ISCC and the Global SAF Market: Certification in an Evolving Landscape

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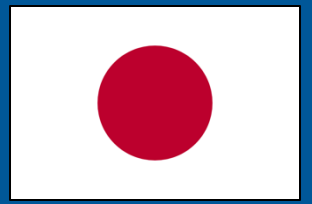


Japan is emerging as a major SAF demand center

The role of Japan in the global SAF market

- Japan is at the global forefront in emissions reductions planning, with the aim to **reduce greenhouse gas emissions** by 46% by the year 2030
- In this context, Japanese authorities introduced a **SAF mandate** to help cut GHG emissions from the aviation sector by 2030
- Japanese **Green Innovation Fund** (METI) contemplates supports, including exploring **certification frameworks** (e.g. ICAO CORSIA)
- **ISCC**, as a leading global certification organization in sustainable fuels, can **play a pivotal role in the country** and help foster expansion and achievement of targets

The ISCC Association is accelerating SAF progress through collaboration with industry leaders

- Many leading organizations in the field of SAF are **ISCC System Users and Association Members**
- ISCC is observer at the **CAEP Fuels Task Group within ICAO** that is working on the further development of CORSIA eligible fuels
- ISCC is an active partner of **ICAO's 'ACT-SAF' program**, helping States in developing their full potential in SAF deployment
- With its members, ISCC is conducting pilot projects on **innovative feedstocks, smart agricultural practices, voluntary claims,** and **Power-to-Liquids**

Sample Selection

Japan

{bits} idemitsu marusumi 丸住製紙株式会社 Marusumi Paper Co.,Ltd HMLP CO., LTD. MITSUI&CO.

Airlines

AIR NEW ZEALAND UNITED American Airlines DELTA DHL

Fuel Providers

REPSOL air bp LanzaTech NESTE ExxonMobil LanzaJet EcoCeres Renewable Energy Group gevo eni TotalEnergies

Company & Associations

AIRBUS aireg Aviation Initiative for Renewable Energy in Germany e.V. BDL Bundesverband der Deutschen Luftverkehrswirtschaft IATA

ISCC International Sustainability & Carbon Certification

ISCC is actively engaged in advancing Japan's SAF marketplace

- Ever-expanding **ISCC Association membership presence from the Japanese Marketplace**, currently with 47 members
- Currently 16 valid ISCC CORSIA certificates in Japan, and growing
- Certificates under all flagship ISCC Schemes - ISCC PLUS, ISCC EU, ISCC CORSIA, ISCC Japan FIT
- Annual ISCC **Regional Stakeholder Committee Southeast Asia established in 2010**
- **Direct engagement** at many Asia-based events, conferences, and workshops

ISCC International Sustainability & Carbon Certification

Driving SAF Success: ISCC's Impact in Japan and Asia

Examples of recent press releases

JAPAN'S SAFFAIRE SKY ENERGY SECURES ISCC CERTIFICATION FOR SAF

NEWS BY FAYAZ HUSSAIN DECEMBER 13, 2024 0 PRINT THIS PAGE

Saffaire Sky Energy, a joint venture between Japan's Cosmo Oil, JGC, and Revo International, said it recently secured the International Sustainability and Carbon Certification (ISCC) CORSA certification for its sustainable aviation fuel (SAF) produced at the Sakai plant, currently under construction.

Source: SAF Investor

Pertamina Patra Niaga achieves ISCC certification for sustainable aviation fuel

PT Pertamina Patra Niaga, a subsidiary of State oil and gas company PT Pertamina, has strengthened its commitment to sustainability by securing the International Sustainability and Carbon Certification (ISCC) for its Sustainable Aviation Fuel (SAF) under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Renewable Energy Directive-European Union (RED-EU).

Source: Indonesia Business post

SEP 26, 2024

Neste, Itochu and Caltex collaborate on sustainable fuel for purchase in Japan

Neste, ITOCHU and GS Caltex have collaborated to make the first batch of CORSIA-eligible ISCC-certified sustainable aviation fuel (SAF) available for purchase at Narita International Airport in Japan.

