



Update on Certification Solutions for SAF & SMF

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An Increasing Range of Regulatory Frameworks Utilize Certification Schemes to Ensure the Sustainability of SAF

Examples

ICAO CORSIA

Airlines can reduce their offsetting obligations under CORSIA through SAF **certified under an ICAO-approved SCS (e.g. ISCC CORSIA)**

ReFuelEU Aviation Regulation

Fuel suppliers obligated under ReFuelEU must supply SAF that is **certified under an EU RED Voluntary Scheme (e.g. ISCC EU)**

UK SAF Mandate

UK foresees **use of certification schemes** similarly to those currently accepted under the UK RTFO

SAF blender's tax credit under the US IRA*

Eligible SAF must be certified under a CORSIA approved SCS (**e.g. ISCC CORSIA**) – GHG emission reduction of at least 50%

*US IRA = US Inflation Reduction Act

EU Emissions Trading System

Airlines can only account for the use of SAF with zero emissions if it is **certified under an EU RED Voluntary Scheme (e.g. ISCC EU)**

UK Emissions Trading System

Airlines can only account for the use of SAF with zero emissions if it is **certified under an RTFO-approved certification scheme (e.g. ISCC EU)**

In the Maritime Sector, both the IMO and the EU Utilize Certification Schemes to Validate Sustainability of Sustainable Marine Fuels (SMF)

IMO's Carbon Intensity Indicator (CII)

- IMO issued a circular to account for the **use of biofuels for CII purposes**
- **Biofuels must be certified** by an ICAO-recognized certification scheme (such as ISCC)
- **Temporary approach** until LCA Guidelines are implemented

FuelEU Maritime Regulation

- Sets increasing **GHG intensity reduction targets for energy for ships** above a certain gross tonnage.
- Makes use of the **EU RED sustainability framework**, including certification **under an EU RED Voluntary Scheme (e.g. ISCC EU)**

IMO's LCA Guidelines

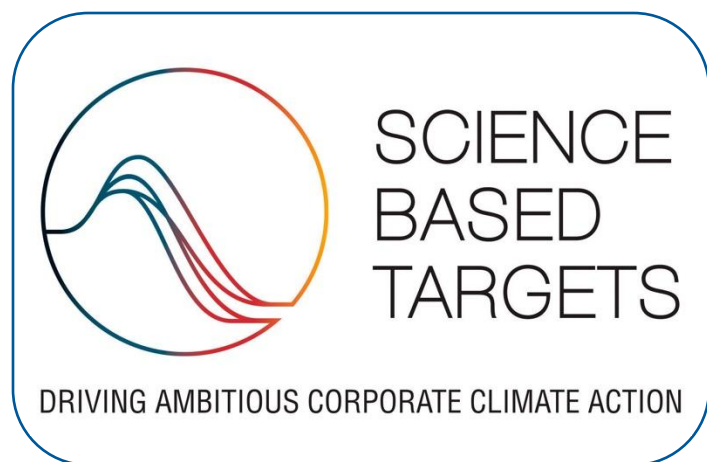
- Provide the **methodology for calculating well-to-wake GHG emissions** for all marine fuels in IMO context, also specify **sustainability aspects**
- Will make use of **third-party certification schemes**
- Concrete provisions on **application and fuel certification still under development** at IMO level

EU Emissions Trading System

- **Biofuels** will be able to accounted for with an **emission factor of zero**, provided they are **certified as EU RED compliant under a recognized Voluntary Scheme** (such as ISCC EU)

Growing demand for alternative marine and aviation fuels from the voluntary market

Certification provides robust validity and credibility



- **The science-based targets initiative (SBTi)** has become the industry-leading platform for corporate climate action, with currently **over 9400 companies setting science-based targets**
- Under SBTi, sustainability certification is largely envisioned:
 - **ISCC CORSIA certification is explicitly recognized by SBTi** as ensuring compliance with criteria for SAF*
 - In the 2023 maritime sector guidance**, **SBTi recognizes biofuels as one of several key levers** in achieving ambitious carbon intensity reduction rates
 - SBTi recommends that companies using/ producing biofuels for transport should **support their GHG accounting with recognized biofuels certification*****

* Refer to: "SBTi for the Aviation Sector (v 1.0, August 2021)" ([link](#))

** Refer to: "SBTi for the Maritime Transport Sector (v 1.1, May 2023)"

*** Refer to: SBTi Corporate Near-Term Criteria (v 5.2, March 2024)

Why Sustainability Certification?

