4th Stakeholder Plenary Meeting – from feedstocks to finance – upscaling sustainable biofuels

Implementation of sustainability regulations in the EU

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Overview

- State of affairs and overview of voluntary schemes recognized by Commission
- Experience with the operations of a voluntary scheme: ISCC
- Ongoing development work
- Stakeholder representation
- Challenges ahead: Regulatory framework

Implementation framework defined by EU Directives. State of transformation differs tremendously between Member States

- RED (2009/28/EC) and FQD (2009/30/EC) have set the framework for the implementation of renewable energy regulations for the transport sector of the EU Member States. The Directives include:
  - A 10% mandatory target for the use of renewable energy in the transport sector by 2020,
  - Sustainability requirements for biofuels and bioliquids,
  - Minimum greenhouse gas saving requirements for biofuels and bioliquids plus the obligation for suppliers of fossil fuel to gradually reduce life cycle greenhouse gas emissions (decarbonization strategy) by a minimum of 6% by 2020,
  - Double counting options for certain types of biofuels produced from wastes and residues, including UCOME and TME.

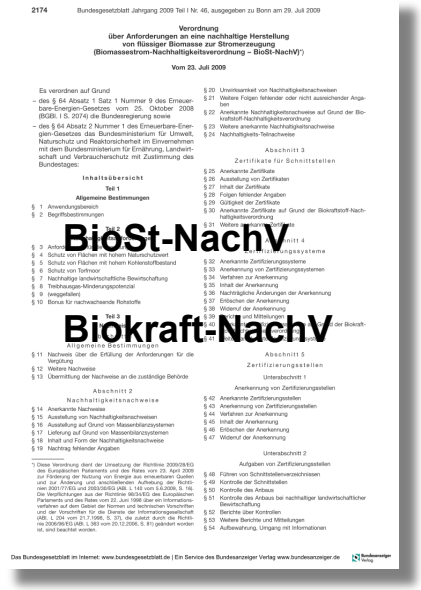
- The option to use voluntary certification schemes to proof compliance with the sustainability and greenhouse gas requirements

- Both Directives have a tremendous impact on future fuel markets and the share and type of renewables used in the fuel market. However, the state of transformation of the Directives into national law differs tremendously between Member States, is very diverse and partly incomplete

Example Germany: Transformation of the RED into national legislation

Renewable Energy Directive → **Transformation into national legislation** → **Implementation requirements**

- Protection of high nature value areas
- Protection of areas with high carbon stocks
- GHG savings
- Sustainable agriculture
- Social standards



- Specification of legal requirements (structure, process)
  - Administrative Regulation
  - Guidelines
  - Communication EC
- Public authority for acceptance process and surveillance
- Recognized certification systems
- Recognized certification bodies

In July 2011, the EC recognized the first seven certication schemes for the proof of sustainable biofuels

The schemes show different characteristics. Not all of them have received a full recognition

Monthly Editorial — **The Certification Matrix** — **August 2011**

KINGSMAN	Bonsucro	ISCC	REDCert	RSB	RTRS	RSPO	2BSvs
Recognized by the EU Commission	Yes	Yes	Not yet. Expected in Q4 2011	Yes	Yes	No	Yes
Member State recognition	No	Germany , Netherlands	Germany	Germany	Netherlands	No	No
Scheme Operational	Yes. Since June 2011	Yes. Since January 2010	Yes. Since June 2010	Yes	Yes	Yes	Yes. Since July 2011
Scheme Operational under EU RED	No	Yes. Since January 2010	Yes. Since June 2010	No	No	No	No
Scheme users (number of registrations/certifications)	1	750 registrations and 519 certifications	Approx. 920	0	2	299	51
Biomass coverage	Sugarcane and ethanol	All kinds of biomass	Grains, sugarcane, rapeseed, oils	All kinds of biomass	Soy	Palm	All kind of biomass
Geographical focus	Global	Global	Europe	Global	Global	Southeast Asia and Europe	Europe and Argentina
Validity of the certificate	3 years	1 year	At least one year	Up to 24 months	5 years	<500 mt: 3 years // > 500 mt: 1 year	5 years
Annual Audits	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recognized certification bodies (CB)	6	17	20	None. In process of recognizing 1 CB	4	20	7
Scheme Members	Global stakeholder initiative, open to	Global stakeholder initiative, open to	Group of ten German agricultural	Global stakeholder initiative, open to	Soy multi-stakeholder	Palm multi-stakeholder	Group of seven French agriculture
Membership fee (annual)	£200 - £13,000	€50-€3,000	n.a.	$250-$10,000	€250-2,500	€100-2,000	n.a.
Membership compulsory for certification	Yes	No	No	No	Yes	Yes	No
Registration fee (per site in the supply chain)	$650-$1,300	€50-€500 (1 time)	€50 (annual)	n.a.	$1,500-$3,200	-	€500-€4'000
Annual certification fee		€50-€500	€150-€250	n.a.		-	-
Quantity dependent fee		€0.02-€0.03/mt	€0.027-€0.05/mt	n.a.		$4/mt	-

Some systems have not been recognized for biodiverse grassland GHG-emission calculation (Bonsucro, RTRS, 2BS).
Source: Kingsmann

ISCC has been fully recognized by the European Commission. In addition, ISCC is recognized by the Netherlands and Germany

COMMISSION IMPLEMENTING DECISION

of 19 July 2011

on the recognition of the 'International Sustainability and Carbon Certification' scheme for demonstrating compliance with the sustainability criteria under Directives 2009/28/EC and 2009/30/EC of the European Parliament and of the Council

