch in der Regel gegeben ist. Üblicherweise wird von kurzfristigen Änderungen der Fütterungsmischung abgesehen, da sich dies nachteilig auf die Biologie auswirken kann. Für die nachhaltige Biomethanerzeugung ist diese Praxis unbedingt zu empfehlen, umso mehr umso kürzer der Bilanzzeitraum gewählt wird, da an-

[19] Mit der am 09.09.2010 in Kraft getretenen Gasnetzzugangsverordnung (GasNZV) (BGBl. I S. 1261) ist auch möglich, dass der Gasnetzbetreiber die gemessenen Mengen direkt an Dritte weitergibt.

sonsten das Risiko besteht, dass Methanerträge und zugeordnete Substratmengen nicht zu dem erwarteten THG-Minderungspotenzial führen.

Mit der Konvention ist eine eindeutige Zuordnung einer Methanmenge zu einer eingesetzten Substratmenge möglich. Im Weiteren ist zu klären, wie diese aufgeteilt werden kann, um eine getrennte Betrachtung verschiedener, gemeinsam eingesetzter Substrate zu ermöglichen. Dies ist die Voraussetzung dafür, dass der Nachhaltigkeitsnachweis ggf. nur für einen Teil des erzeugten Biomethans ausgestellt werden kann.

Für das im vorangegangenen Kapitel geschilderte Beispiel (Abbildung 7) ergibt sich der von der Aufbereitungsanlage zurückgemeldete und um Verluste korrigierte gesamte Methanertrag über den Bilanzzeitraum zu 153.678 m³. Dieser Wert entspricht dem Methaninput bei der Aufbereitungsanlage (Abbildung 9), der im Beispiel noch um den Anteil Methan korrigiert werden muss, der für die Wärmeerzeugung auf der Biogasanlage abgetrennt wurde (Rückrechnung über Wärmemenge und thermischen Wirkungsgrad). Im Ergebnis berechnet sich für die Biogasanlage ein gesamter Methanertrag von 168.148 m³ (Tabelle 2). Darin enthalten ist auch der Anteil aus dem eingesetzten Gras, das im Beispiel wegen Überschreitung des Höchstwertes nicht saldiert werden durfte. Dieser Anteil ist zu bestimmen und entweder von der weiteren Berechnung des THG-Minderungspotenzials auszunehmen (wenn anzunehmen ist, dass die 35% nicht eingehalten werden) oder weiter separat zu betrachten.

Die Bestimmung von Anteilen an einem gesamten Methanertrag ist nicht durch eine Messung vor Ort möglich. Als Alternative erging mit den zuständigen Stellen die Übereinkunft, dass hilfsweise Daten zu Methanerträgen aus wissenschaftlich anerkannten Literaturquellen herangezogen werden können.

Dies entspricht dem im Leitfaden Nachhaltige Biomasseherstellung der BLE geschilderten Verständnis. Danach können allgemeine Daten als genau gemessen gelten, wenn sie aus einer wissenschaftlich anerkannten Literaturquelle übernommen werden. In diesem Fall ist die entsprechende Quelle zu zitieren (insbesondere Autor, Titel, Zeitschrift, Band, Jahr).

Für die in Tabelle 2 gezeigte Berechnung des Methanertragsanteils für das Gras wurden entsprechende Daten gemäß (KTBL 2009) verwendet. Diese Literaturquelle dürfte als wissenschaftlich anerkannt gelten. Zum einen umfasst sie aber nur eine bestimmte Anzahl an Substraten und zum anderen gibt es weitere wissenschaftlich anerkannte Literaturquellen, die ggf. etwas abweichende Werte aufweisen. Insofern besteht hier die Überlegung eine Liste mit umfassenden Methanertragsdaten zu erstellen, die nach einer Anerkennung durch die BLE generell heranzuziehen wären[20].

Tabelle 2 Aufteilung Methanertrag

Substrate	Substratinput in t	Methanertrag Literatur in m³ CH_4/t	Methanertrag gesamt in m³ CH_4	Anteile in %
Summe Bilanzzeitraum	**1.900**		**168.148**	**100**
Gras	140	100	14.024	8,340
Rindergülle	500	17	8.360	4,972
Saldierte Menge	1.260		145.764	86,688

Nach (KTBL 2009) wurde der anteilige Methanertrag für Gras zu 14.024 m³ bzw. zu 8,34% bestimmt. In Tabelle 2 ebenfalls separat ausgewiesen ist der sich nach (KTBL 2009) rechnerisch ergebende Methanertragsanteil für die eingesetzte Rindergülle. Diese muss nicht separat ausgewiesen werden. Der aus der Rindergülle resultierende Anteil (5,0%) kann im Weiteren gemeinsam mit dem für die saldierte Menge verbleibenden Anteil (rd. 86,7% des Gesamtmethanertrags) betrachtet werden. In diesem Fall sind für die Berechnung des THG-Minderungspotenzials allerdings noch die Emissionen aus der Anlieferung der Rindergülle zu bestimmen. Dagegen sind etwaige vorgelagerte Emissionen bis zur Sammlung mit null festgesetzt (vgl. Kap. A I).

V. Emissionen der Biogasanlage

Die Emissionen der Biogasanlage werden zunächst unabhängig davon bestimmt, ob der gesamte Methanertrag für die Bestimmung des THG-Minderungspotenzials zugrunde gelegt wird oder ein Anteil davon. Über den vorgesehenen Bilanzzeitraum werden sämtliche mit der Biogaserzeugung verbundenen Emissionen erhoben und auf die Methanmenge bezogen, die als Methanoutput der Biogasanlage zur weiteren Aufbereitung gelangt. Im Beispiel entspricht dies der Methanmenge von 153.687 m³ (Methaninput Aufbereitungsanlage, Abbildung 9). Ergebnis der Ermittlung der Emissionen der Biogasanlage ist damit ein spezifischer Wert in g CO_2-Äq/m³ Methanoutput. Zur Berechnung des THG-Minderungspotenzials wird dieser

[20] Die formale Anerkennung einer genauen Messung kann insbesondere durch die BLE als zuständige Behörde erfolgen (§ 8 (3) Biokraft-NachV)

spezifische Wert mit der Methanmenge multipliziert, für die der Nachhaltigkeitsnachweis erbracht werden soll (vgl. Kap. E).

Die zur THG-Berechnung erforderlichen Eingabedaten sind in Abbildung 8 dargestellt. Dies beinhaltet zunächst den gesamten Methanertrag über den Bilanzzeitraum (s. Tabelle 2) und im Weiteren die zu berücksichtigenden diffusen Methanemissionen aus dem Vergärungsprozess. Als Stand der Technik wird hier entsprechend dem Verständnis in Wissenschaftskreisen (IE 2007, IFEU 2008, Wuppertal Institut 2010) von Methanemissionen in Höhe von 1% bezogen auf das produzierte Methan ausgegangen. Entsprechende Methanemissionen ergeben sich z.B. aus Undichtigkeiten von Bauteilen, aus Diffusion über Folienspeicher oder aus dem Ansprechen der Sicherheitseinrichtung. Ein niedrigerer Wert darf hier nur verwendet werden, wenn Anlagenbetreiber dies anhand eines entsprechenden Messprotokolls für die Biogasanlage belegen können.

Die weiteren erforderlichen Eingabedaten betreffen den Eigenbedarf an Strom und Wärme der Biogasanlage. Dabei muss die Wärme grundsätzlich aus regenerativen Quellen stammen. Andernfalls dürfen die in Kapitel B III aufgeführten Höchstwerte nicht verwendet werden. Auch besteht das Risiko, dass das THG-Minderungspotenzial ansonsten nicht eingehalten wird[21]. Die über den Bilanzzeitraum verbrauchten Energiemengen sind über Strom- bzw. Wärmezähler zu bestimmen.

In Abbildung 8 ist der konservative Fall für die Strom- und Wärmeherkunft gezeigt, der für die Ableitung der Höchstwerte zugrunde gelegt wurde. Darin wird Strom aus dem Netz bezogen, die THG-Emissionen sind entsprechend mit dem Emissionsfaktor für Netzstrom zu berechnen (Strommix D, s. Fußnote 10). Wärmequelle stellt im konservativen Fall ein Biogasheizwerk dar mit einem thermischen Wirkungsgrad von 90%. Bei der Verbrennung des Biogases im Heizkessel fallen keine signifikanten klimawirksamen Emissionen an. Die entsprechend über den Bilanzzeitraum aufzuwendende Menge Biogas steht nicht mehr für die weitere Aufbereitung zur Verfügung. Das bedeutet, dass mit dieser Anlagenkonstellation zur Erzeugung von 1 GJ Biomethan mehr Biogas erzeugt und entsprechend mehr Substrat eingesetzt werden muss als bei Bezug der Wärme aus anderen Quellen.

[21] Manche regenerative Quellen können mit hohen THG-Emissionen verbunden sein wie z.B. Wärme aus Geothermie nach (UBA 2010). Zur Sicherheit sollte vor Installation bzw. Vertragsschluss geprüft werden, welche Wärme eine sichere Einhaltung des THG-Minderungspotenzials erlaubt.

Daten für die Biogasanlage bitte in die grün markierten Felder eintragen		
Schritt 1 - Methanertrag der Biogasanlage im Bilanzzeitraum		
Methanertrag	m³	168.148
Schritt 2 - Diffuse Methanverluste Biogasanlage		
1%	**Wert darf nur verringert werden, wenn nachweisbar**	
Methanverluste	m³	1.698
Schritt 3 - Energiebedarf der Biogasanlage im Bilanzzeitraum		
Welche Energiemengen wurden im Bilanzzeitraum verbraucht		
Strombedarf	kWh	62.880
Wärme Biogasheizwerk	kWh	160.228
Wärme Holzheizwerk	kWh	
Wärme Biogas-BHKW	kWh	
Wärme ThOx Aufbereitung	kWh	
Schritt 4 - Gärrestlager		
Ist das Gärrestlager gasdicht ausgeführt ?		ja
Emissionseinsparung		
Überschussstrom	kWh	

Abbildung 8: Eingabemaske Entwurf THG-Rechner Emissionen der Biogasanlage

Alternativ zu dem konservativen Fall ist die Wärmebereitstellung z.B. auch über Holzheizwerk möglich oder ggf. über Abwärme aus der Biogasaufbereitungsanlage, die sich häufig am gleichen Standort befindet. Für ein Holzheizwerk stehen Emissionsfaktoren zur Verfügung. Für die Abwärme, die aus der thermischen Nachbehandlung (ThOx) der Abluft aus der Aufbereitungsanlage entsteht, sind die ggf. dabei erforderlichen Aufwendungen bei der Aufbereitungsanlage zu berücksichtigen (vgl. Kap. D). Im Rahmen eines Zertifizierungssystems sollte generell die Wärmequelle nachweispflichtig sein.

Als weitere Fallmöglichkeit kann der Energieeigenbedarf der Biogasanlage auch über ein wärmegeführtes Biogas-BHKW gedeckt werden. Wärmegeführt bedeutet, dass nur so viel Biogas im BHKW eingesetzt wird wie Wärme aus dem BHKW zur Deckung des Eigenbedarfs der Biogasanlage gebraucht wird. Dabei wird neben der Wärme auch Strom erzeugt, der ebenfalls zur Deckung des Eigenbedarfs der Biogasanlage genutzt werden kann. Erfolgt dies nicht, müssen die THG-Emissionen aus der ansonsten erfolgenden Deckung des Strombedarfs berechnet werden. Aber auch wenn die Biogasanlage ihren Strombedarf über das Biogas-BHKW deckt, bleibt in der Regel Strom übrig, der üblicherweise ins Stromnetz eingespeist wird und zur Anrechnung die entsprechende Gutschrift (Strommix D, s. Fußnote 10) erhalten sollte. Dieser Punkt ist insofern strittig, als dass hier der Wortlaut der Norm dieses Vorgehen streng genommen nicht erlaubt (vgl. Kap. A I). Dennoch sollten die zuständigen Stellen die Anrechnung über den Emissionsfaktor für Netzstrom zulassen.

Im Gegensatz zum Heizwerk fallen aber beim Biogas-BHKW weitere klimarelevante Emissionen an, die in der Berechnung zu berücksichtigen sind. Im Abgas von Biogas-BHKW finden sich nach Auswertung der Messergebnisse in (LfU Bayern 2006) Methanemissionen in Höhe von 0,5% bezogen auf das eingesetzte Methan bei Gas-BHKW und in Höhe von 1% bezogen auf das eingesetzte Methan bei Zündstrahl-BHKW. Diese Emissionen werden nach neuesten Messerkenntnissen nicht durch einen Oxidationskatalysator reduziert[22]. Sollen niedrigere Werte für diesen Methanschlupf als die oben genannten in Anrechnung gebracht werden, so sind zum Nachweis Abgasmessungen vorzulegen.

Auf den Punkt Emissionen aus dem Gärrestlager wird nachfolgend gesondert eingegangen. Grundsätzlich sind Gärrestlager gasdicht mit Restgasnutzung auszuführen. Ansonsten dürfen die in Kapitel B III aufgeführten Höchstwerte nicht verwendet werden und es besteht ein erhöhtes Risiko, dass das THG-Minderungspotenzial nicht eingehalten wird.

VI. Allokation Gärrest

Bei der Biogaserzeugung fällt als Nebenerzeugnis Gärrest an. Die Emissionen, die bei der Lagerung des Gärrestes auf der Biogasanlage entstehen, sind ebenfalls zu berücksichtigen. Allerdings sollen Gärrestlager wie erwähnt gasdicht mit Restgasnutzung ausgeführt sein. Ansonsten ist mit signifikanten Methanemissionen zu rechnen, die wahrscheinlich die Einhaltung des THG-Minderungspotenzials unmöglich machen. Hat die Biogasanlage dennoch ein nicht gasdicht abgedecktes Gärrestlager, so müssen die daraus anfallenden Methanemissionen kontinuierlich messtechnisch erfasst werden und in die Berechnung des THG-Minderungspotenzials eingehen. Da dies in der Praxis kaum machbar ist und auch einen hohen Unsicherheitsfaktor für die nachhaltige Erzeugung darstellt, ist davon auszugehen bzw. wird dringend empfohlen, dass Zertifizierungssysteme gasdichte Gärrestlager mit Restgasnutzung fordern.

Sobald Gärreste die Biogasanlage verlassen, sind sie als Nebenerzeugnisse nach den Vorgaben der Biokraft-NachV zu allozieren, d. h. die bis dahin angefallenen Treibhausgasemissionen sind zwischen dem erzeugten Methan und dem Gärrest nach Maßgabe ihres Energiegehaltes (unterer Heizwert bezogen auf Frischmasse) aufzuteilen (Nr. 17, Anlage 1, Bio-

[22] Persönliche Mitteilung Herr Effenberger, LfL Bayern, Juni 2010

kraft-NachV). Die bei der Biogaserzeugung anfallenden Gärreste weisen üblicherweise einen geringen TS-Gehalt von im Mittel 7% auf (z.B. LfL 2009 und LTZ 2008). Damit dürfte bezogen auf die Frischmasse der untere Heizwert negativ ausfallen. Nach Nr. 18, Anlage 1, Biokraft-NachV ist in diesem Fall der Heizwert mit null anzusetzen. Für die Berechnung des THG-Minderungspotenzials bedeutet dies, dass dem Gärrest keine Anteile der bislang angefallenen Treibhausgasemissionen zugeordnet werden und dass der Gärrest ab Verlassen der Biogasanlage nicht weiter in die Berechnung einbezogen werden muss.

Offen ist der Fall, wenn Gärreste separiert werden. Nach aktuellem Wissenschaftsstand können bei der Separierung Methanemissionen anfallen. Auch kann die abgetrennte Festphase ein signifikantes Restgasbildungspotenzial aufweisen. Hier wäre sicher zu stellen, dass evtl. entstehende Methanemissionen nicht in die Atmosphäre freigesetzt werden (Abluftfassung und Behandlung) und dass die Festphase des Gärrestes die Biogasanlage erst verlässt bzw. so verlässt, wenn gewährleistet ist, dass keine relevanten Methanemissionen mehr aus ihr freigesetzt werden.

D. Biogasaufbereitungsanlage und nachgelagerte Schritte

Eine Zusammenfassung der wichtigsten, die Biogasaufbereitungsanlage betreffenden Aspekte findet sich in Teil 3. In einem Zertifizierungssystem stellt die Biogasaufbereitungsanlage bei der Biomethanerzeugung die letzte Schnittstelle dar und muss sich zertifizieren lassen. Es ist zu vermuten, dass die im Weiteren beschriebene Vorgehensweise künftig auch im Rahmen von Zertifizierungssystemen vorgegeben wird.

In der Biogasaufbereitungsanlage erfolgt die Aufbereitung des Rohbiogases auf Erdgasqualität. Dabei muss die ggf. eingesetzte Prozesswärme regenerativ gedeckt werden, wobei insbesondere bei Wärme aus Geothermie vorab geprüft werden sollte, ob die damit verbundenen THG-Emissionen eine sichere Erreichung des THG-Minderungspotenzials erlauben (s. Fußnote 21). Des Weiteren muss bei Verfahren, die unter Druck arbeiten, die Abluft thermisch nachbehandelt werden. Diese Anforderungen wurden als Stand der Technik bei der Ermittlung der Höchstwerte vorausgesetzt (Kap. B III). Deswegen dürfen die Höchstwerte nur verwendet werden, wenn die Anforderungen eingehalten werden.

Auch die Emissionen der Biogasaufbereitungsanlage werden wie bei der Biogasanlage zunächst unabhängig davon bestimmt, ob die gesamte Methanmenge für die Bestimmung des THG-Minderungspotenzials zugrunde gelegt wird oder ein Anteil davon. Über den vorgesehenen Bilanzzeitraum werden sämtliche mit der Aufbereitung des Rohbiogases verbundenen Emissionen erhoben und auf die letztendlich nutzbare Methanmenge bezogen. Neben den THG-Emissionen der Aufbereitungsanlage selbst sind im Weiteren auch diejenigen THG-Emissionen einzubeziehen, die sich aus den der Aufbereitungsanlage nachgelagerten Schritten ergeben. Dies sind der Transport des Biomethans zur Tankstelle (über das deutsche Erdgasnetz oder per Lkw in abgefüllten Druckflaschen) und die Komprimierung auf Tankstellendruck. Ergebnis der Ermittlung der THG-Emissionen der Biogasaufbereitungsanlage und der nachgelagerten Schritte ist damit ein spezifischer Wert in g CO_2-Äq/m³ Methan frei Zapfsäule. Zur Berechnung des THG-Minderungspotenzials wird dieser spezifische Wert mit der Methanmenge multipliziert, für die der Nachhaltigkeitsnachweis von der Aufbereitungsanlage als letzte Schnittstelle ausgestellt wird (vgl. Kap. E).

Die zur Berechnung der THG-Emissionen der Aufbereitungsanlage und der nachgelagerte Schritte erforderlichen Eingabedaten sind in Abbildung 9 dargestellt. Da der über einen Bilanzzeitraum erfasste Methanertrag durch eine mit dem Eichrecht konforme Messung bei der Einspeisung bestimmt wird (vgl. Kap. C IV), ist als erste Kenngröße der Methanoutput der Aufbereitungsanlage anzugeben (berechnet aus messtechnisch erfasstem, eingespeistem Energiegehalt und Heizwert von Methan). Über die gegebenen Methanverluste der Aufbereitung kann der Methaninput der Aufbereitungsanlage berechnet werden, der an die Biogasanlage rückzumelden ist[23]. Der Biomethanoutput kann über den Methangehalt des eingespeisten Biomethans berechnet werden. Dieser wird ebenfalls bei der Einspeisung messtechnisch erfasst. Im Beispiel wurde dieser zu 96 Vol% angenommen.

[23] Die Rückrechnung kann auch von der Biogasanlage vorgenommen werden. Dann müssen dieser neben der Methanoutputmenge auch Angaben zu den Methanverlusten der Aufbereitung übermittelt werden.

Bilag 16

Daten für die Aufbereitung bitte in die grün markierten Felder eintragen			
Schritt 1 - Methaninput Aufbereitung im Bilanzzeitraum			
Methaninput Aufbereitung	m³		153.687
Methanoutput Aufbereitung	m³		145.598
Biomethanoutput Aufbereitung	m³		151.665
Schritt 2 - Methanschlupf und Methanemissionen Aufbereitungsanlage			
Methanschlupf	5%	**Anderer Wert ist nachzuweisen**	
Methanverluste	m³		8.089
Methanemissionen nach ThOx	0,01%	**Anderer Wert ist nachzuweisen**	
Methanemissionen	m³		15
Schritt 3 - Energiebedarf der Aufbereitungsanlage im Bilanzzeitraum			
Welche Energiemengen wurden im Bilanzzeitraum verbraucht			
Strombedarf	kWh		94.639
Wärme Biogasheizwerk	kWh		
Wärme Holzheizwerk	kWh		
Wärme	kWh		
Schritt 4 - Transport des Biomethans			
Emissionen aus der Nutzung des Erdgasnetzes als Transportmedium			
Strombedarf	kWh		394
Gasverbrauch	0,17%	**Anderer Wert ist nachzuweisen**	
Gasverbrauch	m³		248
Methanverluste/-leckagen	0,08%	**Anderer Wert ist nachzuweisen**	
Methanemissionen	m³		116
Emissionen aus dem Transport mittels Druckflaschen			
Entfernung	km		
Gewicht Druckflaschen	t/m³ Biomethan		
Schritt 5 - Strombedarf der Komprimierung auf Tankstellendruck			
Strombedarf	kWh		28.748

Abbildung 9: Eingabemaske Entwurf THG-Rechner Emissionen der Aufbereitungsanlage und der ihr nachgelagerten Schritte

Im Weiteren ist der Methanschlupf der Aufbereitung zu berücksichtigen sowie die abschließenden Methanemissionen in die Atmosphäre. Beides Methanschlupf und -emissionen sind abhängig vom jeweiligen Aufbereitungsverfahren. Bei den unter Druck arbeitenden Verfahren, der Druckwechseladsorption (PSA), der Druckwasserwäsche (DWW) oder der Genosorb®-Wäsche ist mit einem Methanschlupf von im Mittel rd. 5% zu rechnen (IFEU et al. 2008, GWF 2008, Fraunhofer IUSE 2009). Dieser Wert wurde in dem in Abbildung 3 gezeigten konservativen Fall verwendet. Sollen geringere Werte verwendet werden, so ist dies entweder durch Messungen oder über Herstellergarantien nachzuweisen. Teilweise werden hier Werte unter 2% garantiert.

Der Methanschlupf ist zu berücksichtigen, da dieses Methan i.d.R. verloren geht. Eine Ausnahme bildet der Fall, wenn die über thermische Nachbehandlung der Abluft erzeugte Wärme für die Biogasanlage genutzt werden kann. Ansonsten ist für die Erzeugung von 1 GJ Biomethan umso mehr Biogas zu erzeugen bzw. umso mehr Substrat einzusetzen je höher der Methanschlupf ist. Für die thermische Nachbehandlung kommen v. a. verschiedene Verfahren der Schwachgasverbrennung zum Einsatz wie die autotherme Hochtemperaturverbrennung (TNV), die Hochtemperaturfackel mit Stützgaszufuhr (z.B. „Flox-Brenner") oder die katalytische Niedertemperaturverbrennung (KNV). Die daraus resultierenden THG-Emissionen sind ebenfalls in der THG-Berechnung zu berücksichtigen. Hierzu zählen die auch nach der Schwachgasverbrennung verbleibenden Restmethanemissionen in die Atmosphäre, die im konservativen Beispielfall 0,01% betragen. Des Weiteren etwaiger Strombedarf für Lüfter, v. a. aber bei der Hochtemperaturfackel die THG-Emissionen aus der Stützfeuerung mit Erdgas[24].

Alternativ zu den unter Druck arbeitenden Verfahren kommen auch drucklose Verfahren zur Anwendung, in Deutschland mittlerweile insbesondere Aminwäscheverfahren. Bei diesen liegt der Methanschlupf üblicherweise unterhalb 0,1% (IFEU et al. 2008, Fraunhofer IUSE 2009) und es ist keine Abluftbehandlung erforderlich. Allerdings muss für die Aminwäsche neben Strom auch Wärme eingesetzt werden. Dies ist bei den unter Druck arbeitenden Verfahren nur bei der Genosorb®-Wäsche ebenfalls in gewissem Maße der Fall. Wie eingangs erwähnt muss diese Wärme aus regenerativen Quellen stammen. Die mit ihrer Bereitstellung verbundenen THG-Emissionen sind zu berücksichtigen. Dies gilt gleichermaßen für verbrauchten Strom, der üblicherweise aus dem Netz entnommen wird und dann mit dem Emissionsfaktor für Netzstrom zu verrechnen ist (Strommix D, s. Fußnote 10). Strom- und Wärmebedarf der Aufbereitungsanlage sind über Strom- bzw. Wärmezähler zu bestimmen.

