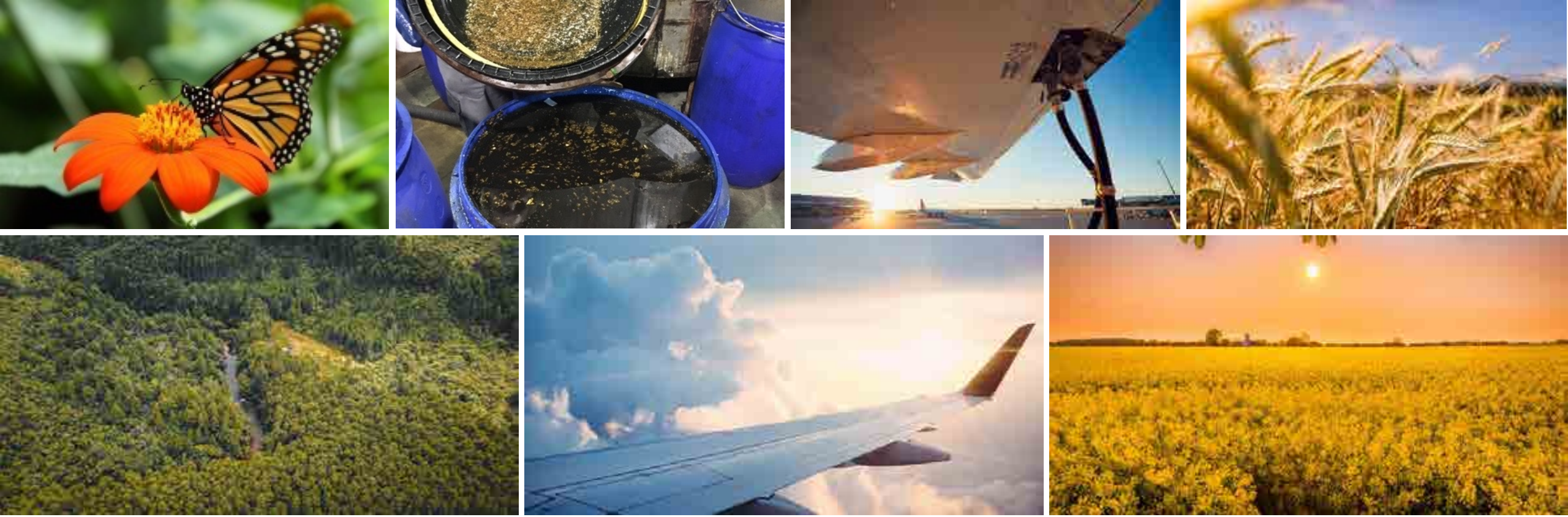


ISCC for Emerging Markets – Aviation (SAF)

Thomas Bock, System Manager, ISCC System GmbH

ISCC Regional Stakeholder Meeting North America, 09 November 2022

ISCC
International Sustainability & Carbon Certification

As governments and the aviation industry commit to significantly reducing the sector's emissions, sustainable aviation fuels (SAF) are seen as a crucial pillar

	2020	2025	2030	2035	2040	2045	2050
Commuter • 9-50 seats • < 60 minute flights • <1% of industry CO_2	SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF
Regional • 50-100 seats • 30-90 minute flights • ~3% of industry CO_2	SAF	SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF
Short haul • 100-150 seats • 45-120 minute flights • ~24% of industry CO_2	SAF	SAF	SAF	SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF
Medium haul • 100-250 seats • 60-150 minute flights • ~43% of industry CO_2	SAF	SAF	SAF	SAF	SAF	SAF	SAF potentially some Hydrogen
Long haul • 250+ seats • 150 minute + flights • ~30% of industry CO_2	SAF	SAF	SAF	SAF	SAF	SAF	SAF

Source: Air Transport Action Group – Waypoint 2050

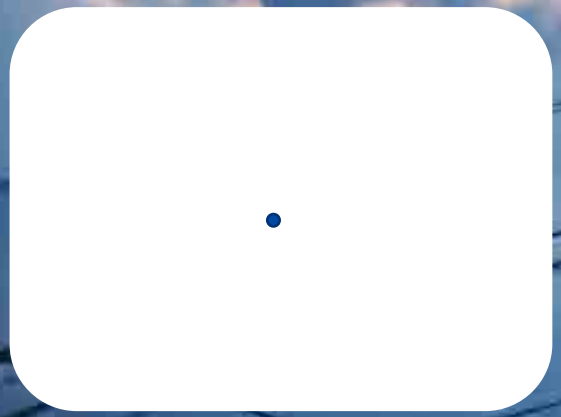
International Air Transport Association (IATA), representing more than 300 airlines worldwide