Source: Biofuels International

Cathay Pacific Completes its First Commercial Flight Overseas Using SAF

Made from 100% used cooking oil, this pure SAF meets the **European Union's International Sustainability and Carbon Certification (ISCC)** standards. The SAF can decrease greenhouse gas (GHG) emissions by nearly 90% over its lifecycle compared to traditional jet fuel, providing an air transport and air cargo solution with lower GHG emissions.

Source: aviacionline

ISCC International Sustainability & Carbon Certification

Why sustainability certification in SAF?

Certification is key in ensuring that SAF production is sustainable & leads to quantifiable GHG emission reductions

Sustainability certification aims to ensure:

Sustainability in feedstock, waste/residue generation and fuel production

Traceability and chain of custody through fuel supply chains

Ensuring quantifiable GHG emissions reductions

ISCC
International Sustainability & Carbon Certification

ISCC offers three certification systems

Tailored to market needs and the evolving global regulatory market

ISCC EU

- Officially approved by the EU Commission
- Used to demonstrate compliance with the **EU RED II sustainability criteria**
- ISCC EU certified SAF can be claimed under **EU ETS, UK ETS and,** once in effect, **ReFuelEU Aviation**
- Officially recognized for **RFNBOs and RCFs** (thus including eSAF)

ISCC PLUS

- Applicable for mostly **voluntary markets**
  - Energy and renewable fuels outside the EU RED II market
  - Industrial applications
  - Food and feed markets
- Recognized for **Ethanol/ETBE** imports to Japan

ISCC CORSIA

- Officially approved by ICAO
- Used to demonstrate compliance with the **ICAO CORSIA sustainability criteria**
- ISCC CORSIA certified SAF can be claimed under **CORSIA**
- ISCC CORSIA certified SAF explicitly recognized by the **Science-Based Targets Initiative (SBTi)**