Certification can play a key role in ensuring that SAF and SMF production is sustainable, traceable and leads to quantifiable GHG emission reductions

Sustainability certification aims to ensure:



Sustainability in feedstock production, and waste and residue generation



Traceability and chain of custody through supply chains



Ensuring verified GHG emissions reductions along supply chains

Three ISCC certification systems for SAF & SMF tailored to market needs

System choice depends on compliance and/or market desires – combined audits possible

ISCC EU



- Officially approved by the EU Commission
- Used to demonstrate compliance with the **EU RED sustainability criteria**
- ISCC EU certified SMF or SMF will be able to be claimed under the **FuelEU Maritime, ReFuelEU Aviation Regulations** and the **EU ETS**

ISCC PLUS



- Applicable for mostly **voluntary markets**
 - Energy and renewable fuels outside the EU RED II market
 - Industrial applications
 - Food and feed markets
- Can be used for SMF and SAF claims in **non-regulated markets**

ISCC CORSIA



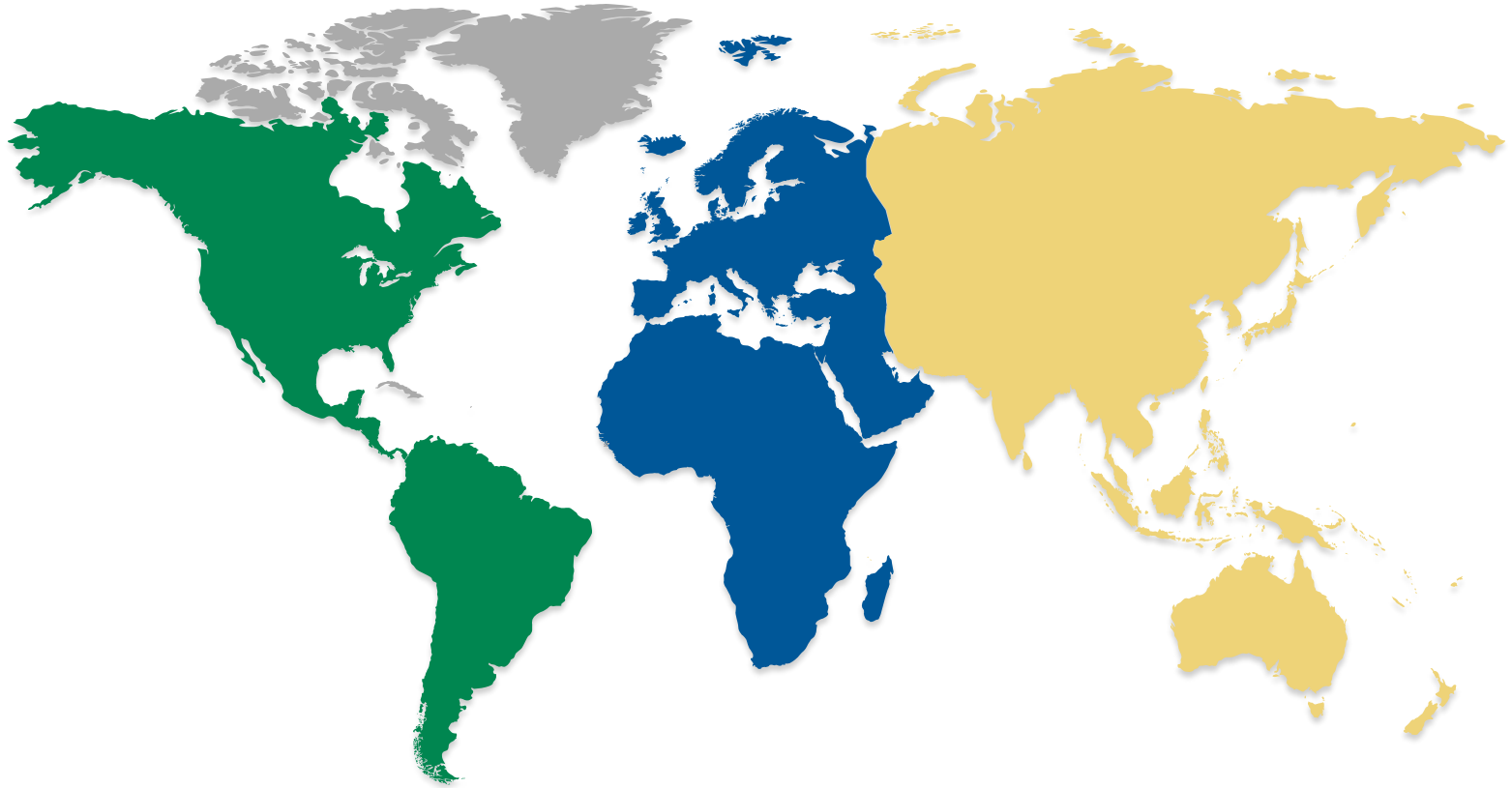
- Officially approved by ICAO
- Used to demonstrate compliance with the ICAO CORSIA sustainability criteria for sustainable aviation fuels
- ISCC CORSIA certified SAF can be claimed under **CORSIA**