International Civil Aviation Organization (ICAO), a UN agency with more than 193 Member States

To get to net-zero in aviation, a huge scale-up of SAF will be needed

- **5,000 - 7,000 production facilities** will be needed*
- **Investments of 1,000 - 1,500 billion USD** will be required*

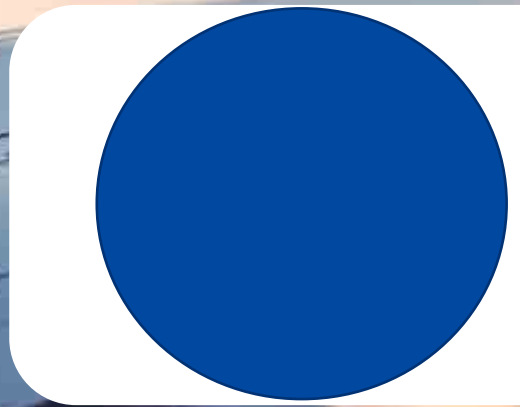
SAF volumes in 2021



85,000 mt of SAF

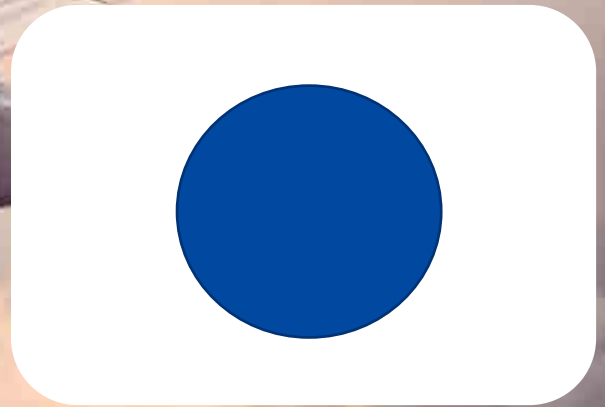
Production scale-up by more than **4,000** times necessary

Needed SAF volumes in 2050 to reach net-zero



≈ 400,000,000 mt of SAF

For comparison: **Projected volume of biofuel market** in 2022



≈ 150,000,000 mt of biofuel

*Based on ICF – Fueling Net Zero study, available here

Sources: ICF, ATAG (Waypoint 2050), IEA

ISCC is supporting the aviation industry on its journey towards a net-zero future

Uptake of ISCC CORSIA certification for SAF is growing steadily

- 32 economic operators already certified, including feedstock and SAF producers
- Several fully ISCC CORSIA certified supply chains already established
- With all ISCC standards largely harmonized, ISCC EU or PLUS certified operators are in a prime position to also become CORSIA certified

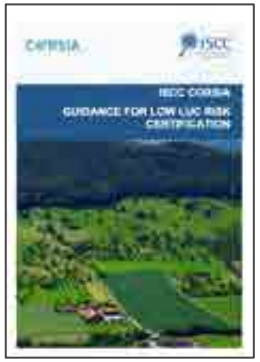
Major players active in the aviation sector increasingly recognize ISCC's key role in ensuring the sustainability of SAF

- Major fuel producers and suppliers are already ISCC certified and show increasing interest in SAF
- In collaboration with its stakeholders, ISCC is conducting pilot projects for a variety of issues related to SAF certification and market ramp-up
- Supply and use of ISCC certified SAF has been featuring more regularly and prominently in (biofuel) news

ISCC is actively working with regulators to facilitate the SAF claiming process

- The SAF claiming and accounting process is becoming increasingly complex in many scenarios
- ISCC is currently working with and supporting different authorities on implementing procedures to allow for transparent, practical and credible accounting and claiming of SAF under different SAF policies

ISCC is supporting the aviation industry on its journey towards a net-zero future



ISCC has developed an approach for certifying low LUC risk feedstocks

- Feedstocks that have a low risk for land use change (LUC) can play an important role in **ensuring enough feedstock supply** for the needed SAF volumes
- ISCC has been heavily involved in field-testing and further refining the **certification approach for low land use change (LUC) risk feedstocks under CORSIA**
- **ISCC's low LUC risk certification approach has been officially approved by ICAO** earlier this year

ISCC is an active member of the CAEP Fuels Task Group within ICAO

- The CAEP Fuels Task Group at ICAO level is working on a wide variety of issues around **CORSIA eligible SAF** (including PtL SAF) **and LCAF (lower carbon aviation fuels)**
- ISCC in close contact with respective ICAO team on all certification-related issues

