RSB Webinar

NEW SUSTAINABLE SOLUTIONS FOR AVIATION

4 August 2021, 5pm CEST
Agenda

Presentation

- Welcome & Introduction — Elena Schmidt, Executive Director, RSB
- Working with RSB — Pedro Piris-Cabezas, Director for Sustainable International Transport and Lead Senior Economist, Climate Program, Environmental Defense Fund (EDF)
- Deep dive: RSB’s CORSIA Standard — RSB experts (Aurea Nardelli, Carolina Grassi and George Deslandes)
  - Overview of RSB Schemes
  - Sustainability requirements
  - Chain of Custody & Claims
  - GHG requirements
  - Getting Certified
- Q&A — Hannah Walker, Marketing & Communications Manager, RSB

Housekeeping

- Q&A
  - Questions via chat box
- Session will be recorded and made available on Youtube during August
- Polling in the session
RSB & The Aviation Sector: Welcome and Introduction
RSB: A just transition to a net positive world

RSB is leveraging its community, resources and best-in-class sustainability standard as part of a global movement to create a world of positive impacts and a thriving planet with:

- 1.5°C warming cap achieved
- Assured global nutrition and water access
- Fossil left in the ground
- Guaranteed human & labour rights
- Maximum circularity
- Productive and healthy ecosystems
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<thead>
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</thead>
<tbody>
<tr>
<td>Legality</td>
<td>Planning, Monitoring &amp; Continuous Improvement</td>
<td>Greenhouse Gas Emissions</td>
<td>Human &amp; Labour Rights</td>
<td>Rural and Social Development</td>
<td>Local Food Security</td>
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<td>Conservation</td>
<td>Soil</td>
<td>Water</td>
<td>Air Quality</td>
<td>Use of Technology, Inputs &amp; Management of Waste</td>
<td>Land Rights</td>
</tr>
</tbody>
</table>
About the RSB

Member governance – a multi-stakeholder approach

97 Members
32 Countries
5 Chamber groups

Role of RSB members

• Network / B2B & project opportunities
• Support the development of the RSB Standards
• Agree on sustainability approaches for new feedstocks, pathways, technologies (e.g., Advanced Fuels, Woody biomass, PtX)
• Policy advocacy
RSB: A just transition to a net positive world

Anchored in the most comprehensive set of **sustainability criteria and standards**, RSB works with organisations to integrate, plan and **operationalise their social, environmental and climate commitments** through:

**Certification**

- Real sustainability in alternative fuels and materials used
- Ensuring consumer trust & credible claims
- Reducing risks

**Projects & Programmes**

- Advancing regional, national and global policy
- Unlocking regional potential
- Ensuring sustainable feedstock development

**Convening a multi-stakeholder community**

- Developing new knowledge and insights
- Sharing wisdom in a pre-competitive space
‘Best in class’ standard
Government recognition & 3rd party assessments

RSB Compliance with Blue Angel requirements

3rd Party Assessments

Government recognition

Source: Implementierung von Nachhaltigkeitskriterien für die stoffliche Nutzung von Biomasse im Rahmen des Blauen Engels

UN environment programme
Canopy
BFA Bioplastic Feedstock Alliance

Consumers International

WWF

European Union

Queensland Government Department of Environment and Heritage Protection

RSB
RSPO
ISCC Plus Global
RTRS
SAN
Bonsucro
REDCert EU
RSB’s Aviation Work in Action
RSB Solutions for the aviation industry
How RSB can support this sector

• SAF Certification throughout the entire supply chain
• GHG Calculation tool
• RSB Advisory Services
• RSB Sustainable Feedstock Assessments
• SAF Roadmaps
• RSB Book & Claim System
• RSB EcoTransport Programme
Launching RSB’s Book & Claim Solution
Credible Chain of Custody Solution to Bring SAF to Market

**Challenge**

- Limited SAF supply in few physical locations
- Access limited to carriers in a few hubs with limit on offtake levels
- Cost + emissions of transporting SAF to customers