(2011/438/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to 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 [1], and in particular Article 18(6) thereof,

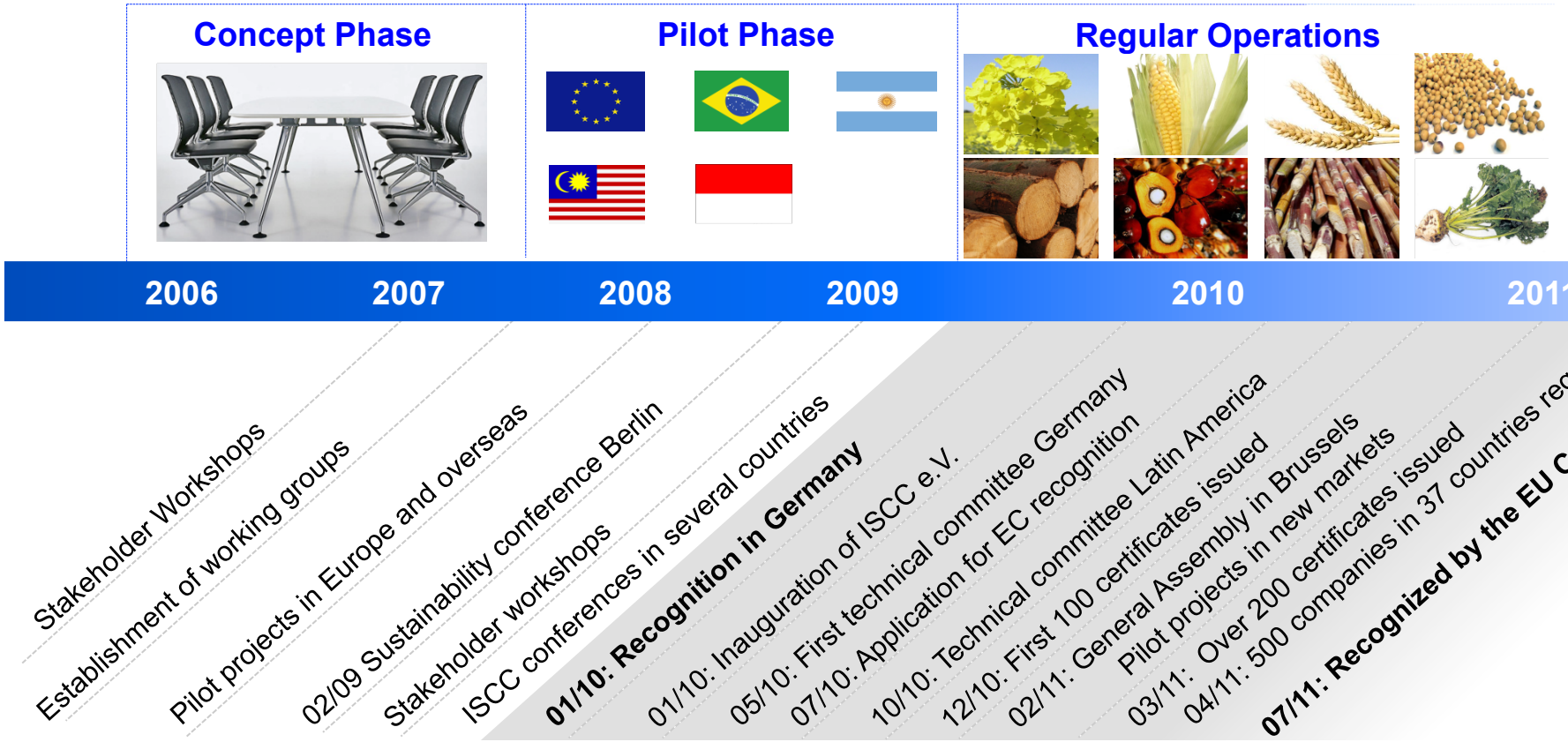
Having regard to Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating

Article 17(3) to (5) of Directive 2009/28/EC or that a voluntary national or international scheme to measure greenhouse gas emission savings contains accurate data for the purposes of Article 17(2) of this Directive.

