ISCC Certification Solutions for Sustainable Aviation Fuels

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As governments and the aviation industry commit to significantly reducing the sector's emissions, the use of SAF is 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

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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*

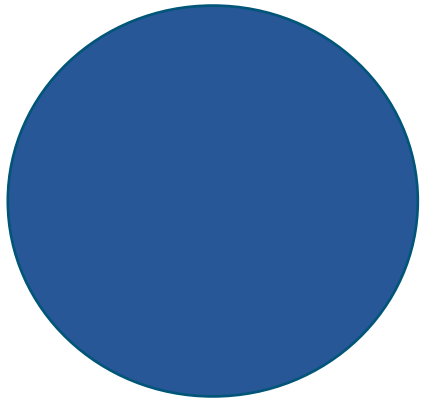
* Based on ICF – Fueling Net Zero study, available here

SAF volumes in 2022

240,000
mt of SAF

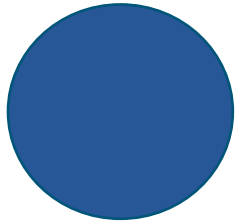
Production scale-up by more than **1,600** times necessary

Needed SAF volumes in 2050 to reach net-zero



≈ 400,000,000
mt of SAF

For comparison:
Volume of biofuel market in 2022



≈ 130,000,000
mt of biofuel

Source: IATA Announcement, 06 June 2023, available here

Source: ATAG Waypoint 2050, available here

Source: International Energy Agency, available here

A wide range of regulatory frameworks make use of certification schemes to ensure the sustainability of SAF

Examples

ICAO CORSIA

- Offsetting scheme to ensure carbon-neutral growth of international aviation from 2020
- Airlines can use SAF to reduce their offsetting obligations under CORSIA
- Airlines can only reduce their offsetting obligations under CORSIA through SAF that is **certified under an ICAO-approved certification scheme (e.g. ISCC CORSIA)**

ReFuelEU Aviation Regulation

- Sets a mandate on fuel suppliers to supply a defined percentage of SAF to EU airports, starting 2025
- 2% of SAF in 2025, increasing to 70% by 2050
- Fuel suppliers obligated under ReFuelEU must supply SAF that is **certified under an EU RED II-approved certification scheme (e.g. ISCC EU)**

UK SAF Mandate (in development)

- SAF mandate set to start in 2025, requiring 10% SAF blend by 2030
- Under the 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*

- Grants tax credits for SAF that achieves a life cycle emissions reduction of at least 50%
- Mention of **ICAO-approved certification schemes** under CORSIA for demonstrating compliance of SAF **(e.g. ISCC CORSIA)**

EU Emissions Trading System

- Requires airlines to buy and surrender allowances for each metric ton of CO_2 emitted on intra-EU flights
- Airlines can use SAF to reduce the allowances they will need to buy and surrender
- Airlines can only account for the use of SAF with zero emissions if it is **certified under an EU RED II-approved certification scheme (e.g. ISCC EU)**

UK Emissions Trading System

- Under the UK ETS, similarly to the EU ETS, airlines can use SAF to reduce the allowances they will need to buy and surrender
- 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)**

*US IRA = US Inflation Reduction Act

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In addition, there is growing demand for SAF from the voluntary market. Certification of SAF can give added credibility to voluntary SAF use

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

- 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, over **6,000 companies are working with SBTi**
- **SBTi recognizes that SAF can be a key lever** in reducing corporations' Scope 3 air transport-related GHG emissions
- 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 CORSIA 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

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Why sustainability certification? Certification can play a key role in ensuring that SAF production is sustainable and leads to GHG emission reductions