**RSB’s Book & Claim Solution**

- Allows SAF purchase without a physical connection to the supply site
- No matter where SAF is purchased the net environmental effect is the same
- Enables the attribution of GHG emission reductions through SAF use to corporates to reduce their scope 3 emissions
- RSB provides assurance that transactions are credible, traceable and don’t lead to double counting
Piloting Book & Claim
Announcing a new strategic collaboration with Air bp

- SAF sales through ‘book & claim’ to Air bp customers in France, Germany, Spain, Switzerland & the UK and US – with more locations possible
- Minimum SAF volume to purchase is 5,000G/19,000 L/19m3/15MT
- No matter where SAF is purchased and used via ‘book and claim’ the net environmental effect is the same – customers are contributing to an overall reduction in emissions globally
- First fuel supplier to register and make trades using the RSB Book & Claim solution

- Pilot Book & Claim audit and certification based on the RSB Book & Claim Manual
- Registration of SAF volumes in the RSB internal Book & Claim registry
- Issuance of retirement certificates for airlines and corporates
- Development of claims
- Development of specifications for market-scale registry system
- Stakeholder consultation to address key topics
RSB Solutions for the aviation industry

RSB EcoTransport Programme

Certification Scope: Fuel Supply chain

Certification Scope: EcoTransport Programme

Sourcing of certified alternative fuels

Calculation of GHG emission reductions and bookkeeping

Allocation of GHG emission reductions to Corporate Customers
Pilot Period
RSB Book & Claim and RSB EcoTransport Programme

Q1-Q2 2021
- System set-up
  - RSB Book & Claim Manual updated
  - Requirements for EcoTransport Programme drafted
  - Targeted stakeholder consultations

Q3 2021–Q1 2022
- Pilot period
  - Pilot certifications based on RSB Book & Claim Manual
  - First SAF transactions within pilot Book & Claim registry
  - Development of specifications for post-pilot registry
  - Development of sample claims for Book & Claim and EcoTransport Programmes
  - Broad stakeholder consultation - Addressing key questions
    - Application to CORSIA (from blending onwards) and EU under ReFuel EU
    - Rules for Scope 1 and Scope 3 emissions reporting
    - Data confidentiality vs public availability
    - Alignment with other methodologies, and recognition by other programmes, e.g. SBTi

Q1-Q2 2022
- Market launch
  - RSB Book & Claim Chain of Custody certification and RSB EcoTransport Programme open for wider market adoption
  - Launch of RSB Book & Claim Registry
RSB Annual Conference 2021
Virtual Event | 15-18 November

Working Together for Real Impact
Working with RSB

Pedro Piris-Cabezas
Director for Sustainable International Transport and Lead Senior Economist, Climate Program
Environmental Defense Fund (EDF)
RSB ICAO CORSIA: Scope
## RSB Schemes
Meeting voluntary + regulatory sustainability

<table>
<thead>
<tr>
<th>Core Standard</th>
<th>Regulatory adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSB Global</td>
<td>RSB EU RED</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td></td>
</tr>
<tr>
<td>Energy and non-energy products</td>
<td>Energy feedstocks and products for the the EU RED market</td>
</tr>
<tr>
<td><strong>Main Standards</strong></td>
<td></td>
</tr>
<tr>
<td>RSB Standard for Advanced Fuels</td>
<td>RSB Standard for EU market access</td>
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<tr>
<td>RSB Standard for Advanced Products</td>
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<td>RSB Smallholder Standard</td>
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<tr>
<td><strong>Sustainability</strong></td>
<td></td>
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<tr>
<td><strong>Indirect impacts</strong></td>
<td></td>
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<tr>
<td>RSB Low ILUC Risk Biomass Module</td>
<td></td>
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<tr>
<td>RSB Methodology for Displacement Emissions</td>
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</tbody>
</table>
# RSB Schemes

