The ISCC CORSIA Certification System

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ISCC is a leading sustainability certification system

ISCC
International Sustainability & Carbon Certification

- ISCC is a global **sustainability certification system** operational since **2010**
- ISCC is used by more than **5,000 companies** in over **100 countries**
- ISCC is governed by the **ISCC Association**, a **multi-stakeholder non-profit organization** with currently approx. 200 members

CORSIA

- ISCC is **recognized** in important energy markets to demonstrate compliance with sustainability requirements, including **CORSIA**, the **EU**, **Japan** and **Australia** (Queensland)
- ISCC is also recognized by **company specific initiatives** as well as important **standards and platforms** (e.g. Unilever's Sustainable Agriculture Code)

- ISCC has vast **experience in the transportation sector** and supports the certification of **advanced fuels**, **recycled carbon fuels** and **e-fuels**
- ISCC uses latest remote sensing technologies to support the **verification of land status**, **land use change** and **low LUC risk certification**
- ISCC has comprehensive experience with **reliable greenhouse gas (GHG) emissions calculations** – more than 2,000 currently valid certificates are based on actual GHG values

ISCC supports the aviation industry in achieving its climate targets

- Several **ISCC members and system users** are active in the field of sustainable aviation and sustainable aviation fuels (SAF)
- With American Airlines, the **first major airline** joined the ISCC Association last year
- ISCC is an active member of the **CAEP Fuels Task Group within ICAO** that is working on the further development of CORSIA eligible SAF and LCAF (lower carbon aviation fuels)
- ISCC was involved in a **scientific project** analysing reporting requirements in supply chains of **aviation fuel multi-blends**
- ISCC actively supports **various initiatives**, and conducts pilots in supply chain certification
- ISCC currently has 14 certificates under its **CORSIA standards**, 13 certificates covering **co-processed SAF**, 14 covering **HEFA**, and 138 covering **HVO**

The regulatory situation: SAF is legislated for under different frameworks, with some in development and some still on the horizon

Focus Europe

CORSIA	• SAF that is CORSIA eligible can be used to reduce airline operators' offsetting requirements • ISCC CORSIA certification system recognized under ICAO CORSIA
EU RED II	• SAF can be counted towards RED II targets in EU Member States under opt-in schemes • ISCC EU certification system recognized under RED II by EU Commission
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	• Proposal by UK Government to attribute zero emissions to RTFO compliant SAF • ISCC EU certification system accepted under RTFO
ReFuel EU	• EU Commission proposal to introduce SAF blending mandate starting from 2025 • EU RED II framework likely applicable, thus ISCC EU certification system could 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)

14 ISCC CORSIA certificates have already been issued, including for both feedstock and fuel producers. Further certifications are in the pipeline

SCS recognized under CORSIA ensure that SAF is produced in accordance with the requirements for CORSIA eligible fuels

ISCC CORSIA Certification ensures

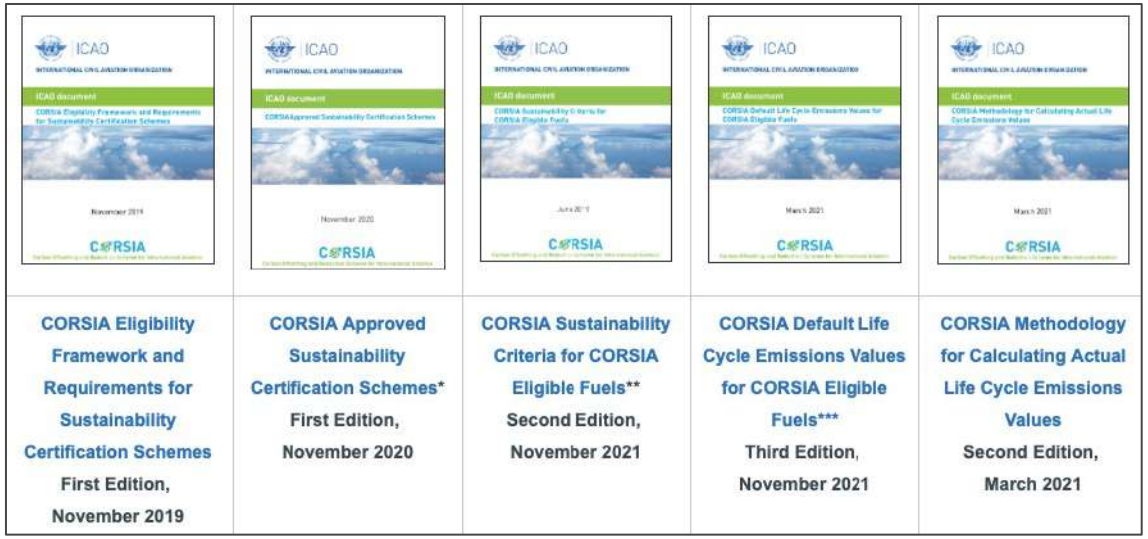
Compliance with sustainability requirements for feedstock production

