ISCC Solutions for Sustainable Aviation Fuels
Air travel has increased by 62% from 2010 to 2018 and is expected to keep rising.

Number of scheduled passengers boarded by the global airline industry (in millions)


*estimation
Lowering GHG emissions in aviation will be fundamental to reach climate targets of the 2015 Paris agreement.

CO2 emissions from aviation (in million tonnes)

Paris Agreement: Key elements

- Long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels
- Parties aim to reach global peaking of GHG emissions as soon as possible
- Transparency and global stocktake
- Strengthen societies’ ability to deal with the impacts of climate change
- Support climate action in developing countries

Ambitious targets of ICAO Member States: carbon-neutral growth from 2020 and a 50% reduction of net aviation carbon emissions by 2050.

| Timeline for ICAO’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) |
|---|---|---|
| **Pilot phase** | **First phase** | **Second phase** |
| 2021 - 2023 | 2024 - 2026 | 2027 - 2035 |

**VOLUNTARY**
States are volunteering to be part of the scheme from 2021

**MANDATORY**
With exemption for: Small islands, least developed countries, landlocked developed countries and States with less than 0.5% of international air traffic in the year 2018 (although they can volunteer)

81 states (including all EU Member States), representing around 80% of international aviation intend to participate in CORSIA*


© ISCC System GmbH: For personal use only. Reproduction and distribution is prohibited.
Compared to fossil fuels, sustainable aviation fuels (SAF) have the potential to cut emissions substantially

- According to the ICAO 2016 trends assessment, a 100 % substitution of fossil fuels with SAF could reduce 63% of the baseline CO2 emissions from international flights in 2050*

- Using existing schemes will help to make commercial volumes available. It reduces the organisational and cost burden on companies in the supply chain and thus will increase acceptance

- Beyond sustainable aviation fuels, the concept of “Lower Carbon Aviation Fuels” (LCAF) is based on prospective technologies that may allow the production of fossil fuels with a lower carbon footprint.

In 2016, a set of sustainability criteria for CORSIA eligible SAF was approved by the ICAO Council.

### 1. Greenhouse Gases

**Principle**
CORSIA eligible fuel should generate **lower carbon emissions** on a life cycle basis.

**Criteria**
At least **10% net GHG emissions** reductions compared to the baseline life cycle emissions values for aviation fuel on a life cycle basis.

### 2. Carbon Stock

**Principle**
CORSIA eligible fuel should **not** be made from biomass obtained **from land with high carbon stock**.

**Criteria**
**No land use change** of land with high carbon stock (primary forests, wetlands and peatlands) **on or after 01 January 2008**.

ISCC is a well experienced certification scheme with innovative tools to verify sustainability requirements set by CORSIA

Large volumes of certified feedstock basis available which could be used for alternative jet fuels

Major fuel producers are ISCC members and active users of the certification system

Vast experiences in the road transportation market is of high value for the deployment of SAF

Latest remote sensing technologies to support the verification of land use change and to ensure that supply chains are deforestation-free
ISCC certification provides full **traceability** along the supply chain from the origin of biomass… to collectors, traders… and producers… to the final market!
ISCC supports companies to measure and reduce their carbon footprint by providing comprehensive GHG methodologies and tools.
ISCC is a main driver of the establishment of sustainable aviation fuels

- ISCC members active in SAF:
  
  ![en] ![IATA] ![gevo] ![NESTE] ![Shell]
  
  ![LanzaTech] ![TOTAL] ![UPM] ![bp]

- ISCC is an active member of the CAEP Fuels Task Group that is working on CORSIA eligible SAF and LCAF (lower carbon aviation fuels)

- Lufthansa has already used ISCC for test flights with SAF

- ISCC is involved in a scientific project analysing reporting requirements in supply chains of multi-blends of fossil and alternative jet fuels
With currently over 4,000 valid certificates in more than 100 countries, ISCC is among the world’s largest certification systems

All Feedstocks, including:
- Camelina
- Canola / Rapeseed
- Cereal
- Corn
- Cotton
- Palm
- Shea
- Soy
- Sugarbeet
- Sugarcane
- Sunflower
- Waste & Residues
- Wood

