EU Policies for Waste and Residue based Biofuels
(RED, amended RED, RED II)

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Dr. Norbert Schmitz, ISCC System GmbH
ISCC is a leading global sustainability certification system. More than 16,000 certificates have been issued in 100 countries.
The number of valid ISCC certificates for China is increasing constantly. UCO is by far the most important material.

- **Type of operation**
  - Collecting Point: 77 certificates
  - Refinery: 2 certificates
  - Biodiesel Plant: 28 certificates
  - Trader, Storage: 70 certificates

- **Materials covered by certification**
  - UCO: 100%
  - W/R processing of animal/vegetable oil: 32%
  - Brown grease/trap fat: 7%

Numbers as of 7 November 2017
* Each certificate can cover more than one material
RED and FQD set the framework for renewable energy for transport in the EU

**Renewable Energy Directive (RED) and Fuel Quality Directive (FQD)**

- **10% mandatory target** (2020) for renewable energy in transport
- Life cycle **GHG emissions reduction** by a min. of 6% by 2020 for fossil fuel suppliers
- Obligatory **sustainability requirements**
- Minimum **GHG savings**
- Use of voluntary **certification schemes**
- **Double-counting** options for biofuels produced from waste and residues, including UCOME
- ILUC debate promotes high GHG performance of **advanced biofuels** based on waste and residues

Both Directives have a strong impact on biofuel markets and the share and type of renewables used as feedstocks

The amended RED entered into force in October 2015. Waste/residue based biofuels are even further promoted

Overview of amended RED (excerpt)

- 7% **cap on food/feed** crop biofuels
- Provisional **ILUC factors**
- Reverence value of 0.5% **for advanced biofuels** (non-food/feed crops listed in Annex IX part A of RED)
- Annex IX: feedstocks and fuels which can be **double counted** towards national quotas
- 60% GHG savings for **new installations**
- **Review** clauses (ILUC factors, default values, energy content of transport fuel)
- **Adjusted GHG** methodology
- Regular **reporting requirements** of voluntary schemes to the Commission
Annex IX of amended RED – List of advanced biofuels comprise non-food/feed crops

<table>
<thead>
<tr>
<th>Annex IX Part A (advanced biofuels)</th>
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<tbody>
<tr>
<td>• Algae if cultivated on land in ponds or photobioreactors</td>
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<tr>
<td>• Biomass fraction of mixed municipal waste</td>
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<td>• Bio-waste</td>
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<tr>
<td>• Biomass fraction of industrial waste not fit for use in the food or feed chain</td>
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<td>• Straw</td>
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<td>• Animal manure and sewage sludge</td>
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<tr>
<td>• Palm oil mill effluent and empty palm fruit bunches</td>
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<td>• Tall oil pitch</td>
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<tr>
<td>• Crude glycerine</td>
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<tr>
<td>• Bagasse</td>
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<tr>
<td>• Grape marc and wine lees</td>
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<tr>
<td>• Nut shells</td>
</tr>
<tr>
<td>• Husks</td>
</tr>
<tr>
<td>• Cobs cleaned of kernels of corn</td>
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<tr>
<td>• Biomass fraction of wastes and residues from forestry and forestry-based industries</td>
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<tr>
<td>• Other non-food cellulosic material</td>
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<tr>
<td>• Other ligno-cellulosic material</td>
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<tr>
<td>• Renewable liquid and gaseous transport fuels of non-biological origin</td>
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<tr>
<td>• Carbon capture and utilisation for transport purposes, if energy source is renewable</td>
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<tr>
<td>• Bacteria, if energy source is renewable</td>
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</tbody>
</table>

Used cooking oil and animal fat based biofuels are not considered as advanced biofuels

### Annex IX of amended RED*

Feedstocks and fuels that shall be considered for double counting

<table>
<thead>
<tr>
<th>Part A</th>
<th>Part B (Not considered as advanced feedstocks)</th>
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<tbody>
<tr>
<td>• Advanced biofuels (see previous slide)</td>
<td>• Used Cooking Oil (UCO)</td>
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<tr>
<td></td>
<td>• Animal fats categories 1 and 2</td>
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</table>