Komprimierung auf Tankstellendruck

Die verschiedenen Verfahren stellen das erzeugte Biomethan auf unterschiedlichen Druckniveaus zur Verfügung. Ausgehend von diesem Druckniveau bzw. bei Einspeisung ins Erdgasnetz, dem dafür vorgegebenen Einspeisedruck, muss die Aufbereitungsanlage auch die THG-Emissionen vorwegnehmen, die sich aus der Komprimierung des Biomethans auf den

[24] Sollte eine Stützfeuerung mit Biogas erfolgen, so ist die entsprechende Menge von dem zur Aufbereitung angelieferten Biogas abzuziehen. Dazu muss die entsprechende Biogasmenge messtechnisch erfasst oder berechnet werden können.

Tankstellendruck von 250 bar ergeben. Als Anhaltspunkte können die folgenden Werte nach (Concawe 2003) für den Stromaufwand zur Komprimierung herangezogen werden:

Verdichtung 1 auf 250 bar: 0,011 kWh_{el}/MJ Biomethan

Verdichtung 16 auf 250 bar: 0,0055 kWh_{el}/MJ Biomethan

Verdichtung 40 auf 250 bar: 0,003 kwh_{el}/MJ Biomethan

Transport des Biomethans

Mehrheitlich wird das erzeugte Biomethan in das Erdgasnetz eingespeist. Teilweise muss dem Biomethan LPG (liquefied petroleum gas) zugegeben werden, zur Einstellung eines, für die Einspeisestelle geforderten, bestimmten Brennwertes. Die LPG-Zugabe verändert das eigentliche Biomethan nicht, auch wird das zugegebene LPG nicht durch die Biomethaneinspeisung verbraucht. Zudem wird über den geeichten Einspeisezähler die über das Biomethan eingespeiste Energiemenge streng getrennt aufgezeichnet. Damit ist das zugegebene LPG ein reiner Träger- oder Hilfsstoff, dessen Bereitstellung und Nutzung in der THG-Berechnung nicht berücksichtigt werden muss. Dieses Vorgehen entspricht dem für die Standardwerte der Erneuerbaren Energien Richtlinie verfolgten Vorgehen. Im Standardwert für ETBE[25] wurde ausschließlich das enthaltene Ethanol bewertet, der Trägerstoff Isobuten blieb bei der Ermittlung des THG-Minderungspotenzials unberücksichtigt.

Allerdings sind bei der Nutzung des Erdgasnetzes als Transportmedium die damit verbundenen THG-Emissionen einzubeziehen. Für die regionale Verteilung im deutschen Erdgasnetz erfordert der Betrieb des Netzes nach (Ecoinvent 2007) 0,17% des verteilten Gases sowie 2,6 Wh pro m^3 verteiltes Gas. Unvermeidbare Methanverluste sind mit 0,08% des verteilten Gases zu berücksichtigen. Diese Aufwandsdaten gelten ausschließlich für die Einspeisung des Biomethans in das deutsche Erdgasnetz. Soll Biomethan berücksichtigt werden, das außerhalb Deutschlands eingespeist wird, so sind zusätzlich die hierfür anfallenden THG-Emissionen des Ferntransportes zu berücksichtigen. Entsprechende Daten sind von der Aufbereitungsanlage als letzte Schnittstelle zu erheben und nachzuweisen. Neben der Einspeisung des Biomethans in das Erdgasnetz kommt auch die Abfüllung in Druckflaschen in der Praxis vor, die – wenn sich die Tankstelle nicht vor Ort befindet – per Lkw zu transportieren wären. Hierbei berechnen sich die THG-Emissionen des Transportes aus der zurückgelegten Entfernung und der insgesamt transportierten Masse (inkl. Druckflaschen).

[25] Ethyl-tert-butylether (ETBE) wird durch säurekatalytische Addition von Ethanol an die Doppelbindung des Isobuten hergestellt.

E. Zusammenfassung und Ergebnis

In Tabelle 3 sind schließlich sämtliche THG-Emissionen über die gesamte Produktionskette für den beschriebenen Beispielfall zusammengefasst. In der Tabelle sind der Einfachheit halber ausschließlich die eingesetzten Pflanzensubstrate enthalten, die den Höchstwert unterschritten haben und spätestens nach Einbringung in den Fermenter saldiert werden durften (Mais und Getreidekörner). Gras und Rindergülle sind hier nicht in die Schlussrechnung einbezogen. Dieser abschließende Schritt der Zusammenfassung und Bestimmung des THG-Minderungspotenzials über den Bilanzzeitraum (im Beispiel ein Monat) muss von der Aufbereitungsanlage als letzter Schnittstelle vollzogen werden. Dafür benötigt sie sämtliche Informationen aus den ihr vorgelagerten Prozessschritten.

Der Startpunkt für die Zusammenfassung der THG-Berechnung für eine erzeugte Menge Biomethan liegt notwendigerweise beim Input an Substraten in den Fermenter. Hier definieren sich die im Bilanzzeitraum eingebrachten Substrate (Aufzeichnung gemäß Betriebstagebuch). Für diese berücksichtigten Pflanzensubstrate werden dann zunächst die THG-Emissionen aus der Lieferung zusammengestellt (1. Block in Tabelle 3). Die spezifischen THG-Emissionen für den Transport sind aus Abbildung 5 zu entnehmen, die zugehörige Transportmenge entspricht der berücksichtigten, in den Fermenter im Bilanzzeitraum eingebrachten Menge (Abbildung 7) zuzüglich angefallener Silierverluste.

Es folgen die THG-Emissionen aus der Gewinnung der eingesetzten und berücksichtigten Pflanzensubstrate (2. Block in Tabelle 3). Die Daten (eingesetzte Trockenmasse und saldierter THG-Wert) sind Abbildung 7 zu entnehmen.

Die spezifischen THG-Emissionen der Biogasanlage (3. Block in Tabelle 3) ergeben sich aus den in Abbildung 8 gezeigten Eingabedaten zu rund 438 g CO_2-Äq/m³ Methanoutput (bei einer gesamten Methanmenge zur Aufbereitung von 153.687 m³, s. a. Abbildung 9). Der spezifische Wert wird ausschließlich auf den Anteil Methan bezogen, für den im Beispielfall der Nachweis ausgestellt werden soll und der der saldierten Substratmenge zugeordnet ist (86,688% ergibt 133.228 m³).

Das gleiche gilt für die THG-Emissionen der Aufbereitungsanlage (4. Block in Tabelle 3). Hier ergeben sich aus den Eingabedaten in Abbildung 9 die spezifischen THG-Emissionen zu rund 548 g CO_2-Äq/m³ Methan frei Zapfsäule. Die gesamte nutzbare Methanmenge beläuft sich auf 145.234 m³. Dies entspricht der in die Aufbereitung eingebrachten Menge abzüglich der Methanverluste, die bis zur Nutzung an der Tankstelle gegeben sind (im Beispiel Methanschlupf Aufbereitung, Methanleckage Erdgasnetz und verbrauchtes Methan für Erdgasnetzbetrieb).

Für den Anteil Methan, für den hier beispielhaft ein Nachhaltigkeitsnachweis ausgestellt werden soll (125.901 m³), ergeben sich die gesamten THG-Emissionen zu 207.491 kg CO_2-Äq (5. Block in Tabelle 3). Der Quotient daraus ergibt den spezifischen THG-Wert von 45,9 g CO_2-Äq/MJ Biomethan, der dem Komparator (83,8 g CO_2-Äq/MJ) gegenüberzustellen ist. Damit ergibt sich für den gezeigten Beispielfall das THG-Minderungspotenzial zu rd. 45%. Die Biomethanmenge für die der Nachhaltigkeitsnachweis ausgestellt werden soll, ist in MJ anzugeben.

Tabelle 3: Zusammenfassung Berechnung THG-Minderungspotenzial für den Beispielfall

Anlieferung im Bilanzzeitraum eingesetzte Pflanzensubstrate			
	Anlieferung in t Frischmasse	Spez. THG-E in g CO_2-Äq/kg FS	Absolute THG-E in kg CO_2-Äq
Mais	744	0,8	610
Mais	634	1,6	1.040
Getreidekörner	20	0,8	16
Anbau und Lagerung eingesetzte, saldierte Pflanzensubstrate			
	Input Fermenter in t Trockenmasse	Spez. THG-E in g CO_2-Äq/kg TS	Absolute THG-E in kg CO_2-Äq
Saldierte Substrate	451	173,8	78.476
Emissionen Biogasanlage für saldierte Menge			
	Methan zur Aufbereitung in m³	Spez. THG-E in g CO_2-Äq/m³ CH_4 Output	Absolute THG-E in kg CO_2-Äq
Gesamt	153.687	438	67.298
Anteil saldierte Menge (86,7%)	133.228		58.339
Emissionen Aufbereitungsanlage inkl. nachgelagerte Schritte für saldierte Menge			
	Nutzbares Methan in m³	Spez. THG-E in g CO_2-Äq/m³ CH_4 frei Zapfsäule	Absolute THG-E in kg CO_2-Äq
Gesamt	145.234	548	79.607
Anteil saldierte Menge (86,7%)	125.901		69.010
Ergebnis THG-Berechnung für saldierte Menge			
	Nutzbares Methan in m³	Nutzbares Methan in MJ	Summe THG-E in kg CO_2-Äq
Anteil saldierte Menge (86,7%)	125.901	4.519.837	207.491

**Abweichungen in den Summen ergeben sich durch Rundungsungenauigkeiten*

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Teil 3 Service-Teil

A. Zusammenfassung für die Marktakteure

I. Anbaubetrieb/Landwirt

Der Anbau der nachhaltigen Biomasse darf keine ökologisch wertvollen Flächen in Anspruch nehmen[26]. Ferner sind die sog. Cross-Compliance-Regelungen einzuhalten, wenn die Biomasse innerhalb der Europäischen Union angebaut wird.

Der Anbaubetrieb hat eine schriftliche Selbsterklärung abzugeben, in der bestätigt wird, dass diese Voraussetzungen vorliegen. Zugleich erkennt der Anbaubetrieb mit Unterzeichnung der Selbsterklärung an, dass Auditoren von Zertifizierungsstellen stichprobenartige Kontrollen durchführen können.

Schließlich muss der Anbaubetrieb die für die Berechnung der THG-Minderung erforderlichen Daten der beim Anbau der Biomasse entstandenen THG-Emissionen vorhalten und an seinen Kunden weitergeben. Für Biogas aus Anbau-Biomasse gibt es in der Biokraft-NachV keine Standardwerte, die verwendet werden könnten. Die THG-Emissionen müssen berechnet werden. Erforderliche Daten sind: eingesetzte Düngemenge, eingesetzte Menge Saatgut und Pflanzenschutzmittel, Dieselverbrauch, Frischmasseertrag und TS-Gehalt. Als Hilfe für die Berechnung wird unter www.ifeu.de ein Exel-Tool bereitgestellt, das neben den Anbaubetrieben auch die Biogasanlage und die Aufbereitungsanlage nutzen können.

II. Biogasanlage als Schnittstelle

Die Biogasanlage, in der das Rohbiogas erzeugt wird, muss sich an ein von der BLE anerkanntes Zertifizierungssytem anschließen und sich jährlich von einer Zertifizierungsstelle als Schnittstelle zertifizieren lassen. Sie muss über eine Dosiereinheit mit Wiegesystem verfügen sowie über eine messtechnische Erfassung des Stromeigenbedarfs. Sie muss außerdem ein gasdichtes Gärrestlager aufweisen und sie muss zur Berechnung der THG-Minderung unvermeidbare Methanverluste berücksichtigen (s. Teil 2). Außerdem muss sie den Wärmeeigenbedarf bestimmen und nachweisen, dass die hierzu eingesetzte Wärme aus regenerativen Quellen ohne den Einsatz zusätzlicher fossiler Energie bereitgestellt wird. Der

[26] Das sind Flächen mit hohem Naturschutzwert, mit hohem Kohlenstoffbestand und Torfmoore. Eine genauere Erklärung findet sich im „Leitfaden Nachhaltige Biomasseherstellung“ der Bundesanstalt für Landwirtschaft und Ernährung (BLE).

Methanertrag soll durch eine mit dem Eichrecht konforme Messung bestimmt werden. Eine solche Messung erfolgt bei der Einspeisung des Biomethans ins Erdgasnetz. Die Biogasanlage kann sich alternativ zu eigenen Messungen, die Messdaten der Aufbereitungsanlage übermitteln lassen (s. Teil 2, Kap. C IV).

Die Biogasanlage hat die eingehende Biomasse – ggf. auch schon in ihrem externen Lager – zu verwiegen und den Eingang der Lieferungen mit den folgenden Angaben zu dokumentieren: Die Herkunft der Biomasse (Anbaubetrieb), der Trockensubstanzgehalt und der vom Anbaubetrieb angegebene Wert der THG-Emissionen in g CO_2-Äq/kg TS. Die Lieferverträge über die Biomasse und die Selbsterklärungen des Anbaubetriebes sind aufzubewahren, um die Herkunft der Biomasse nachweisen zu können. Im Silo sollten Lieferungen mit unterschiedlichen THG-Werten grundsätzlich getrennt eingelagert werden. Eine Saldierung ist nur unter bestimmten Voraussetzungen bei gleicher Substratart möglich (s. Teil 2).

Die Dokumentation, welche Substrate in welcher Menge tatsächlich in den im Fermenter eingebracht werden, hat über das Betriebstagebuch zu erfolgen, das auch Angaben zur Substratherkunft (Lieferung), dem Trockensubstanzgehalt und dem zugeordneten THG-Wert des eingesetzten Substrats in g CO_2-Äq/kg TS enthalten muss. Welcher THG-Wert zuzuordnen ist, hängt davon ab, ob Substrate bei der Lagerung saldiert werden durften und ob Silierverluste zu berücksichtigen sind (s. Teil 2). Die über den Dosierer arbeitstäglich in den Fermenter eingebrachten Substrate sind im Betriebstagebuch bezüglich ihrer Menge so genau wie möglich zu erfassen. Eine Schätzung lässt sich hier nicht umgehen, um aber möglichst geringe Abweichungen zu generieren, soll die Biogasanlage in regelmäßigen Abständen – mindestens aber einmal pro Monat – überprüfen, ob die angelieferten und die im Fermenter gemäß Eintrag im Betriebstagebuch eingesetzten Substratmengen korrespondieren. Je öfter eine solche Überprüfung stattfindet, desto eher lassen sich mögliche Abweichungen korrigieren. Sollte sich bei einer Kontrolle der Schnittstelle durch eine Zertifizierungsstelle (einmal pro Jahr) herausstellen, dass es zu erheblichen Abweichungen gekommen ist, so läuft die Schnittstelle Gefahr, wegen dieser Unregelmäßigkeit zukünftig nicht mehr zertifiziert zu werden.

Im Betriebstagebuch soll des Weiteren der Methanertrag dokumentiert werden, der entweder kontinuierlich von der Aufbereitungsanlage übermittelt wird (Methaninput Aufbereitungsanlage, s. Teil 2, Kap. D) oder an der Biogasanlage selbst Eichrecht konform gemessen wird. Die Zuordnung des Methanertrages zu den eingesetzten Substraten erfolgt grundsätzlich genauso wie bei der Abrechnung der EEG-Vergütung. Allerdings erfolgt die genaue Gegenüber-

stellung von erzeugter Methanmenge und eingesetztem Substrat schon nach maximal drei Monaten.
Zur Berechnung der THG-Minderung sind zunächst für den Teilschritt „Anbau“ die im Betriebstagebuch eingetragene Substratmenge bzw. TS-Menge und der zugeordnete THG-Wert heranzuziehen. Dabei dürfen verschiedene Substrate bzw. deren THG-Werte saldiert werden (s. Teil 2), wenn diese Werte den vom Bundesumweltministerium festgelegten und voraussichtlich Mitte Oktober 2010 im Bundesanzeiger veröffentlichten THG-Höchstwert für diese Substrate einhalten. Nicht für alle Substrate gibt es Höchstwerte, nicht alle Substrate halten diesen ein. Solche Substrate müssen in der Berechnung streng getrennt betrachtet werden. Wie hier vorzugehen ist und wie die erzeugte Methanmenge aufzuteilen ist, ist in Teil 2 ausführlich beschrieben. Die mit der zuständigen Behörde abgestimmte Erläuterung zeigt auf, wie tatsächliche Werte anhand genau zu messender Daten im Sinne der Biokraft-NachV zu bestimmen sind. Ggf. wird dieses Vorgehen auch seitens der zuständigen Behörde durch gesondertes Schreiben im elektronischen Bundesanzeiger bekannt gemacht.
Als Hilfe für die Berechnung der THG-Minderung wird unter www.ifeu.de ein Exel-Tool bereitgestellt, das neben der Biogasanlage auch die Anbaubetriebe und die Aufbereitungsanlage nutzen können.

III. Biogasaufbereitungsanlage als letzte Schnittstelle

In der Biogasaufbereitungsanlage erfolgt die Aufbereitung des Rohbiogases auf Erdgasqualität entsprechend der DIN 51624 und die sich daran anschließende Einspeisung des Biogases in das Erdgasnetz.
Auch die Biogasaufbereitungsanlage muss sich einem von der BLE anerkannten Zertifizierungssytem anschließen und sich von einer Zertifizierungsstelle als letzte Schnittstelle zertifizieren lassen. Sofern die Biogasanlage und die Biogasaufbereitungsanlage als eine betriebliche Einheit in einer sog. Superschnittstelle zusammenfallen, bedarf es nur einer Zertifizierung. Diese muss sich dann aber auf die Anforderungen sowohl der ersten als auch der letzten Schnittstelle beziehen.
Die Aufbereitungsanlage muss nachweisen, dass die ggf. eingesetzte Prozesswärme regenerativ gedeckt wird. Wenn die Wärme aus der Nutzung des erzeugten Biogases hergestellt wird, muss die entsprechende Wärmemenge und die eingesetzte Biogasmenge bestimmt werden. Die Aufbereitungsanlage muss außerdem ihren Strombedarf messen und den Methanschlupf bestimmen (Messung oder Herstellergarantie bzw. je nach Vorgabe des Zertifi-

zierungssystems). Anlagen, die ein unter Druck arbeitendes Verfahren einsetzen, müssen die Abluft thermisch nachbehandeln.

Als letzter Schnittstelle obliegt es der Biogasaufbereitungsanlage, das endgültige THG-Minderungspotenzial des erzeugten, nachhaltigen Biomethans zu bestimmen. Dabei ist auch schon der Aufwand für den Transport – im Erdgasnetz oder per Druckflaschen im Lkw – und die Komprimierung an der Tankstelle auf 250 bar Tankstellendruck zu berücksichtigen. Als Hilfe für die Berechnung wird unter www.ifeu.de ein Exel-Tool bereitgestellt, das neben der Aufbereitungsanlage auch die Anbaubetriebe und die Biogasanlage nutzen können.

Nach Errechnung des endgültigen THG-Minderungspotenzials hat die Biogasaufbereitungsanlage als letzte Schnittstelle den Nachhaltigkeitsnachweis für das eingespeiste Biomethan auszustellen, der vom Inverkehrbringer (also von demjenigen, der das Biomethan aus dem Erdgasnetz entnimmt) beim Hauptzollamt bzw. bei der Biokraftstoffquotenstelle vorzulegen ist. Sollte sich die Aufbereitungsanlage keinem Zertifizierungssystem angeschlossen haben und deshalb selbst keine Nachhaltigkeitsnachweise ausstellen können, so kann die Einhaltung der Anforderungen aus der Verordnung in einer Übergangsphase bis Ende 2011 – bezogen auf eine einzelne Lieferung – auch durch die Bescheinigung eines Umweltgutachters nachgewiesen werden.

IV. Biomethanhändler

Unternehmen, die mit dem eingespeisten nachhaltigen Biomethan handeln, müssen gewährleisten, dass die Zuordnung der nachhaltigen Eigenschaften zur eingespeisten Biomethanmenge erhalten bleibt. Das heißt, sie können keine größere Menge nachhaltiges Biomethan verkaufen als die Menge, auf die sich der jeweilige Nachhaltigkeitsnachweis bezieht. Um die Herkunft des Biokraftstoffs aus der jeweiligen Schnittstelle nachzuweisen, die den Nachhaltigkeitsnachweis ausgestellt hat, können die Händler die von ihnen aufgekauften bzw. verkauften Mengen nachhaltigen Biomethans eigenschaftsscharf in der elektronischen Datenbank der BLE dokumentieren. Dies hat den Vorteil, dass die Händler keine eigenen Datenbanken unterhalten müssen und die Anforderungen der Biokraft-NachV an ein Massenbilanzsystem nach der letzten Schnittstelle von Gesetzes wegen als erfüllt gelten. Zudem eröffnet die Webanwendung dieser Datenbank dem Händler die Möglichkeit, Teil-Nachweise auszustellen und dadurch auch kleinere Teilmengen nachhaltigen Biomethans als Kraftstoff zu vermarkten. Anders gestaltet sich dies bei Biomethan, dessen Nachhaltigkeit ersatzweise durch Umweltgutachter bescheinigt wird. Hier muss jede Lieferung vom Umweltgutachter über die gesamte Lieferkette bis zum Inverkehrbringer verfolgt werden, erst dann kann die Bescheinigung ausgestellt werden. Diese kann nicht in der elektronischen Datenbank der BLE dokumentiert werden.

V. Inverkehrbringer

An der Tankstelle wird das nachhaltige Biogas in den Verkehr gebracht, also dem Erdgasnetz als Kraftstoff entnommen und auf der erforderlichen Druckstufe (250 bar) vertankt. Die entnommenen Mengen sind im Rahmen einer Massenbilanzierung zu erfassen und den in das Erdgasnetz eingespeisten Mengen gegenüberzustellen. Dabei muss am Ende eines maximal drei Monate umfassenden Bilanzierungszeitraums sichergestellt sein, dass dem Erdgasnetz nicht mehr nachhaltiges Biomethan entnommen als zuvor eingespeist wurde, denn dem Erdgasnetz kommt im Kraftstoffbereich zwar eine begrenzte Speicher-, aber keine Kreditfunktion zu.

Will der Inverkehrbringer die Steuerentlastung geltend machen, so muss er die Nachhaltigkeitsnachweise für die Mengen Biomethan, welche er in Verkehr gebracht hat, mit der Steuererklärung beim Hauptzollamt vorlegen. Dies hat im Grundsatz zum 15. eines jeden Monats für den Vormonat zu geschehen, kann aber abweichend auch jährlich bis spätestens Ende Mai für das jeweilige Vorjahr geschehen. Insoweit besteht ein Wahlrecht, dass der Steuerschuldner vor Beginn des Kalenderjahres, in dem die Steuer anfällt, ausüben muss.[27]

Möchte der Inverkehrbringer das nachhaltige Biomethan hingegen auf die Biokraftstoffquote eines Quotenverpflichteten anrechnen lassen, weil er für diesen die Erfüllung der Quotenverpflichtung vertraglich übernommen hat, so muss der Nachhaltigkeitsnachweis bis spätestens Ende April des Folgejahres der Biokraftstoffquotenstelle vorgelegt werden.[28]

B. Glossar zu den wichtigsten Begrifflichkeiten

I. Ersterfasser

Der Ersterfasser ist die erste Schnittstelle in der Wertschöpfungskette, also der Betrieb oder Betriebsteil, der die geerntete Biomasse vom Landwirt zum Zweck des Weiterhandels oder der Weiterverarbeitung aufnimmt. Ersterfasser kann sowohl die Biogaserzeugungsanlage als

[27] Vgl. § 39 Abs. 1 und 2 EnStG.
[28] Vgl. § 37c Abs. 1 BImSchG.

auch ein Zwischenhändler (wie etwa eine Agrargenossenschaft oder ein Maschinenring) sein. Ersterfasser benötigen als Schnittstelle im Rahmen eines Zertifizierungssystems zwingend eine Zertifizierung.

II. Höchstwerte

Unter Höchstwerten werden Werte verstanden, die für einen Arbeitsschritt der Herstellung einen maximal zulässigen THG-Wert darstellen. Höchstwerte bilden die Voraussetzung, dass Biomassen oder Biokraftstoffe mit unterschiedlichen THG-Werten nach einer Vermischung saldiert werden dürfen. Für die Biomethanerzeugung wurden Höchstwerte für den Arbeitsschritt Anbau der Biomasse für einige übliche Substrate abgeleitet und werden voraussichtlich Mitte Oktober 2010 durch das BMU bekannt gemacht.

III. In Verkehr bringen

Biomethan wird im Sinne der Biokraft-NachV in dem Zeitpunkt in Verkehr gebracht, in dem es als Kraftstoff aus dem Erdgasnetz entnommen wird.

IV. Massenbilanzsystem

Ein Massenbilanzsystem ist ein System aus Aufzeichnungen, das die mengenmäßig bilanzielle Rückverfolgbarkeit von Biomasse auf allen Stufen der Herstellung und Lieferung eigenschaftsscharf gewährleisten muss. Ein Massenbilanzsystem muss also sicherstellen, dass die Zuordnung der Nachhaltigkeitseigenschaften zu einer bestimmten Menge Biomethan oder Biomasse bilanziell auch dann erhalten bleibt, wenn es mit nicht nachhaltigen Produkten vermischt wird.