Sustainable Aviation Fuels

ISCC International Sustainability & Carbon Certification

Harmonization between the three ISCC systems

Combined audits and alignment provide increased access to global markets

ISCC EU

ISCC PLUS

ISCC CORSIA

Multi-stakeholder driven

Quality and risk management

Integrity Program

Requirements for certification bodies

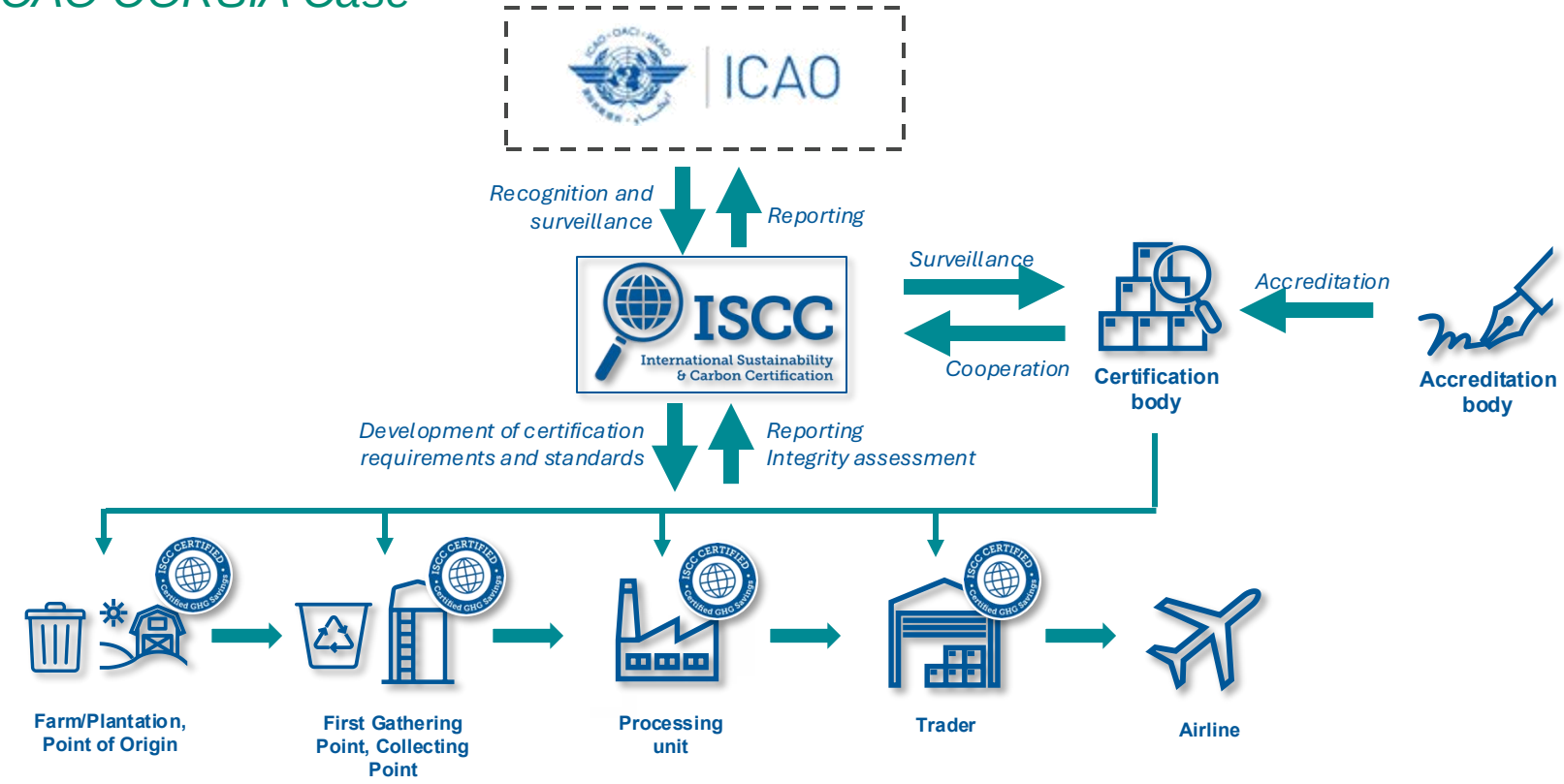
Requirements for conducting audits

Registration and certification process

ISCC International Sustainability & Carbon Certification

The certification “Ecosystem” in the regulated market

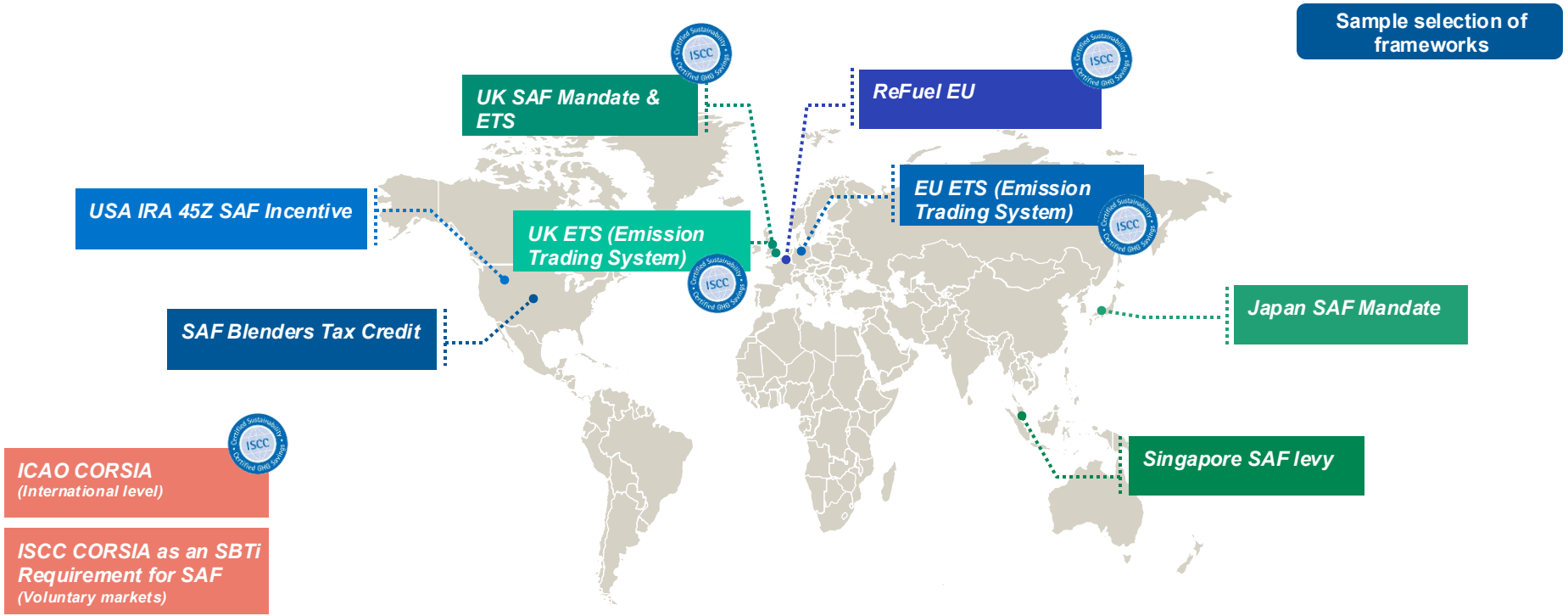
The ICAO CORSIA Case



ISCC International Sustainability & Carbon Certification

Powering SAF sustainability through certification

A key tool for compliance in (inter)national regulatory & voluntary frameworks



= *official recognition in place*

ISCC Certification: Unlocking Key Feedstocks for Japan's SAF Industry

Example of certified feedstocks for Japan

Agricultural feedstocks

Rapeseed / canola

Waste and residues

Used cooking oil

Forestry processing residues

Food waste

Circular feedstocks

Mixed plastic waste

ISCC can certify nearly all feedstocks that are used to produce SAF. Applicable regulatory frameworks determine the eligibility of specific feedstocks.