Sustainability certification aims to ensure

Sustainability in feedstock production

Traceability of sustainable materials through the supply chain

Verified reduction in life cycle emissions

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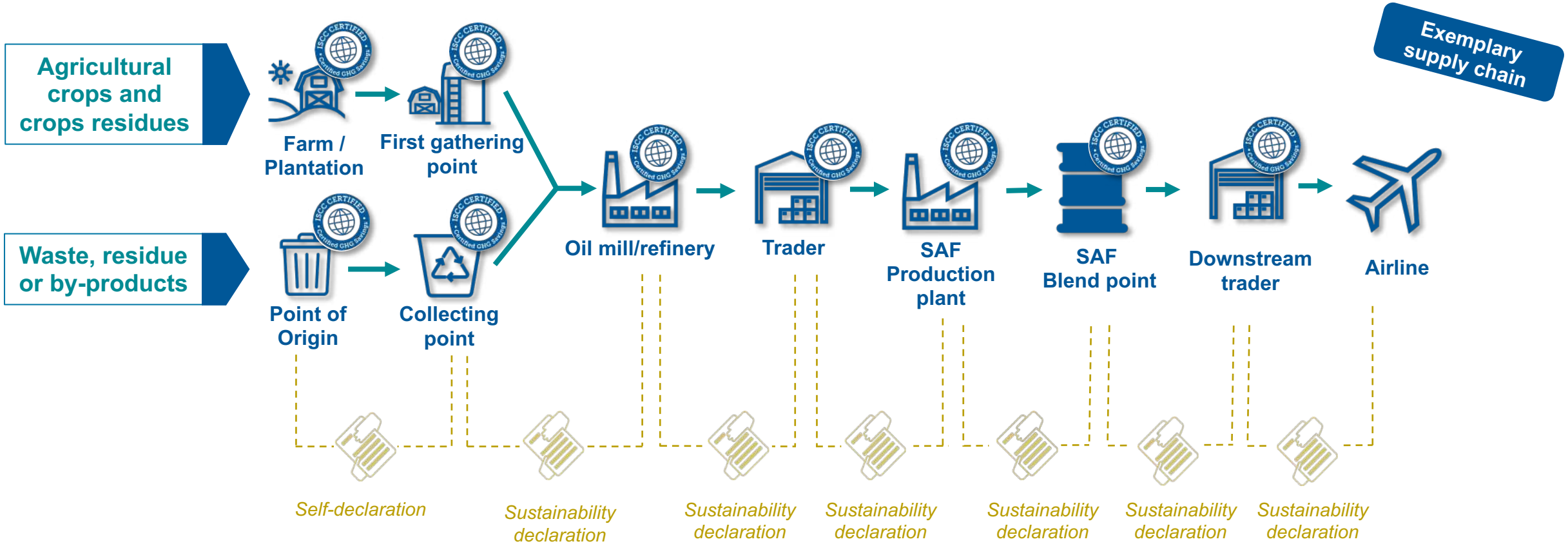
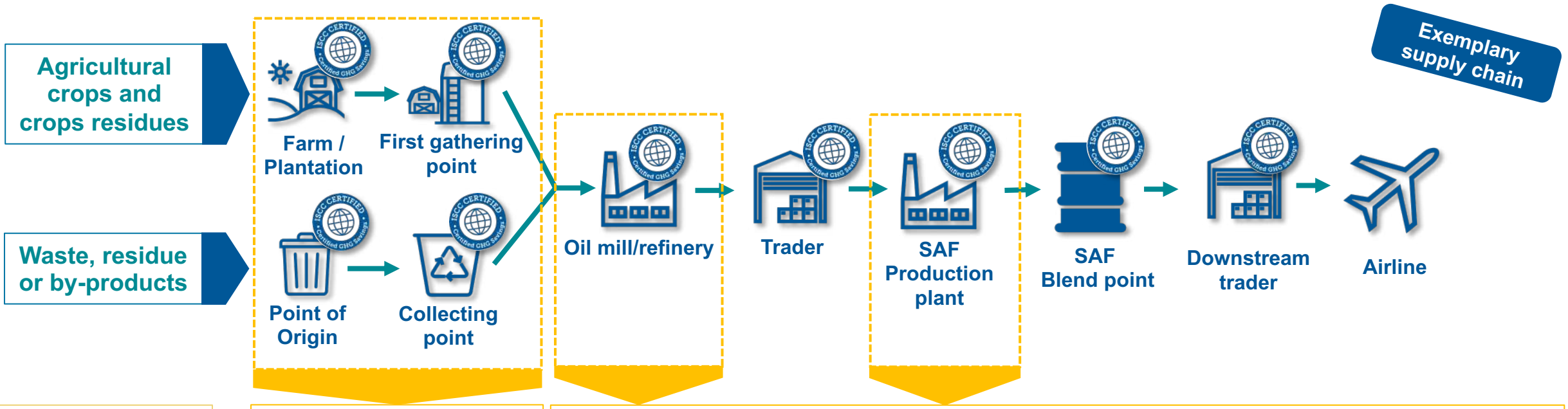
Every economic operator is certified to ensure full traceability. Sustainability information is forwarded through the supply chain



GHG emissions from each life cycle step are calculated and added up along the supply chain to determine the SAF's carbon intensity



Indirect effects

- Emissions from **indirect land use change** (e.g. under CORSIA)

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

SAF can be (and is!) certified under all three ISCC certification systems. System choice depends on regulatory compliance and/or customer needs

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**

ISCC PLUS

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

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 is referred to in the IRS guidance for the **US IRA's SAF blender's tax credit**
- ISCC CORSIA certified SAF explicitly recognized by the **Science-Based Targets Initiative (SBTi)**