V. Nachhaltigkeitsnachweis

Ein Nachhaltigkeitsnachweis belegt, dass Biokraftstoffe nachhaltig sind. Er darf ausschließlich von der letzten Schnittstelle (hier Biogasaufbereitungsanlage) ausgestellt werden. Der Nachhaltigkeitsnachweis ist der Biokraftstoffquotenstelle und den Hauptzollämtern vorzulegen, wenn eine Anrechnung auf die Biokraftstoffquote bzw. eine Steuerermäßigung beantragt wird. Alternativ zum Nachhaltigkeitsnachweis wird bis Ende 2011 auch eine Bescheinigung durch Umweltgutachter/innen anerkannt. Für eine bestimmte Menge Biomethan ausgestellte Nachhaltigkeitsnachweise können geteilt werden (Teil-Nachhaltigkeitsnachweise).

Dabei werden die Nachhaltigkeitseigenschaften der gesamten ursprünglichen Menge den Teilen der Biomethanmenge zugeordnet, für die Teil-Nachweise ausgestellt werden. Auch hier muss das Massenbilanzsystem sichergestellt sein. Der ursprüngliche Nachhaltigkeitsnachweis ist zu entwerten und die Summe der Biomethanmenge, für die Teil-Nachweise ausgestellt wurden, muss dem Wert der Biomethanmenge entsprechen, für die der ursprüngliche Nachweis ausgestellt war.

VI. Referenzzeitpunkt

Der Referenzzeitpunkt ist maßgeblich für die Beurteilung der Anforderungen an den Schutz natürlicher Lebensräume nach den §§ 4 bis 6 der Biokraft-NachV. Als Referenzzeitpunkt legt die Verordnung den 1. Januar 2008 fest. Sollten keine geeigneten Daten vorliegen, um die Erfüllung der Anforderungen für diesen Tag nachzuweisen, kann ein anderer Tag im Januar 2008 gewählt werden.

VII. Schnittstelle

Im Rahmen eines Zertifizierungssystems sind Schnittstellen die zertifizierungsbedürftigen Betriebe oder Betriebsstätten entlang der Herstellungs- und Lieferkette. Man unterscheidet zwischen Ersterfassern, also Betrieben oder Betriebsstätten, die die geerntete Biomasse erstmals vom Anbaubetrieb zum Zweck des Weiterhandels oder der Weiterverarbeitung aufnehmen, und sonstigen Betrieben, die Biomethan für die Endverwendung auf die erforderliche Qualitätsstufe aufbereiten. Bei der Biomethanherstellung kann die Biogasanlage die erste Schnittstelle sein, wenn sie die Biomasse direkt vom Anbaubetrieb (Landwirt) bezieht. Als erste Schnittstelle kommt aber auch ein Zwischenhändler (wie etwa eine Agrargenossenschaft oder ein Maschinenring) in Betracht, der die Biomasse vom Landwirt bezieht und diese an eine Biogasanlage weiterveräußert. Letzte Schnittstelle in der Wertschöpfungskette ist beim Biomethan immer die Biogasaufbereitungsanlage, denn diese bereitet das Rohbiogas vor der Einspeisung auf Erdgasqualität auf und erzeugt damit das fertige Kraftstoffprodukt. Bilden Biogaserzeugungsanlage und Biogasaufbereitungsanlage eine Betriebsstätte können erste und letzte Schnittstelle auch zusammenfallen (sog. Superschnittstelle).

VIII. Selbsterklärung

Mit einer schriftlichen Selbsterklärung verpflichtet sich der Anbaubetrieb (Landwirt) – ohne selbst eine zertifizierungspflichtige Schnittstelle zu sein –, dass die von ihm angebaute Biomasse die Anforderungen der Biokraft-NachV bzw. eines Zertifizierungssystems erfüllt. Überprüft wird dies im Rahmen eines Zertifizierungssystems in stichprobenartigen Kontrollen durch Zertifizierungsstellen. Zur Duldung einer solchen Kontrolle hat sich der Anbaubetrieb gleichfalls in der schriftlichen Selbsterklärung verpflichtet.

IX. Standardwerte

Standardwerte oder auch Teil-Standardwerte sind in der Biokraft-NachV vorgegebene Werte für bestimmte Biokraftstoffe, die zur Ermittlung des THG-Minderungspotenzials herangezogen werden dürfen. Für Biomethan enthält die Biokraft-NachV bislang einzig Werte für auf Erdgasqualität aufbereitetes Biogas aus organischen Siedlungsabfällen, aus Gülle und aus Trockenmist (Anlage 2, Biokraft-NachV).

X. Tatsächliche Werte und genaue Messung

Tatsächliche Werte sind für eine Berechnung des THG-Minderungspotenzials heranzuziehen. Sie sind anhand genau zu messender Daten zu bestimmen. Messungen von Daten gelten als genau, wenn sie nach der Vorgabe eines anerkannten Zertifizierungssystems erfolgen oder nach einer Regelung, die von der Europäischen Kommission oder der nationalen zuständigen Behörde (BLE) anerkannt wurde. Die Anerkennung durch die BLE erfolgt durch Bekanntgabe eines gesonderten Schreibens im elektronischen Bundesanzeiger. In dieser Broschüre werden tatsächliche Werte und genaue Messung bzw. das konkrete Vorgehen bei der Berechnung des THG-Minderungspotenzials genauer in Teil 2 erläutert. Das mit der zuständigen Behörde abgestimmte Vorgehen wird ggf. im Bundesanzeiger bekannt gemacht. .

XI. Treibhausgas-Minderungspotenzial

Verordnungskonforme Biokraftstoffe müssen gegenüber flüssigen fossilen Kraftstoffen ein THG-Minderungspotenzial von mindestens 35% aufweisen. Dieser Wert erhöht sich ab 2017 auf mindestens 50% und für Biogasaufbereitungsanlagen, die nach dem 31. Dezember 2016 in Betrieb genommen wurden, ab 2018 auf mindestens 60%. Stammt das Biomethan aus einer Anlage, die vor dem 23. Januar 2008 in Betrieb genommen worden ist, sind die 35%

THG-Minderung erst ab dem 1. April 2013 einzuhalten. Zum Nachweis des THG-Minderungspotenzials können entweder Standardwerte herangezogen werden oder es ist mittels tatsächlicher Werte zu berechnen.

XII. Umweltgutachter

Umweltgutachter sind von der DAU zugelassene Sachverständige. Sie können in einer Übergangsphase bis Ende 2011 eine Bescheinigung darüber ausstellen, dass eine bestimmte Lieferung Biokraftstoffe die von der Biokraft-NachV vorgeschriebenen Anforderungen erfüllt. Diese Bescheinigung eines Umweltgutachters kann der Biokraftstoffquotenstelle oder dem Hauptzollamt anstelle eines Nachhaltigkeitsnachweises vorgelegt werden, wenn der Biokraftstoff vor dem 31.12.2011 in Verkehr gebracht wird.

XIII. Zertifikate

Zertifikate sind Konformitätsbescheinigungen darüber, dass Schnittstellen einschließlich aller von ihnen mit der Herstellung oder dem Transport und Vertrieb (Lieferung) der Biomasse unmittelbar oder mittelbar befassten Betriebe die Anforderungen der Biokraft-NachV erfüllen. Schnittstellen müssen die Kopie ihrer Zertifkate den ihnen nachgelagerten Schnittstellen vorlegen. Nur die letzte Schnittstelle, die ebenfalls über ein Zertifikat verfügt, darf Nachhaltigkeitsnachweise ausstellen.

XIV. Zertifizierungsstelle

Eine Zertifizierungsstelle ist ein Dienstleister, der die korrekte Umsetzung der Vorgaben eines Zertifizierungssystems durch die Schnittstellen kontrolliert. Wenn die Schnittstelle die Vorgaben des Zertifizierungssystems erfüllt, wird sie von der Zertifizierungsstelle zertifiziert. Zertifizierungsstellen bedürfen ihrerseits einer Anerkennung seitens der BLE, um Zertifikate ausstellen zu können. Die meisten Zertifizierungsstellen überprüfen die Vorgaben mehrerer Zertifizierungssysteme.

XV. Zertifizierungssystem

Ein Zertifizierungssystem ist ein von der BLE zugelassenes System, dass den Schnittstellen die Einhaltung konkreter Vorgaben bei der Umsetzung der Anforderungen der Biokraft-

NachV auferlegt. Dazu muss sich eine Schnittstelle einem Zertifizierungssystem anschließen und sich verpflichten, die Anforderungen des Systems zu erfüllen.

C. Übersicht der bisher zugelassenen Zertifizierungssysteme und Zertifizierungsstellen

Die hier folgend aufgeführten Zertifizierungssysteme und Zertifizierungsstellen sind im Moment anerkannt (Stand 21.09.2010). Der jeweils aktuelle Stand ist unter http://www.ble.de/cln_090/nn_1053330/SharedDocs/Downloads/02__Kontrolle__Zulassung/05__NachhaltigeBiomasseerzeugung/Anerkennung__de.html?__nnn=true zu finden und steht dort als PDF zum Download bereit.

Zertifizierungssysteme

Registrier-Nummer	Name des Zertifizierungssystems	Datum der Anerkennung	Art der Anerkennung
DE-B-BLE-BM-10	ISCC System GmbH Weissenburgstraße 53 50670 Köln DEUTSCHLAND	20.07.2010	dauerhaft
DE-B-BLE-BM-11	REDcert GmbH Südstraße 133 53175 Bonn DEUTSCHLAND	20.07.2010	dauerhaft

Zertifizierungsstellen

Registrier-Nummer	Name der Zertifizierungsstelle	Datum der Anerkennung	Art der Anerkennung	Anerkannt bis
DE-B-BLE-BM-ZSt-100	SGS Germany GmbH Europa Allee 14 49685 Emstek DEUTSCHLAND	23.08.2010	dauerhaft	
DE-B-BLE-BM-ZSt-101	DQS GmbH August-Schanz-Straße 21 60433 Frankfurt a. M. DEUTSCHLAND	23.08.2010	dauerhaft	
DE-B-BLE-BM-ZSt-102	TÜV SÜD Industrie Service GmbH Westendstraße 199 80686 München DEUTSCHLAND	23.08.2010	dauerhaft	
DE-B-BLE-BM-ZSt-103	Global-Creative-Energy GmbH Joachimstalerstraße 34 10719 Berlin DEUTSCHLAND	30.08.2010	dauerhaft	
DE-B-BLE-BM-ZSt-104	GUT Certifizierungsgesellschaft mbH Eichenstraße 3 b 12435 Berlin DEUTSCHLAND	23.08.2010	dauerhaft	

Registrier-Nummer	Name der Zertifizierungsstelle	Datum der Anerkennung	Art der Anerkennung	Anerkannt bis
DE-B-BLE-BM-ZSt-105	Peterson Control Union Deutschland GmbH Dorotheastraße 30 10318 Berlin DEUTSCHLAND	30.08.2010	dauerhaft	
DE-B-BLE-BM-ZSt-106	AGRIZERT Zertifizierungs GmbH Vorgebirgsstraße 80 53119 Bonn DEUTSCHLAND	31.03.2010	vorläufig	30.03.2011
DE-B-BLE-BM-ZSt-107	agro Vet Lebens- und Umweltqualität Sicherungs GmbH Königsbrunnerstraße 8 2202 Enzersfeld ÖSTERREICH	21.04.2010	vorläufig	20.04.2011
DE-B-BLE-BM-ZSt-108	BCS Öko Garantie GmbH Cimbernstraße 21 90402 Nürnberg DEUTSCHLAND	02.06.2010	vorläufig	01.06.2011
DE-B-BLE-BM-ZSt-109	IFTA AG Neukirchstraße 26 13089 Berlin DEUTSCHLAND	02.06.2010	vorläufig	01.06.2011

Registrier-Nummer	Name der Zertifizierungsstelle	Datum der Anerkennung	Art der Anerkennung	Anerkannt bis
DE-B-BLE-BM-ZSt-110	DEKRA Certification GmbH Handwerkstraße 15 70565 Stuttgart DEUTSCHLAND	02.06.2010	vorläufig	01.06.2011
DE-B-BLE-BM-ZSt-111	ABCERT AG Martinstraße 42 – 44 73728 Esslingen DEUTSCHLAND	11.06.2010	vorläufig	10.06.2011
DE-B-BLE-BM-ZSt-112	LACON GmbH Brünnlesweg 19 77654 Offenburg DEUTSCHLAND	16.06.2010	vorläufig	15.06.2011
DE-B-BLE-BM-ZSt-113	TÜV Rheinland Cert GmbH Am Grauen Stein 51105 Köln DEUTSCHLAND	08.07.2010	vorläufig	07.07.2011
DE-B-BLE-BM-ZSt-114	ÖHMI Euro Cert GmbH Berliner Chaussee 66 39114 Magdeburg DEUTSCHLAND	22.06.2010	vorläufig	21.06.2011
DE-B-BLE-BM-ZSt-115	QAL Umweltgutachter GmbH Am Branden 6 b 85256 Vierkirchen DEUTSCHLAND	30.06.2010	vorläufig	29.06.2011

Registrier-Nummer	Name der Zertifizierungsstelle	Datum der Anerkennung	Art der Anerkennung	Anerkannt bis
DE-B-BLE-BM-ZSt-116	ACG Agrar-Control GmbH Bischofstraße 85 47809 Krefeld DEUTSCHLAND	08.07.2010	vorläufig	07.07.2011
DE-B-BLE-BM-ZSt-117	CERES – CERtification of Environmental Standards – GmbH Vorderhaslach Nr. 1 91230 Happurg DEUTSCHLAND	09.07.2010	vorläufig	08.07.2011
DE-B-BLE-BM-ZSt-118	ENVIZERT Umweltgutachter und öbuv Sachv. GmbH Borkener Straße 68 48653 Coesfeld DEUTSCHLAND	25.08.2010	vorläufig	24.08.2011
DE-B-BLE-BM-ZSt-119	ASG Analytik-Service Gesellschaft mbH Trentiner Ring 30 86356 Neusäß DEUTSCHLAND	15.09.2010	vorläufig	14.09.2011

D. Adressen der wichtigsten Behörden und Stellen

Bundesanstalt für Landwirtschaft und Ernährung (BLE)

Referat 412
Deichmanns Aue 29
53179 Bonn
Telefon: 0228-99-6845-2550
E-Mail: nachhaltigkeit@ble.de
Internet: www.ble.de

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)

Referat IG I 6
Robert-Schumann-Platz 3
53175 Bonn
Telefon: 0228 99 305-2470
Telefax: 0228 99 305-3225
E-Mail:
Internet: www.bmu.de

Deutsche Akkreditierungs- und Zulassungsgesellschaft für Umweltgutachter (DAU GmbH)

Dottendorfer Straße 86
53129 Bonn
Tel.: 0228 / 280 52-0
Fax: 0228 / 280 52-28
E-Mail: info@dau-bonn.de
Internet: www.dau-bonn-gmbh.de

Biokraftstoffquotenstelle

Hauptzollamt Frankfurt (Oder)
Arbeitsbereich Biokraftstoffquote
Drachhausener Straße 72
03044 Cottbus
Telefon: 0355/8769-0
Telefax: 0355/8769-111
E-Mail: poststelle@hzacb.bfinv.de
Internet:
www.zoll.de/b0_zoll_und_steuern/b0_verbrauchsteuern/b0_energie/d0_besonderheit/c0_biokraftst/index.html

International Sustainability and Carbon Certification - ISCC System GmbH

Weissenburgstraße 53
50670 Köln
Tel.: +49-221-9727232
Fax: +49-221-9415863
E-Mail:
Internet: www.iscc-system.org

REDcert Gesellschaft zur Zertifizierung nachhaltig erzeugter Biomasse mbH

Südstraße133
53175 Bonn
Tel.: +49 228 3506 - 100
Fax: +49 228 3506 - 109
E-Mail: info@redcert.de
Internet: www.redcert.org

E. Weiterführende Literatur, Fundstellen

Weiterführende Hinweise zum Umgang mit der Biokraft-NachV können dem von der BLE herausgegebenen **„Leitfaden Nachhaltige Biomasseherstellung"** entnommen werden, der unter www.ble.de zum Download bereit steht. Dort finden sich auch Merkblätter für einzelne Akteure und Schnittstellen sowie Vordrucke für Selbsterklärungen, Nachhaltigkeitsnachweise und Umweltgutachterbescheinigungen.

Die elektronische Datenbank der BLE mit der Web-Anwendung „nabisy" ist zu finden unter https://nabisy.ble.de.

Nähere Angaben zur Biogaseinspeisung und insbesondere auch zur Aufbereitung von Biomethan hinsichtlich der für gasförmige Kraftstoffe vorgeschriebenen Qualitätsanforderungen finden sich in der von Wolfgang Urban herausgegebenen Studie **„Gasnetze der Zukunft"** zu den Auswirkungen der Biogaseinspeisung in das Erdgasnetz vom 05.05.2010, die unter www.biogaseinspeisung.de zum Download bereit steht.

Eine Übersicht der derzeit im Betrieb oder im Bau bzw. in Planung befindlichen Aufbereitungsanlagen findet sich auf der Internetseite der „Biogaspartner" der deutschen Energieagentur (dena) (Einspeiseatlas Deutschland) unter www.biogaspartner.de. Dort sind auch Informationen zu den im Biogas- bzw. Biomethanmarkt agierenden Unternehmen zu finden.

Bilag 16

Bilag 16

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Agriculture and Food

Bilag 17

Sustainable Biomass Production

Manual for Proofs of Sustainability

Die BLE.
Für Landwirtschaft und Ernährung.

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Sustainable Biomass Production

Manual for Proofs of Sustainability

Publisher:
Federal Office for Agriculture and Food (BLE)

Bilag 17

Imprint

Publisher

Federal Office for Agriculture and Food (BLE)
Deichmanns Aue 29
53179 Bonn, Germany
Telephone: +49 (0) 228 99 6845-2500
Facsimile: +49 (0) 228 6845-3040

General information: nabisy@ble.de
CSV-File of proofs of sustainability: nachhaltigkeitsnachweise@ble.de
Internet: www.ble.de

Editor

Federal Office for Agriculture and Food (BLE)
Unit 412 – Recognition and Accreditation Issues,
Sustainable Biomass Production, Energy Crops

Design

Federal Office for Agriculture and Food
Press desk

Printed by

MKL Druck GmbH & Co. KG, Ostbevern/W

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Situation

June 2011

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Bilag 17

Content

Bilag 17

I. Introduction

When using biomass in the European Community's energy sector, the operators must fulfil certain sustainability requirements pursuant to Guideline 2009/28/EC on the promotion and the use of energy from renewable sources.

In order to implement this guideline in Germany, the biomass-electricity-sustainability ordinance (Biomassestrom-Nachhaltigkeitsverordnung (BioSt-NachV)) and the ordinance on sustainable biofuels (Biokraftstoff-Nachhaltigkeitsverordnung (Biokraft-NachV)) have been issued.

In the field of biofuels, proof that the biofuels have been sustainably produced must be provided in order to be able to claim a tax relief according to Art. 50 of the Energy Tax Law (Energiesteuergesetz (EnergieStG)), or to credit the biofuels to the biofuels targets pursuant to Art. 37, letter a, et al. of the Federal Imission Control Act (Bundes-Immissionsschutzgesetzes (BImSchG)).

In the field of bio electricity, the operator of an installation must provide proof that the liquid biomass has been sustainably produced in order to be able to claim remuneration in accordance with Art. 27 para. 1 EEG, and for claiming the "Nawaro bonus" pursuant to Art. 27 para. 4 EEG from the network operator.

The present manual is intended to facilitate access to this topic and to provide help where necessary.

Bilag 17

II. Prerequisites for the issuing of proofs of sustainability

Under certain conditions, proofs of sustainability may be issued by a last interface. In accordance with the sustainability ordinances, last interfaces are e.g. oil mills, vegetable oil refineries or other operations which process liquid or gaseous biomass, so that it reaches the quality level required for being used as biofuels or as liquid biomass for electricity production. Proofs of sustainability provide the proof that the biomass delivered fulfils the requirements as laid down in the sustainability ordinances.

Last interfaces may only issue proofs of sustainability, if the following criteria are fulfilled:

- you are participating in a recognized certification system,
- you have a valid certificate issued by a recognized certification system,
- the upstream interfaces have
  - submitted a copy of their valid certificate,
  - confirmed that the requirements as to the area-related criteria have been fulfilled and
  - communicated the value of greenhouse gas emissions which have so far been incurred during cultivation, transport and processing up.
- traceability back to the time of cultivation of the biomass is ensured by a mass balance system,
- the biomass complies with the greenhouse gas emissions savings potential required,
- the proof of sustainability has been issued in accordance with the specifications laid down by a certification system recognized by the BLE, and
- there will be no further conversion by a subsequent interface.

Proofs of sustainability may only be issued for biomass which comes from upstream interfaces that have already been certified. The interface must always have been certified prior to undertaking production, processing or any other steps related to the biomass. It must have been submitted to the first gathering point as defined in Art. 2 par. 3 no. 1 of the Biokraft-NachV and/or the BioSt-NachV, at the latest at the date of transfer of the biomass. This is fully applicable as from 1 January 2011.

Where certification systems have more stringent specifications than those resulting from the Biokraft-NachV and/or BioSt-NachV, the interfaces must apply these.

For certification systems and for certification bodies recognized by the BLE, please refer to www.ble.de, Kontrolle und Zulassung, Nachhaltige Biomasseherstellung, Sustainable Biomass Production, Recognitions/Document Templates and Forms.

Bilag 17

III. Structure of a proof of sustainability

field 1

Proof of Sustainability

For bioliquids pursuant to Arts. 15 et seqq. of the Biomass electricity sustainability ordinance (Biomassestrom-Nachhaltigkeitsverordnung (BioSt-NachV)), or for biofuels pursuant to Arts. 15 et seqq. of the biofuels sustainability ordinance (Biokraftstoff-Nachhaltigkeitsverordnung (Biokraft-NachV))

Number of the proof:

field 2

Interface:	Recipient:	Certification system:
(name, address, number of certificate)	(name, address)	(name, website, registration number)

field 3

1. General information on biomass / biofuels:

Type, potential parts (e.g. 80% rapeseed oil, 20% palm oil)*: Country of cultivation*:

Quantity (t oder m^3): Energy content (MJ):

The bioliquids / biofuels have been produced from residues or by-products, with by-products not arising from agriculture, forestry, fisheries or aquaculture. ☐ yes ☐ no

Advice: If Yes has been indicated, no further particulars are required for 2.

field 4

2. Sustainable production of biomass and / or sustainable production of biofuels pursuant to Arts. 4 – 7 BioSt-NachV/Biokraft-NachV:

The biomass complies with the requirements pursuant to Arts. 4 – 7 BioSt-NachV / Biokraft-NachV. ☐ yes ☐ no

field 5

3. Greenhouse gas savings pursuant to Art. 8 BioSt-NachV / Biokraft-NachV:

☐ The greenhouse gas emissions savings potential has been complied with as follows:

- Greenhouse gas emissions (g CO_2eq/MJ): Comparator for fossil fuels (g CO_2eq/MJ):
- Compliance with the savings potential when used ☐ for electricity generation ☐ as fuels ☐ for combined electricity / heat generation ☐ for heat generation
- Compliance with the greenhouse gas savings when used in the following countries (e.g. Germany, EU):

Calculation of the greenhouse gas savings has been carried out wholly or partially on the basis of standard values according to Annex 2 BioSt-NachV / Biokraft-NachV. ☐ yes ☐ no

☐ The biomass originates from an exemption granted interface pursuant to Art. 8 para. 2 BioSt-NachV and Art. 8 para. 2 Biokraft-NachV respectively.

The proof of sustainability is valid without signature. The interface is responsible for accuracy of the proof. Identification of the proof takes place by means of ist non-recurring number.

Place and Date of issuance:

field 6

Delivery / shipment based on a mass balance system pursuant to Art. 17 BioSt-NachV / Biokraft-NachV:**

☐ Delivery / shipment has been documented in a mass balance system.

☐ Documentation has been carried out according to the requirements of the following certification system:

☐ Documentation is carried out pursuant to Art. 17 para. 3 Biokraft-NachV.

☐ Documentation has been carried out by means of the following electronic database:

☐ Documentation has been carried out in the following different way:

Last supplier (name, address):

* **Advice:** When blending different quantities of biofuels, indication of the two major parts of the blend will be sufficient.

****Advice:** to be completed by the last supplier

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Bilag 17

Proofs of sustainability provide the proof that the biomass delivered fulfils the requirements as laid down in the sustainability ordinances. It lies within the responsibility of the last interface to transmit all data concerning the liquid biomass and/or biofuels to the buyer of the goods in the form of the proof of sustainability shown above.

For a model, please refer to the BLE website at: www.ble.de. The last interfaces are supplied with a editable form by their certification bodies. Proofs of sustainability must be transmitted immediately and electronically to the BLE. For this purpose, the BLE has chosen a CSV format (also refer to chapter 8: Structure of a dataset for transmitting proofs of sustainability). The certification body is responsible for transmitting the proofs of sustainability in CSV format to the BLE. However, it may also delegate the transmission to the last interface.

