Low iLUC Feedstock and Low iLUC Verification

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Different ways to deal with indirect land use change (iLUC)

<table>
<thead>
<tr>
<th>LCFS iLUC values (gCO$_2$e/MJ)</th>
<th>RFS iLUC values (gCO$_2$e/MJ)</th>
<th>EU RED II iLUC values (gCO$_2$e/MJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn: 19.8</td>
<td>Corn ethanol: 30.3</td>
<td>Oil crops: 55</td>
</tr>
<tr>
<td>Sugarcane: 11.8</td>
<td>Switchgrass ethanol: 14.2</td>
<td>Cereals and other starch-rich oils: 12</td>
</tr>
<tr>
<td>Corn Stover: 0</td>
<td>Soybean biodiesel: 40.8</td>
<td>Sugars: 13</td>
</tr>
<tr>
<td>Sorghum: 19.4</td>
<td>Sugarcane ethanol: 3.8</td>
<td>▪ No application of values</td>
</tr>
<tr>
<td>Soy: 29.1</td>
<td></td>
<td>▪ High vs low risk iLUC biofuels</td>
</tr>
<tr>
<td>Canola: 14.5</td>
<td></td>
<td>▪ High risk iLUC biofuels must be phased out until 2030</td>
</tr>
<tr>
<td>Corn Oil: 0</td>
<td></td>
<td></td>
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<tr>
<td>UCO, Tallow: 0</td>
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</tr>
</tbody>
</table>

iLUC values to be applied  

Low risk iLUC biofuels can be further used if certified
Low iLUC risk biofuels are produced from crops being cultivated by avoiding the displacement of biomass for food and feed applications.

European Union: RED II

- **High iLUC:** Identification of crops for which a significant expansion of the production area into land with high carbon stocks is observed.

- **Low iLUC risk biofuels:** No displacement of biomass for food, feed and fibre ("additionality" required)
  - Waste, residues and forest biomass not classified as low iLUC risk.

- ISCC may implement procedures to certify low iLUC biomass and biofuels based on forthcoming delegated act.
A new draft delegated act for high/low ILUC risk biofuels was just published by the EC and presented at the ISCC Global Conference

European Union: RED II

- National caps on **conventional biofuels** (food and feed crops): 2020 consumption levels (+1 pp) in each Member State – max of **7%** share

- National caps on biofuels with **high ILUC-risk**: 2019 consumption levels until 2023, followed by a gradual reduction by 2030 (certified low ILUC-risk biofuels exempted)

- **Article 26.2**: Delegated Regulation + Report setting out criteria for:
  - **identifying** high ILUC-risk feedstock, for which is observed a significant expansion of relevant food and feed crops worldwide
  - **certifying** low ILUC-risk biofuels, i.e. produced from productivity increases or on unused land

Source: Presentation of Giulio Volpi at 9th ISCC Global Sustainability Conference 2019

Feedback still possible until 8 March
Criteria for determining high iLUC-risk feedstock for which is observed a significant expansion into land with high-carbon stock

Draft Delegated Act

- Average annual expansion of the global production area since 2008 is >1% and affects >100,000 hectares;
- The share of such expansion into carbon-rich land is >10%

Worldwide production expansion of food and feed crop

<table>
<thead>
<tr>
<th></th>
<th>Average annual expansion of production area since 2008 (kha)</th>
<th>Average annual expansion of production area since 2008 (%)</th>
<th>Share of expansion into land referred to in Article 29(4)(b) and (c) of Directive (EU) 2018/2001</th>
<th>Share of expansion into land referred to in Article 29(4)(a) of Directive (EU) 2018/2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>-263.4</td>
<td>-0.1%</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>Maize</td>
<td>4027.5</td>
<td>2.3%</td>
<td>4%</td>
<td>-</td>
</tr>
<tr>
<td>Sugar crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar cane</td>
<td>299.8</td>
<td>1.2%</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Sugar beet</td>
<td>39.1</td>
<td>0.9%</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>Oil crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapeseed</td>
<td>301.9</td>
<td>1.0%</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>Palm oil</td>
<td><strong>702.5</strong></td>
<td><strong>4.0%</strong></td>
<td><strong>45%</strong></td>
<td><strong>18%</strong></td>
</tr>
<tr>
<td>Soybean</td>
<td>3183.5</td>
<td>3.0%</td>
<td>8%</td>
<td>-</td>
</tr>
<tr>
<td>Sunflower</td>
<td>127.3</td>
<td>0.5%</td>
<td>1%</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Presentation of Giulio Volpi at 9th ISCC Conference 2019
Criteria for certification of low iLUC-risk biofuels

Draft Delegated Act

a) Compliance with the EU sustainability criteria (art 29 REDII)
b) Produced from additional feedstock directly resulting from measures:

1. Increased productivity on already used land, beyond business as usual increase (e.g. financial attractive due EU biofuel demand); or

2. Cultivation of crops on areas which were previously not used for cultivation of crops, i.e. unused land; or

3. Production from smallholders (means farmers independently conducting an agricultural activity on a holding with an agricultural area of less than [2 – 5] hectares for which they hold ownership or lease rights)

c) Implementation of robust auditing and verification requirements

Source: Presentation of Guilio Volpi at 9th ISCC Conference 2019
Option 1: Yield increase – Proposal ISCC

Requirements for determining yield increase

- Determination of “additional biomass” produced by crops on already cultivated land

- Yield increase must be **achieved via improved land management** (e.g. implementation of at least one improved agricultural practice)

- “Additional biomass” is calculated against a reference baseline
“Yield increase from agriculture” can be achieved via improved agricultural practices

Option 1: Yield increase from agriculture

Possible yield increase from improved agricultural practices:

- Choice of different crop varieties (e.g. higher yielding variety)
- Fertilisation (e.g. optimisation of fertilisation, use of better fertiliser)
- Crop protection (e.g. change in pest and disease control)
- Harvest practices
- Weed control
- Soil conservation
- Precision farming
- Etc.
Option 2: Unused land

Definition:
- “unused land’ means areas which, for a consecutive period of at least 5 years before the start of cultivation of the feedstock used for the production of biofuels, bioliquids and biomass fuels, were neither used for the cultivation of food and feed crops, other energy crops nor any substantial amount of fodder for grazing animals” (Source: Delegated act supplementing Directive (EU) 2018/2001 as regards the determination of high indirect land-use change-risk feedstock)
- This may also apply for coca crops

The land must meet requirements:
1. Agricultural production in compliance with EU sustainability criteria for biofuels
2. Land can be used for agricultural production in compliance with relevant legal and regulatory requirements as well as respecting traditional and/or customary land use rights
Verification of biomass production on previously unused land

ISCC proposes a two steps approach:

1. **Land cover and utilization assessment** with GRAS (Global Risk Assessment Services), a tool analysing remote sensing data
   a) Vegetation profile – Examination through e.g. EVI
   b) Image interpretation – Satellite and high-resolution images
   c) Geo-information – Digital geoportals or cadastre systems

2. **On-site assessment** including verification of low carbon stock and biodiversity value of the land
Cultivation of crops on areas which were previously not used for cultivation of crops (unused land)

Certification issues

- ISCC is able to proof the history of land use with **remote sensing technology** (land cover and utilization assessments, image interpretation, EVI time series approach, digital geo-portals, cadastre systems; on site assessments)

- Approach covers annual and perennial crops

- For new cultivation areas, compliance with **sustainability criteria** for biofuels is done within the regular audits

- Criteria need to be set by the EC for determining unused land
High resolution satellite imagery and EVI time series are used to map the land history. The GRAS tool is used.

Claim: Document field survey proved the land currently unused land in Colombia
Fact: The status of the unused land hasn’t changed since the year 2000

Claim: Unused land was converted to plantation in 2008
Fact: Land was similar to the unused land reference area, then converted to plantation
Verification of former status as unused land is possible with GRAS

- Use of vegetation profile and image interpretation to detect the actual status of vegetation
- Find out about historical information on land use and LUC
- This is relevant to determine if ISCC compliant unused land was changed to potential low iLUC cropland
Meo and ISCC provide solutions for smallholder management to allow efficient data collection, automated sustainability checks and yield assessment.

- Map the field outlines of all smallholders
- Easy collection of basic smallholder data and pictures
- Automated sustainability check of field outlines
- Trace back sustainable produced FFBs to ISHs
- Historical harvest analysis and yield projections
Therefore, different tools have been developed for an efficient smallholder management and monitoring.

### Smallholder App
- Collect and access basic ISH data, pictures and polygons

### Tracking App
- Track FFBs delivery from ISH to the palm oil mill

### Database and User Interface
- Database to store and access the collected data
- Manage and monitor your suppliers within an interactive user interface
- Conduct analysis of historical harvests
- Conduct more precise yield projections/estimations
- Upload and download collected data
ISCC has developed the ISCC Smallholder Academy to support smallholder certification

www.iscc-system.org
The ISCC online training for smallholder certification has been established
Next steps

- The delegated act is subject to further changes and currently open for feedback from any interested party in a public consultation until 8 March 2019
- If you have comments it is recommended to provide those as soon as possible to the EC (the earlier the better)!
- EC has after the deadline about 5 working days to “redraft” the proposal based on the consultation but is not obliged to taken any of the ideas received on board
- Amended draft will be provided to European Member States and Parliament (cannot amend but reject)
- Rejection will lead to new round by EC and drawing Board
- EC may issue further guidance on iLUC verification and implementation
- ISCC to implement meaningful solutions
Many thanks for your attention!