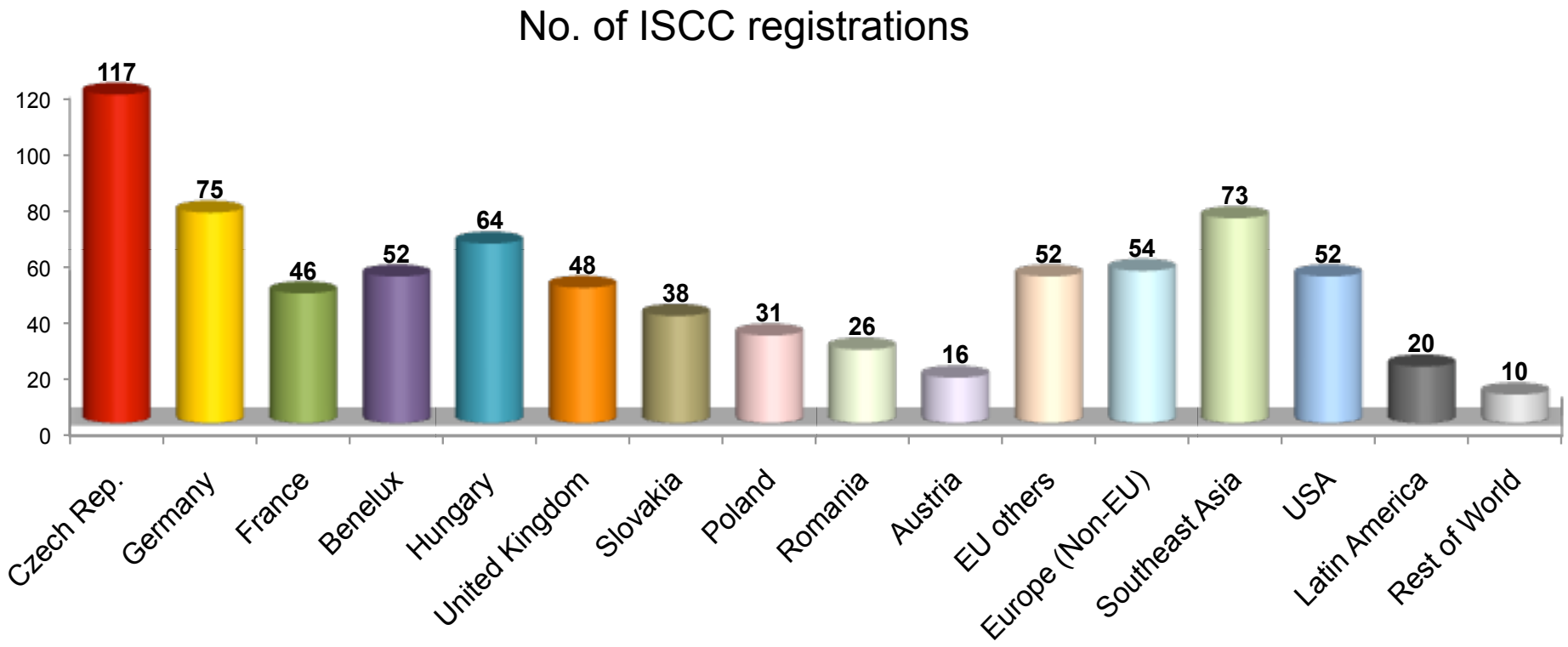
(5) The Commission may recognise such a voluntary scheme for a period of 5 years.

(6) When an economic operator provides proof or data obtained in accordance with a scheme that has been recognised by the Commission, to the extent covered by that recognition decision, a Member State shall not

ISCC is based on a concept phase, followed by pilots carried out in several countries. Regular operations have started in January 2010



Less than 10% of global registrations are in the German market

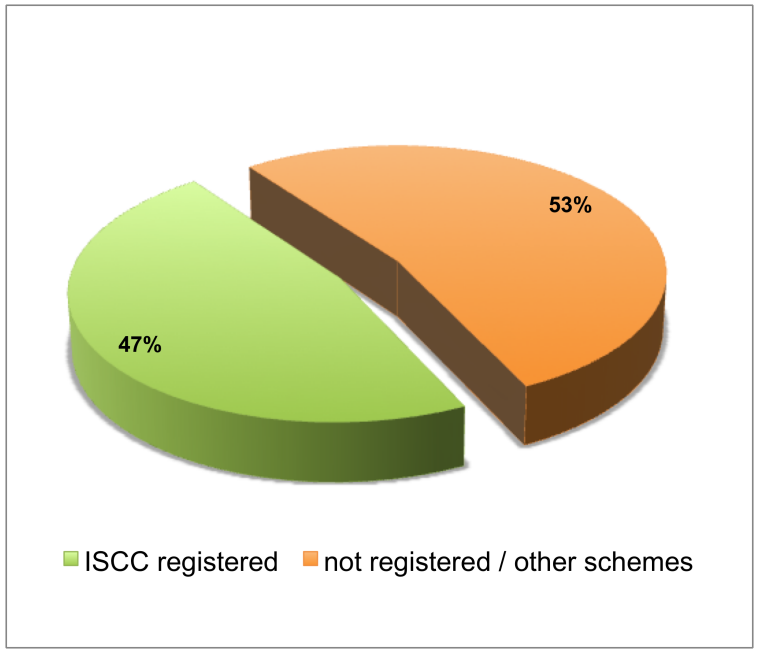


* Numbers as per September 02, 2011

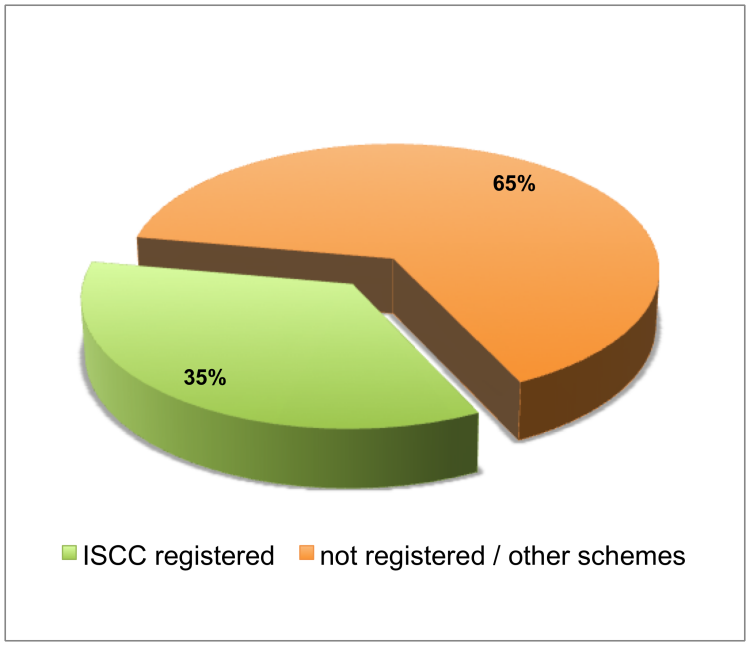
About half of the EU bioethanol production capacity and more than one third of the EU biodiesel production capacity are registered with ISCC