1. On field 1: Information on how to identify the proof


Proof of Sustainability

For bioliquids pursuant to Arts. 15 et seqq. of the Biomass electricity sustainability ordinance (Biomassestrom-Nachhaltigkeitsverordnung (BioSt-NachV)), or for biofuels pursuant to Arts. 15 et seqq. of the biofuels sustainability ordinance (Biokraftstoff-Nachhaltigkeitsverordnung (Biokraft-NachV))

Number of the proof:

At the top of the proof of sustainability, the last interface enters a unique number.
The number is structured as follows:

DE-	B-	BLE-	BM-	[2 digit]-	[3 digit]-	[8 digit]-	NNw-	[8 digit]
country letter code (DE= Germany)	federation	BLE	biomass	certification system	certification body	number of the certificate of the last interface	proof of sustainability	unique number of the proof

For the purpose of allocating the number of the proof of sustainability, the last interface uses the certification number and expands it by adding the abbreviation NNw and an 8-digit unique number.

Bilag 17

2. On field 2: Information on traceability

Interface:	Recipient:	Certification system:
(name, address, number of certificate)	(name, address)	(name, website, registration number)

Field 2 contains three pieces of information:

- in the field on the left, there are the name, address and certification number of the last interface,
- in the field in the middle, there are the name and address of the recipient of the proof of sustainability,
- the field on the right contains information on the certification system and contains at least the name and registration number.

In the dataset to be transmitted to the BLE, the recipient of the proof must be indicated by entering the ID number assigned to him. If necessary, the number may be inquired with the recipient.

3. On field 3: General information on biomass / biofuels

1. General information on biomass / biofuels:

Type, potential parts (e.g. 80% rapeseed oil, 20% palm oil)*:	Country of cultivation*:
Quantity (t oder m³):	Energy content (MJ):

The bioliquids / biofuels have been produced from residues or by-products, with by-products not arising from agriculture, forestry, fisheries or aquaculture. ☐ yes ☐ no
Advice: If Yes has been indicated, no further particulars are required for 2.

In "General information ..." the types of biomass, countries of cultivation, quantity and energy content of the liquid biomass and/or biofuels which are the subject of the proof of sustainability are stated.

In the case of mixtures of different types of biomass, the two largest proportions in the mixture, the percentage and respective country of cultivation are listed.

The quantity which the proof of sustainability refers to is stated in tons or cubic meters with up to three decimal places after the comma. The energy content shall be stated in mega joules.

Bilag 17

If the liquid biomass and/or biofuels were produced from residues or by-products not arising from agriculture, forestry, fisheries or aquaculture, “yes” shall be indicated. Where “yes” is indicated, no further information on area-related requirements must be given for 2.

Note: All types of biomass used must be included in the calculation of the energy content and the greenhouse gas emissions savings potential (also refer to 5. Information on the greenhouse gas emissions savings potential).

In the inventory control system and/or mass balance system all types of biomass and their respective proportions must be documented, the same applies to the CSV file which must be sent to the BLE.

4. On field 4: Information on sustainable cultivation and production

2. Sustainable production of biomass and / or sustainable production of biofuels pursuant to Arts. 4 – 7 BioSt-NachV/Biokraft-NachV:

The biomass complies with the requirements pursuant to Arts. 4 – 7 BioSt-NachV / Biokraft-NachV. ☐ yes ☐ no

In field 4, the last interface must enter whether or not the area-related requirements pursuant to Arts.4 -7 have been complied with. The last interface must therefore ensure that the upstream interfaces have provided it with all information as laid down in Chapter II “Prerequisites for the issuing of proofs of sustainability”.

As a rule, sustainable biomass may be produced in all areas which already were arable land on 1 January 2008 or on any other day in January 2008.

Grassland in fallows, set-aside areas and rotations in agricultural crop rotation systems are treated like arable land.

Sustainable biomass may not be cultivated in the following areas, respectively may only cultivated in these areas under specific conditions:

- high-nature value areas, i.e.
  - primary forests
  - areas designated for conservation purposes,
  - highly biodiverse natural grassland and
  - highly biodiverse artificially created grassland
- surfaces with high carbon-stock, i.e.
  - wetlands and
  - continuously wooded areas and
- peatlands.

In a Member State of the European Union, the Cross Compliance rules pursuant to Art. 7 BioSt-NachV and/or Biokraft-NachV shall be complied for agricultural activities related to the growing

Bilag 17

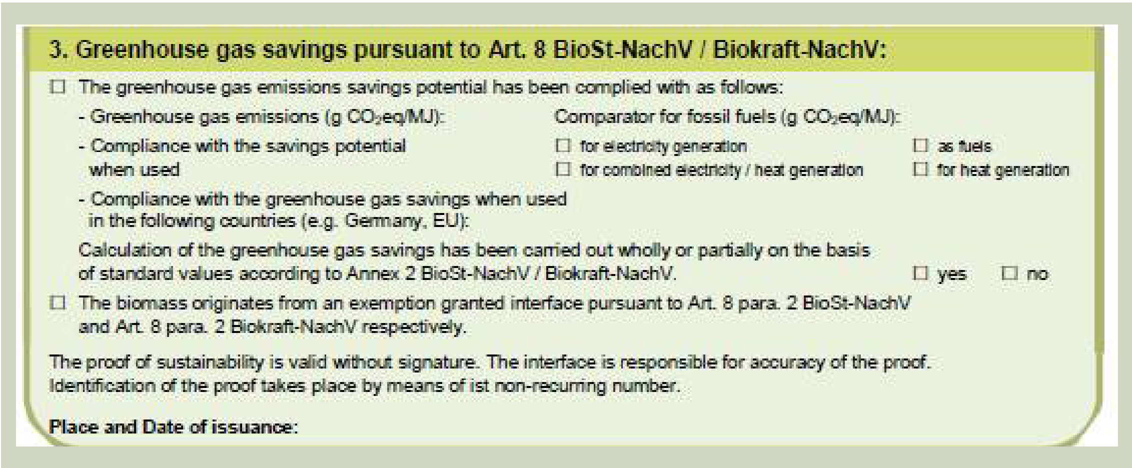
of biomass. The areas must be cultivated in accordance with the minimum requirements for the Good Agricultural and Ecological Conditions.

The sustainability requirements apply to biomass, regardless of whether it comes from domestic production or imports.

For residues or by-products arising from agriculture, forestry, fisheries and aquaculture, the area-related requirements as laid down in Arts. 4 – 7 BioSt-NachV and/or Biokraft-NachV shall also be complied with, in addition to compliance with the greenhouse gas emissions savings potential pursuant to Art. 8 BioSt-NachV and/or Biokraft-NachV. The area-related requirements as laid down in Arts. 4 – 7 BioSt-NachV and/or Biokraft-NachV do not apply to liquid biomass and/or biofuels produced from residues or by-products not arising from agriculture, forestry, fisheries and aquaculture. However, the greenhouse gas emissions savings potential criterion pursuant to Art. 8 BioSt-NachV and/or Biokraft-NachV must be satisfied.

5. On field 5: Information on the greenhouse gas emissions savings potential

5a
5b
5c
5d


3. Greenhouse gas savings pursuant to Art. 8 BioSt-NachV / Biokraft-NachV:

☐ The greenhouse gas emissions savings potential has been complied with as follows:
- Greenhouse gas emissions (g CO_2eq/MJ): Comparator for fossil fuels (g CO_2eq/MJ):
- Compliance with the savings potential when used ☐ for electricity generation ☐ as fuels ☐ for combined electricity / heat generation ☐ for heat generation
- Compliance with the greenhouse gas savings when used in the following countries (e.g. Germany, EU):

Calculation of the greenhouse gas savings has been carried out wholly or partially on the basis of standard values according to Annex 2 BioSt-NachV / Biokraft-NachV. ☐ yes ☐ no

☐ The biomass originates from an exemption granted interface pursuant to Art. 8 para. 2 BioSt-NachV and Art. 8 para. 2 Biokraft-NachV respectively.

The proof of sustainability is valid without signature. The interface is responsible for accuracy of the proof. Identification of the proof takes place by means of ist non-recurring number.

Place and Date of issuance:

On 5 a: Information on the greenhouse gas emissions savings potential
The greenhouse gas emissions savings potential for biofuels and liquid biomass used for electricity production must amount to at least 35%. As from 1 January 2017, this value shall increase to 50%, and as from 1 January 2018, it shall increase to 60%.

For determining the greenhouse gas emissions savings in the proof of sustainability

- the greenhouse gas emissions, accumulated across all stages of cultivation, production and delivery, in grams of carbon dioxide equivalent per mega joule (g CO_{2eq}/MJ) of sustainable biomass, and
- the comparator, in grams of fossil fuels of carbon dioxide equivalents per mega joule (g CO_{2eq}/MJ),

must be entered.

Bilag 17

The comparator applied for fossil fuels is

- 91 gg CO_{2eq}/MJ when used to produce electricity,
- 85 g CO_{2eq}/MJ when used in CHP plants,
- 83,8 g CO_{2eq}/MJ when used as fuel, and
- 70 g CO_{2eq}/MJ when used to produce heat.

The match code specifying the types of use of the dataset description stipulates which types of use apply to a comparator for fossil fuels and must therefore be marked with a cross. This is also important for the creation of the partial proofs of sustainability.

For the dataset to be transmitted to the BLE, the potential types of use are stated by means of the match codes given in the dataset description.

On 5 b: Information on countries where the use of liquid biomass /biofuel is permitted

The calculation of greenhouse gas emissions must include all emissions incurred during production and refinement of the product, including transport emissions up to the place of final use. Therefore it must be stated in which countries and regions respectively the liquid biomass or biofuels to which the proof/s of sustainability refer/s may be used without falling short of the calculated greenhouse gas emissions savings.

For transmitting the CSV file, the country abbreviations in accordance with the codes of ISO 3166 ALPHA-2 shall be used. For the list, please refer to the data set description.

On 5 c: Information on the use of standard values

As a rule, the emissions values must be established on the basis of values actually measured. However, pursuant to Art. 8 para. 4, standard values as laid down in Annex 2 of the sustainability ordinances may be used for calculating the greenhouse gas emissions savings. The disaggregated standard values pursuant to Annex 2 no. 1 letter a (cultivation) and letter e (greenhouse gas emissions savings as against the comparator for fossil fuels; biofuels sector only) may only be applied, if

- the biomass was grown
  - outside the Member States of the European Union, or
  - within the Member States of the European Union, in areas which are mentioned in a list pursuant to Art. 19 para. 2 of Guideline 2009/28/EC, or if
- the liquid biomass and/or biofuels were produced from residues or by-products, excluding by-products from agriculture, fisheries or aquaculture.

Bilag 17

Where, for the calculation of the greenhouse gas emissions, standard values have been used, either completely or in part, pursuant to Annex 2 of the sustainability ordinances, this must also be stated.

On 5 d: Information on interfaces

If the sustainable biomass and/or biofuels come from an interface to which inventory protection applies ("old installations rule"), this must also be stated. Interfaces are:

- oil mills,
- in the case of biodiesel this is the esterification plant,
- in the case of hydrogenated vegetable oil or animal oils this is the hydrogenation and/or co-hydrogenation plant,
- in the case of bioethanol this is the bioethanol production plant,
- in the case of biogas this is the biogas plant, and
- in all other cases these are other operations which process liquid or gaseous biomass so that it reaches the quality level required for being used as biofuel, or which produce biofuels from the biomass used, or operations which process liquid biomass so that it reaches the quality level required for being used in installations which produce electricity.

Exemption is granted to interfaces which were first put into service before 23 January 2008. In this case, the liquid biomass and/or biofuels must only comply with the greenhouse gas reduction of 35% as from 1 April 2013.

Liquid biomass and/or biofuels may only be balanced, if the interfaces calculates the greenhouse gas emissions savings potential or apply standard values.

It is important to note:

- An interface for which exemptions have been granted calculates the greenhouse gas emissions based on actual measurement data and achieves greenhouse gas emissions savings amounting to at least 35% as against the fossil comparator.

  Greenhouse gas emissions may be balanced against other biomass which does not come from an old installation for which exemptions have been granted.

- An interface for which exemptions have been granted uses standard values or disaggregated standard values for calculating greenhouse gas emissions and achieves greenhouse gas emissions savings amounting to at least 35% as against the fossil comparator.

  Greenhouse gas emissions may be balanced against other biomass which do not come from an old installation for which exemptions have been granted.

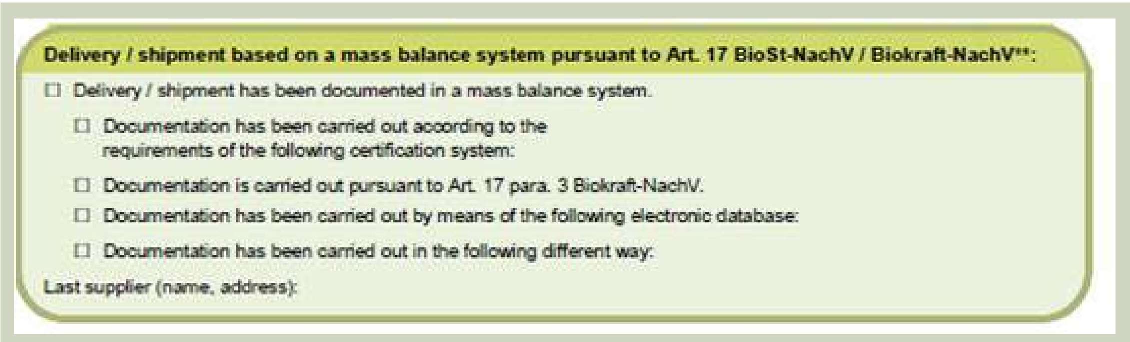
Bilag 17

- An interface for which exemptions have been granted does not actually undertake calculations, and for the product produced there are no standard values and/or standard values with the greenhouse gas emissions savings required.

  It is not possible to state emissions in the proof of sustainability; balancing against other sustainable biomass not coming from old installations is not permitted.

There is no entitlement to the Nawaro bonus pursuant to Art. 10 BioSt-NachV.

6. On field 6: Information on the mass balance system



Delivery / shipment based on a mass balance system pursuant to Art. 17 BioSt-NachV / Biokraft-NachV:**

☐ Delivery / shipment has been documented in a mass balance system.

☐ Documentation has been carried out according to the requirements of the following certification system:

☐ Documentation is carried out pursuant to Art. 17 para. 3 Biokraft-NachV.

☐ Documentation has been carried out by means of the following electronic database:

☐ Documentation has been carried out in the following different way:

Last supplier (name, address):

6a
6b
6c
6d

Documentation of delivery of biomass in a mass balance system is compulsory.

On 6 a: Delivery is documented pursuant to the requirements of a certification system

At the last interface, delivery of liquid biomass and/or biofuels is always documented pursuant to the requirements laid down by your certification system.

On 6 b to 6 d: Delivery is not documented pursuant to the requirements of a certification system

If you do not use of the alternative 6a stated above, please mark one of these items with a cross.

Where documentation is not undertaken in accordance with the requirements of a certification system, please mark one of the options 6b, 6c, or 6d with a cross.

Bilag 17

7. Drawing-up of proofs of sustainability when mixing different components

Art. 16 para. 2 no. 2 letter b of the BioSt-NachV and/or Biokraft-NachV lays down that for biomass which is used for the production of biofuels pursuant to this ordinances, and for which proofs of sustainability have not yet been issued, and for which greenhouse gas emissions differ, these greenhouse gas emissions may only be balanced, if all quantities that are included into the mixture have, before mixing, had the values stipulated by the Commission of the European Communities or the Federal Ministry for the Environment, Nature Conservation and Reactor Safety for this processing step.

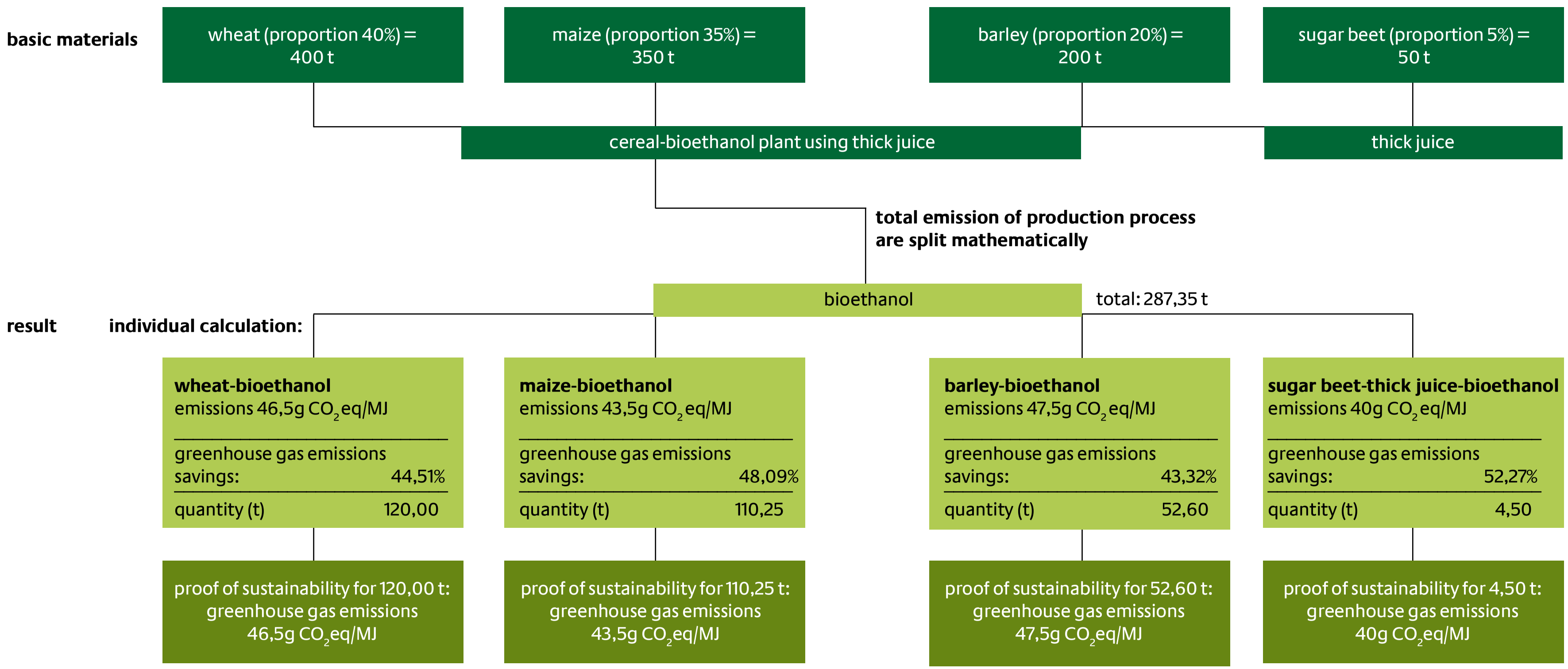
For the balancing of different greenhouse gas emissions when mixing different components, the maximum values published by the Federal Ministry for the Environment, Nature Conservation and Reactor Safety in the electronic Federal Gazette of 28 July 2010 and 17 December 2010, based on Art. 16 para. 3 p. 1, within the meaning of Article16 para. 2 no. 2 letter b of the BioSt-NachV and/or Biokraft-NachV must be applied. If maximum values exist the balancing according to the examples 3 and 4 can be effected. If maximum values do not exist there must be issued a separate proof of sustainability for each component in accordance to the examples 3 and 4.

Bilag 17

1. Example 1

Example 1 for drawing up proofs of sustainability in the case of mixing different components

Situation:
The different components are mixed in order to achieve a higher yield and/or to cause lower emission.

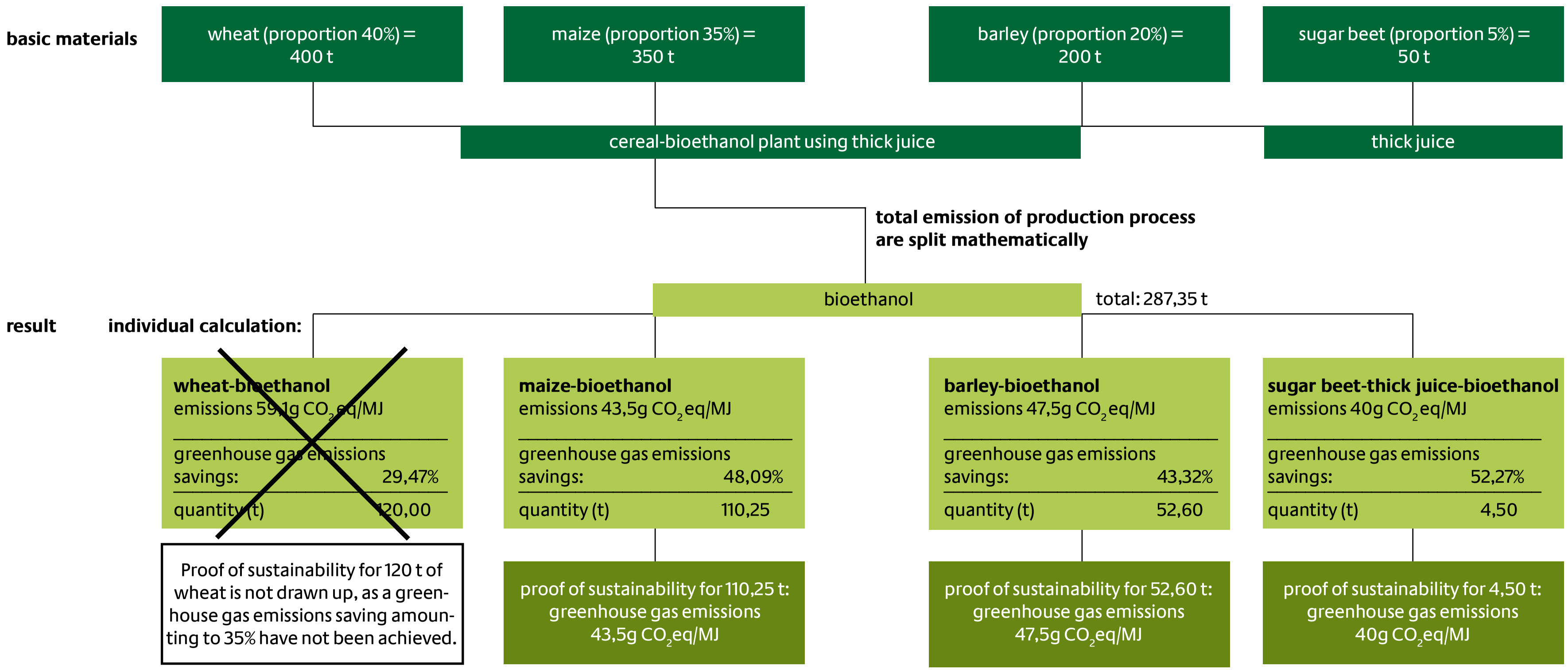


Bilag 17

2. Example 2

Example 2 for drawing up proofs of sustainability in the case of mixing different components

Situation:
The different components are mixed in order to achieve a higher yield and/or to cause lower emissions

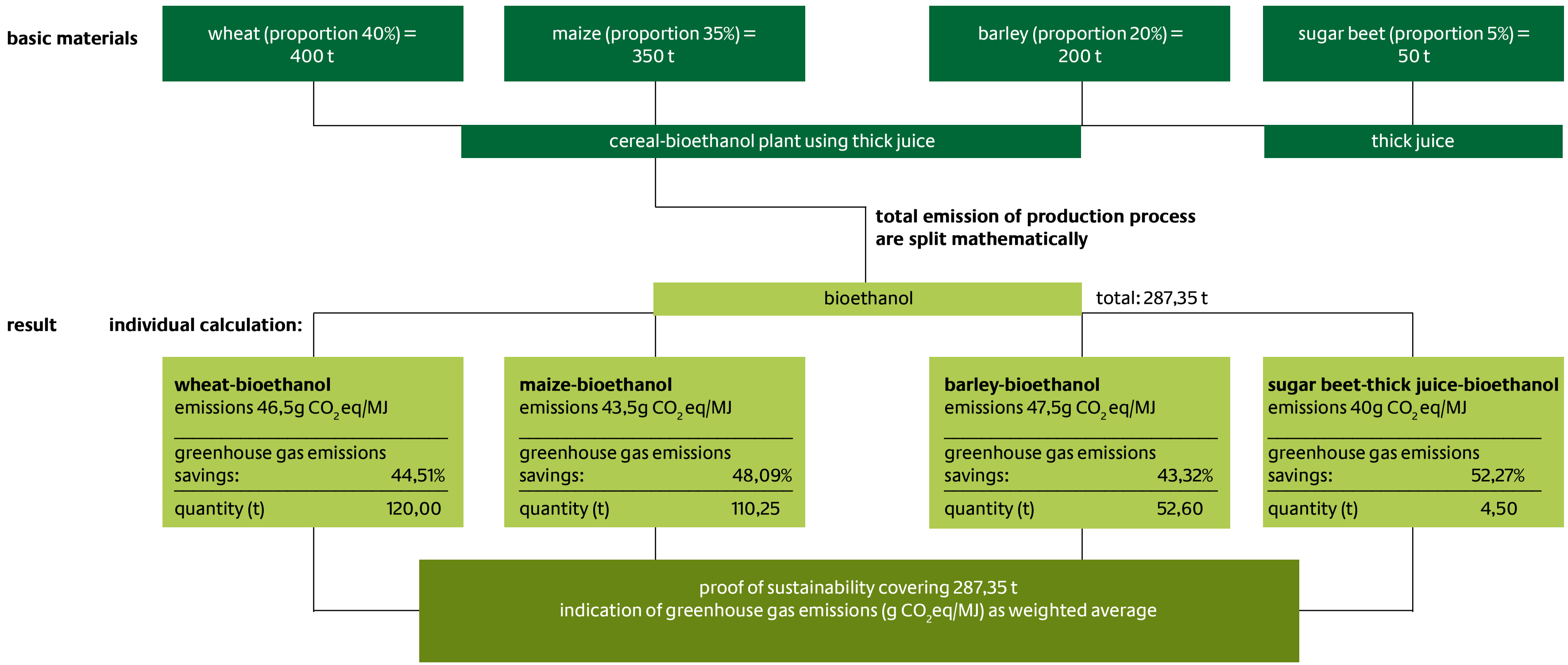


Bilag 17

3. Example 3

Example 3 for drawing up proofs of sustainability in the case of mixing different components