ISCC International Sustainability & Carbon Certification

354* companies certified under the ISCC CORSIA system

13% **AMERICAS**
47 Certified entities

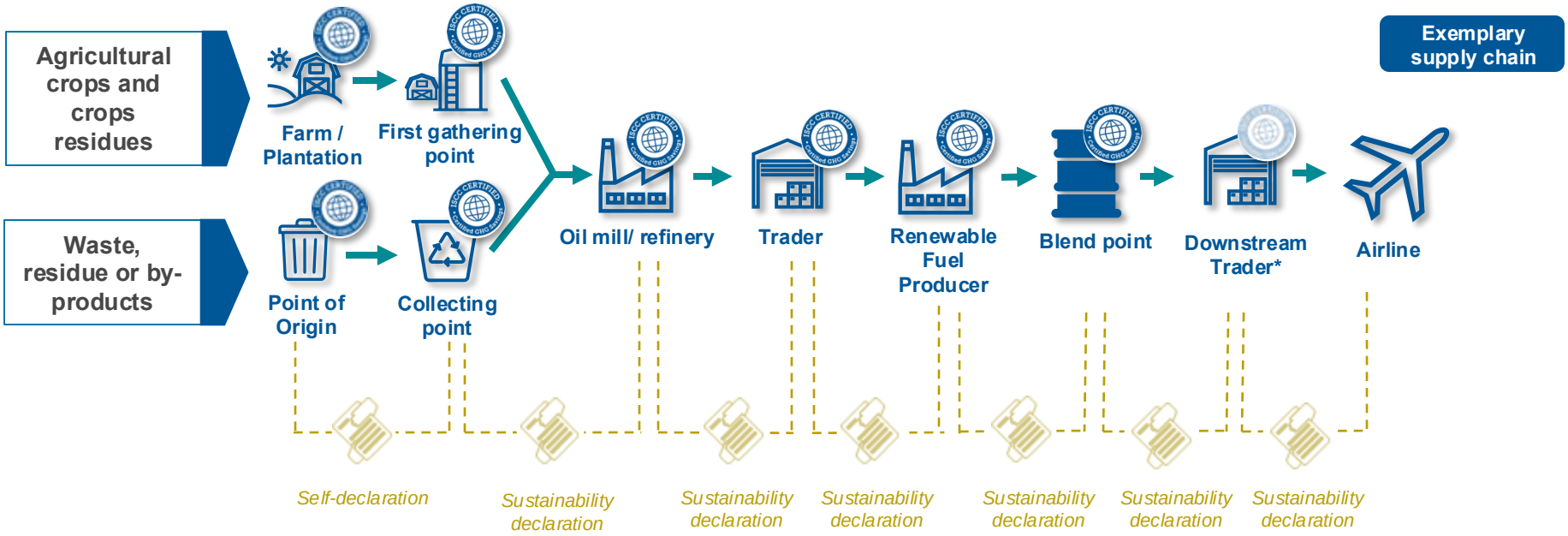
16% **EMEA**
56 Certified entities

71% **APAC**
252 Certified entities

*As of January 2025

Each supply chain element is certified to ensure full traceability

Information is forwarded through the chain via sustainability declarations

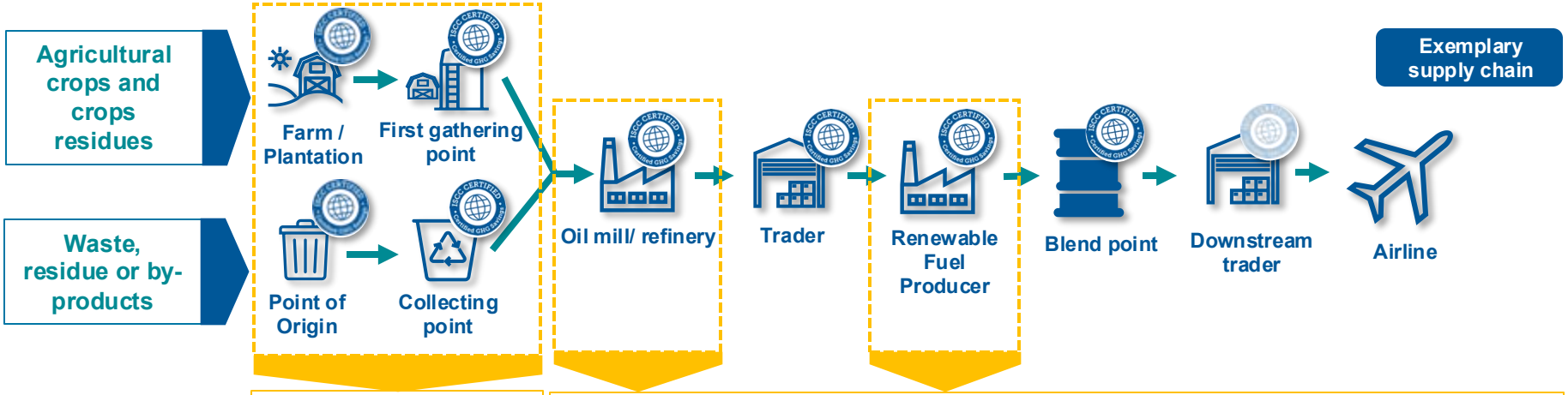


*Under ICAO CORSIA, certification is mandated up to and including to the SAF Blend Point. Further downstream certification is voluntary.

ISCC International Sustainability & Carbon Certification

Tracing emissions: the final carbon footprint

GHG Emissions are calculated along every step along the chain



Feedstock production and collection

- Emissions from **feedstock cultivation**
- Emissions from **direct land use change (DLUC)**
- Emission savings from **soil carbon accumulation**
- Emissions from **upstream transport**

Processing; upstream and downstream transport and distribution

- Emissions from **processing**
- Emission savings from **carbon capture and storage**
- Emissions from **transport and distribution** (upstream and downstream)
- Emissions from **combustion**

The GHG emissions value calculated at each step must be audited and verified by a certification body before it can be forwarded in the supply chain.