Sustainable Marine Fuels

Sustainable Aviation Fuels

250 Organizations certified under the ISCC CORSlA standard

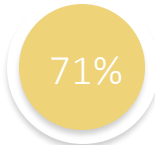
Interest is rising drastically within the North American market



AMERICAS
38 Certified entities



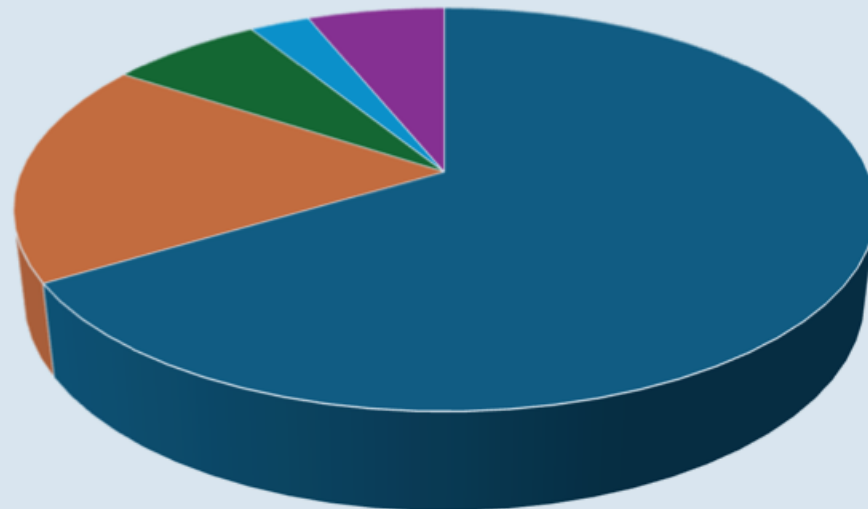
EMEA
35 Certified entities



APAC
177 Certified entities

Breakdown of ISCC CORSIA Certificates at global level

ISCC CORSIA certificates:
distribution by scope



■ Traders ■ Collecting Points ■ Points of Origin
■ First Gathering Points ■ Processing Units