Situation:
The different components are mixed in order to achieve a higher yield and/or to cause lower emissions

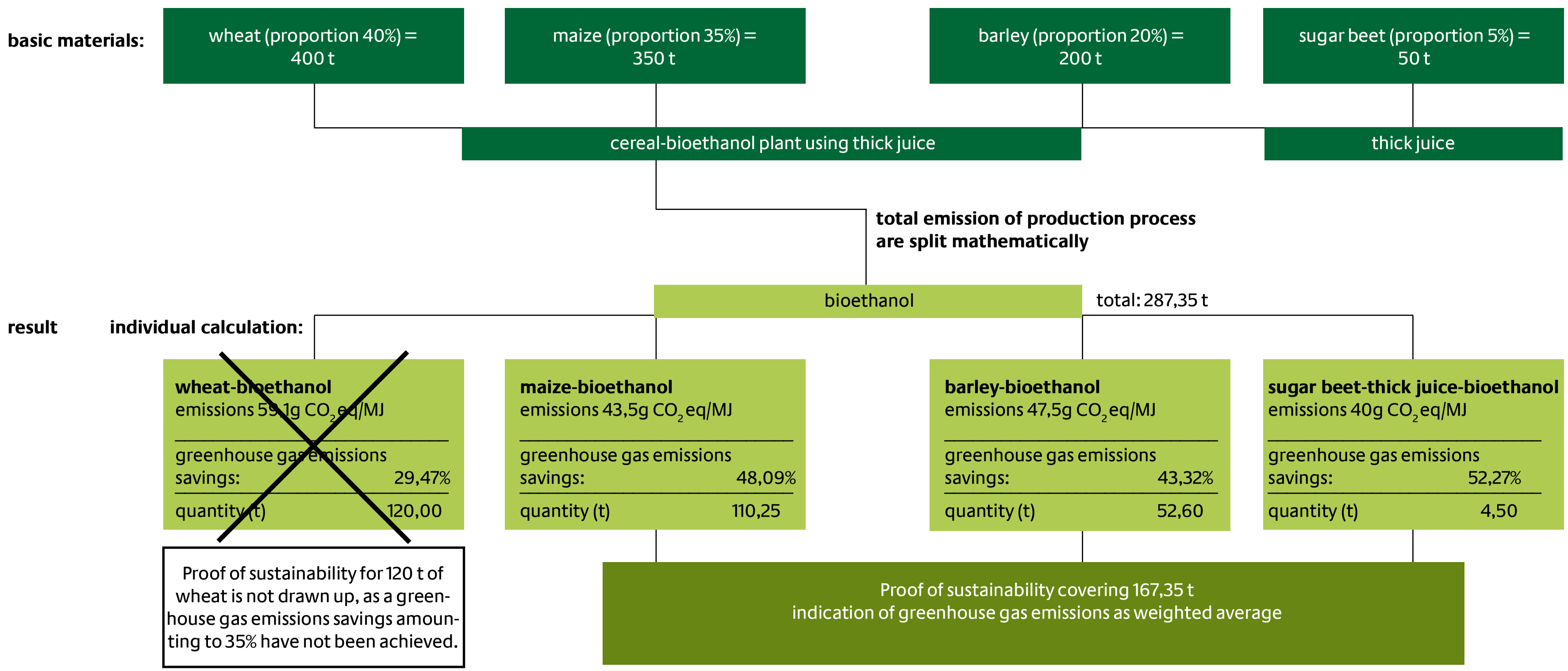


Bilag 17

4. Example 4

Example 4 for drawing up proofs of sustainability in the case of mixing different components

Situation:
The different components are mixed in order to achieve a higher yield and/or to cause lower emissions



Bilag 17

8. Structure of a dataset for the electronic transmission of proofs of sustainability

Codes of goods

Coding	Type of biomass	Nabisy designation
2207 - 1	Sugar beet ethanol	Eth_ZR
2207-2	Wheat ethanol (process fuel not specified)	Eth_W_PB_unspec
2207-3	Wheat ethanol (lignite as process fuel in CHP plant)	Eth_W_PB_BK-KWK
2207-4	Wheat ethanol (natural gas as process fuel in conventional boiler)	Eth_W_PB_EGas_konvent
2207-5	Wheat ethanol (natural gas as process fuel in CHP plant)	Eth_W_PB_Egas_KWK
2207-6	Wheat ethanol (straw as process fuel in CHP plant)	Eth_W_PB_Stroh_KWK
2207-7	Corn (maize) ethanol, produced in the European Community (natural gas as process fuel in CHP plant)	Eth_Mais_EU_PB_KWK
2207-8	Sugar cane ethanol	Eth_SC
2207-07	Wheat ethanol (biomass as process fuel in biomass boiler)	Eth_W_PB_BM_BMB
2207-08	Wheat ethanol (bran as process fuel in CHP plant)	Eth_W_PB_Kl_KWK
2207-09	Wheat ethanol (waste heat as process fuel)	Eth_W_PB_Abw
29091910-1	The part from sugar beet of ETBE	ETBE_ZR
29091910-2	The part from wheat of ETBE, (process fuel not specified)	ETBE_W_PB_unspec
29091910-3	The part from wheat of ETBE (lignite as process fuel in CHP plant)	ETBE_W_PB_BK-KWK
29091910-4	The part from wheat of ETBE (natural gas as process fuel in conventional boiler)	ETBE_W_PB_EGas_konvent
29091910-5	The part from wheat of ETBE (natural gas as process fuel in CHP plant)	ETBE_W_PB_Egas_KWK
29091910-6	The part from wheat of ETBE (straw as process fuel in CHP plant)	ETBE_W_PB_Stroh_KWK
29091910-7	The part from corn (maize) of ETBE, produced in the European Community (natural gas as process fuel in CHP plant)	ETBE_Mais_EU_PB_KWK
29091910-8	The part from sugar cane of ETBE,	ETBE_SC
29091910-9	The part from wheat of ETBE, (waste heat as process fuel)	ETBE-W_PB_Abw

Bilag 17

Coding	Type of biomass	Nabisy designation
29091990-1	The part from sugar beet of TAEE	TAEE_ZR
29091990-2	The part from wheat of TAEE, (process fuel not specified)	TAEE_W_PB_unspec
29091990-3	The part from wheat of TAEE, (lignite as process fuel in CHP plant)	TAEE_W_PB_BK-KWK
29091990-4	The part from wheat of TAEE, (natural gas as process fuel in conventional boiler)	TAEE_W_PB_EGas_konvent
29091990-5	The part from wheat of TAEE, (natural gas as process fuel in conventional boiler)	TAEE_W_PB_Egas_KWK
29091990-6	The part from wheat of TAEE, (straw as process fuel in CHP plant)	TAEE_W_PB_Stroh_KWK
29091990-7	The part from corn (maize) of TAEE, produced in the European Community (natural gas as process fuel in CHP plant)	TAEE_Mais_EU_PB_KWK
29091990-8	The part from sugar cane of TAEE,	TAEE_SC
27101941-1	Rape seed biodiesel	Biodiesel_Raps
27101941-2	Sunflower biodiesel	Biodiesel_SFl
27101941-3	Soybean biodiesel	Biodiesel_Soja
27101941-4	Palm oil biodiesel (process fuel not specified)	Biodiesel_Palm
27101941-5	Palm oil biodiesel (process with methane capture at oil mill)	Biodiesel_Palm_Methan-bdg
27101941-6	Waste vegetable or animal oil biodiesel	Biodiesel_Abf
27101941-7	Hydrotreated vegetable oil from rape seed	Rapsöl_hydr
27101941-8	Hydrotreated vegetable oil from sunflower	Sflöl_hydr
27101941-9	Hydrotreated palm oil (process not specified)	Palmöl_hydr_unspec
27101941-10	Hydrotreated palm oil (process with methane capture at oil mill)	Palmöl_hydr_Methan-bdg
1514	Pure vegetable oil from rape seed	Rapsöl_rein
1511	Pure palm oil (process with methane capture at oil mill), except where another value results from no. 3	Palm_rein_Methan_bdg
1507	Pure soybean oil, except where another value results from no. 3	Sojaöl_rein
2207-9	Wheat straw ethanol	Eth_Weizenstroh
2207-10	Waste wood ethanol	Eth_Abfallholz

Bilag 17

Coding	Type of biomass	Nabisy designation
2207-11	Farmed wood ethanol	Eth_Kulturholz
27101941-11	Waste wood Fischer-Tropsch diesel	F-T-Diesel_Abfallholz
27101941-12	Farmed wood Fischer-Tropsch diesel	F-T-Diesel_Kulturholz
29091990-1	The part from sugar beet of TAEE	TAEE_ZR
29091990-2	The part from wheat of TAEE, (process fuel not specified)	TAEE_W_PB_unspec
29051190-3	Waste wood methanol	Meth_Abfallholz
29051190-4	Farmed wood methanol	Meth_Kulturholz
29051190-5	The part from waste wood of MTBE	MTBE_Abfallholz
29051190-6	The part from farmed food of MTBE	MTBE_Kulturholz
27111900-1	Biogas from municipal organic waste as compr. Biomethan	Biomethan_org_Sdlabf
27111900-2	Biogas from wet manure as compr. biomethane	Biomethan_Gülle
27111900-3	Biogas from dry manure as compressed biogas	Biogas_Trockenmist
2207-12	Rye ethanol (process fuel not specified)	Eth_R_PB_unspec
2207-13	Rye ethanol (lignite as process fuel in CHP plant)	Eth_R_PB_BK-KWK
2207-14	Rye ethanol (natural gas as process fuel in conventional boiler)	Eth_R_PB_EGas_konvent
2207-15	Rye ethanol (natural gas as process fuel in CHP plant)	Eth_R_PB_Egas_KWK
2207-16	Rye ethanol (straw as process fuel in CHP plant)	Eth_R_PB_Stroh_KWK
2207-19	Rye ethanol (waste heat as process fuel)	Eth_R_PB_Abw
29091910-12	The part from rye of ETBE, (process fuel not specified)	ETBE_R_PB_unspec
29091910-13	The part from rye of ETBE, (lignite as process fuel in CHP plant)	ETBE_R_PB_BK-KWK
29091910-14	The part from rye of ETBE, (natural gas as process fuel in conventional boiler)	ETBE_R_PB_EGas_konvent
29091910-15	The part from rye of ETBE, (natural gas as process fuel in CHP plant)	ETBE_R_PB_Egas_KWK
29091910-16	The part from rye of ETBE, (straw as process fuel in CHP plant)	ETBE_R_PB_Stroh_KWK

Bilag 17

Coding	Type of biomass	Nabisy designation
29091910-19	The part from rye of ETBE, (waste heat as process fuel)	ETBE-W_PB_Abw
29091990-12	The part from rye of TAEE, (process fuel not specified)	TAEE_R_PB_unspec
29091990-13	The part from rye of TAEE, (lignite as process fuel in CHP plant)	TAEE_R_PB_BK-KWK
29091990-14	The part from rye of TAEE, (natural gas as process fuel in conventional boiler)	TAEE_R_PB_EGas_konvent
29091990-15	The part from rye of TAEE, (natural gas as process fuel in CHP plant)	TAEE_R_PB_Egas_KWK
29091990-16	The part from rye of TAEE, (straw as process fuel in CHP plant)	TAEE_R_PB_Stroh_KWK
2207-22	Barley ethanol (process fuel not specified)	Eth_G_PB_unspec
2207-23	Barley ethanol (lignite as process fuel in CHP plant)	Eth_G_PB_BK-KWK
2207-24	Barley ethanol (natural gas as process fuel in conventional boiler)	Eth_G_PB_EGas_konvent
2207-25	Barley ethanol (natural gas as process fuel in CHP plant)	Eth_G_PB_Egas_KWK
2207-26	Barley ethanol (straw as process fuel in CHP plant)	Eth_G_PB_Stroh_KWK
2207-29	Barley ethanol (waste heat as process fuel)	Eth_G_PB_Abw
29091910-22	The part from barley of ETBE, (process fuel not specified)	ETBE_G_PB_unspec
29091910-23	The part from barley of ETBE, (lignite as process fuel in CHP plant)	ETBE_G_PB_BK-KWK
29091910-24	The part from barley of ETBE, (natural gas as process fuel in conventional boiler)	ETBE_G_PB_EGas_konvent
29091910-25	The part from barley of ETBE, (natural gas as process fuel in CHP plant)	ETBE_G_PB_Egas_KWK
29091910-26	The part from barley of ETBE, (straw as process fuel in CHP plant)	ETBE_G_PB_Stroh_KWK
29091910-29	The part from barley of ETBE, (waste heat as process fuel)	ETBE-W_PB_Abw
29091990-22	The part from barley of TAEE, (process fuel not specified)	TAEE_G_PB_unspec
29091990-23	The part from barley of TAEE, (lignite as process fuel in CHP plant)	TAEE_G_PB_BK-KWK

Bilag 17

Coding	Type of biomass	Nabisy designation
29091990-24	The part from barley of TAEE, (natural gas as process fuel in conventional boiler)	TAEE_G_PB_EGas_konvent
29091990-25	The part from barley of TAEE, (natural gas as process fuel in CHP plant)	TAEE_G_PB_Egas_KWK
29091990-26	The part from barley of TAEE, (straw as process fuel in CHP plant)	TAEE_G_PB_Stroh_KWK
2207-32	Triticale ethanol (process fuel not specified)	Eth_T_PB_unspec
2207-33	Triticale ethanol (lignite as process fuel in CHP plant)	Eth_T_PB_BK-KWK
2207-34	Triticale ethanol (natural gas as process fuel in conventional boiler)	Eth_T_PB_EGas_konvent
2207-35	Triticale ethanol (natural gas as process fuel in CHP plant)	Eth_T_PB_Egas_KWK
2207-36	Triticale ethanol (straw as process fuel in CHP plant)	Eth_T_PB_Stroh_KWK
2207-39	Triticale ethanol (waste heat as process fuel)	Eth_T_PB_Abw
29091910-32	The part from triticale of ETBE, (process fuel not specified)	ETBE_T_PB_unspec
29091910-33	The part from triticale of ETBE, (lignite as process fuel in CHP plant)	ETBE_T_PB_BK-KWK
29091910-34	The part from triticale of ETBE, (natural gas as process fuel in conventional boiler)	ETBE_T_PB_EGas_konvent
29091910-35	The part from triticale of ETBE, (natural gas as process fuel in CHP plant)	ETBE_T_PB_Egas_KWK
29091910-36	The part from triticale of ETBE, (straw as process fuel in CHP plant)	ETBE_T_PB_Stroh_KWK
29091910-39	The part from triticale of ETBE, (waste heat as process fuel)	ETBE-T_PB_Abw
29091990-32	The part from triticale of TAEE, (process fuel not specified)	TAEE_T_PB_unspec
29091990-33	The part from triticale of TAEE (lignite as process fuel in CHP plant)	TAEE_T_PB_BK-KWK
29091990-34	The part from triticale of TAEE, (natural gas as process fuel in conventional boiler)	TAEE_T_PB_EGas_konvent
29091990-35	The part from triticale of TAEE, (natural gas as process fuel in CHP plant)	TAEE_T_PB_Egas_KWK
29091990-36	The part from triticale of TAEE, (straw as process fuel in CHP plant)	TAEE_T_PB_Stroh_KWK

Bilag 17

Countries and regions

NAME OF THE COUNTRY/REGION		ISO 3166 ALPHA-2
English	German	
AFGHANISTAN	Afghanistan	AF
ÅLAND ISLANDS	Åland	AX
ALBANIA	Albanien	AL
ALGERIA	Algerien	DZ
AMERICAN SAMOA	Amerikanisch-Samoa	AS
ANDORRA	Andorra	AD
ANGOLA	Angola	AO
ANGUILLA	Anguilla	AI
ANTARCTICA	Antarktis (Sonderstatus durch Antarktis-Vertrag)	AQ
ANTIGUA AND BARBUDA	Antigua und Barbuda	AG
ARGENTINA	Argentinien	AR
ARMENIA	Armenien	AM
ARUBA	Aruba	AW
AUSTRALIA	Australien	AU
AUSTRIA	Österreich	AT
AZERBAIJAN	Aserbaidschan	AZ
BAHAMAS	Bahamas	BS
BAHRAIN	Bahrain	BH
BANGLADESH	Bangladesch	BD
BARBADOS	Barbados	BB
BELARUS	Belarus (Weißrussland)	BY
BELGIUM	Belgien	BE
BELIZE	Belize	BZ
BENIN	Benin	BJ
BERMUDA	Bermuda	BM
BHUTAN	Bhutan	BT
BOLIVIA, PLURINATIONAL STATE OF	Bolivien	BO
BOSNIA AND HERZEGOVINA	Bosnien und Herzegowina	BA
BOTSWANA	Botswana	BW

Bilag 17

NAME OF THE COUNTRY/REGION		ISO 3166 ALPHA-2
English	**German**	
BOUVET ISLAND	Bouvetinsel	BV
BRAZIL	Brasilien	BR
BRITISH INDIAN OCEAN TERRITORY	Britisches Territorium im Indischen Ozean	IO
BRUNEI DARUSSALAM	Brunei Darussalam	BN
BULGARIA	Bulgarien	BG
BURKINA FASO	Burkina Faso	BF
BURUNDI	Burundi	BI
CAMBODIA	Kambodscha	KH
CAMEROON	Kamerun	CM
CANADA	Kanada	CA
CAPE VERDE	Kap Verde	CV
CAYMAN ISLANDS	Kaimaninseln	KY
CENTRAL AFRICAN REPUBLIC	Zentralafrikanische Republik	CF
CHAD	Tschad	TD
CHILE	Chile	CL
CHINA	China, Volksrepublik	CN
CHRISTMAS ISLAND	Weihnachtsinsel	CX
COCOS (KEELING) ISLANDS	Kokosinseln	CC
COLOMBIA	Kolumbien	CO
COMOROS	Komoren	KM
CONGO	Republik Kongo	CG
CONGO, THE DEMOCRATIC REPUBLIC OF THE	Kongo, Demokratische Republik (ehem. Zaire)	CD
COOK ISLANDS	Cookinseln	CK
COSTA RICA	Costa Rica	CR
CÔTE D‘IVOIRE	Cote d‘Ivoire/Côte d‘Ivoire (Elfenbein-küste)	CI
CROATIA	Kroatien	HR
CUBA	Kuba	CU
CYPRUS	Zypern	CY
CZECH REPUBLIC	Tschechische Republik	CZ

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
DENMARK	Dänemark	DK
DJIBOUTI	Dschibuti	DJ
DOMINICA	Dominica	DM
DOMINICAN REPUBLIC	Dominikanische Republik	DO
ECUADOR	Ecuador	EC
EGYPT	Ägypten	EG
EL SALVADOR	El Salvador	SV
EQUATORIAL GUINEA	Äquatorialguinea	GQ
ERITREA	Eritrea	ER
ESTONIA	Estland	EE
ETHIOPIA	Athiopien Äthiopien	ET
European Union	Europäische Union	EU
FALKLAND ISLANDS (MALVINAS)	Falklandinseln	FK
FAROE ISLANDS	Faroer Färöer	FO
FIJI	Fidschi	FJ
FINLAND	Finnland	FI
FRANCE	Frankreich	FR
FRENCH GUIANA	Französisch-Guayana	GF
FRENCH POLYNESIA	Französisch-Polynesien	PF
FRENCH SOUTHERN TERRITORIES	Französische Süd- und Antarktisgebiete	TF
GABON	Gabun	GA
GAMBIA	Gambia	GM
GEORGIA	Georgien	GE
GERMANY	Deutschland	DE
GHANA	Ghana	GH
GIBRALTAR	Gibraltar	GI
GREECE	Griechenland	GR
GREENLAND	Grönland	GL
GRENADA	Grenada	GD
GUADELOUPE	Guadeloupe	GP

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
GUAM	Guam	GU
GUATEMALA	Guatemala	GT
GUERNSEY	Guernsey (Kanalinsel)	GG
GUINEA	Guinea	GN
GUINEA-BISSAU	Guinea-Bissau	GW
GUYANA	Guyana	GY
HAITI	Haiti	HT
HEARD ISLAND AND MCDONALD ISLANDS	Heard und McDonaldinseln	HM
HOLY SEE (VATICAN CITY STATE)	Vatikanstadt	VA
HONDURAS	Honduras	HN
HONG KONG	Hongkong	HK
HUNGARY	Ungarn	HU
ICELAND	Island	IS
INDIA	Indien	IN
INDONESIA	Indonesien	ID
IRAN, ISLAMIC REPUBLIC OF	Iran, Islamische Republik	IR
IRAQ	Irak	IQ
IRELAND	Irland	IE
ISLE OF MAN	Insel Man	IM
ISRAEL	Israel	IL
ITALY	Italien	IT
JAMAICA	Jamaika	JM
JAPAN	Japan	JP
JERSEY	Jersey (Kanalinsel)	JE
JORDAN	Jordanien	JO
KAZAKHSTAN	Kasachstan	KZ
KENYA	Kenia	KE
KIRIBATI	Kiribati	KI
KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF	Korea, Demokratische Volksrepublik (Nordkorea)	KP

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
KOREA, REPUBLIC OF	Korea, Republik (Südkorea)	KR
KUWAIT	Kuwait	KW
KYRGYZSTAN	Kirgisistan	KG
LAO PEOPLE'S DEMOCRATIC REPUBLIC	Laos, Demokratische Volksrepublik	LA
LATVIA	Lettland	LV
LEBANON	Libanon	LB
LESOTHO	Lesotho	LS
LIBERIA	Liberia	LR
LIBYAN ARAB JAMAHIRIYA	Libysch-Arabische Dschamahirija (Libyen)	LY
LIECHTENSTEIN	Liechtenstein	LI
LITHUANIA	Litauen	LT
LUXEMBOURG	Luxemburg	LU
MACAO	Macao	MO
MACEDONIA, THE FORMER YUGOS-LAV REPUBLIC OF	Mazedonien, ehem. jugoslawische Republik	MK
MADAGASCAR	Madagaskar	MG
MALAWI	Malawi	MW
MALAYSIA	Malaysia	MY
MALDIVES	Malediven	MV
MALI	Mali	ML
MALTA	Malta	MT
MARSHALL ISLANDS	Marshallinseln	MH
MARTINIQUE	Martinique	MQ
MAURITANIA	Mauretanien	MR
MAURITIUS	Mauritius	MU
MAYOTTE	Mayotte	YT
MEXICO	Mexiko	MX
MICRONESIA, FEDERATED STATES OF	Mikronesien	FM
MOLDOVA, REPUBLIC OF	Moldawien (Republik Moldau)	MD

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
MONACO	Monaco	MC
MONGOLIA	Mongolei	MN
MONTENEGRO	Montenegro	ME
MONTSERRAT	Montserrat	MS
MOROCCO	Marokko	MA
MOZAMBIQUE	Mosambik	MZ
MYANMAR	Myanmar (Burma)	MM
NAMIBIA	Namibia	NA
NAURU	Nauru	NR
NEPAL	Nepal	NP
NETHERLANDS	Niederlande	NL
NETHERLANDS ANTILLES	Niederländische Antillen	AN
NEW CALEDONIA	Neukaledonien	NC
NEW ZEALAND	Neuseeland	NZ
NICARAGUA	Nicaragua	NI
NIGER	Niger	NE
NIGERIA	Nigeria	NG
NIUE	Niue	NU
NORFOLK ISLAND	Norfolkinsel	NF
NORTHERN MARIANA ISLANDS	Nordliche Marianen/Nördliche Marianen	MP
NORWAY	Norwegen	NO
OMAN	Oman	OM
PAKISTAN	Pakistan	PK
PALAU	Palau	PW
PALESTINIAN TERRITORY, OCCUPIED	Palästinensische Autonomiegebiete	PS
PANAMA	Panama	PA
PAPUA NEW GUINEA	Papua-Neuguinea	PG
PARAGUAY	Paraguay	PY
PERU	Peru	PE