ISCC International Sustainability & Carbon Certification

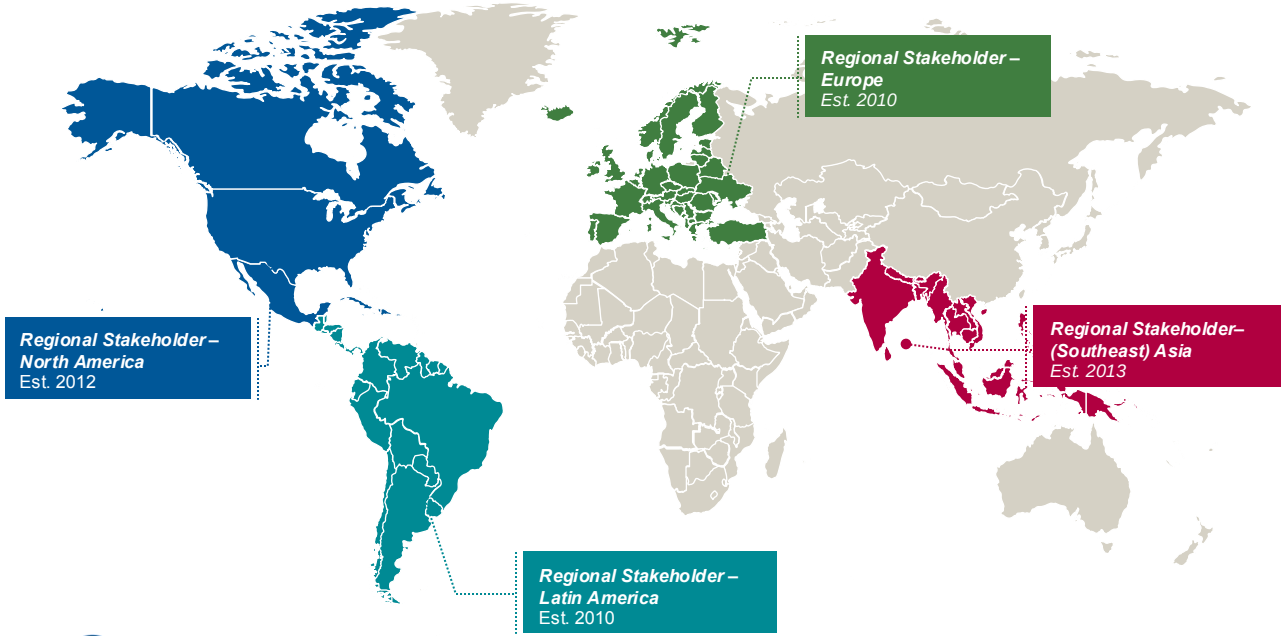
Global auditor network supporting ISCC certification

67 Certification Bodies deliver worldwide capacity, including Japan

ISCC International Sustainability & Carbon Certification

Continuous development of the ISCC System through active stakeholder committees

Regional Stakeholder Committees



Technical Stakeholder Committees

- **Solid Biomass** Est. 2011
- **Waste, Residues, and Advanced Low Carbon Fuels** Est. 2018
- **Circular Economy & Bioeconomy** Est. 2020
- **Sustainable Aviation Fuels** Est. 2021
- **Alternative Marine Fuels** Est. 2023
- **Renewable Fuels of Non-Biological Origin (RFNBOs)** Est. 2023

ISCC International Sustainability & Carbon Certification

ISCC CORSIA Low LUC-risk* presents significant opportunity

ILUC value of zero for certified agricultural products

- **ISCC certifies Low LUC risk feedstocks** under ISCC CORSIA. Two options for compliance:
  - **Yield increase** approach
  - **Unused land** approach
- Certified feedstocks have an **ILUC value of zero, decreasing the final CI** of SAF
- **Three ISCC CORSIA Low LUC-Risk certificates issued**: Gremca Agricultura (palm oil), São Martinho (sugarcane) and FS (corn) in Colombia and Brazil, respectively.
- ISCC has **succesfully conducted extensive pilot projects** proving the feasibility of ISCC CORSIA Low LUC Risk Certification around the globe