Ca 7.6 mil tons biodiesel and 3.5 mil. M^3 bioethanol production capacity are registered with ISCC

Market share ISCC on EU bioethanol production capacity

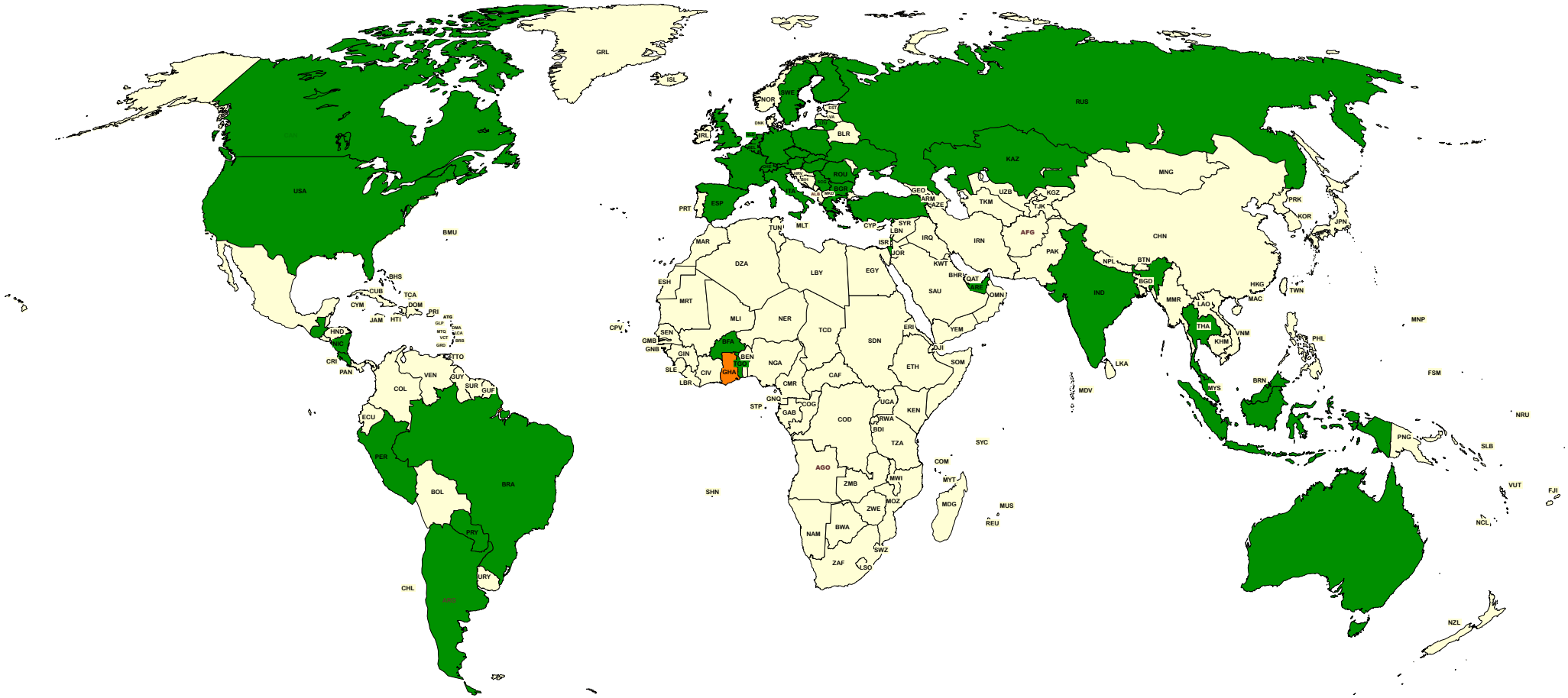


Market share ISCC EU biodiesel production capacity



Calculations are based on published numbers of industry associations. Numbers as per August 22, 2011.
In addition there are biodiesel and bioethanol plants certified or registered for certification in the USA, South America and Southeast Asia.

ISCC is a a global certification scheme, covering all kind of biomass. Today, it is used in 45 countries



ISCC registrations / certificates

Shortly expected registrations

To support the auditors in the field, ISCC has developed country specific guidelines for all countries it is active in

Land use change

- Amount of forest and primary forest
- Existence of No-go areas according to databases like WDPA, Ramsar-Wetlands, Intact Forest Landscape
- National biofuels programs and their impacts

Ecological Sustainability

- Country-specific use of fertilizer
- Registration, use, ban and restriction of pesticides
- Forest fires, slash and burn practices
- Poisoning statistics, environmental issues