Meeting voluntary + regulatory sustainability

<table>
<thead>
<tr>
<th>Core Standard</th>
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<tr>
<td>RSB Global</td>
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</table>

<table>
<thead>
<tr>
<th>General procedure for Participating Operators</th>
<th>RSB Procedure for Operators Taking Part in the RSB Certification System (RSB-PRO-30-001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Management</td>
<td>RSB Procedure for Risk Management and RSB Risk Assessment Tool (RSB-PRO-60-001)</td>
</tr>
<tr>
<td>Communications &amp; Claims</td>
<td>RSB Procedure on Communications and Claims (RSB-PRO-50-001)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GHG emissions</th>
<th>RSB GHG Methodology</th>
<th>RSB Standard for EU market access</th>
<th>RSB Standard for ICAO CORSIA</th>
<th>RSB GHG Methodology</th>
</tr>
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<tr>
<td>Indirect impacts (voluntary)</td>
<td>RSB Low iLUC Risk Biomass Module</td>
<td>RSB Methodology for Displacement Emissions</td>
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RSB ICAO CORSIA
Demonstrating production of CORSIA eligible SAF

• The RSB ICAO CORSIA Standard [RSB-STD-12-001] specifies requirements for operators along the Sustainable Aviation Fuel (SAF) supply chain to produce SAF eligible under CORSIA.

• This scheme is globally applicable for operators producing, processing and trading feedstock, intermediates or SAF.
1. **Certification of CORSIA eligible SAF:**
   This certification comprises the sustainability criteria as approved by the ICAO Council. Currently, two themes are addressed by these sustainability criteria:
   - **Greenhouses Gases** and **Carbon Stock**

2. **Certification of RSB compliant CORSIA eligible SAF:**
   This certification comprises the sustainability criteria as approved by the ICAO Council plus the **RSB Principles and Criteria.**

**Key Differences:**
- Sustainability criteria covered

Other requirements (e.g. traceability, calculating actual life cycle emission values, auditing procedures) are the same for both options.
# RSB Certification
## Key requirements by operator type

<table>
<thead>
<tr>
<th>Type of operator</th>
<th>Sustainability Requirements (RSB’s P&amp;C)</th>
<th>Chain of Custody</th>
<th>GHG emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biomass producer</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E.g., farm that supplies biomass (like sugar cane)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Point of Origin</strong></td>
<td></td>
<td></td>
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<tr>
<td>E.g., farm / mill that supplies waste biomass (like agricultural residues, UCO or crude tall oil)</td>
<td>Waste feedstock-specific requirements, if any</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Industrial operator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.g., company that processes feedstock into products (like oil processors or SAF refineries)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Trader</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.g., companies buying and selling feedstock, intermediate or finished products, and distributors</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
RSB Certification
Flexible certification scope

Biomass producer → Trader → Industrial Operator → Industrial Operator → Trader → End user
RSB ICAO CORSIA: Sustainability Requirements
The operator shall demonstrate that the CORSIA eligible fuel was not made from biomass obtained from land converted after 1 January 2008 that was primary forest, wetland, or peat land and/or contributes to degradation of the carbon stock in primary forests, wetlands, or peat lands as these lands all have high carbon stocks.

*Please note:* This criterion is also covered by RSB Principle 7 of the RSB Principles & Criteria [RSB-STD-01-001].
RSB’s 12 Principles & Criteria

Holistic sustainability

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RSB’s 12 Principles & Criteria
Holistic sustainability

RSB Principles and Criteria shall apply to any primary biomass producer (e.g., oil crop farm) and industrial operator (e.g., SAF producer) along the supply chain.

Principles & Criteria are applicable when the operator’s is applying for the certification of “RSB compliant CORSIA eligible SAF”.

Note: The RSB P&Cs do not apply to traders or mechanical operators, i.e., operators only conducting mechanical or physical processing (e.g., mixing, assembling, sorting etc.).
RSB Certification
Risk-based approach

RSB certification uses a **risk-based approach**. This aims to decrease burden for low-risk feedstocks and operations, while ensuring full compliance for high-risk ones.