ISCC International Sustainability & Carbon Certification

All three ISCC systems are largely harmonized. Combined audits provide easier access to different 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

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Certification bodies cooperating with ISCC provide auditor capacities all over the world, including for SAF

- **59 certification bodies** currently cooperating with ISCC on a world-wide level
- **1200+ auditors** trained
- ISCC cooperating auditors are qualified via comprehensive **ISCC Trainings** (ISCC Academy)

As the SAF market begins to develop, more and more companies choose ISCC for SAF certification

Examples of recent press releases

REUTERS

Brazil's Raizen gets certification for ethanol-based SAF

August 21, 2023 — 09:03 am EDT

"The ISCC CORSIA Plus certification issued by the International Civil Aviation Organization (ICAO) proves that the ethanol produced in Piracicaba complies with international requirements to produce SAF," Raizen said.

Source: Reuters

Air bp makes first ISCC EU sale of co-processed SAF to LATAM Cargo from its Castellon refinery in Spain

Christopher Surgenor · 8 March 2023 · 3 min read

Source: Greenairnews.com

DHL GF and IAG Cargo partner on SAF

13 / 06 / 2023

DHL said that SAF being purchased is certified by International Sustainability & Carbon Certification (ISCC) and produced from used cooking oil and food waste and has at least 80% lower lifecycle emissions than conventional jet fuel.

Source: Air Cargo News

Montana Renewables Achieves ISCC CORSIA Certification for SAF

NEWS PROVIDED BY
Calumet Specialty Products Partners, L.P. →
03 Aug, 2023, 07:30 ET

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Source: PR Newswire

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Recently, ISCC's recognition under the CORSIA scheme was extended by ICAO to cover CORSIA's *post*-pilot phase

The ISCC CORSIA certification system was first recognized by ICAO in November 2020, applicable to **CORSIA's pilot phase from 2021 to 2023**.

In June 2023, ISCC CORSIA's recognition was extended by ICAO to cover **CORSIA's post-pilot phase starting in 2024**.

Economic operators and airlines can **demonstrate compliance with the CORSIA Sustainability Criteria for CORSIA Eligible Fuels** by applying the ISCC CORSIA Certification System.

Name of the Sustainability Certification Scheme	Date of approval	Website	Scope of approval
International Sustainability and Carbon Certification (ISCC)	16 Jun. 2023	https://www.iscc-system.org/about/sustainable-aviation-fuels/corsia/	Certification of CORSIA Sustainable Aviation Fuels economic operators covered by Chapters 1 and 2 of the ICAO document "CORSIA Sustainability Criteria for CORSIA eligible fuels"

As of today, 69 economic operators are ISCC CORSIA certified. SEA is becoming a frontrunner region with currently 10+ CORSIA certifications

Type of operation	No. of ISCC CORSIA certified economic operator types
Trader/Trader with Storage	53
Processing Unit	23
Collecting Point (waste/residues)	10
Point of Origin (waste/residues)	7
First Gathering Point (primary crops/residues)	4
Farm (primary crops/residues)	1

Numbers as of 19 October 2023.
Please note that each certificate may be issued for more than one type of operation