All Markets:
- Food
- Feed
- Energy
- Industrial applications

© ISCC System GmbH: For personal use only. Reproduction and distribution is prohibited.
ISCC certifies all kinds of agricultural and forestry feedstocks for low carbon fuels

Examples

- Soy
- Canola
- Palm
- Sunflower
- Cereals
- Corn
- Sugarcane
- Sugarbeet
- Wood
- Cotton
- Shea Nuts
- Camelina
In addition, ISCC is the leading system for the certification of waste and residue-based supply chains

<table>
<thead>
<tr>
<th>Waste and processing residues</th>
<th>Renewable non-bio feedstocks</th>
<th>Forestry / agricultural crop residue</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCO</td>
<td>Power-to-Gas Power-to-Liquid</td>
<td>Forestry residue</td>
</tr>
<tr>
<td>Landfill gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tall oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>End-of-life tires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipal solid waste / mixed plastic waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude glycerine</td>
<td>CO2</td>
<td>Husks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Straw</td>
</tr>
</tbody>
</table>

Examples
ISCC is a comprehensive standard with a balanced set of ecological and social criteria for the certification of agricultural raw materials.

**Principle 1:** Protection of biodiverse and carbon rich areas

**Principle 2:** Good Agricultural Practice

**Principle 3:** Safe Working Conditions

**Principle 4:** Compliance with Human, Labour and Land rights

**Principle 5:** Compliance with Laws and International Treaties

**Principle 6:** Good Management Practices and Continuous Improvement
7 good reasons why you should choose ISCC

# 1 We comply with legal requirements for biofuels/bioliquids and comply with aviation initiatives

# 2 We do not accept compensation for deforestation

# 3 We protect human and social rights

# 4 We perform outstandingly well in benchmarks

# 5 We use innovative tools for credible and efficient audits

# 6 We ”never stop looking and watching” in the ISCC integrity Programme

# 7 We are a living multi-stakeholder initiative
# 1 ISCC provides compliance with legal requirements for biofuels/bioliquids in important markets and is recognised by aviation initiatives

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union</td>
<td>ISCC is in compliance with the Liquid Fuel Supply Regulation of Queensland.</td>
</tr>
<tr>
<td>Japan</td>
<td>The Japanese Government recognises ISCC certification to verify compliance with the sustainability requirements for biofuels.</td>
</tr>
<tr>
<td>Queensland (Australia)</td>
<td>ISCC participates in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), developed by the International Civil Aviation Organization (IATA).</td>
</tr>
<tr>
<td>CORSIA</td>
<td>ISCC is recognised by AIREG (aviation for renewable energy in Germany).</td>
</tr>
</tbody>
</table>
# 2 Biodiverse and carbon rich areas are protected under ISCC. Land use change in or after January 2008 is not allowed

- Primary forests and other wooded land
- Forested areas
- Designated nature protection areas
- Highly biodiverse grassland
- Wetland
- Peatland
# 3 Social criteria are very important within ISCC. ISCC requirements address many topics to protect human and labor rights

- Access to primary school education
- Adequate training
- No forced labour & no discrimination
- Payment of a minimum wage
- Only competent and non-vulnerable workers do hazardous work
- Labour organisation and collective bargaining are allowed
# 4 We perform outstandingly well in benchmarks

The International Trade Centre (ITC), a joint agency of the United Nations (UN) and the World Trade Organization, has developed the Sustainability Map, an online platform to enable any interested party to explore and compare voluntary sustainability standards.

Source: ITC Sustainability Map (as of June 2018)
# 5 We develop and use innovative tools such as GRAS, a remote sensing tool to support identification of deforestation.

With GRAS (www.gras-system.org) we can analyze deforestation and grassland conversion and ensure a more credible, effective and less costly certification!
# 6 We „watch the watchmen“ – ISCC Integrity Program

We monitor with our own independent auditors the compliance of our certification bodies and system users based on random and risk-based selection.

This ensures consistent, objective and reliable audits and preserves the high credibility and quality of our system.
# 7 We are a living multi-stakeholder initiative organised in an association with 138 members
We take responsibility to protect our environment and the climate!
What about you?
Join us in our journey today and be part of the change!

ISCC System GmbH
info@iscc-system.org
+49 221 50802010