Key elements:

<table>
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<tr>
<th>Screening tool</th>
<th>Risk assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scoping exercises that helps identify:</td>
<td>Excel-based questionnaire that helps identify:</td>
</tr>
<tr>
<td>• Which RSB Principles &amp; Criteria are applicable to the operator’s certification scope and that will need to be included in the certification</td>
<td>• Operator risk level (high, medium, low) based on socioeconomic context, legal / judiciary issues, complexity of supply chain</td>
</tr>
<tr>
<td>• Whether specialised impact assessments must be conducted for serious sustainability risks</td>
<td>• The risk level informs the frequency and intensity of RSB audits (Low = physical audit every 2 years, Medium = 3 years, Low = 5 years)</td>
</tr>
</tbody>
</table>
RSB ICAO CORSIA: Chain of Custody
RSB Certification
Chain of Custody & Claims

• The RSB Chain of Custody Procedure shall apply to any operator along the SAF supply chain with legal ownership of RSB certified material.

• RSB Procedure for Communication & Claims shall apply to any operator along the SAF supply chain making RSB claims.
RSB Certification
Chain of Custody: Steps

Chain of custody tracking is based on 3 steps in tracking and documenting RSB compliant product in the operations under control of the Operator:

1. **acquiring**
   - Ordering, purchasing, receiving (legal / physical ownership)
   - Product and associated documentation is received, verified and accepted

2. **handling**
   - Storage, processing, transport (within the scope)
   - Product and associated documentation is handled – possibly in various steps

3. **forwarding**
   - Transfer of legal and physical control to the next operator
   - Product and associated documentation is passed to the operation(s) of the next participating operator
The following chain of custody models are eligible under RSB ICAO CORSIA:

- Identity preserved
- Product segregation
- Mass balance
## RSB Certification

**Chain of Custody: Traceability Options**

<table>
<thead>
<tr>
<th>Chain of custody system</th>
<th>Description</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mass balance</strong></td>
<td>From the production of a raw material to the final product for consumption, the information on sustainability can be traced to a specific production quantity.</td>
<td>The system allows for the physical mixing of RSB certified and non-certified products along the supply chain. It is required separate records of certified and not certified materials’ quantities. At each stage there is a reconciliation between the quantity of certified material used as input and the quantity of certified material sold (output).</td>
</tr>
</tbody>
</table>
RSB Certification
Acceptance of other schemes and COC

• RSB operators may accept materials certified by other ICAO-accredited schemes. However, this means only the ICAO CORSIA claim is allowed on the final product.

• An RSB operator may forward materials certified by other schemes using the claim “ICAO CORSIA compliant”.

• The operator shall not use any RSB trademarks on the product information.
RSB Certification

RSB certified supply chain for RSB claims

Farms or Points of Origin
Crop / Forest biomass
Waste / residue

First Collectors or Gathering Points
Collection

Industrial Operators
Refinery

Distribution

Traders
Final user

RSB CERTIFIED
RSB CERTIFIED
RSB CERTIFIED
RSB CERTIFIED
RSB Certification
RSB certified supply chain for RSB claims