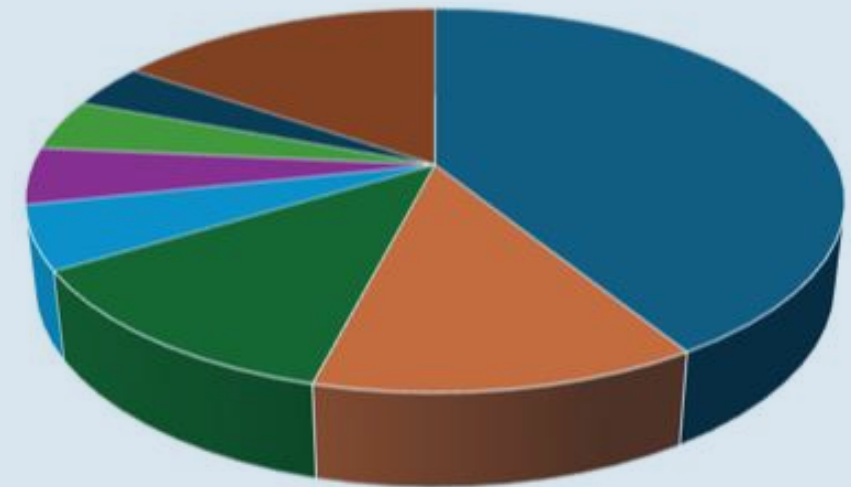
Processing Units - Distribution per conversion technology:

HEFA: 12

Co-Processing: 7

EtJ: 1

ISCC CORSIA certificates :
distribution by feedstock



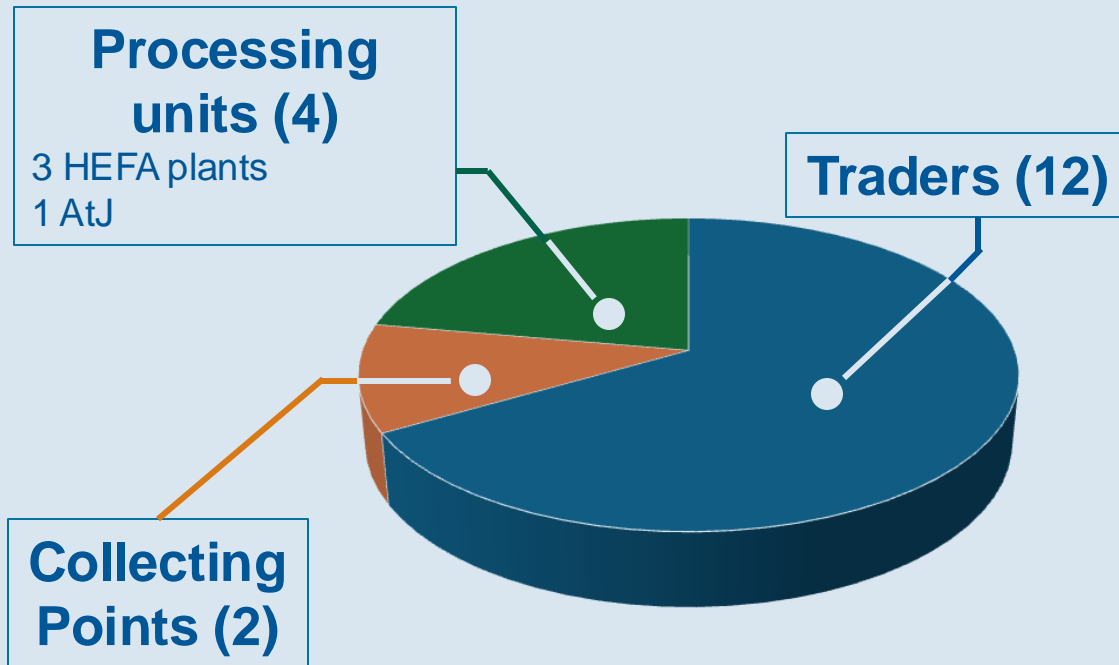
■ UCO ■ POME ■ Animal fats
■ Corn ■ Sugarcane ■ Technical corn oil
■ PFAD ■ Others

UCO = Used Cooking Oil
PFAD = Palm Fatty Acid Distillate
POME = Palm Oil Mill Effluent