The Technical Committee is a key pillar in ISCC's stakeholder process for SAF

- The Committee provides a platform for ISCC members and other stakeholders to share the latest **expertise on SAF and sustainability certification**
- **ISCC plans to establish a dedicated Working Group** under the umbrella of the Committee to allow for more targeted work on a variety of issues

Coverage of SAF in regulated markets is rapidly growing. With many policies prescribing certification for compliance, ISCC covers many major markets

	Examples
CORSIA	• SAF that is CORSIA eligible can be used to reduce airline operators' offsetting requirements • ISCC CORSIA certification system recognized under ICAO CORSIA
US Inflation Reduction Act 	• Tax credit of between $1.25 and $1.75 per gallon of SAF, depending on how much the SAF improves in GHG performance compared to standard fossil jet fuel (minimum threshold: 50%) • CORSIA certification (e.g. via ISCC) one way to prove compliance of SAF with GHG threshold
EU ETS 	• RED II compliant SAF is attributed zero emissions in airlines' emissions reporting • EU RED II framework applicable, thus ISCC EU certification system can be used
UK ETS 	• Zero emissions can be attributed to RTFO compliant SAF • ISCC EU certification system recognized by UK authorities under RTFO
ReFuel EU 	• EU Commission proposal to introduce SAF blending mandate starting from 2025 • EU RED II framework will be applicable, thus ISCC EU certification system can be used
National mandates 	• Different individual countries have implemented SAF mandates (e.g. Norway, Sweden, France) or plan to do so (e.g. UK, the Netherlands) • ISCC certification accepted under many of these mandates (e.g. France, Nordics)

Increasingly, there is significant demand for SAF from the voluntary market, too

- A growing number of corporations commit to ambitious climate targets
- **The science-based targets initiative (SBTi)** has become the industry-leading platform for corporate climate action
- Currently, almost **4000 companies are working with SBTi**
- **SBTi recognizes that SAF can be a key lever** in reducing corporations' Scope 3 GHG emissions (including from business travel and air freight)
- To **report the use of biofuels, and SAF in particular, as progress** against science-based targets, SBTi has established a stringent set of sustainability criteria that must be fulfilled
- **ISCC certification is explicitly recognized by SBTi** as ensuring compliance with these criteria for SAF*

*Please refer to: SBTi Aviation Sector Guidance, v1.0, August 2021, available via: https://sciencebasedtargets.org/resources/files/SBTi_AviationGuidanceAug2021.pdf

SAF certification under ISCC – some quick facts

20+

Certification bodies conduct ISCC audits in SAF supply chains

Certificates issued under ISCC's CORSIA standard, incl. for feedstock and SAF producers

32

80+

Auditors trained in ISCC CORSIA trainings

ISCC
International Sustainability & Carbon Certification

Feedstocks certified for SAF under ISCC so far include mostly waste materials, particularly UCO and tallow

>90%

ISCC certificates in SAF supply chains issued in Europe, US and Asia

ISCC Certificates issued in SAF supply chains so far (across all ISCC systems)

50+

Recently, ISCC handed in updated ISCC CORSIA documents to ICAO

One update aims to incorporate recent CORSIA changes in the ISCC CORSIA standard for the **remainder of the pilot phase (until end of 2023).**

The **main updates** concern the inclusion of:

- A **co-processing** methodology
- A methodology to calculate emissions from **direct land use change** (DLUC)
- Amendments of **low land use change (LUC) risk certification** approach
- **Alignment** in key aspects to other ISCC systems

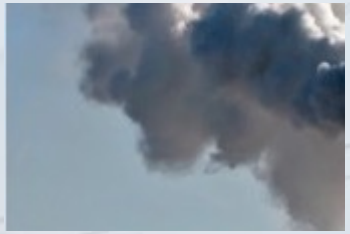
Another update aims to incorporate the expanded CORSIA sustainability criteria in the ISCC CORSIA standard for **CORSIA's first phase (from 2024).**