Farms or Points of origin
Crop / Forest biomass
Waste / residue

First Collectors or Gathering Points
Collection

Industrial operators
Refinery

Traders
Distribution

Final user

ICAO CORSIA compliant only
## RSB Certification Options

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Option 1: Certification of “CORSIA eligible SAF”</th>
<th>Option 2: Certification of “RSB compliant CORSIA eligible SAF”</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSB Principles &amp; Criteria compliant</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>GHG emission reduction threshold</td>
<td>10% compared to the baseline life cycle emissions for aviation fuels (as approved by the ICAO Council).</td>
<td>50% and 60% for new installations, compared to the baseline life cycle emissions for aviation fuels (RSB Principle 3)</td>
</tr>
<tr>
<td>Claims on delivery documentation</td>
<td>“CORSIA eligible [product] certified by [insert name of certification body] accredited to RSB - Roundtable on Sustainable Biomaterials Association”</td>
<td>“RSB compliant CORSIA eligible [product]”</td>
</tr>
<tr>
<td>Claims for the product information</td>
<td>“CORSIA eligible”</td>
<td>“RSB ICAO CORSIA”</td>
</tr>
<tr>
<td>Use of RSB trademarks</td>
<td>Not allowed</td>
<td>Yes (as per RSB-PRO-50-001)</td>
</tr>
</tbody>
</table>
RSB ICAO CORSIA: GHG Requirements
RSB Certification
GHG Requirements for CORSIA and RSB CORSIA

CORSIA requirement

GHG LCA + ILUC

>10%

RSB CORSIA requirement

GHG LCA

>50%

GHG LCA + ILUC

>10%

CORSIA baseline = 89 g cO2e/MJ

5 August 2021
RSB Certification
System Boundaries: GHG

- The core LCA value can be determined either with default values or with calculated actual LCA values.
- The ILUC value must be determined with default values.
Primary and co-products: main products of a production process. These products have significant economic value and elastic supply.

By-products: secondary products with inelastic supply and economic value.

Residues: are secondary materials with inelastic supply and little economic value.

Waste: materials with inelastic supply and no economic value. A substance that will be discarded or required to be discarded.

A default ILUC value for primary and co-products feedstocks must be added to the ICAO document titled “CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels” before the fuel is eligible under CORSIA.

Feedstocks that are “low risk” for ILUC shall be assigned an ILUC value of zero.

Waste, residue and by-product feedstocks have zero emissions during the feedstock production step of the lifecycle.

Feedstocks classified as a waste, residue, or by-product shall be assigned an ILUC value of zero.

Positive list (not exhaustive) of feedstocks that are classified as by-product, waste or residues.
RSB Certification
Low ILUC Risk Feedstocks

Yield increase
Additional production compared to a reference date (no land conversion)
Example: agricultural practices, intercropping.

Unused / Degraded Land
Land not cultivated for a minimum of 5 years, or
Severe degradation process for at least 3 years (e.g. contaminated)
Example: mining exclusion areas

Use of wastes & residues
From existing supply chains (e.g. food, wood processing etc.)
Example: UCO, agricultural residues.
## RSB Certification

**Positive List:**
By-products, wastes or residues

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Feedstock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residues</td>
<td>Agricultural residues</td>
<td>Bagasse, Cobs, Stover, Husks, Manure, Nut shells, Stalks, Straw</td>
</tr>
<tr>
<td></td>
<td>Forestry residues</td>
<td>Bark, Branches, Cutter shavings, Leaves, Needles, Pre-commercial thinnings, Slash, Tree tops</td>
</tr>
<tr>
<td>Residues</td>
<td>Processing residues</td>
<td>Crude glycerine, Forestry processing residues, Empty palm fruit bunches, Palm oil mill effluent, Sewage sludge, Crude Tall Oil, Tall oil pitch</td>
</tr>
<tr>
<td>Wastes</td>
<td></td>
<td>Municipal Solid Waste, Used Cooking Oil</td>
</tr>
<tr>
<td>By-Products</td>
<td></td>
<td>Palm Fatty Acid Distillate, Tallow, Technical Corn Oil</td>
</tr>
</tbody>
</table>
# RSB Certification