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
PHILIPPINES	Philippinen	PH
PITCAIRN	Pitcairninseln	PN
POLAND	Polen	PL
PORTUGAL	Portugal	PT
PUERTO RICO	Puerto Rico	PR
QATAR	Katar	QA
REUNION	Réunion	RE
ROMANIA	Rumänien	RO
RUSSIAN FEDERATION	Russische Föderation	RU
RWANDA	Ruanda	RW
SAINT BARTHÉLEMY	Saint-Barthélemy	BL
SAINT HELENA	St. Helena	SH
SAINT KITTS AND NEVIS	St. Kitts und Nevis	KN
SAINT LUCIA	St. Lucia	LC
SAINT MARTIN	Saint-Martin (franz. Teil)	MF
SAINT PIERRE AND MIQUELON	St. Pierre und Miquelon	PM
SAINT VINCENT AND THE GRENADI-NES	St. Vincent und die Grenadinen	VC
SAMOA	Samoa	WS
SAN MARINO	San Marino	SM
SAO TOME AND PRINCIPE	São Tomé und Príncipe	ST
SAUDI ARABIA	Saudi-Arabien	SA
SENEGAL	Senegal	SN
SERBIA	Serbien	RS
SEYCHELLES	Seychellen	SC
SIERRA LEONE	Sierra Leone	SL
SINGAPORE	Singapur	SG
SLOVAKIA	Slowakei	SK
SLOVENIA	Slowenien	SI
SOLOMON ISLANDS	Salomonen	SB

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
SOMALIA	Somalia	SO
SOUTH AFRICA	Südafrika	ZA
SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS	Südgeorgien und die Südlichen Sandwichinseln	GS
SPAIN	Spanien	ES
SRI LANKA	Sri Lanka	LK
SUDAN	Sudan	SD
SURINAME	Suriname	SR
SVALBARD AND JAN MAYEN	Svalbard und Jan Mayen	SJ
SWAZILAND	Swasiland	SZ
SWEDEN	Schweden	SE
SWITZERLAND	Schweiz (Confoederatio Helvetica)	CH
SYRIAN ARAB REPUBLIC	Syrien, Arabische Republik	SY
TAIWAN, PROVINCE OF CHINA	Republik China (Taiwan)	TW
TAJIKISTAN	Tadschikistan	TJ
TANZANIA, UNITED REPUBLIC OF	Tansania, Vereinigte Republik	TZ
THAILAND	Thailand	TH
TIMOR-LESTE	Osttimor (Timor-Leste)	TL
TOGO	Togo	TG
TOKELAU	Tokelau	TK
TONGA	Tonga	TO
TRINIDAD AND TOBAGO	Trinidad und Tobago	TT
TUNISIA	Tunesien	TN
TURKEY	Türkei	TR
TURKMENISTAN	Turkmenistan	TM
TURKS AND CAICOS ISLANDS	Turks- und Caicosinseln	TC
TUVALU	Tuvalu	TV
UGANDA	Uganda	UG
UKRAINE	Ukraine	UA
UNITED ARAB EMIRATES	Vereinigte Arabische Emirate	AE

Bilag 17

NAME OF THE COUNTRY / REGION		ISO 3166 ALPHA-2
English	**German**	
UNITED KINGDOM	Vereinigtes Königreich Großbritannien und Nordirland	GB
UNITED STATES	Vereinigte Staaten von Amerika	US
UNITED STATES MINOR OUTLYING ISLANDS	United States Minor Outlying Islands	UM
URUGUAY	Uruguay	UY
UZBEKISTAN	Usbekistan	UZ
VANUATU	Vanuatu	VU
VENEZUELA, BOLIVARIAN REPUBLIC OF	Venezuela	VE
VIETNAM	Vietnam	VN
VIRGIN ISLANDS, BRITISH	Britische Jungferninseln	VG
VIRGIN ISLANDS, U.S.	Amerikanische Jungferninseln	VI
WALLIS AND FUTUNA	Wallis und Futuna	WF
WESTERN SAHARA	Westsahara	EH
YEMEN	Jemen	YE
ZAMBIA	Sambia	ZM
ZIMBABWE	Simbabwe	ZW
WORLDWIDE	Weltweit	XW

Types of use

Types of use	Code	Comparator fossil fuels	Specific emissions with savings potential	Match code
fuel	1	83,8	54,4	1|2|4
electricity	2	91	59,1	2
heat	3	77	50	1|2|3|4
power-heat	4	85	55,2	2|4

Bilag 17

IV. Supplier ID and installation operator ID

In the csv file, both, the suppliers and the installation operators, are designated only by their respective ID numbers. In the printed paper version of a proof of sustainability these must of course be stated in plain text. Play a key role in the creation of a csv file for the electronic transmission of proofs of sustainability to the BLE. Particular attention must be paid to stating the number of the business partner correctly, for otherwise there is a danger that the proof of sustainability will be booked into the account of the web application of another operator.

A supplier ID is structured as follows:

DE-	B-	BLE-	BM-	[2 digit]-	Lfr-	[8-13 digit]
Germany	federation	BLE	biomasse	certification system	supplier	unique number

An installation operator operates an installation which produces electricity from liquid biomass. An installation operator ID is structured as follows:

DE-	B-	BLE-	BM-	AnIB-	[8 digit]
Germany	federation	BLE	biomasse	installation operator	unique number

V. Guideline for creating a CSV file for transmitting the proof of sustainability to the BLE

The CSV file must be sent to the BLE exclusively to the following e-mail address:

nachhaltigkeitsnachweise@ble.de

Please note, that the BLE uses a European Number Format. All Numbers should therefore be written using a decimal comma and no thousands seperator/digit grouping symbol (e. g. 12345,123).

See also depositors.

Bilag 17

Bilag 18

Kontrollsystem för produktion och leverans av biogas som fordonsbränsle enligt Energimyndighetens föreskrift om hållbarhetskriterier för biodrivmedel

Mall för och exempel på kontrollsystem för samtliga aktörer i kedjan från produktion till försäljning av biogas som fordonsbränsle

Bilag 18

Kontrollsystem för aktörer i produktionskedjan för biogas som fordons-bränsle

Innehåll

Bilag 18

Kontrollsystem för produktion och leverans av biogas som fordonsbränsle enligt Energimyndighetens föreskrift om hållbarhetskriterier för biodrivmedel

Xx ägs av xxxx och bedriver sin verksamhet i xxx. Den omfattar produktion av biogas, uppgradering av biogasen till fordonskvalitet och gasen säljs för drift av fordon. Biogas produceras i huvudsak av xxxx, xxxxx och xxxx. Producerad biogas uppgraderas i egen anläggning och distribueras till kunder via xxx tankstationer via ett eget system för distribution av gasen. Utöver egen produktion av biogas köps ej uppgraderad biogas från xxxxx.

I föreliggande kontrollsystem redovisas rutiner och anvisningar baserade på en riskbedömning så att det säkerställs att leverad biogas uppfyller gällande hållbarhetskriterier.

Förslag till kontrollsystem

Syftet med detta dokument är att visa på exempel på hur ett kontrollsystem med tillhörande rutiner kan utformas för uppfyllandet av hållbarhetskriterier för biogas. Avsikten är att det ska kunna användas av alla aktörer i biogasbranschen antingen de som har verksamhet som täcker hela kedjan från produktion till försäljning av biogas för fordonsdrift eller endast de som har verksamhet inom en del av produktionskedjan.

Dokumentet är skrivet med exempeltexter och scheman så att det enkelt ska kunna anpassas till aktull verksamhet, antingen till ett fristående dokument eller införlivas i befintligt kvalitetssäkringssystem.

Kontrollsystemet är utformat så enkelt som möjligt men ändå innehålla det som bedöms som är nödvändigt för att hållbarheten hos levererad biogas ska kunna redovisas och kunna accepteras av en särskild granskare. Det är således utformat utifrån en särkskild granskares ”ögon”.

Vid frågor kontakta Carl-Magnus Pettersson

Telefon: 072-722 07 07 eller

e-post: carl-magnus@tekniksupport.se

Bilag 18
Riskbedömning

Med risk i kontrollsystemet menas risk att hållbarhet för leverad biogas inte kan visas eller att uppgifter om hållbarhetsegenskaper för mellanprodukter i produktionskedjan inte kan säkerställas.

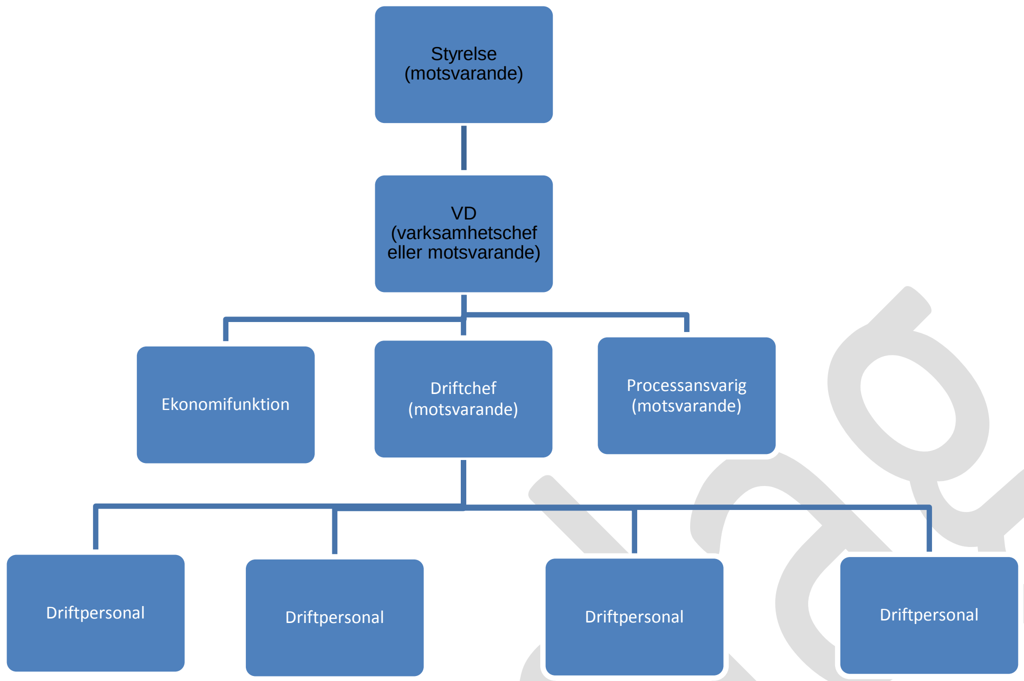
Nedan anges steg i produktionskedjan och risker enligt ovan som kan uppstå.

Risk	Konsekvens	Orsak	Vidtagen åtgärd
Substrat för biogasproduktion används för vilket inte hållbarhetsegenskaper kan visas	Hållbarhetsegenskaper för levererad biogas kan inte visas	Substrat tas in till förbehandling och/eller produktion av biogas för vilka uppgifter om växthusgasegenskaper krävs, som odlade grödor eller samprodukter, men där växthusgasegenskaper inte kan visas eller där markkriteriet inte är uppfyllt för odlade grödor	Avtal med leverantörer av substrat med krav på leverantören att redovisa hållbarhetsegenskaper och i förekommande fall att markriterier är uppfyllt Kontroll vid mottagning av substrat Stickprov hos leverantörer
Hållbarhetsegenskaper för Inköpt biogas kan inte visas	Hållbarhetsegenskaper för levererad biogas kan inte visas	Biogas köps in från leverantör som inte har kontrollsystem eller att det finns stora avvikelser i produktionen av biogas	Avtal med leverantörer av biogas Kontroll att biogas endast köps från leverantörer som man har avtal med Stickprov hos leverantör
Fel i underlag för beräkning av växthusgasutsläpp	Kan medföra att hållbarhet hos levererad biogas inte uppfylls	Fel i insamlade data och fel i hantering av data	Fortlöpande kontroll av mätutrustning samt kontroller i samband med registrering och lagring av data (kontroll av massbalanser vid distribution)
Manipulering av underlag för redovisning av hållbarhet	Bedrägeri	Brott mot gällande rutiner	Skydd mot intrång i datorsystem och tydliga roll- och ansvarsgränser

Bilag 18

Bilag 18
Företagets organisation

Verksamhetens organisation framgår av nedanstående schema.



Ansvars- och rollfördelning i organisationen
Verkställande direktör är ytterst ansvarig för redovisningen av hållbarhetsegenskaperna hos levererad biogas samt fastställer kontrollsystemet.

Driftchef (motsvarande) är ansvarig för att regler och rutiner i kontrollsystemet efterlevs samt att kontrollsystemet vidmaktshålls. Driftchef har genom delegation från VD rättighet att uppdatera enskilda rutiner och anvisningar som föranleds av förändringar i verksamheten samt från beslut vid utvärdering och revision av kontrollsystemet. Driftchef rapporterar till VD resultat av årlig utvärdering och revision samt när förändringar i kontrollsystemet utförts.

Driftpersonalen är ansvarig att följa rutiner och instruktioner som anges i kontrollsystemet.

Bilag 18
Beskrivning av produktionskedja

Produktion och leverans av biogas som fordonsbränsle kan indelas i nedanstående block. Företagets (namn) verksamhet omfattar blocken x, x (till exempel B, C och D).

A. Separat förbehandling av substrat	⇒	B1. Biogasproduktion vid rötningsanläggning B2. Biogasproduktion vid avloppsreningsverk	⇒	C. Uppgrade-ring	⇒	D. Distribut-ion och för-säljning

Exempel på beskrivning av respektive del i produktionskedjan. Texten är en dummy-text och ska ses som exempel på hur beskrivningen av produktionsblocket kan utryckas.

A. Separat förbehandling

I anläggningen för separat förbehandling, dvs skild från anläggningar för biogasproduktion, tas substrat emot och förbehandlas så att en ensartad massa/suspension levereras till anläggningar där biogas produceras. Anläggningen är belägen xxxx och all process samt registrering av in- och utleveranser sker inom anläggningsplatsen.

Process

Substraten som tas emot är huvudsakligen källsorterat avfall från hushåll, restauranger och motsvarande verksamheter samt förpackade livsmedel. Insamlingssystemet för källsorterat organiskt avfall bygger på olikfärgade plastpåsar (eller papperspåsar) där det organiska avfallet sorteras i xxx påsar. Efter mottagandet sker en utsortering av det organiska avfallet med ledning av påsarnas färg. I processen sönderdelas (löses) det inkommande avfallet upp. Därefter pressas materialet så att en flytande massa erhålls och som sedan pumpas till tank för leverans till biogasanläggningen (-ar). Avskiljt material i förbehandlingen (rejekt) levereras till förbränning.

Källsorterat avfall från närområdet levereras till anläggningen med renhållningsfordon (en- två- eller flerfacksbilar). Källsorterat avfall utanför närregionen transporteras till anläggningen i container. Förpackat avfall levereras på pall från producenten.

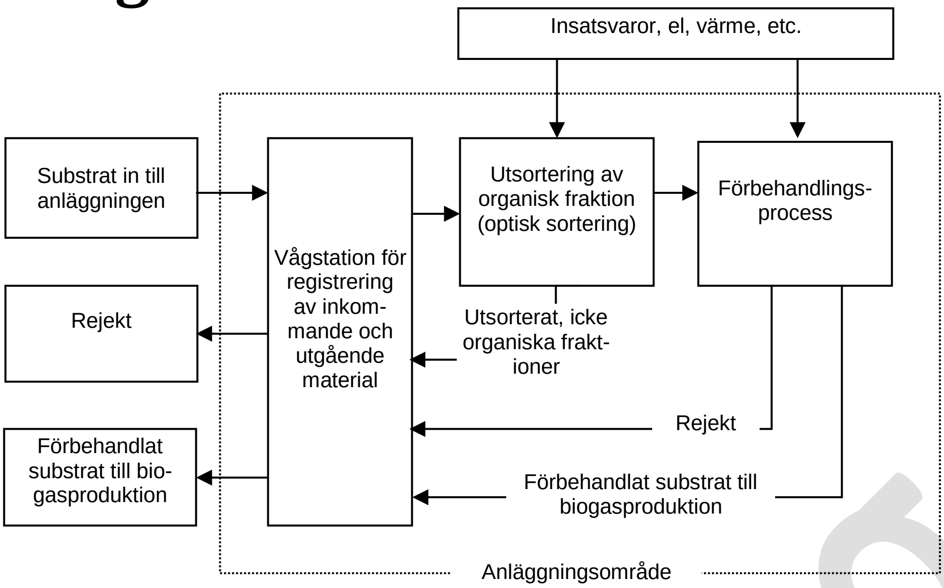
Insatsvaror

I processen används vatten för spädning av substratet så att en flytande massa/suspension erhålls. Inga andra insatsvaror används i processen. För drift av anläggningen används, förutom el för drift av maskiner, värme från lokalt fjärrvärmenät för uppvärmning av lokaler.

Massbalanssystem

Substrat som tas emot i anläggningen vägs vid vågstation vid infart till anläggningen. Utgående förbehandlat substrat till biogasproduktion samt rejekt vägs också vid vågstationen. Registrerade mängder lagras i vågstationens datorsystem tillsammans med information om bland annat materialkod samt leverantör/mottagare av de registrerade mängderna. Den lagrade informationen utgör underlag för redovisning mängder till och från anläggningen i massbalanssystemet.

Bilag 18



Exempel på schema över en anläggning för separat förbehandling av substrat för biogasproduktion.

Bilag 18

B1. Biogasproduktion vid rötningsanläggning

Anläggningen för produktion av biogas är belägen xxxx och all process och produktion sker inom anläggningsplatsen.

Substrat

Substrat som tas emot för behandling och biogasproduktion är huvudsakligen:

- källsorterat avfall från hushåll, restauranger och motsvarande verksamheter
- förpackade livsmedel
- fettavskiljareslam från fettavskiljare i restauranger och storkök
- ensilerad vallgröda

Insamlingssystemet för det källsorterade organiska avfallet bygger på att i hushållen sorteras avfallet i papperspåsar (eller där det organiska avfallet sorteras i gröna (eller svarta) påsar).

Källsorterat hushållsavfall från områden nära anläggningen levereras direkt till anläggningen med de renhållningsfordon som används för insamling av avfallet. Fordonen är av typen en- eller tvåfacksbilar. Källsorterat avfall utanför närregionen transporteras till anläggningen i container.

Förpackat avfall levereras på pall från producenterna. Fettavskiljareslam levereras till anläggningen med slamsugningsbil.

Vallgröda levereras med lastbil till lager vid anläggningen i samband med skörden av grödan vilken normalt sker två gånger per år. Grödan konserveras genom ensilering i långa plastsäckar (sk korvensilering) på lagerplatsen.

Förbehandling och process

Efter mottagandet av avfallet sker en utsortering av det organiska avfallet med ledning av påsarnas färg i en optisk sorteringsanläggning. Restavfallet, dvs påsar som inte innehåller organiskt avfall levereras till förbränning. I förbehandlingen av avfallet före själva biogasprocessen sönderdelas (löses) det inkommande avfallet upp. Därefter pressas materialet så att en flytande massa erhålls vilken sedan pumpas till mellanlagertank före inmatning i rötkammaren.

Förpackade livsmedel pressas och innehållet i förpackningarna pumpas till mellanlagertank.

Fettavskiljareslam pumpas vid mottagningen direkt till mellanlagertanken.

Vallgrödan hanteras med lastmaskin och matas in i rötkammaren med en särskild utrustning.

Före inpumpning av suspension från mellanlagertanken till rötkammare värmebehandlas suspensionen för avdödning av bakterier som t ex salmonella (hygieninsering). Avskiljt material i förbehandlingen (rejekt) levereras till förbränning. Avskilt tungt material som sand och grus levereras till deponi.

Efter rötningen erhålls en rötrest, sk biogödsel, som levereras till lantbrukare vilka använder den som ersättning för konstgödsel i växtodlingen på gården.

Producerad biogas levereras till egen anläggning för uppgradering till fordonsbränsle (alternativt levereras till annan aktör som uppgraderar biogasen här kan också anges eventuell annan användning av biogasen). Vid driftstörningar i uppgraderingsanläggning eller annan förbrukare facklas överskottsgas.

Insatsvaror

I processen används processvatten för spädning av substratet så att en flytande massa/suspension erhålls. Processvattnet erhålls genom separering av utgående rötrest från rötkammaren i en flytande och i en fast fas. Vatten från det kommunala dricksvattennätet används i processen för rengöring mm. Inga andra insatsvaror används i processen.

För drift av anläggningen används, förutom el för drift av maskiner, värme från lokalt fjärrvärmenät för uppvärmning av lokaler, samt för värme i processen. Mätning av el- och värme-

Bilag 18

förbrukning sker med mätare i anläggningen och registreras genom abonnemang med leverantören. För hantering av avfall och vallgröda används lastmaskin som drivs med diesel. Förbrukad mängd diesel registreras genom loggbok.

Metanförluster

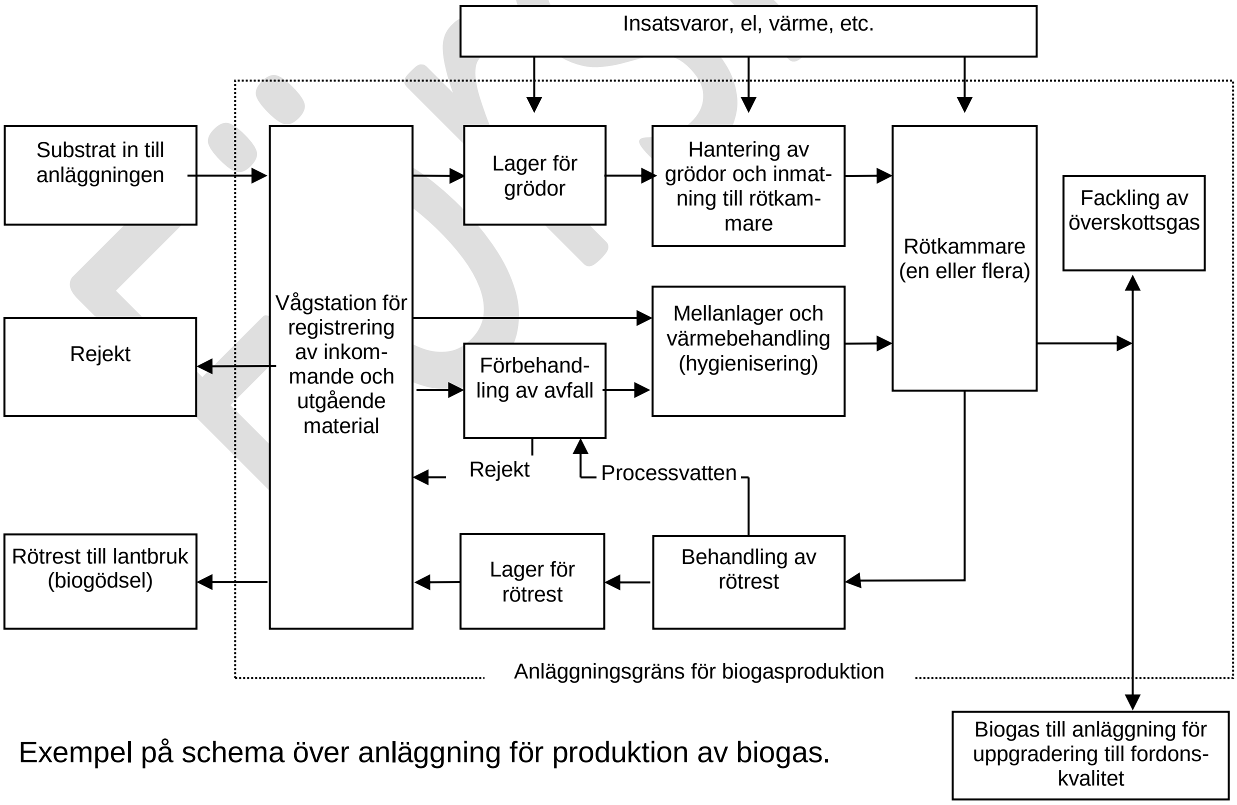
Metanförluster från processen och lager bestäms enligt metod beskriven i ”Handbok metanmätningar Rapport SGC 227”

Massbalanssystem

Alla substrat som tas emot i anläggningen vägs vid vågstation vid infart till anläggningen. vågstationen drivs av xxxx. Utgående rötrest (biogödsel) samt rejekt vägs också vid vågstationen. Registrerade mängder lagras i vågstationens datorsystem tillsammans med information om materialkod, tidpunkt för vägningen samt leverantör/mottagare av de registrerade mängderna.

Mängd ensilerad vallgröda som tillförs rötkammaren bestäms genom vägning i samband med inmatningen. Dessa värden läggs manuellt in i anläggningens datorsystem.