The RED II to set the path for post 2020 (I) – The potential for waste/residues will further increase – Current state of discussion

- Target of at least 35% renewable energy and 40% GHG emission savings by 2030 across the sectors electricity, heating and cooling, and transport

- Gradual reduction of „food/feed-based“ biofuels to 0% by 2030 and for palm oil based biofuels by 2021

- Developing the decarbonisation potential of advanced biofuels

- Minimum share of biofuels and biogas produced from feedstock listed in Annex IX shall be at least equal to 1.5% in 2021 (up to at least 10% in 2030)

- The share of advanced biofuels/-gas produced from feedstock listed in part A of Annex IX should be at least 0.5% as of January 2021 at least 3.6% by 2030

- ILUC mainly addressed by gradual reduction of conventional biofuels and promoting high GHG performance of advanced biofuels

- Incorporation obligation for aviation and maritime renewable fuels. Minimum share of advanced biofuels for aviation shall be 1.5% by 2021 increasing to 6.8% by 2030

ISCC is recognised by the EC. Only biofuels certified by recognized schemes are eligible to be counted towards quota fulfilment.
ISCC cooperates with 32 certification bodies from 16 countries to conduct the audits for ISCC certification.
All kinds of waste-related materials such as UCO, processing or agricultural crop residues are certified under ISCC.
Double counting plays an important role in the EU. Example UK shows high share of biofuels based on double counting materials.

Supply of biofuel to the UK by feedstock in 2016/2017

Source: RTFO
ISCC EU is the leading certification scheme for waste and residues. The share of certificates covering w/r has increased.

Numbers as of 8 November 2017. Certificates covering waste/residues may cover non-waste material.
Top 10 of waste and residues materials covered currently under ISCC

Input materials as indicated for all valid ISCC certificates*

- UCO (of veg. & animal origin): 28%
- Animal fat (uncategorized, cat 1-3): 12%
- Empty palm fruit bunches (EFB): 5%
- Palm oil mill effluent (POME): 2%
- (Free) Fatty Acids: 2%
- Food waste: 2%
- PFAD & w/r from processing of vegetable or animal oil: 2%
- Crude glycerin: 1%
- Brown grease/trap fat: 1%
- Spent bleaching earth: 1%

* Numbers as of 8 November 2017. Each certificate may be issued for more than one raw material. Information for trader and/or storage as stated in audit procedures as no (raw) materials are indicated on certificates.
ISCC is widely recognized for biofuels and bioliquids certification around the world

- ISCC active at ICAO (Montreal) in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*
- Recognition by the EC for all European Member States in 2011 and re-recognition in 2016
- Poland: Recognition by the ARR in 2016
- Germany: Recognition in 2010
- Indonesia and Malaysia: ISCC is in close cooperation with national authorities
- Australia (Queensland): ISCC is recognised as certification standard for biofuels
- Colombia: ISCC is used to determine GHG emissions and reductions of biofuels
- California (USA): ISCC is considered for CI pathway verification

* CORSIA is the Carbon Offsetting and Reduction Scheme for International Aviation.
Summary

• **Waste and residues based biofuels** are being promoted in the EU biofuels policy

• **Increase in advanced biofuels** expected for the forthcoming years

• Strong **global increase in demand** for waste and processing residues, not only in EU

• Additional demand from **aviation** and **maritime** sectors

• Amended RED set legal framework for biofuels in Europe and include **further fuels of non-biological origin**

• RED II will further **increase potential for waste/residues**

• **Certification schemes** like ISCC have to be used to deliver biofuels into the EU to ensure accountability towards quota fulfilment

• ISCC EU is the **leading scheme** for waste/residues based supply chains
Many thanks for your attention!

Dr. Norbert Schmitz
ISCC System GmbH
Hohenzollernring 72
D-50672 Cologne, Germany
Email: schmitz@iscc-system.org

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