## GHG Requirements: ILUC and core LCA default values

<table>
<thead>
<tr>
<th>Fuel Conversion Process</th>
<th>Region</th>
<th>Fuel Feedstock</th>
<th>Core LCA Value</th>
<th>ILUC LCA Value</th>
<th>LS(\text{gCO}_2\text{/MJ})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fischer-Tropsch (FT)</td>
<td>Global</td>
<td>Agricultural residues</td>
<td>7.7</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Forestry residues</td>
<td>8.3</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Municipal solid waste (MSW), 0% non-biogenic carbon (NBC)</td>
<td>5.2</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Municipal solid waste (MSW) (NBC given as a percentage of the non-biogenic carbon content)</td>
<td>NBC*170.5 + 5.2</td>
<td>NBC*170.5 + 5.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Poplar (short-rotation woody crops)</td>
<td>12.2</td>
<td>-5.2</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Miscanthus (herbaceous energy crops)</td>
<td>10.4</td>
<td>-32.9</td>
<td>-22.5</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>Miscanthus (herbaceous energy crops)</td>
<td>10.4</td>
<td>-22.0</td>
<td>-11.6</td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Switchgrass (herbaceous energy crops)</td>
<td>10.4</td>
<td>-3.8</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Tallow</td>
<td>22.5</td>
<td>22.5</td>
<td></td>
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<tr>
<td></td>
<td>Global</td>
<td>Used cooking oil</td>
<td>13.9</td>
<td>13.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Palm fatty acid distillate</td>
<td>20.7</td>
<td>20.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global</td>
<td>Corn oil (from dry mill ethanol plant)</td>
<td>17.2</td>
<td>17.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Soybean oil</td>
<td>40.4</td>
<td>24.5</td>
<td>64.9</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>Soybean oil</td>
<td>40.4</td>
<td>27.0</td>
<td>67.4</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>Rapseed oil</td>
<td>47.4</td>
<td>24.1</td>
<td>71.5</td>
</tr>
<tr>
<td></td>
<td>Malaysia &amp; Indonesia</td>
<td>Palm oil – closed pond</td>
<td>37.4</td>
<td>39.1</td>
<td>76.5</td>
</tr>
<tr>
<td></td>
<td>Malaysia &amp; Indonesia</td>
<td>Palm oil – open pond</td>
<td>60.0</td>
<td>39.1</td>
<td>99.1</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>Brachiaria carinata (grown as a secondary crop that avoids other crops displacement)</td>
<td>34.4</td>
<td>-20.4</td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Brachiaria carinata (grown as a secondary crop that avoids other crops displacement)</td>
<td>34.4</td>
<td>-21.4</td>
<td>13.0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Fuel Conversion Process</th>
<th>Region</th>
<th>Fuel Feedstock</th>
<th>Core LCA Value</th>
<th>ILUC LCA Value</th>
<th>LS(\text{gCO}_2\text{/MJ})</th>
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</thead>
<tbody>
<tr>
<td>Alcohol (isobutanol) to jet (ATJ)</td>
<td>Global</td>
<td>Agricultural residues</td>
<td>29.3</td>
<td>0.0</td>
<td>29.3</td>
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<tr>
<td></td>
<td>Global</td>
<td>Forestry residues</td>
<td>23.8</td>
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<td>23.8</td>
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<tr>
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<td>Brazil</td>
<td>Sugarcane</td>
<td>20.0</td>
<td>7.3</td>
<td>31.3</td>
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<tr>
<td></td>
<td>USA</td>
<td>Corn grain</td>
<td>55.8</td>
<td>22.1</td>
<td>77.9</td>
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<tr>
<td></td>
<td>USA</td>
<td>Miscanthus (herbaceous energy crops)</td>
<td>43.4</td>
<td>-54.1</td>
<td>-10.7</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>Miscanthus (herbaceous energy crops)</td>
<td>43.4</td>
<td>-31.0</td>
<td>12.4</td>
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<tr>
<td></td>
<td>USA</td>
<td>Switchgrass (herbaceous energy crops)</td>
<td>43.4</td>
<td>-14.5</td>
<td>28.9</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>Sugarcane</td>
<td>24.1</td>
<td>8.7</td>
<td>32.8</td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>Corn grain</td>
<td>65.7</td>
<td>25.1</td>
<td>90.8</td>
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<tr>
<td></td>
<td>Global</td>
<td>Agricultural residues (standalone conversion design)</td>
<td>39.7</td>
<td>0</td>
<td>39.7</td>
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<tr>
<td></td>
<td>Global</td>
<td>Agricultural residues (integrated conversion design)</td>
<td>24.6</td>
<td>0</td>
<td>24.6</td>
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<tr>
<td></td>
<td>Global</td>
<td>Forestry residues (standalone conversion design)</td>
<td>40.0</td>
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<td></td>
<td>Global</td>
<td>Forestry residues (integrated conversion design)</td>
<td>24.9</td>
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<td>Miscanthus (herbaceous energy crops) (standalone conversion design)</td>
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<td>-42.6</td>
<td>0.7</td>
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<tr>
<td></td>
<td>USA</td>
<td>Miscanthus (herbaceous energy crops) (integrated conversion design)</td>
<td>28.3</td>
<td>-42.6</td>
<td>-14.3</td>
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<tr>
<td></td>
<td>EU</td>
<td>Miscanthus (herbaceous energy crops) (standalone conversion design)</td>
<td>43.3</td>
<td>-23.3</td>
<td>20.0</td>
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<tr>
<td></td>
<td>EU</td>
<td>Miscanthus (herbaceous energy crops) (integrated conversion design)</td>
<td>28.3</td>
<td>-23.3</td>
<td>5.0</td>
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<tr>
<td></td>
<td>USA</td>
<td>Switchgrass (herbaceous energy crops) (standalone conversion design)</td>
<td>43.9</td>
<td>-10.7</td>
<td>33.2</td>
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<tr>
<td></td>
<td>USA</td>
<td>Switchgrass (herbaceous energy crops) (integrated conversion design)</td>
<td>28.9</td>
<td>-10.7</td>
<td>18.2</td>
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<tr>
<td>Synthesized iso-paraffins (SIP)</td>
<td>Brazil</td>
<td>Sugarcane</td>
<td>32.8</td>
<td>11.3</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td>EU</td>
<td>Sugar beet</td>
<td>32.4</td>
<td>20.2</td>
<td>52.6</td>
</tr>
</tbody>
</table>
## Examples