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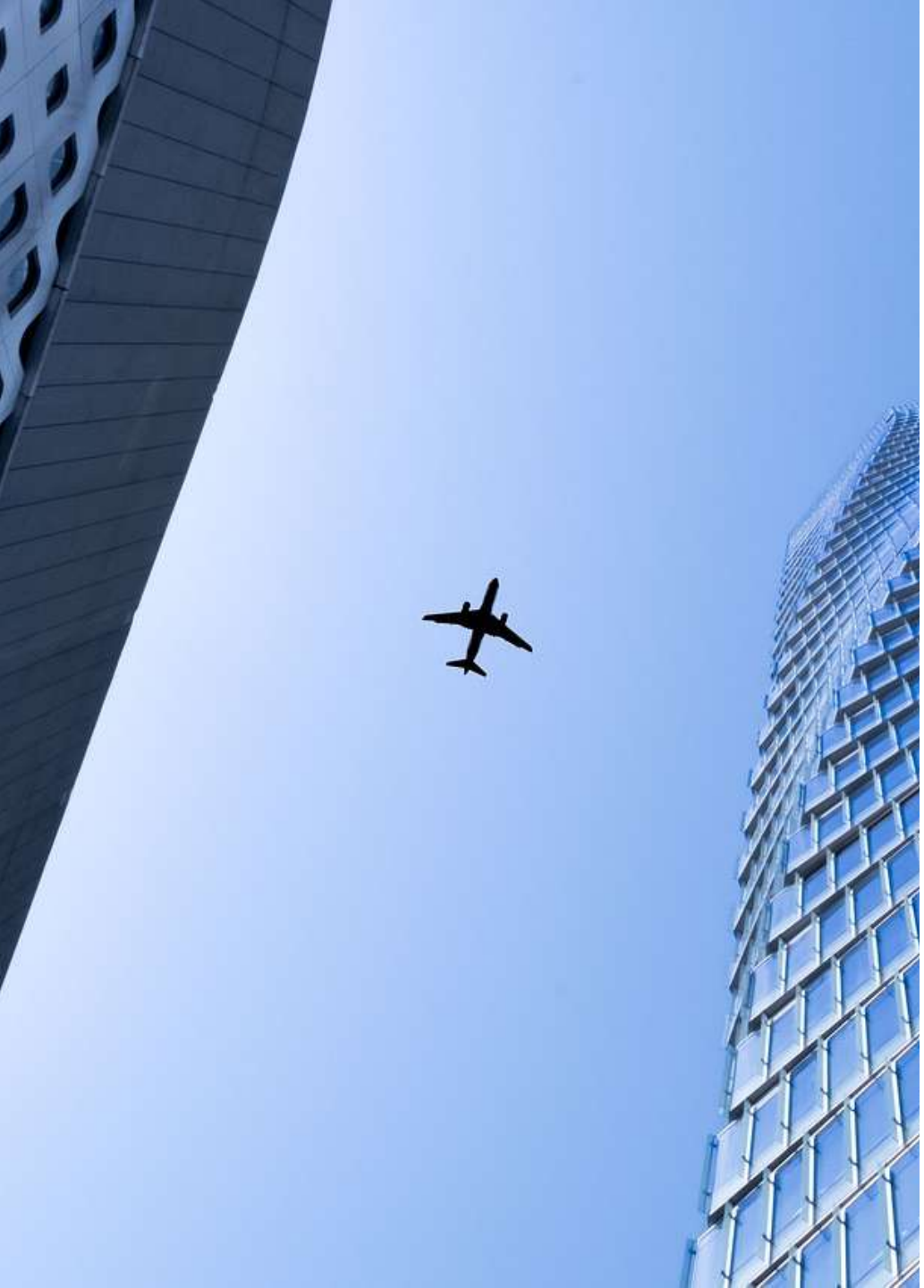
ISCC is continuously developing its certification approach for Power-to-Liquids

- Integration of **electricity and CO_2 as feedstocks** is gaining importance, including for SAF production
- **ISCC is in the position to certify PtX**, ensuring that key sustainability parameters are met along global supply chains
- Under **ISCC PLUS**, several companies have been certified for renewable electricity and CO_2 as feedstocks to date
- Under the EU RED II, **ISCC has applied for the recognition of RFNBOs*** – approval by the EU Commission pending
- ISCC supports the **ongoing work at ICAO to integrate PtL under CORSIA**
- ISCC has set up a dedicated **Stakeholder Committee** as well as as a dedicated **Training on RFNBOs –** subscribe to the ISCC Newsletter to stay up-to-date!

*RFNBO = **R**enewable **f**uels of **n**on-**b**iological **o**rigin



Jointly with IATA and RSB, ISCC is developing guidance on SAF certification

- Goal: To promote consistency in **understanding around SAF certification processes**
- Work includes but is not limited to:
  - Promote consistent **definitions of certification concepts**
  - Explain **applicability of different certification standards** under different regulatory (and voluntary) frameworks
  - Explain **supply chain certification** and important **concepts around mass balancing** and **life cycle emissions**
  - **Clarify documentation flow** between SAF producers/suppliers and airlines
  - and much more

SAF certification offers opportunities for economic operators in Southeast Asia

- Broad agreement in aviation industry that SAF scale-up is needed, signaling a **clear commitment towards getting to net-zero**
- **Growing number of regulatory frameworks** are coming online**,** providing **incentives** (e.g. tax credits) **and/or demand certainty** (e.g., through fixed SAF mandates)
- **Demand for SAF is also picking up in voluntary markets** (e.g., with companies committing to Science Based targets)
- **Many feedstocks of relevance for Southeast Asia are eligible under various frameworks** (including prevalent crop and waste / residue feedstocks)
- **ISCC certification** of feedstocks, intermediate products and SAF **can open the door to many of the regulated markets**
- **New certification approaches**, such as low land use change risk certification, **can help access specific premium markets**

ISCC is working together with major players in the aviation and SAF space. New members very welcome!

- Many frontrunner organizations active in the field of SAF are **ISCC Association Members and System Users**
- ISCC is part of 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" programme**, helping States in developing their full potential in SAF deployment
- With its members, ISCC is conducting pilot projects on a variety of topics, including for **innovative feedstocks, smart agricultural practices** and **Power-to-Liquids**

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Thank you!

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