Breakdown of ISCC CORSIA Certificates in North America

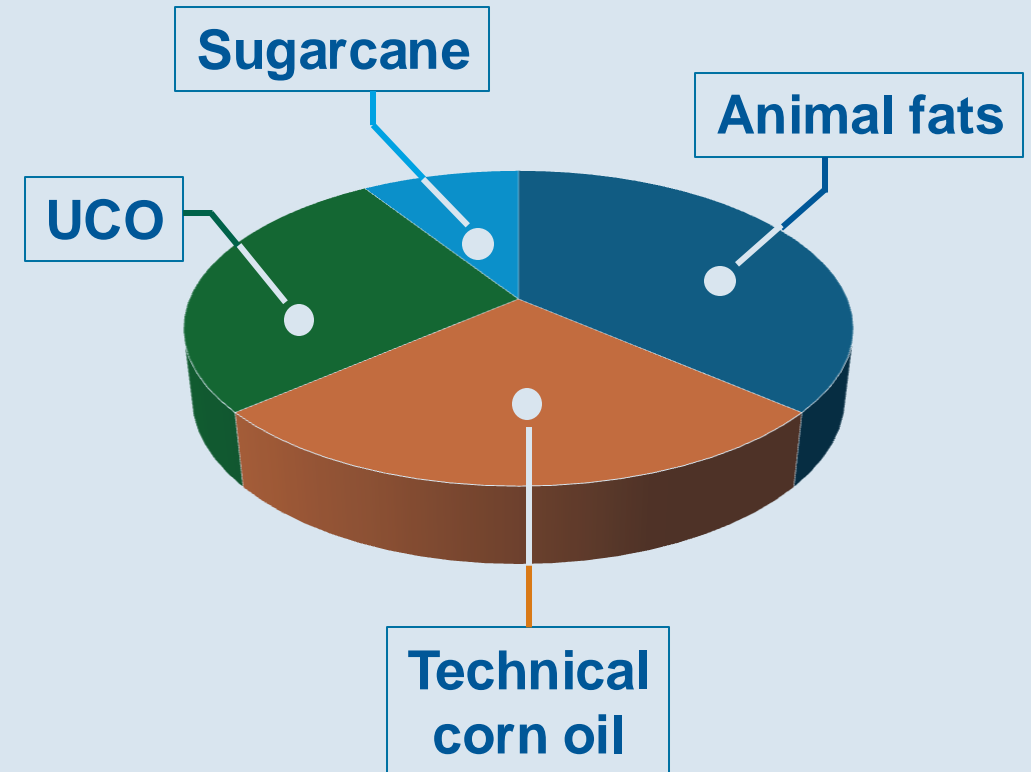
16 certificates with Waste and Residues the most used feedstock

ISCC CORSIA certificates in NA:
distribution per operation*



*Please note that under ISCC multiple scopes are allowed under one certificate, thus the sum of scope numbers does not match the number of certificates.

ISCC CORSIA certificates in NA:
distribution per feedstock



Data as of 8 November 2024

ISCC CORSIA**GUIDANCE FOR LOW LUC RISK
CERTIFICATION**

Low LUC-risk* Certification under ISCC

CORSIA presents significant opportunity

Certified agricultural feedstocks carry ILUC value of zero

- ISCC is in the position to **certify Low LUC risk feedstocks** under ISCC CORSIA. **Two options** for compliance:
 - Yield increase approach
 - Unused land approach
- Certified feedstocks carry an ILUC value of zero, **decreasing the final CI of SAF**
- **Three ISCC CORSIA Low LUC-Risk certificates** have been already issued for Gremca Agricultura (palm oil), São Martinho (sugarcane) and FS (corn) in Colombia and Brazil, respectively.
- ISCC has **successfully conducted pilot projects in US** (approach: unused land) proving the **feasibility of ISCC CORSIA Low LUC Risk Certification** in that territories

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

As Global SAF & SMF markets develop, more companies choose ISCC for certification including in NA

ISCC CORSIA has certified the first AtJ production facility globally

Examples of recent press releases

Colonial Oil Industries Marine Division achieves ISCC Plus and EU Certifications

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Colonial Oil Industries announced that its Marine division has received ISCC certification from SCS Global Services.