SAF(ATJ) from sugarcane ethanol

<table>
<thead>
<tr>
<th></th>
<th>Producer 1 (Region A)</th>
<th>Producer 2 (Region B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG LCA</td>
<td>27</td>
<td>45</td>
</tr>
<tr>
<td>CORSIA ILUC value</td>
<td>8.7</td>
<td>10</td>
</tr>
<tr>
<td>Total GHG intensity</td>
<td>35.7</td>
<td>55</td>
</tr>
<tr>
<td>CORSIA baseline</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Total saving GHG LCA only</td>
<td>62</td>
<td>44</td>
</tr>
<tr>
<td>Total saving GHG LCA + ILUC</td>
<td>53.3</td>
<td>34</td>
</tr>
<tr>
<td>% GHG reductions GHG LCA only</td>
<td>70%</td>
<td>49%</td>
</tr>
<tr>
<td>% GHG reductions GHG LCA + ILUC</td>
<td>60%</td>
<td>38%</td>
</tr>
<tr>
<td>CORSIA eligible?</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Qualifies for RSB certification?</td>
<td>✔</td>
<td>✗</td>
</tr>
</tbody>
</table>

Values in g CO₂ eq / MJ

Examples:

- SAF(ATJ) from sugarcane ethanol
RSB Certification

Greenhouse Gas Calculator Tool

- Excel based calculator
- Embeds all GHG methodologies – RSB Global, EU RED & CORSIA
- Simple navigation to move between supply chain steps
- Instruction notes built into the tool – no user manual needed
- Emissions factors from Ecoinvent and Biograce included, but can be overwritten with actual values (to be verified by auditors)

Note: Click on the respective components of the above "flow diagram" to navigate to the relevant section.

The supply chain depicted above is an example supply chain. You can model your specific supply chain in the "Results" section.