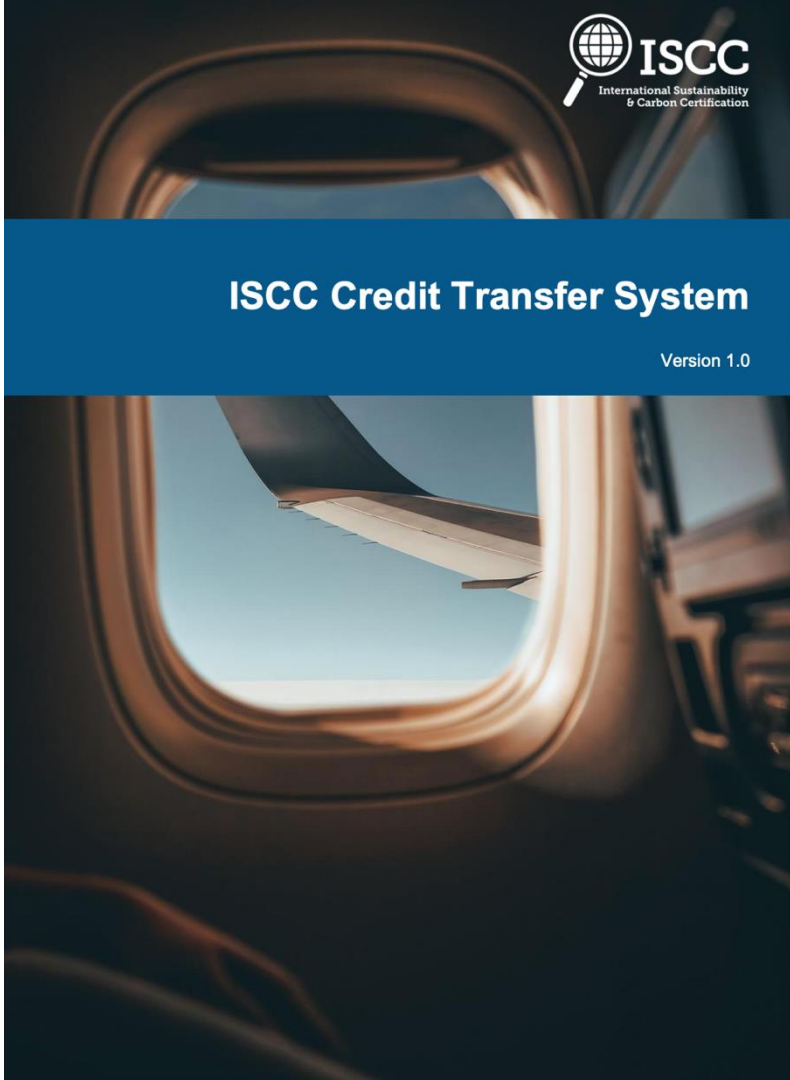
*Low LUC-Risk = Low Land Use Change Risk Certification

The ISCC Credit Transfer System

Ensuring credible SAF claims & unlocking voluntary market opportunities for Japan

- Existing certification systems **lack coverage for airlines and corporate end-customers**, leading to transparency gaps and **potential inaccuracies** in voluntary claims
- ISCC Credit Transfer System **links certified SAF supply chains to airlines and corporate Scope 1 and 3 claims**
- This system ensures **transparency and credibility** through clear sustainability rules, secure transfers, and a robust digital registry
- Officially launched, the ISCC Credit Transfer System is **rapidly expanding** its adoption

ISCC
International Sustainability & Carbon Certification



ISCC is developing certification approaches for Power-to-Liquids

- Integration of electricity as a feedstock is gaining importance, including for eSAF production
- Under **ISCC PLUS**, PtX solutions (including eSAF) can be certified, ensuring **key sustainability parameters are met**
- Under the EU Renewable Energy Directive, ISCC was recently granted **official recognition** by the EU COM for **RFNBOs* and RCFs**** certification. First certificates already issued!
- Under **ICAO CORSIA**, ISCC is taking part in dedicated subgroups/ad-hoc groups to monitor and participate in relevant discussions (**HEI CEF*****)

*RFNBOs = Renewable Fuels of Non-Biological Origin

*RCFs = Recycled Carbon Fuels

***HEI CEF = High-Electricity Input CORSIA Eligible Fuels

ISCC certification of SAF fuels new opportunities in Japan

- Increasing number of **regulatory frameworks around the globe, including in Japan**, offering incentives and ensuring demand certainty through SAF mandates
- ISCC and sister companies are in the position to support the Japanese market for SAF certification:
  - Strong presence of **ISCC in Japan** across all certification schemes, including ISCC CORSIA
  - Many relevant **feedstocks are already covered by ISCC**
  - **New certification approaches** (e.g. Low LUC, PtL, LCAF) offer unique opportunities and access to new markets
  - ISCC collaborating on a **joint project with MRI/JCAB** for SAF producers in Japan for ISCC CORSIA certification
  - Rapidly expanding **presence and recognition in voluntary markets**

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Thank you!

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