Source: Business and Industry Connection

LanzaJet Announces First-of-a-Kind \$20 Million Investment from Global Airport Operator Groupe ADP

ADP's investment in LanzaJet comes as the company recently opened LanzaJet Freedom Pines Fuels – the world's first commercial-scale ethanol-to-SAF plant. Located in the United States, the historic plant will produce SAF and renewable diesel from low-carbon and sustainable ethanol and achieve International Sustainability and Carbon Certification (ISCC). LanzaJet Freedom Pines Fuels serves as a blueprint for utilizing first-of-its-kind innovation to scale SAF production and enables LanzaJet's aspiration for one billion gallons of SAF production by 2030.

Source: LanzaJet Website

Montana Renewables Achieves ISCC CORSIA Certification For SAF

Montana Renewables LLC, the largest producer of sustainable aviation fuel (SAF) in North America, announced today that it received its Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) certificate via the International Sustainability and Carbon Certification (ISCC) and as developed by the International Civil Aviation Organization (ICAO). The ISCC CORSIA certification is another step in the transformation of the Great Falls facility into a premier SAF producer in North America.



MONTANA RENEWABLES™

Source: Biodiesel Magazine

World Fuel Services receives CORSIA and ISCC certifications



World Fuel Services and its affiliates has received new certification for its renewable fuel, making it ISCC and RSB accredited in the United States, Singapore and across all locations in Europe where it is sold. The award of Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA...

Source: Airline Economics

ISCC Certification for RFNBOs and RCFs has Received Positive Technical Assessment by EU COM

Official recognition to be granted soon



- Meo Carbon Solutions in cooperation with ISCC has conducted **numerous projects pilot audits** (including in the US) to verify the RFNBOs requirements “on the ground”
- ISCC is in contact with regulators to clarify how **specific requirements can be applied in non-EU territories, such as NA**
- RFNBOs and RCFs certification will pave the way for the **production and related certification of e-SAF and alternative marine fuels (e.g. e-ammonia or e-methanol)**
- At ICAO level, ISCC is monitoring and participating to the FTG activities in the context of **HEI CEF** (High Electricity Input CORSIA Eligible Fuels)

ISCC System Documents published on our website

ISCC is directly engaged with the EU and IMO to ensure smooth and realistic certification of SMF



- ISCC is active in the **ESSF-SAPS group** (*European Sustainable Shipping Forum*, technical sub-groups on *Sustainable Alternative Power for Shipping*)
- Development of a **guideline for certification of SMF**, including provisions on traceability (e.g. Proof of Compliance – Poc)
- ISCC is **ready to certify SMF (it is already happening!)** for FuelEU Maritime compliance under the ISCC EU scheme



- IMO discussing the **development of a certification framework requirements** for compliance with the provisions in the LCA Guidelines
- ISCC is active in working groups to ensure **practical and robust verification of the provisions**
- ISCC is fully committed to **seek recognition under IMO**, eventually developing a dedicated scheme