Producerad biogas mäts med flödesmätare i biogasanläggningen. Metanhalten mäts med analysutrustning i anläggningen. Mängd biogas och metanhalten lagras i anläggningens datorsystem. Genom utdrag/sammanställning av data från vågstationens och anläggningens datorsystem erhålls rapporter som utgör underlag för redovisning av mängder till och från anläggningen i massbalanssystemet.



Exempel på schema över anläggning för produktion av biogas.

Bilag 18

B2. Biogasproduktion vid avloppsreningsverk

Anläggningen för produktion av biogas är belägen xxxx och all process och produktion sker inom anläggningsplatsen.

Substrat

Substrat som tas emot för behandling och biogasproduktion är huvudsakligen:

- slam från avloppsreningsverket på anläggningsplatsen
- slam från enskilda avlopp
- slam från externa reningsverk utan rötkammare
- fettavskiljareslam från fettavskiljare i restauranger och storkök

Slam från enskilda avlopp, externa reningsverk utan rötkammare och slam från fettavskiljare- levereras till anläggningen med slamsugningsbil.

Förbehandling och process

Slam från avloppsreningsanläggningen och slam från externa avloppsanläggningar pumpas till en förtjockare innan det pumpas vidare till rötkammare. Rejektvatten från förtjockaren leds tillbaka till reningsverket. Andra substrat som inte behöver förbehandlas pumpas via ett mellanlager direkt till rötkammaren. Biogasproduktionen sker i en rötkammare genom sk mesofil process vid ca 37 grader C.

Efter rötningen erhålls en rötrest som förtjockas genom centrifugering. Rejektvattnet från centrifugerna leds tillbaka till reningsverket och den fasta delen till ett rötrestlager (slamlager) för vidare leverans till användare av rötresten.

Producerad biogas levereras till egen anläggning för uppgradering till fordonsbränsle. Vid driftstörningar i uppgraderingsanläggning eller annan förbrukare facklas överskottsgas.

Insatsvaror

I förbehandlingen (förtjockaren) används flockningsmedel xxxx. Vatten från det kommunala dricksvattennätet används i processen för rengöring mm. I anläggningen för behandling av rötrest används flockningsmedel xxxx. Förbrukningen av insatsvaror registreras genom loggning av inköpen.

Inga andra insatsvaror används i den del av anläggningen som ingår i biogasproduktionen.

För drift av anläggningen används, förutom el för drift av maskiner, värme från lokalt fjärrvärmenät för uppvärmning av lokaler, samt för värme i processen. Bestämning av elförbrukning till pumpar och omrörare sker genom uppskattning med ledning av motorstorlek och drifttid. Mätning av värmeförbrukning sker med mätare i anläggningen och registreras genom abonnemang med leverantören.

Metanförluster

Metanförluster från del av anläggningen som ingår i biogasproduktion bestäms enligt metod beskriven i ”Handbok metanmätningar Rapport SGC 227”

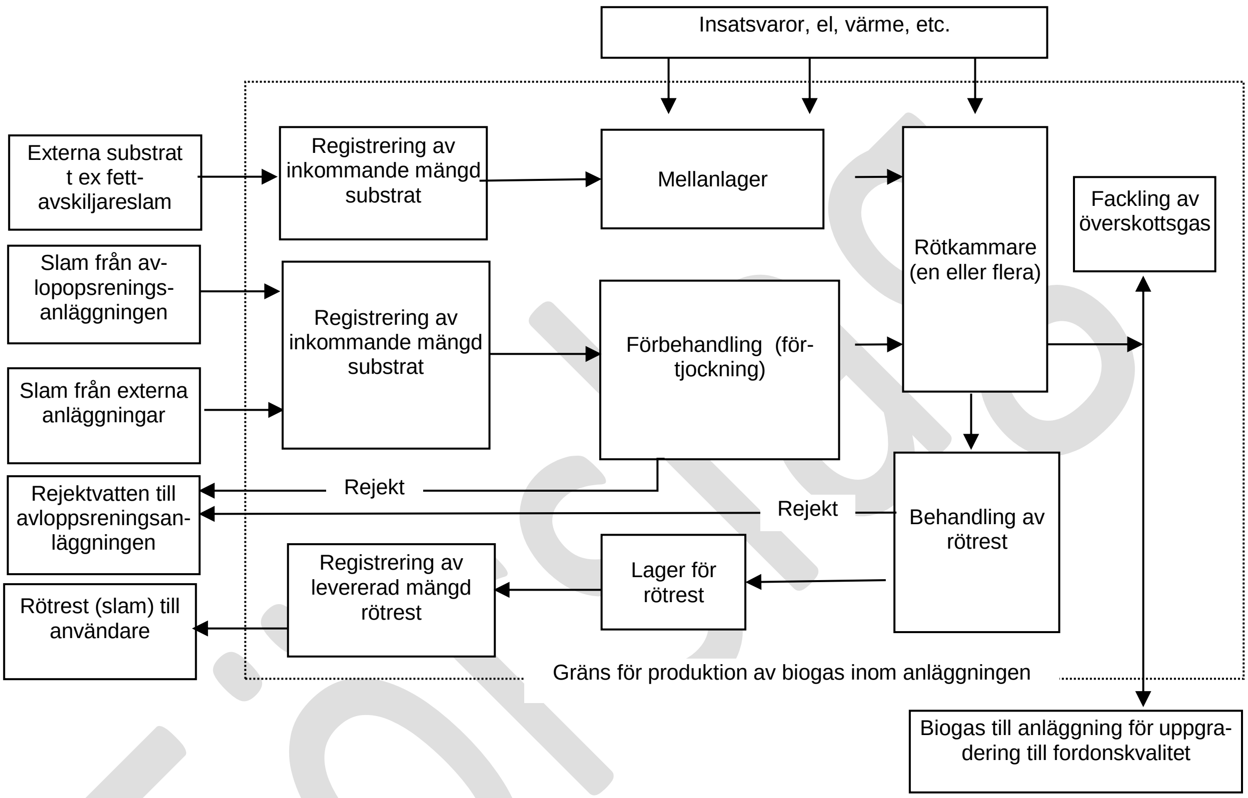
Massbalanssystem

Mängden slam från externa avloppsanläggningar och andra substrat som levereras till anläggningen bestäms genom vägning vid vågstation. Slam från avloppsreningsverket som pumpas till förbehandlingen mäts med flödesmätare. Mängden slam som pumpas till rötkammare mäts med flödesmätare. Mängden utgående rötrest (slam) till användare bestäms genom vägning. Registrerade mängder lagras i vågstationens datorsystem tillsammans med

Bilag 18

information om materialkod, tidpunkt för vägningen samt leverantör/mottagare av de registrerade mängderna.

Producerad mängd biogas mäts med flödesmätare och gasens metanhalt med analysutrustning i anläggningen. Mängd biogas och metanhalten lagras i anläggningens datorsystem. Genom utdrag/sammanställning av data från vågstationens och anläggningens datorsystem erhålls rapporter som utgör underlag för redovisning av mängder till och från anläggningen i massbalanssystemet samt redovisning av hållbarhetsegenskaperna hos producerad bigoas.



Exempel på schema över anläggning för produktion av biogas vid avloppsreningsverk.

Bilag 18

C. Uppgradering

Anläggningen för uppgradering av biogas är belägen på samma anläggningsplats som produktionsanläggningen för biogas.

Rågas

Inkommande rågas till anläggningen produceras dels i egen produktionsanläggning, dels ifrån avloppsreningsverket i xxxx. Gasen från avloppsreningsverket köps enligt avtal med leverantören. Gasen från avloppsreningsverket leds i rörledning till uppgraderingsanläggningen. För transporten av gas finns en tryckhöjningsstation vid respektive produktionsanläggning. Elförbrukningen för tryckhöjningsstationerna ingår i uppgraderingsanläggningens förbrukning och de ses som en enhet tillsammans med själva uppgraderingsanläggningen.

Uppgraderingsanläggningen är av typen vattenskrubber, vilket innebär att koldioxid och föroreningar tvättas bort med trycksatt vatten. Anläggningen är av recirkulerande typ dvs behovet av vatten är endast för ersättning för förorenat vattnet som leds ut från processen till det kommunala avloppsreningsverket.

Utgående restgas från processen, som innehåller avskiljd koldioxid samt liten mängd metan, behandlas i en oxidationsanläggning där metan som finns i restgasen förbränns. Drifttiden för oxidationsanläggningen lagras i anläggningens datorsystem.

Uppgraderad gas

Den uppgraderade biogasen kvalitet som metanhalt och vatteninnehåll (daggpunkt) mäts och kontrolleras vid leveranspunkt för utgående gas. Om satta gränsvärden inte uppnås stoppas leveransen till dess att kvalitetskravet uppnås. Data över den uppgraderade gasens kvalitet lagras i anläggningens datorsystem. Den uppgraderade biogasen levereras till eget distributionssystem för vidare transport till tankstationer.

Insatsvaror

Förbrukningen av vatten mäts med flödesmätare i anläggningen och avläst förbrukning registreras i anläggningens datorsystem. I processen används ett skumdämpningsmedel, men förbrukningen av detta är mycket liten och tas inte med i redovisningen. Förutom el för drift av kompressorer, pumpar mm, används inga andra insatsvaror. Elförbrukningen mäts med mätare i anläggningen och avläst förbrukning registreras i anläggningens datorsystem.

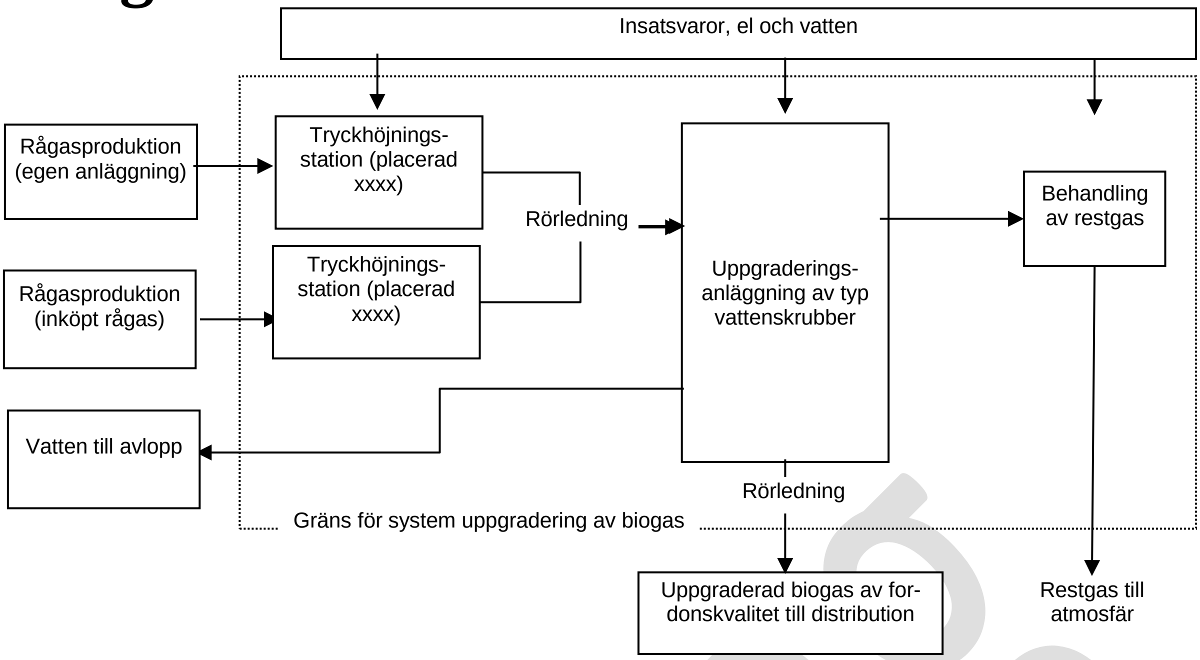
Metanförluster

Metanförluster från processen bestäms enligt metod beskriven i ”Handbok metanmätningar Rapport SGC 227”

Massbalanssystem

Inkommande rågas från de båda produktionsanläggningarna till uppgraderingsanläggningen mäts med en flödesmätare i anläggningen. Utgående uppgraderad biogas mäts också med flödesmätare i anläggningen. Båda flödena registreras i anläggningens datorsystem från vilket utdrag och rapporter skapas vilka utgör underlag över rapporterade mängder uppgraderad biogas och dess hållbarhetsegenskaper.

Bilag 18



Exempel på schema över anläggning för uppgradering av biogas till fordonsbränsle.

Bilag 18

D. Distribution

Biogas från egen produktion och uppgraderingsanläggning distribueras och säljs till slutkunder vid fem tankstationer. Av dessa är två avsedda för tankning av tunga fordon som bussar och renhållningsfordon. Vid tre tankstationer säljs biogas publikt. Utöver egen producerad biogas köps även uppgraderad biogas från xxxx.

Som komplement för att säkerställa leveranserna av fordonsgas till kunderna, finns även ett system för lagring och tillförsel av naturgas till distributionssystemet. Naturgasen lagras i flytande form (LNG) och förångas innan den tillförs ledningssystemet.

Distributionen av biogasen sker dels genom rörledning (med ledningstrycket < 4 bar) till en kombinerad tankstation för tunga fordon och tankningsanläggning för publik försäljning. Till de övriga tankstationerna transporteras biogasen med sk gasflak (container) på lastbil. I gasflaken lagras biogasen i gasform i flaskor under högt tryck, 200 bar eller högre. Transporterna till tankstationerna sker med ett flak åt gången. Gasflaken fylls vid en fyllningsanläggning (flaktankningsanläggning) lokaliserad till xxxx och som xxxx driver. Vid denna anläggning säljs även biogas till icke slutkund, dvs företag som själv är skyldig att rapportera hållbar leverans av biogas.

Tankstationerna utgörs av kompressorer, högtryckslager och tankningssystem i form av dispensrar för snabbtankning av bilar och andra fordons och tankningsramp för långsamtankning av bussar. Stationer som förses med gas från gasflak har uppställningsplats för tre flak vid respektive station.

Insatsvaror

För drift av kompressorer mm används el och elförbrukningen mäts med mätare i anläggningen och med mätare som tillhör elleverantören. Avlästa och registrerade elförbrukningar lagras i datorsystem från vilket utdrag och rapporter kan skapas som underlag till rapportering. För transport av gas med gasflak används dieseldrivan lastbilar.

Massbalanssystem

Mängden biogas som tillförs gasdistributionssystemet mäts med flödesmätare i respektive uppgraderingsanläggning och uppmätta mängder lagras i anläggningarnas datorsystem. Mängden tillförd naturgas mäts med flödesmätare vid anslutningspunkten för tillförsel av naturgas till distributionssystemet och tillförda mängder lagras i anläggningens datorsystem. Från dessa system kan utdrag och rapporter skapas som visar mängd biogas som levererats till distributionssystemet. Mängden köpt uppgraderad biogas mäts av leverantören i dennes system och där mängden levererad biogas även utgör faktureringsunderlag.

Såld biogas mäts med flödesmätare i tankningsanläggningarna där varje tankning registreras. Försäljningen av biogas publikt (till allmänheten) sker via ett kortsystem som kan hantera olika typer av kort, till exempel bankkort och ett särskilt kort som tillhör biogasleverantören. Kortsystemet administreras av xxxx som hanterar alla korttransaktioner och registrerar tankade mängder vid respektive publik tankstation i sitt datorsystem. Debiteringen av kunderna för tankad biogas sker antingen direkt till kunden om tankningen gjorts till exempel med bankkort eller genom särskild faktura om tankningarna gjorts med leverantörens egna kort. Från kortsystemet kan utdrag och rapporter skapas som visar levererad biogas vid de publika tankstationerna.

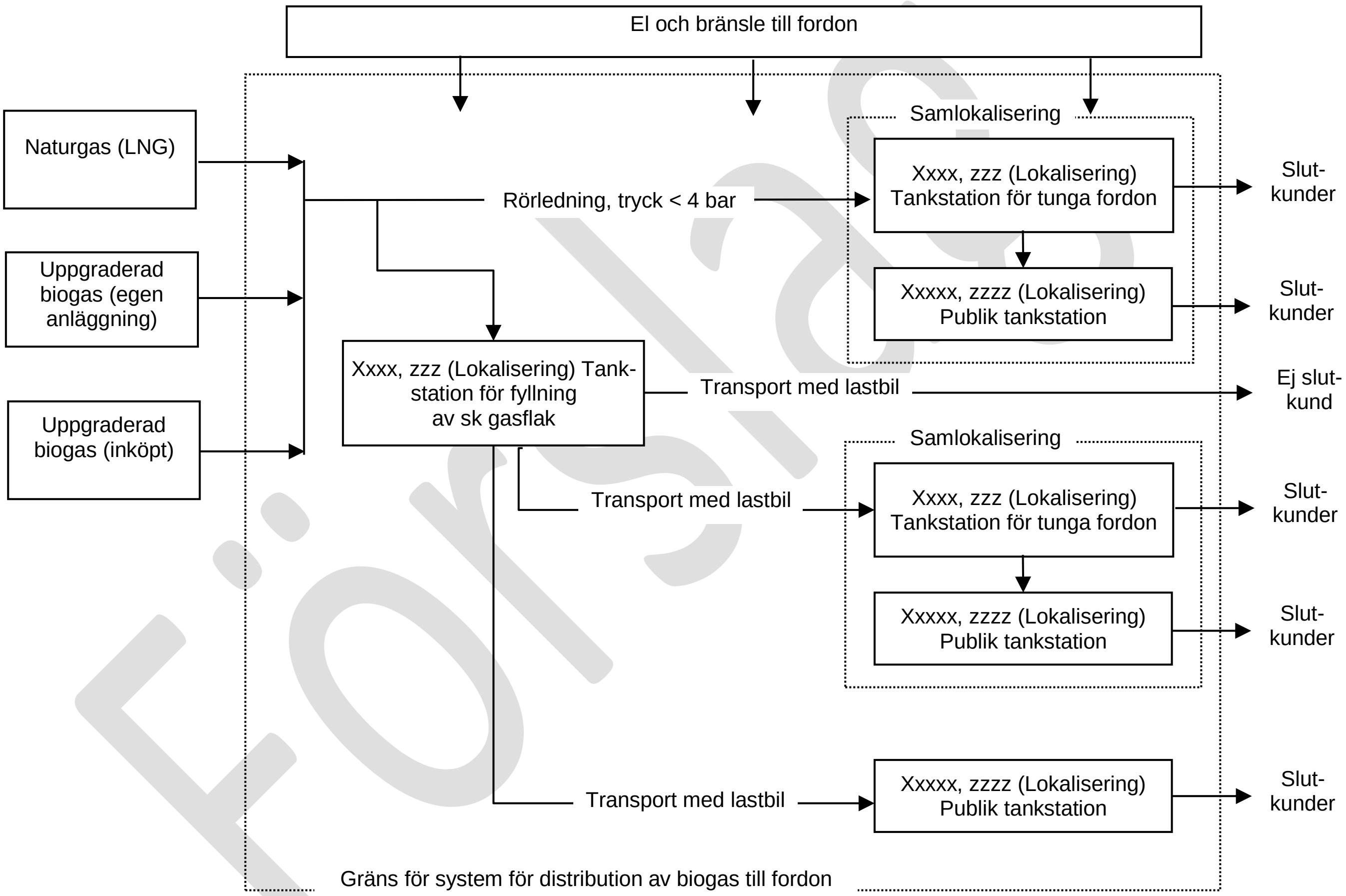
Försäljning till tunga fordon som bussar och renhållningsfordon sker vid särskilda tankningsanläggningar, antingen genom snabbtankning vid dispenser, eller genom långsamtankning där fordonen är uppställda vid en tankningsramp. Systemet är utformat så att endast fordon som har access till systemet kan tanka. Tankade mängder registreras i datorsystem från vilket underlag och rapporter om tankade mängder kan skapas. Registrerade mängder utgör även debiteringsunderlag för tankad gas.

Bilag 18

I flaktankningsanläggningen mäts mängden gas som fylls i flaken med flödesmätare och fyllda mänger registreras och lagras i anläggningens datorsystem. I systemet särredovisas mängden gas som levererats till icke slutkund från den som levererats till de egna tankstationerna.

Den gas som levereras till slutkund vid tankstationerna är en blandning av biogas och naturgas. Mängden biogas som levererats utgörs av den totalt levererade mängden minskat med mängden tillförd naturgas. Kontroll av massbalansen för biogas sker genom att jämföra mängden tillförd gas med mängden såld gas.

Ingen långtidslagring, dvs lagring av gas mer än enstaka dagar, sker i distributionssystemet. Med hänsyn till att de lagrade mängderna är små mängder i förhållande till de totala mängderna under rapporteringsperioden samt att de jämnar ut sig över tid, görs ingen lagerredovisning av lagrade mängder.



Exempel på schema över ett system för distribution av biogas till fordon.

Bilag 18

Beräkning av utsläppsminskning

Beräkningen av utsläppsminskning för levererad biogas sker enligt Excel-verktyget ”Biogas-redovisning” och tillhörande beskrivning framtagen gemensamt av biogasbranschen. Underlag för beräkningarna erhålls enligt beskrivningarna av respektive del i produktionskedjan.

Rapporteringsperiod

Rapportering av levererad mängd hållbar biogas sker kalenderårsvis.

Egenkontroll

Underlag för redovisning av hållbara leveranser av biogas eller för redovisning av hållbarhetsegenskaper för produkter från delar av produktionskedjan erhålls från olika system inom respektive anläggningsdel. Vad som utgör underlag till redovisning och beräkning i Excel-verktyget ”Biogasredovisning” framgår av beskrivning av respektive del i produktionskedjan. Dessa underlag utgörs bland annat av data från:

- Vågstation för t ex invägning av substrat till produktionsanläggning
- Leverantörer av substrat och biogas
- Flödesmätare i anläggningarna för t ex mätning av producerad biogas eller såld biogas
- Manuellt insamlade data som t ex avläsning av mätare som inte är anslutna till datorsystem
- Register över inköp av insatsvaror som el för drift av anläggningarna

Egenkontrollen omfattar rutiner och anvisningar för:

- Löpande kontroll av insamlade och lagrade data i datorsystemen för att säkerställa att data är relevanta för redovisning och beräkning av hållbarhetsegenskaper
- Kontroll av mätutrustning (t ex kontroll av våg i vågstation eller flödesmätare i tankningsstationer)
- Stickprov hos leverantörer
- Avvikelsehantering
- Avtal med leverantörer
- Utvärdering och revision samt åtgärder vid förändring

Bilag 18

Dokumentation

Dokumentationen i kontrollsystemet omfattar:

- Data som ska användas som underlag för beräkning och redovisning av hållbarhets-egenskaper hos biogas
- Resultat från utförda kontroller enligt rutiner i kontrollsystemet
- Gällande lista över substrat som kan tas emot i anläggningen
- Avtal med leverantörer av substrat och/eller biogas

Vid produktion och uppgradering av biogas samt vid distributionen och försäljningen samlas data in från olika delsystem inom verksamheterna. Dessa data utgör underlag för beräkning av hållbarhetsegenskaper hos biogas som produceras och säljs. Primärdata lagras i datorsystem i anläggningarna, i vågstation samt i system för registrering av data från försäljning av biogas. Från dessa system överförs data till databaser i företagets datorsystem från vilket rapporter och underlag för växthusgasberäkningen sedan skapas. Denna överföring sker regelbundet dock minst en gång per månad.

Säkerhet mot förlust av data och dataintrång säkerställs genom de allmänna rutiner som finns för drift av företagets datorsystem. Således finns backup av data som gör att data kan lagras minst de föreskrivna tio åren. Skydd mot intrång sker bland annat genom krav på lösenord för inloggning och att lösenorden regelbundet måste bytas. Skydd mot bedrägeri åstadkoms genom strikt ansvarsfördelning i organisationen och genom fortlöpande kontroller såväl i själva driften som i hantering av data.

Dokumentation från utförda kontroller enligt rutinerna i systemet lagras i ett journalsystem uppdelat på:

- Kontroll av underlagsdata från de olika delarna i produktionskedjan
- Kontroll av mätutrustning
- Stickprov från kontroll av redovisning av hållbarhetsegenskaper
- Avvikelsehantering
- Förändring av verksamheten
- Utvärdering och revision

I journalsystemet finns blanketter för notering av gjorda kontroller etc. Ifyllda blanketter förvaras i pärmar.

Lista över substrat som kan tas emot i anläggningen finns i pärm.

Avtal om leverans av substrat och/eller biogas till verksamheten lagras i ett särskilt avtalsregister.

Bilag 18

Rutiner

Baserat på den genomförda riskbedömningen omfattar kontrollsystemet nedanstående rutiner för att säkerställa redovisningen av hållbarhetsegenskaperna hos leverad biogas.