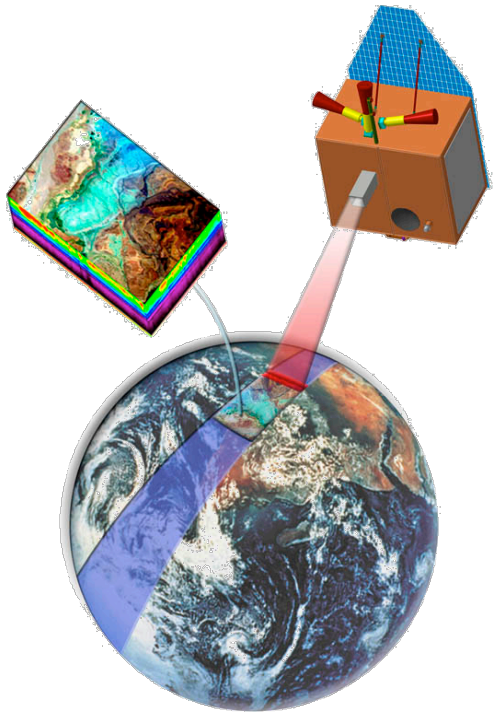
Social Sustainability

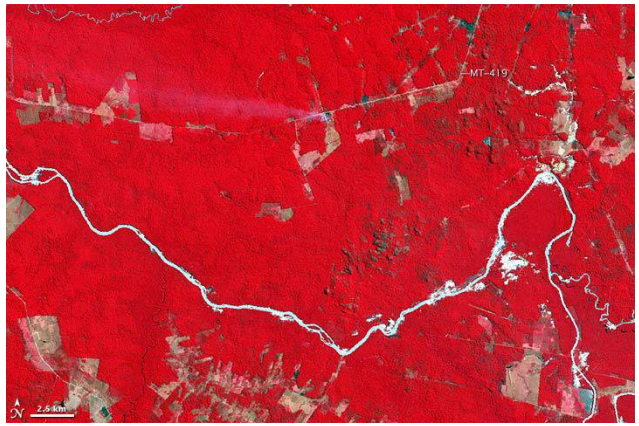
- Ratification of ILO core conventions
- Peculiarities according to child labor, forced labor, violence of trade union rights
- Recognition of indigenous peoples, traditional land, - and land-use rights

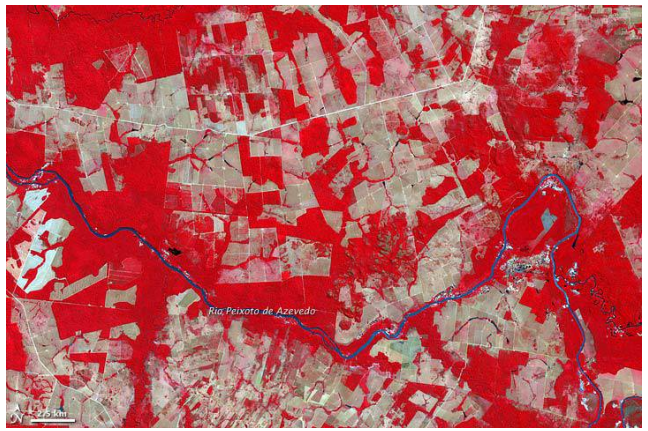
Content

ISCC is also working on making remote sensing data available to facilitate the land use change assessment of the auditors