Anyone applying for RSB certification is required to demonstrate a minimum 50% reduction of GHG from fossil fuels, or 60% if they are a new installation.
This tool is available to alternative fuel producers, processors, and all other parts of the supply chain.
The GHG calculator enables you to see easily whether you meet the RSB minimum 50%-60% reduction of GHG from fossil fuels.

Access to RSB GHG calculator tool is available for free to RSB participating operators and RSB members. All other users may request access for a one-off fee of 200 Euros.
RSB Certification
GHG methodology for RSB Global, EU RED and CORSIA

<table>
<thead>
<tr>
<th></th>
<th>RSB Global</th>
<th>EU RED I</th>
<th>EU RED II</th>
<th>CORSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fossil Baseline</strong></td>
<td>90 g CO₂ eq/MJ</td>
<td>83.8 g CO₂ eq/MJ</td>
<td>94 g CO₂ eq/MJ</td>
<td>89 g CO₂ eq/MJ</td>
</tr>
<tr>
<td><strong>ILUC value</strong></td>
<td>Voluntary module for low ILUC risk claim</td>
<td>No</td>
<td>Not yet</td>
<td>Yes, default provided</td>
</tr>
<tr>
<td><strong>Co-product allocation</strong></td>
<td>Energy value (LHV) or Economic value</td>
<td>Energy value (LHV)</td>
<td>Energy value (LHV)</td>
<td>Energy value (LHV)</td>
</tr>
<tr>
<td><strong>CoC allocation</strong></td>
<td>Ratio of MJ feedstock to produce 1 MJ of intermediate product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target reduction</strong></td>
<td>• 50% (before 5 Oct 2015) • 60% (after 5 Oct 2015)</td>
<td>• 50% (before 5 Oct 2015) • 60% (after 5 Oct 2015)</td>
<td>• 50% (before 5 Oct 2015) • 65% (after 1 Jan 2021) • 70% (fuels of non-biological origin)</td>
<td>• 50% on core LCA and • 10% LCA+ILUC</td>
</tr>
</tbody>
</table>
RSB ICAO CORSIA: Get Certified
The Case for Certification
A key Investment

- Market Access
- Consumer & Stakeholder Confidence
- Reduce business risk
- NGO support
## RSB Certification

### Role players

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Setting body</strong></td>
<td>RSB is the organisation that develops and maintains the standard.</td>
</tr>
<tr>
<td><strong>Accreditation body</strong></td>
<td>ASI (Assurance Services International). Independent organisation that ensures Certification Bodies conduct RSB audits in a competent and consistent way.</td>
</tr>
<tr>
<td><strong>Certification body</strong></td>
<td>Companies who provide auditing services and give the RSB certificate to companies. RSB works with a few international CBs (like Control Union and SCS). Operators hire their CB of choice for their RSB audit.</td>
</tr>
<tr>
<td><strong>Individual auditors</strong></td>
<td>Individuals hired by Certification Bodies to conduct RSB audits. They are regularly trained in the RSB standards.</td>
</tr>
<tr>
<td><strong>Participating operator</strong></td>
<td>Companies who apply for certification, implement the relevant RSB requirements and, upon a successful audit, receive the RSB certificate and sell products with an RSB claim.</td>
</tr>
</tbody>
</table>
Certification Process

Getting Started

Step 1: Application

Step 2: Prep for Audit

Step 3: Audit

Step 4: Close non-conformities

Step 5: Certification

2 week public consultation

CORSIA Compliant
### What next?

**SAF Policy Platform**
- Assessment of SAF policy and legislation in key jurisdictions
- Assessment of sustainability criteria for SAF legislation at national and global level
- Development of a strategy for working with relevant policymakers
- Exclusive for RSB members

**PtX Working Group**
- Expert-led learning sessions on PtX
- Developing knowledge on current approach to sustainability
- Exploring key sustainability issues and providing advice
- Exclusive for RSB members

5 August 2021
Q&A Session

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