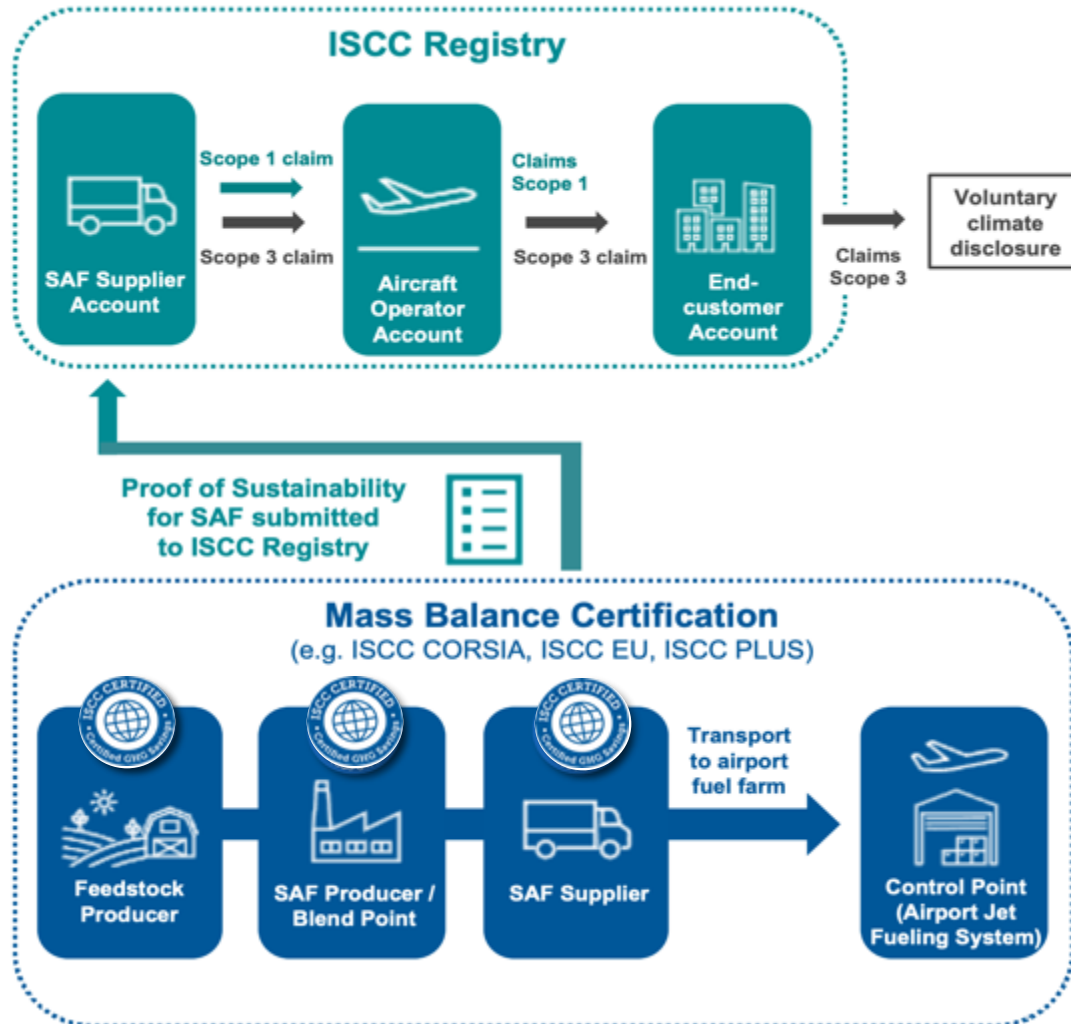
Ensuring trust in SAF Claims: The ISCC Credit Transfer System

- The **ISCC Credit Transfer System**, including the ISCC Registry, **went live on April 2024**
- Platform for **fuel suppliers, airlines, logistics service providers, and aviation end-customers** to manage Scope 1 & 3 claims
- ISCC has **successfully welcomed the first users**, with new organizations continuously being onboarded
- First **large transactions have been successfully completed** with volumes steadily increasing, and large quantities expected from other suppliers

ISCC Credit Transfer System

Version 1.0

The innovation behind ISCC's Credit Transfer System for the voluntary market



- Connects certified physical SAF supply chains with the resulting SAF claims
- Extension of current supply-chain certification systems
- Ensures both **transparency and credibility for SAF claims** through:
 - **Clear guidelines** around SAF sustainability, credit transfers, and SAF claims
 - A **secure digital registry** for credit transfers and claims
- ISCC exploring extension to other markets such as Marine Fuels and HVO
- **ISCC engaged with key global stakeholders** via initiatives such as the Book and Claim Community



SAF and SMF certification under ISCC offers immense opportunity for organizations in North America

- ISCC is very well positioned in the NA market with **overall 800+ economic operators certified** across the ISCC schemes
- A broad SAF & SMF regulatory landscape (including **specific US policies**) makes use of sustainability certification such as ISCC for compliance
- ISCC CORSIA has registered a **tremendous increase in the NA market** (25 % of the ISCC CORSIA processing units are located in US)
- Many **feedstocks of relevance for NA** are eligible under various frameworks (including crop feedstocks)
- **Low LUC Risk certification** under ISCC CORSIA has been **successfully tested in US**, paving the way for its actual implementation



Thank you!

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