Status remote sensing

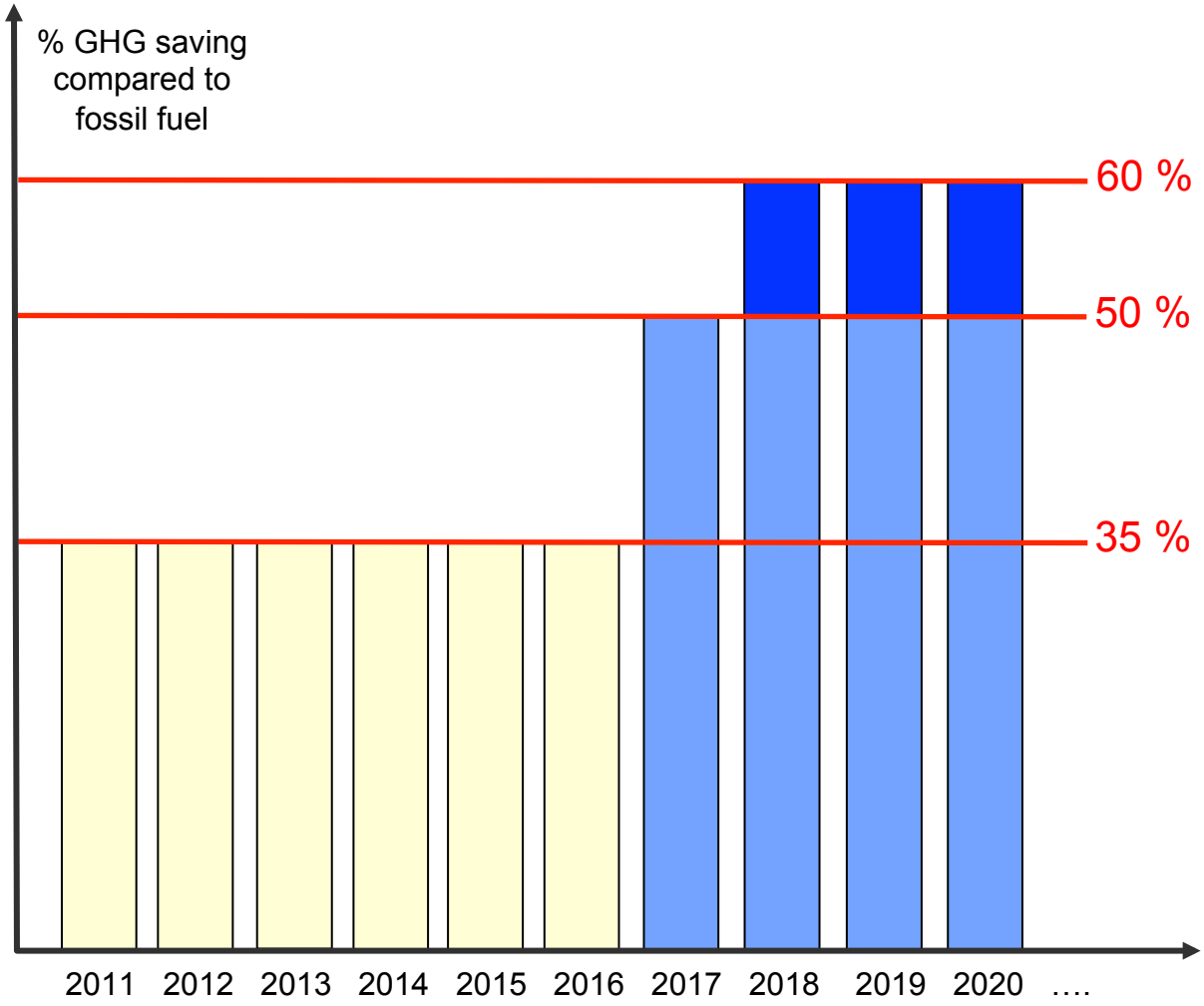






Deforestation in Mato Grosso, Brazil, observed with Landsat TM on August 6, 1992 (upper image) and with ASTER on July 28, 2006 (lower image).
Source: http://earthobservatory.nasa.gov/IOTD/view.php?id=35891 (visited March 17, 2011)

Another area requiring attention is the GHG calculation. It will become more important with increasing GHG saving requirements



- GHG saving requirements:
  - Today: 35 %
  - 2017: 50 %
  - 2018: 60 % for installations in which production started from 2017 onwards
- Grandfathering:
  - Biofuels/ bioliquids produced by installations that were in operation on 23 January 2008 are exempted from complying with the GHG saving criterion until 1 April 2013
- Methodology:
  - The RED contains “default values” and “disaggregated default values” that can be used in certain cases*
  - The RED contains a calculation methodology for “actual values”
- Decarbonization (FQD)

* Certain restrictions are in place for the use of the default value for cultivation

Emission factors play a crucial role in the calculation of actual GHG values

- Choice of emission factors have a crucial impact
- No official list of emission factors available and consistent literature limited, the variance may be large and sometimes no factors are available
- To avoid cherry picking and to assure that GHG emissions calculation and audit take place on an objective, transparent and verifiable basis, ISCC has developed a list of emission factors with most relevant emission factors
- The list was developed based on experience from ISCC pilot and operational phase. It draws wherever possible from the BioGrace project
- The ISCC list of emission factors can be supplemented and/or amended

example inputs conversion unit

Input	Unit	Emission factor	Source/ comments
Conversion inputs			
Process water	kgCO2eq/kg	0,0003	Ecoinvent 2.2, 2010; tap water, at user (RER)
Cycle-hexane	kgCO2eq/kg	0,723	Biograce, 2011
Sulphuric acid	kgCO2eq/kg	0,21	Biograce, 2011
Sodium carbonate	kgCO2eq/kg	1,19	Biograce, 2011
Magnesium oxide	kgCO2eq/kg	1,06	Ecoinvent 2.2, 2010; magnesium oxide, at plant (RER)
Potassium hydroxide	kgCo2eq/kg	0	Biograce, 2011
Sodium hydroxide	kgCO2eq/kg	0,47	Biograce, 2011
Methanol	kgCO2eq/kg	1,25	BLE, 2010, Guideline Sustainable Biomass Production
Hydrochloric acid	kgCO2eq/kg	0,75	Biograce, 2011
Fuller's earth	kgCO2eq/kg	0,20	Biograce, 2011
Phosphoric acid	kgCO2eq/kg	3,01	Biograce, 2011
Hydrogen (for HVO)	kgCO2eq/**MJ**	0,087	Biograce, 2011
Ammonia	kgCO2eq/kg	2,66	Biograce, 2011
Lubricants	kgCO2eq/kg	0,95	Biograce, 2011
Pure CaO for processes	kgCO2eq/kg	1,03	Biograce, 2011

Waste and residues have become very important due to double counting. ISCC had developed a respective positive list, but no application yet

ISCC
International Sustainability & Carbon Certification

II. Rechtliche Rahmenbedingungen

Die Einordnung von Ausgangsmaterialien für die Produktion von Biokraftstoffen und flüssiger Biomasse hat Auswirkungen auf die Zertifizierung bzgl.:

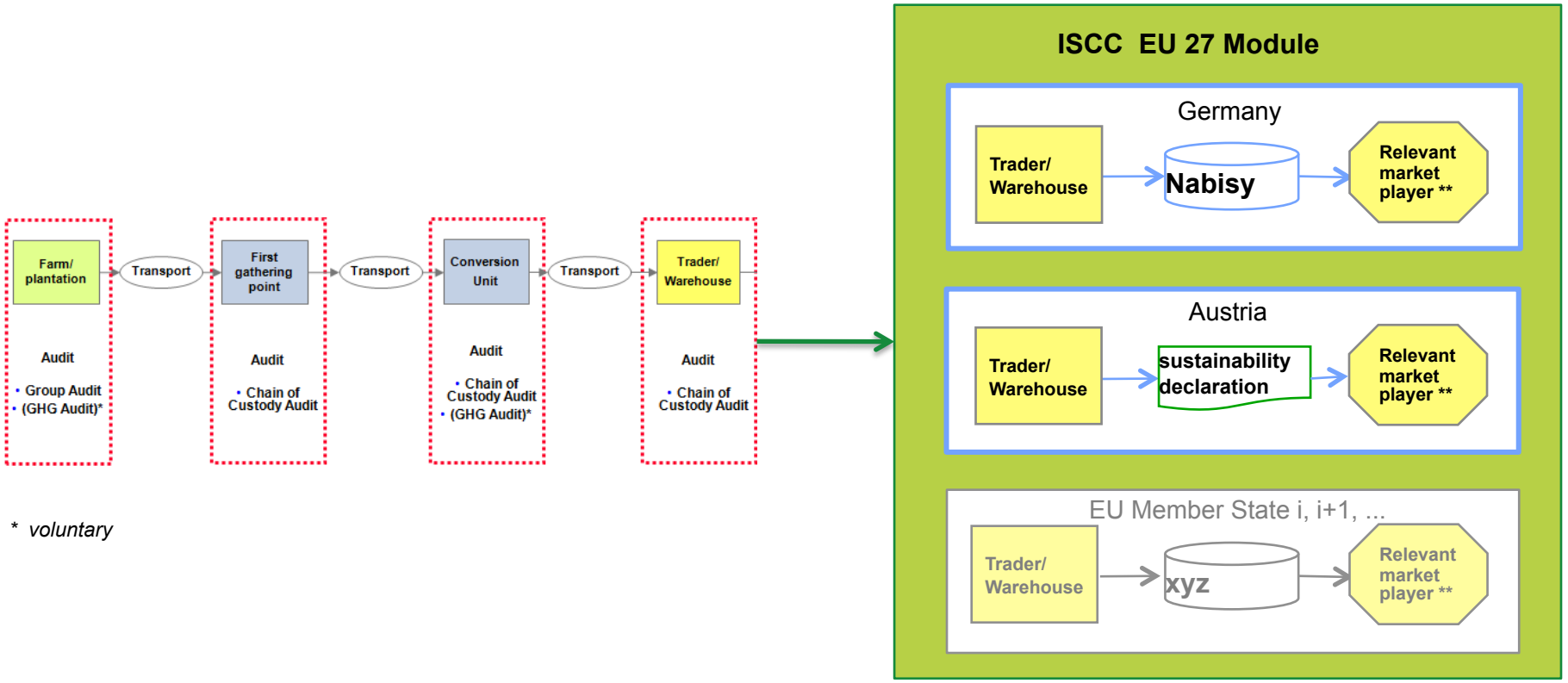
1. **Treibhausgasemissionsberechnung**
   Bei Rückständen, Reststoffen und Abfällen sind die upstream Emissionen (bis zur Sammlung dieser Materialien) auf Null angesetzt.
2. **Double Counting**
   Biokraftstoffe aus Rückständen, Reststoffen und Abfällen können auf die Ziele für den Einsatz erneuerbarer Energien im Transportsektors und für die Erfüllung nationaler Biokraftstoffquoten doppelt angerechnet werden.
3. **Anforderungen an die Rückverfolgbarkeit**
   Die Anforderungen an die Nachhaltigkeit in der Landwirtschaft fallen bei Verarbeitungsrückständen, Reststoffen und Abfällen weg. Bzgl. Rückverfolgbarkeit und Massenbilanz ist erst die Einheit relevant, wo die entsprechenden Rückstände, Reststoffe und Abfälle anfallen.

Positivliste zu Rü

I. Einleitung

Für Abfälle, Reststoffe und Produktionsrückstände als Ausgangsmaterial für die Produktion von Biokraftstoffen und flüssiger Biomasse sind bzgl. Nachhaltigkeit, Treibhausgasemissionsberechnung und Rückverfolgbarkeit gesonderte Regelungen möglich. Zusätzlich zählen bestimmte Biokraftstoffe bei der Anrechnung auf das 10%-Ziel für den Anteil erneuerbarer Energie für alle Verkehrsträger im Jahr 2020 und für die Erreichung der nationalen Verpflichtungen zur Nutzung erneuerbarer Energien doppelt. Zu den Biokraftstoffen, die doppelt zählen, gehören Biokraftstoffe aus Abfällen und Reststoffen/ Rückständen.[1]

To allow ISCC users access to all EU member state markets, country specific modules have to be developed



* *voluntary*

** *Renewable energy installations (CHP plants) and biofuel quota obligated parties*

Training of the auditor and independent integrity audits are important pillars of ISCC‘ quality policy