Concretely, this includes requirements for **further sustainability *themes*:**

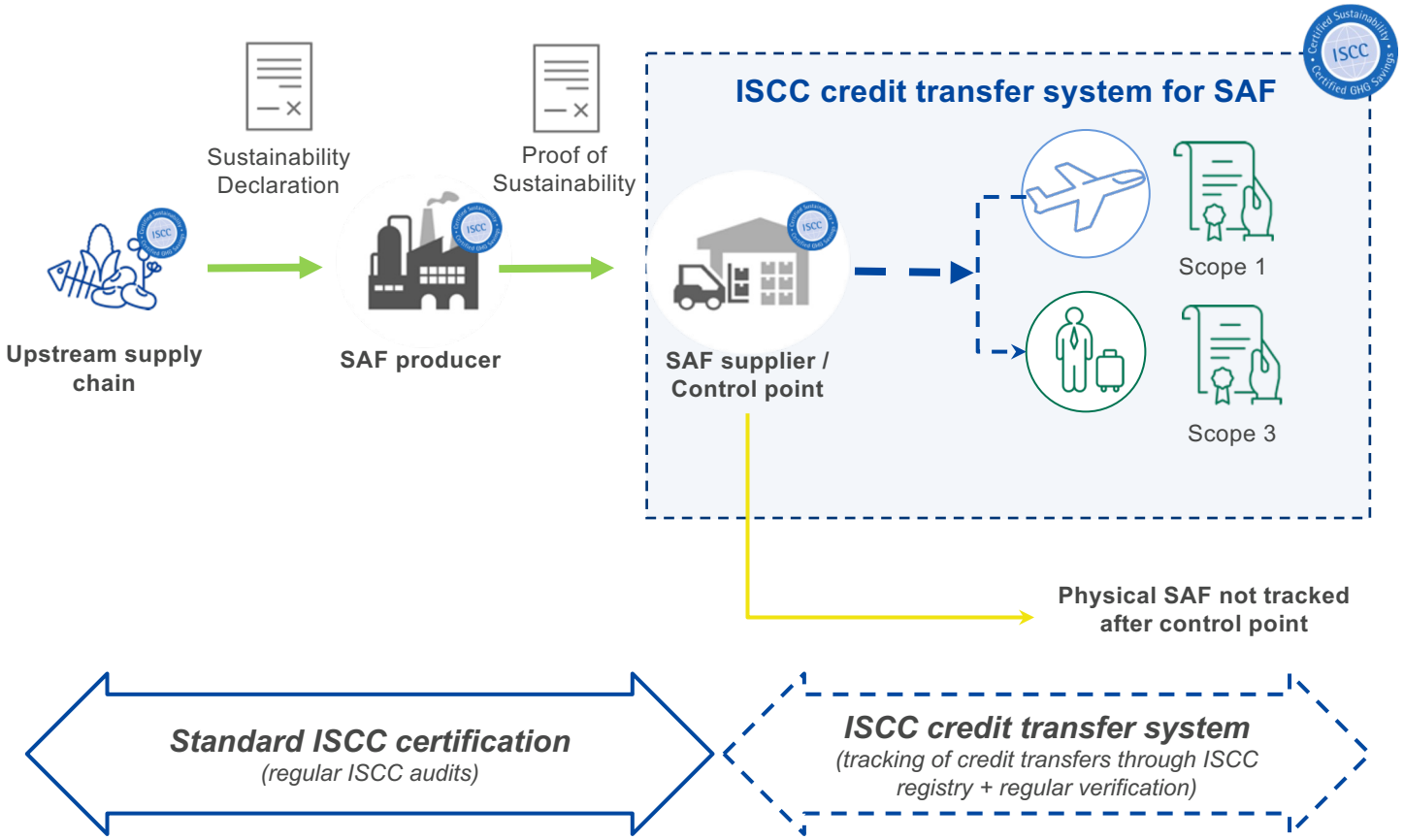
- Water quality and availability
- Soil health
- Air quality
- Human and labour rights, social aspects
- Etc.

Future feedstock availability is a huge concern for SAF production. Virtually all types of feedstocks can be certified under ISCC

Examples

Non-bio renewables and recycled material	All types of crops (including energy and short-rotation woody crops)	Agricultural and forestry residues	Wastes	By-products	Processing residues
					
Renewable electricity	Rapeseed / Canola	Cobs	Used cooking oil	Palm fatty acid distillate	Empty palm fruit bunches
					
CO_2	Miscanthus	Bark	Municipal solid waste	Tallow	Tall oil

ISCC is currently developing a system to allow full end-to-end traceability and verification of SAF claims, including for aviation end-customers



What is the challenge and associated risks?

- **Airlines and aviation end-customers** (e.g. business travelers) wish to purchase and claim GHG emissions reductions from SAF use
- Unlike the upstream SAF supply chain, airlines and end-customers do not become certified, which creates the **risk of insufficient traceability and false claims**
- SAF suppliers, airlines and end-customers demand **solutions for fully traceable end-to-end SAF transactions and verified claims**

What is ISCC developing to address this?

- **ISCC as leading scheme with most major suppliers certified uniquely positioned to offer end-to-end solution**
- **Robust end-to-end approach** by combining the new SAF system with the „tried-and-true“ upstream ISCC certification
- Transaction and claiming process will be governed by **clear and robust rules** and be **subject to credible verification**
- A **key piece of the puzzle will be the dedicated ISCC registry** (currently in development), in which SAF volumes will be registered, transferred, claimed and verified

Thank you for your attention!

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