Nr	Rutin	Niot
0	Kontroll av underlagsdata för beräkning av växthusgasutsläpp vid förbehandling av substrat för biogasproduktion	
0	Kontroll av underlagsdata för beräkning av växthusgasutsläpp vid produktion av biogas	
0	Kontroll av underlagsdata för beräkning av växthusgasutsläpp uppgradering av biogas	
0	Kontroll av underlagsdata för beräkning av växthusgasutsläpp och växthusgasminskning vid distribution och försäljning av biogas	
0	Kontroll av mätutrustning	
0	Avtal om leverans av substrat och/eller biogas till verksamheten	
0	Stickprov för kontroll av redovisning av hållbarhetsegenskaper	
0	Avvikelsehantering	
0	Förändring av verksamheten	
0	Utvärdering och revision	

Bilag 18

Logga	Kontroll av underlagsdata för beräkning av växthusgasutsläpp vid förbehandling av substrat för biogasproduktion				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 20 (35)

Syfte

Syftet med rutinen är att säkerställa att substrat som tas emot för är i enlighet med gällande substratlista samt att underlagsdata för beräkning av växthusgasutsläpp vid förbehandlingen är korrekt insamlade och lagrade i anläggningens datorsystem.

Omfattning

Vid förbehandling av substrat i separat anläggning för användning av produktion av biogas i en annan anläggning samlas nedanstående data in. Dessa data utgör underlag för beräkning av växthusgasutsläpp vid förbehandlingen. Primärdata lagras i datorsystem på anläggningen och i vågstation. Från dessa system överförs data till databaser i företagets datorsystem från vilket rapporter och underlag för växthusgasberäkningen skapas. Denna överföring sker regelbundet dock minst en gång per månad.

Åtgärder vid avvikelse

Om avvikelser upptäcks i samband med kontrollerna utförs åtgärder enligt rutin ”Avvikelsehantering”.

Dokumentation av kontrollerna

Samtliga utförda kontroller dokumenteras i journalsystem.

Data	**Källa**	**Kontroll**	**Frekvens**
Inkommande substrat	Vågstation Avtal med leverantörer av substrat till anläggningen	Att rätt substrat är mottaget (dvs substrat från leverantör som anläggningen har avtal med) och att substratet är rätt klassat (avfall, restprodukt eller samprodukt) samt i enlighet med gällande substratlista Att rätt mängd är registrerad i systemet	Löpande vid invägning och kontroll av registrerade data
Inkommande substrat	Mottagningsplats i anläggningen	Att rätt sätt substrat är mottaget enligt substratlista som anläggningen upprättat. Gjorda kontroller noteras i dagsjournal	Löpande vid mottagning
Transport av substrat till anläggningen	Vågstation Transportörer	Kontroll av mängden substrat, antal transporter samt avstånd till sub-	Minst 1 gång per månad

		stratleverantör	
Växthusgasutsläpp(för substrat som inte har fastställt delnormal-värde)	Leverantör av sub-strat	Att använt (avtalat) värde är giltigt för leve-rerat substrat	Vid ändring i leverantörens process eller byte av sub-strat
Elenergi	Mätare hos elleveran-tör. Mängd enligt fak-turaspecifikation	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion (nyckeltal som t ex MWh/ton substrat)	Minst 1 gång per månad
Värme (fjärrvärme)	Mätare i anläggning-en vid anslutning till fjärrvärmenätet. Mängd enligt faktura-specifikation	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion (nyckeltal som t ex MWh/ton substrat)	Minst 1 gång per månad
Producerat substrat för produktion av biogas	Vågstation Avtal med köpare av substrat till anlägg-ningen	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad produktion med hänsyn till aktuell förhållanden	Minst 1 gång per månad

Övriga data som inte ingår i underlag för växthusgasberäkning och är av informationskarak-tär är följande:

Data	**Källa**	**Kontroll**	**Frekvens**
Rejekt från förbe-handling	Vågstation	Kontroll att mängden är rimlig i förhållande till mängden mottaget substrat och aktuella produktions-förhållanden	Minst 1 gång per månad
Vatten	Flödesmätare vid kallvattenanslutning till anläggningen	Kontroll att mängden är rimlig i förhållande till mängden mottaget substrat och aktuella produktions-förhållanden	Minst 1 gång per månad

Bilag 18

Logga	Kontroll av underlagsdata för beräkning av växthusgasutsläpp vid produktion av biogas				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 22 (35)

Syfte

Syftet med rutinen är att säkerställa att substrat som tas emot för biogasproduktion är i enlighet med gällande substratlista samt att underlagsdata för beräkning av växthusgasutsläpp vid produktion av biogas är korrekt insamlade och lagrade i anläggningens datorsystem.

Omfattning

Vid produktion av biogas samlas nedanstående data in som utgör underlag för beräkning av växthusgasutsläpp vid produktion av biogas. Primärdata lagras i datorsystem på anläggningen och i vågstation. Från dessa system överförs data till databaser i företagets datorsystem från vilket rapporter och underlag för växthusgasberäkningen skapas. Denna överföring sker regelbundet dock som längst en gång per månad.

Åtgärder vid avvikelse

Om avvikelser upptäcks i samband med kontrollerna utförs åtgärder enligt rutin ”Avvikelsehantering”.

Dokumentation av kontrollerna

Samtliga utförda kontroller dokumenteras i journalsystem.

Data	Källa	Kontroll	Frekvens
Inkommande substrat	Vågstation Avtal med leverantörer av substrat till anläggningen	Att rätt substrat är mottaget (dvs substrat från leverantör som anläggningen har avtal med) och att substratet är rätt klassat (avfall, restprodukt eller samprodukt) samt i enlighet med gällande substratlista Att rätt mängd är registrerad i systemet	Löpande vid invägning och kontroll av registrerade data
Inkommande substrat	Mottagningsplats i anläggningen	Att rätt sätt substrat är mottaget enligt substratlista som anläggningen upprättat. Gjorda kontroller noteras i dagsjournal	Löpande vid mottagning
Transport av substrat till anläggningen	Vågstation Transportörer	Kontroll av mängden substrat, antal transporter samt avstånd till sub-	Minst 1 gång per månad

Bilag 18

		stratleverantör	
Växthusgasutsläpp(för substrat som inte har fastställt delnormal-värde)	Leverantör av sub-strat	Att använt (avtalat) värde är giltigt för leve-rerat substrat	Vid ändring i leverantörens process eller byte av sub-strat
Elenergi	Mätare hos elleveran-tör. Mängd enligt fak-turaspecifikation	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion (nyckeltal som t ex MWh/ton substrat)	Minst 1 gång per månad
Värme (fjärrvärme)	Mätare i anläggning-en vid anslutning till fjärrvärmenätet. Mängd enligt faktura-specifikation	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion (nyckeltal som t ex MWh/ton substrat)	Minst 1 gång per månad
Tillsatsmedel xxx	Logg över tillsatsme-del	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion	Minst 1 gång per månad
Diesel till lastmaskin	Loggbok över tankad mängd	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuell produktion	Minst 1 gång per månad
Producerad biogas till förbrukare	Flödesmätare i an-läggningen vid leve-ranspunkt till förbru-kare utanför anlägg-ningen	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad produktion med hänsyn till aktuell förhållanden	Minst 1 gång per månad
Metanhalt hos produce-rad biogas	Analysutrustning i anläggningen	Att metanhalten är rimlig i förhållande rötade sub-strat	Minst 1 gång per månad
Annan användning än till uppgradering	Mätare för levererad gas (vid förbrukare)	Att mängden är rimlig i förhållande till tidigare perioder eller förväntad förbrukning med hänsyn till aktuella förhållanden	Minst 1 gång per månad

Bilag 18

Övriga data som inte ingår i underlag för växthusgasberäkning och är av informationskaraktär är följande:

Data	Källa	Kontroll	Frekvens
Rejekt från förbehandling	Vågstation	Kontroll att mängden är rimlig i förhållande till mängden mottaget substrat och aktuella produktionsförhållanden	Minst 1 gång per månad
Rötrest till användare	Vågstation	Kontroll att mängden är rimlig i förhållande till mängden mottaget substrat och aktuella produktionsförhållanden	Minst 1 gång per månad
Vatten	Flödesmätare vid kallvattenanslutning till anläggningen	Kontroll att mängden är rimlig i förhållande till mängden mottaget substrat och aktuella produktionsförhållanden	Minst 1 gång per månad
Fackling av biogas	Flödesmätare vid fackla	Kontroll att mängden är rimlig i förhållande till aktuella produktionsförhållanden	Minst 1 gång per månad

Bilag 18

Logga	Kontroll av underlagsdata för beräkning av växthusgasutsläpp och växthusgasminskning vid uppgradering av biogas				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 25 (35)

Syfte

Syftet med rutinen är att säkerställa att underlagsdata för beräkning av hållbarhetsegenskaper hos biogas vid uppgradering av biogas är korrekt insamlade och lagrade i anläggningens datorsystem.

Omfattning

I systemet för uppgradering av biogas samlas nedanstående data in som utgör underlag för beräkning av hållbarhetsegenskaper och växthusgasminskning.

Åtgärder vid avvikelse

Om avvikelser upptäcks i samband med kontrollerna utförs åtgärder enligt rutin ”Avvikelsehantering”.

Dokumentation av kontrollerna

Utförda kontroller dokumenteras i journalsystem.

Data	Källa	Kontroll	Frekvens
Egen producerad biogas (rågas)	Datorsystem för registrering av inkommande rågas från egen produktionsanläggning	Att mängden rågas är rimlig i förhållande till aktuella driftförhållanden samt att beräknade växthusgasutsläpp ligger inom beräknat intervall	Minst en gång per månad
Inköpt biogas (rågas)	Datorsystem för registrering av inköpt biogas samt avtal med leverantör	Att mängd inköpt gas är rimlig i förhållande till aktuella driftförhållanden samt att redovisade växthusgasutsläpp ligger inom avtalat intervall. Kontrollen utförs i samband fakturakontroll från leverantör.	Minst en gång per månad
Leverans av gas till distribution	Datorsystem för registrering av mängd uppgraderad biogas samt gasens kvalitet mätt i analysutrustning i anläggning	Att uppgraderad mängd är rimlig i förhållande till aktuella driftförhållanden	Minst en gång per månad
Massbalans	Datorsystem för registrering av inkom-	Att mängden uppgraderad biogas är rimlig i förhållande till tillförd	Minst en gång per

Bilag 18

	mande rågas och ut-gående rågas	rågas	månad
Elförbrukning	Elmätare hos elleve-rantör enligt faktura-underlag och avläs-ning av egna elmätare	Att elförbrukning är rimlig i förhål-lande till mängden uppgraderad biogas till exempel genom kon-troll av nyckeltal som kWh/Nm3	Minst en gång per månad

Bilag 18

<table>
<tr><td rowspan="2">Logga</td><td colspan="5">Kontroll av underlagsdata för beräkning av växthusgasutsläpp och växthusgasminskning vid distribution och försäljning av biogas</td></tr>
<tr><td>Utfärdare
NN</td><td>Fastställd, datum
2011-00-00</td><td>Ersätter
2011-00-00</td><td>Rutin nr
00</td><td>Sidor
27 (35)</td></tr>
</table>

Syfte

Syftet med rutinen är att säkerställa att underlagsdata för beräkning av hållbarhetsegenskaper hos biogas vid distribution och försäljning av biogas är korrekt insamlade och lagrade i anläggningens datorsystem.

Omfattning

I systemet för distribution och försäljning av biogas samlas nedanstående data in som utgör underlag för beräkning av hållbarhetsegenskaper och växthusgasminskning.

Åtgärder vid avvikelse

Om avvikelser upptäcks i samband med kontrollerna utförs åtgärder enligt rutin ”Avvikelsehantering”.

Dokumentation av kontrollerna

Utförda kontroller dokumenteras i journalsystem.

Data	**Källa**	**Kontroll**	**Frekvens**
Leverans av gas till slutkund	Datorsystem för registrering av såld gas vid publika tankställen Datorsystem för registrering av såld gas vid icke publika tankställen	Att levererade mängder är rimliga i förhållande till aktuella driftförhållanden. Kontrollen utförs i samband med debitering av kunderna	Minst en gång per månad
Leverans av gas till icke slutkund	Datorsystem för registrering av såld gas	Att levererade mängder är rimliga i förhållande till aktuella driftförhållanden. Kontrollen utförs i samband med debitering av kunderna	Minst en gång per månad
Egen producerad biogas	Datorsystem för registrering av uppgraderad biogas	Att mängden uppgraderad gas är rimlig i förhållande till aktuella driftförhållanden samt att beräknade växthusgasutsläpp ligger inom beräknat intervall	Minst en gång per månad
Inköpt biogas	Datorsystem för registrering av inköpt	Att mängd inköpt gas är rimlig i förhållande till aktuella driftförhål-	Minst en gång per

	biogas samt avtal med leverantör	landen samt att redovisade växthusgasutsläpp ligger inom avtalat intervall. Kontrollen utförs i samband fakturakontroll från leverantör.	månad
Använd naturgas	Datorsystem för registrering av använd naturgas	Att mängden är rimlig i förhållande till aktuella driftförhållanden	Minst en gång per månad
Massbalans	Datorsystem för registrering av gas som tillförs distributionssystemet och system för registrering av såld gas	Att mängden tillförd gas till distributionssystemet överensstämmer med mängden såld gas när hänsyn har tagits till felmarginal	Minst en gång per månad
Transporter av gas till tankstationer	Fakturaunderlag från transportör av gas och transportsedlar Datorsystem för registrering av försåld gas vid respektive tankstation	Kontroll av att antalet transporter är rimliga i förhållande till mängden försåld gas vid respektive tankstation. Utförs i samband med kontroll av faktura från leverantör.	Minst en gång per månad
Elförbrukning	Elmätare hos elleverantör enligt fakturaunderlag och avläsning av egna elmätare	Att elförbrukning är rimlig i förhållande till mängden försåld gas till exempel genom kontroll av nyckeltal som kWh/Nm3	Minst en gång per månad

Bilag 18

Logga	Kontroll av mätutrustning				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 29 (35)

Syfte
Syftet är säkerställa att utrustning för insamling av data som används som underlag för beräkning av hållbarhetsegenskaper hos biogas visar värden inom angiven felmarginal.

Separat förbehandling
Följande mätutrustning används för registrering av data som används för beräkning av hållbarhetsegenskaper hos förbehandlat substrat

Utrustning	Ansvarig för kontroll	Tagnr, id, placering etc	Rutin / anvisning
Vågstation	xxxx		
Elmätare	Elleverantör		Hos leverantören
Värmemätare	Värmeleverantör		Hos leverantören

Biogasproduktion
Följande mätutrustning används för registrering av data som används för beräkning av hållbarhetsegenskaper hos producerad biogas

Utrustning	Ansvarig för kontroll	Tagnr, id, placering etc	Rutin / anvisning
Vågstation	Xxxx		
Elmätare	Elleverantör		Hos leverantören
Värmemätare	Värmeleverantör		Hos leverantören
Flödesmätare för producerad biogas			
Analysutrustning bestämning av metanhalt hos producerad biogas			

Bilag 18

Uppgradering

Följande mätutrustning används för registrering av data som används för beräkning av hållbarhetsegenskaper vid uppgradering av biogas

Utrustning	Ansvarig för kontroll	Tagnr, id, placering etc	Rutin / anvisning
Flödesmätare för rågas	Xxxx		
Elmätare	Elleverantör		Hos leverantören
Flödesmätare för producerad biogas			
Analysutrustning bestämning av metanhalt hos rågas och uppgraderad biogas			

Distribution och försäljning av biogas

Följande mätutrustning används för registrering av data som används för beräkning av hållbarhetsegenskaper vid distribution och försäljning av biogas

Utrustning	Ansvarig för kontroll	Tagnr, id, placering etc	Rutin / anvisning
Flödesmätare för inköpt uppgraderad biogas	Xxxx		
Naturgas tillförd till distributionssystemet	Xxxx		
El till tankstationer	Elleverantör		Hos leverantören
Flödesmätare för såld gas vid publika tankstationer	Xxxx		
Flödesmätare för såld gas vid icke publika tankstationer	Xxxx		

Kontroll

Kontroll av att mätutrustning kontrollerad sker i samband med utvärdering och revision av kontrollsystemet

Dokumentation

Utförda kontroller dokumenteras i journalsystem.

Bilag 18

Logga	Avvikelsehantering				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 31 (35)

Syfte

Syftet med rutinen är att definiera avvikelser och ange vilka åtgärder som ska vidtas när en avvikelse noteras.

Definition av avvikelse

Med avvikelse avses händelse som observeras till exempel vid egenkontroll enligt rutiner eller vid stickprov. Avvikelser delas upp i nedanstående kategorier med exempel på vad som kan ha orsakat avvikelsen och erforderlig åtgärd.

Avvikelsekategori	Konsekvens	Exempel	Åtgärd
Stor avvikelse	Hållbarhet kan inte visas	Substrat används för biogasproduktion för vilket uppgift om hållbarhetsegenskaper saknas eller från leverantör med vilken avtal saknas Biogas köps in för vilken uppgift om hållbarhetsegenskaper saknas eller från leverantör med vilken avtal saknas	Avvikelsen rapporteras till Energimyndigheten tillsammans med åtgärdsplan En utvärdering och revision av kontrollsystemet genomförs enligt rutin xx
Mindre avvikelse	Hållbarhetskriterier uppfylls men är inte tillförlitliga	Fel i dataunderlag för beräkning av hållbarhetsegenskaper	Kontroll av rutiner för insamling och lagring av data genomförs
Observation	Hållbarhetskriterier uppfylls	Rutiner för kontroller följs inte	Genomgång av kontrollsystem med berörd personal

Om samma avvikelse upprepas flera gånger (mer än fem gånger) uppgraderas den ett steg (observation blir till mindre avvikelse och mindre avvikelse blir till stor avvikelse) vilket är tecken på att kontrollsystemet inte efterlevs.

Åtgärder vid avvikelse

Om avvikelser upptäcks i samband med tillämpning av rutiner i kontrollsystemet eller på annat sätt upptäcks utförs följande:

1. Ansvarig driftchef (platschef) meddelas
2. Orsaken till avvikelsen undersöks
3. Graden av avvikelse bestäms (observation, mindre eller stor avvikelse)
4. Åtgärd vidtas (till exempel korrigering av felaktiga data, kontroll hos leverantör etc).
5. Avvikelsen dokumenteras i avvikelseregister

Bilag 18

6. Om avvikelsen klassas som stor avvikelse rapporteras den till Energimyndigheten

Logga	Stickprov för kontroll av redovisning av hållbarhetsegen-skaper				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 32 (35)

Syfte

Stickprov utförs med syfte att kontrollera att rutiner i kontrollsystemet tillämpas samt att hållbarhetsegenskaperna hos substrat för biogasproduktion eller inköpt biogas uppfylls. I rutinen anges riktlinjer för hur stickprov ska genomföras.

Stickprov i egna verksamheten

Stickprov initieras av driftchef (motsvarande) och utförs minst en gång per år. Tidpunkt under året väljs slumpmässigt. Vid stickprovet kontrolleras att kontroller enligt rutinerna i kontrollssystemet utförts och dokumenteras enligt anvisningarna.

Stickprov hos leverantörer av substrat och/eller biogas

Stickprov initieras av driftchef (motsvarande) och utförs minst vart annat år. Tidpunkt väljs slumpmässigt. Vid stickprovet, som utförs på plats hos leverantören, genomförs en kontroll av leverantörens kontrollsystem och dess efterlevnad. Det kan till exempel ske genom att leverantörens utvärdering och revision av kontrollsystemet följs upp.

Avvikelser

Om avvikelser upptäcks hanteras de enligt rutin ”Avvikelsehantering”.

Dokumentation

Utförda stickprov dokumenteras i journalsystem.

Bilag 18

Logga	Avtal om leverans av substrat och/eller biogas till verksamheten				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 33 (35)

Syfte
Ange riktlinjer för avtal om leveranser av substrat för biogasproduktion och/eller biogas till verksamheten så att hållbarhet kan visas.

Tillägg till kommersiella avtal
Alla substrat som levereras till anläggningen ska ske enligt avtal med respektive leverantör. Utöver kommersiella delar i avtalet ska det även innehålla:

- Substratslag (om substratet utgörs av avfall, restprodukt, samprodukt eller odlad gröda)
- Om substratet är en samprodukt eller innehåller råvaror som är en samprodukt, uppgift om hållbarhetsegenskaper för substratet. Uppgiften ska redovisas som ett intervall för kommande leveranser. Den ska även redovisas för leveranser gjorda under avtalad redovisningsperiod
- Om substratet är odlad gröda eller är en produkt för vilken markkriterier ska visas, att markkriterier är uppfyllda
- Om substratet är odlad gröda, och om fastställt delnormalvärde saknas, uppgift om växthusgasutsläpp från odlingen av grödan
- Plats från vilken substratet ska transporteras
- Rätt för mottagaren att genomföra stickprov kontrollera att hållbarhetsegenskaperna kan redovisas och eventuellt krav på markkriterier är uppfyllda
- Om leverantören i sin tur genom avtal köper in substrat från underleverantör ska dessa avtal med underleverantören innehålla paragrafer som säkerställer att hållbarhet hos substratet kan visas (indirekta avtal). Detta krav gäller även för underleverantören vid dennes inköp av råvaror till substrat

Biogas som köps in, antingen i form av rågas eller som uppgraderad biogas ska ske enligt avtal med respektive leverantör. Utöver kommersiella delar i avtalet ska det även innehålla:

- Uppgift om hållbarhetsegenskaper. Uppgiften ska redovisas dels som ett intervall för kommande leveranser. Den ska även redovisas för leveranser gjorda under angiven avtalad redovisningsperiod
- Plats från vilken biogas ska transporteras
- Rätt för mottagaren att genomföra stickprov för kontroll av att hållbarhetsegenskaperna kan redovisas
- Om leverantören i sin tur genom avtal köper in substrat och/eller biogas från underleverantör ska dessa avtal med underleverantörerna innehålla paragrafer som säkerställer att hållbarhet hos biogasen kan visas (indirekta avtal). Detta krav gäller även för underleverantören vid dennes inköp av till exempel substrat

Bilag 18

Logga	Förändring av verksamheten eller kontrollsystemet				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 34 (35)

Syfte

Ange riktlinjer för hantering av förändringar i verksamheten eller vid ändringar i kontrollsystemet.

Förändring av verksamheten

Förändring av verksamheten kan antingen vara större eller mindre.

Exempel på ändring	Ändring, kategori	Åtgärd
Nya substrat tas in	Mindre	Rutin för kontroll av underlagsdata i produktionen uppdateras så att data för det nya substratet samlas in och redovisas Substratlista uppdateras och avtal med leverantör upprättas
Ändring i process för biogasproduktion	Mindre	Rutin för kontroll av underlagsdata i produktionen uppdateras så att data för produktionen samlas in korrekt. Beskrivning av biogasproduktionen i kontrollsystemet uppdateras
Ny tankstation	Mindre	Rutin för kontroll av underlagsdata för distribution och försäljning uppdateras så att data samlas in korrekt. Beskrivning av distribution och försäljning i kontrollsystemet uppdateras
Ändring av produktionskedjan, till exempel en helt ny produktionskedja (biogasanläggning)	Större	Uppdatering av kontrollsystemet som klassas som en väsentlig förändring. Anmälan till Energimyndigheten
Ändring av organisation och ansvarsförändring	Större	Uppdatering av kontrollsystemet som klassas som en väsentlig förändring. Anmälan till Energimyndigheten

Förändring av kontrollsystemet

Förändringar i kontrollsystemet som klassas som väsentlig förändring medför att kontrollsystemet uppdateras, se exempel ovan. Det innebär att riskbedömningen i kontrollsystemet uppdateras.

Förändringen av kontrollsystemet anmäls till Energimyndigheten och anmälan ska innehålla en beskrivning av förändringens art och omfattning.

Dokumentation

Gjorda förändringar dokumenteras i journalsystem.

Bilag 18

Logga	Utvärdering och revision				
	Utfärdare NN	Fastställd, datum 2011-00-00	Ersätter 2011-00-00	Rutin nr 00	Sidor 35 (35)

Syfte

Ange riktlinjer för utvärdering och revision av kontrollsystemet så att det säkerställs att systemet är anpassat till aktuell verksamhet samt att brister som inte observerats i den löpande tillämpningen av kontrollsystemet upptäcks.

Utvärdering och revision

Utvärdering och revision utförs en gång per år eller om det skett en avvikelse under året som föranleder en mer genomgripande genomgång av kontrollsystemet. Utvärdering och revision initieras av driftchef (motsvarande). Deltagare utöver driftchef (motsvarande) är de inom organisationen som arbetar med insamling och kontroll av data.

Utvärdering och revision omfattar minst följande punkter:

1. Genomgång av avvikelser
2. Genomgång av gjorda kontroller enligt rutiner
3. Genomgång av rutiner i kontrollsystemet. Efterlevnad och eventuella behov av revidering av rutiner
4. Kontroll av substratslista
5. Genomgång av avtal med leverantörer
6. Vilka förändringar har skett under året? Har åtgärder vidtagits med anledning av förändringarna?
7. Rapportering. Har rapportering skett?
8. Genomgång av förändringar i lagstiftning
9. Beslut om åtgärder med anledning av genomgång av punkterna 1 till 8 ovan.

Dokumentation

Resultatet av utvärderingen och revisionen dokumenteras i journalsystem.