Components of the ISCC Integrity Program

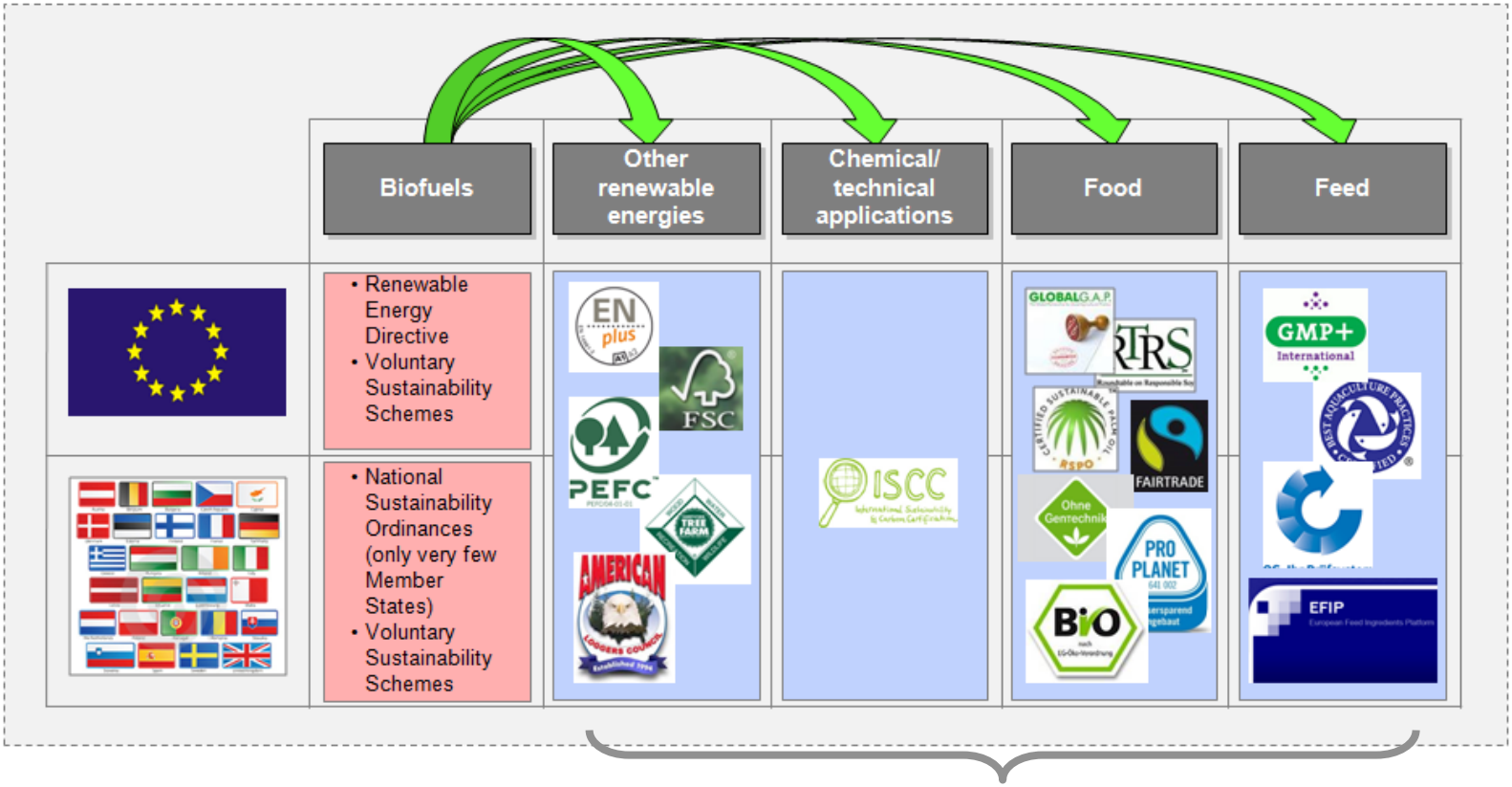
- Office assessments to check the certification process of a CB

  In this process an integrity assessor examines the ISCC certification process of selected cases based on document review

- Company assessments to check the certification body’s inspection performance

  In this process an integrity assessor re-inspects a certified company and compares the assessment result with the latest report of the CB

Sustainability requirements in other markets – discussions and pilots have started



ISCC is also active as founding member of aireg e.V.: sustainable fuels for aviation

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News around ISCC

ISCC is one of the founding members of aireg e.V.

On June 08, 2011 the association "Aviation Initiative for Renewable Energy in Germany – [illegible] industry, bio[illegible] will push the[illegible] tackle one o[illegible] energy sour[illegible] the foundati[illegible] sustainably [illegible] president of[illegible] European le[illegible]

aireg
Aviation Initiative for Renewable Energy in Germany e.V.

ISCC cooperates with 17 certification bodies and 400 trained auditors, which guarantee the global implementation of the standard

The ISCC asscociation welcomes new members. The number of members has doubled in one year

Member - Selection

There are three technical committees active within ISCC, two more are in the planning process

Technical Committee for the Implementation of the German sustainability ordinances in the European context	• Decision of implementation of the technical committee was made during inauguration meeting End January 2010 • Discussions and experiences about ISCC certification • In 2010 there have been 3 meetings of the technical committee • Expected duration: 2 years
Technical Committee Latin America	• Requested by auditors and companies. Approx. 30 – 35 participants • Development of adjusted regional requirements for audit process • Development of partial GHG default values • Two meetings took place, next meeting scheduled for autumn 2011 • Expected duration: 2 years
Technical Committee Wood – „KUP“ Short rotation coppice	• Requested by companies • Development of requirements for the audit process of short rotation coppice • The first meeting was on February 25, 2011 in Cologne. The third meeting is planned in September, Berlin • Expected duration: 2 years

Challenges ahead: Appropriate regulation to ensure credibility of certification and a more sustainable biomass and biofuels production

- Certification is the only instrument to differentiate in global commodity markets. Ecological and social standards are “exported” into 3rd countries outside the EU
- Certification of biofuels has taken off, and it shows impact on the ground. Price premiums are paid for sustainable biomass and biofuels and provide incentives for sustainable behavior
- If sustainability certification is extended to other markets, ILUC can be covered as well. All ILUCs become automatically dLUCs
- The danger exist, that competition between the schemes results in a race to the bottom
- Credibility of certification should be ensured by appropriate regulations and a monitoring of the schemes, ensuring that minimum standards are kept
- EU and member states must provide a level playing field for certification. Same rules to be applied by all schemes. Most important issues at the time being:
  - 3 month vs. 12 month mass balance period
  - Multi site mass balance vs. site specific mass balance
  - Categorization of waste and residues and its control mechanisms