Traceability of sustainable materials through the supply chain

Verified reduction of life cycle emissions

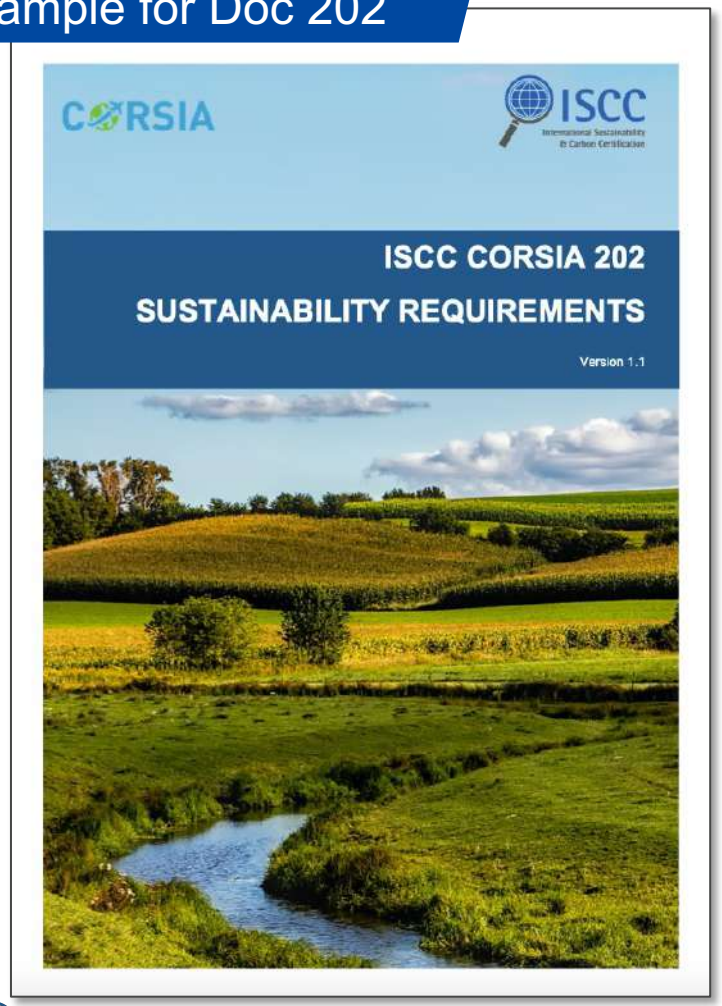
The **System Documents** build the basis of the ISCC CORSIA certification system

- The System Documents
  - **translate the ICAO documents** on CORSIA Eligible Fuels into the SCS' requirements and processes "on the ground"
  - lay down all relevant **certification requirements and processes** for Certification Bodies and System Users (i.e. certified companies)
  - are **publicly available** on the ISCC website



Auditors verify compliance with the standard's requirements via so-called **audit procedures**. These are based on the System Documents

Example for Doc 202



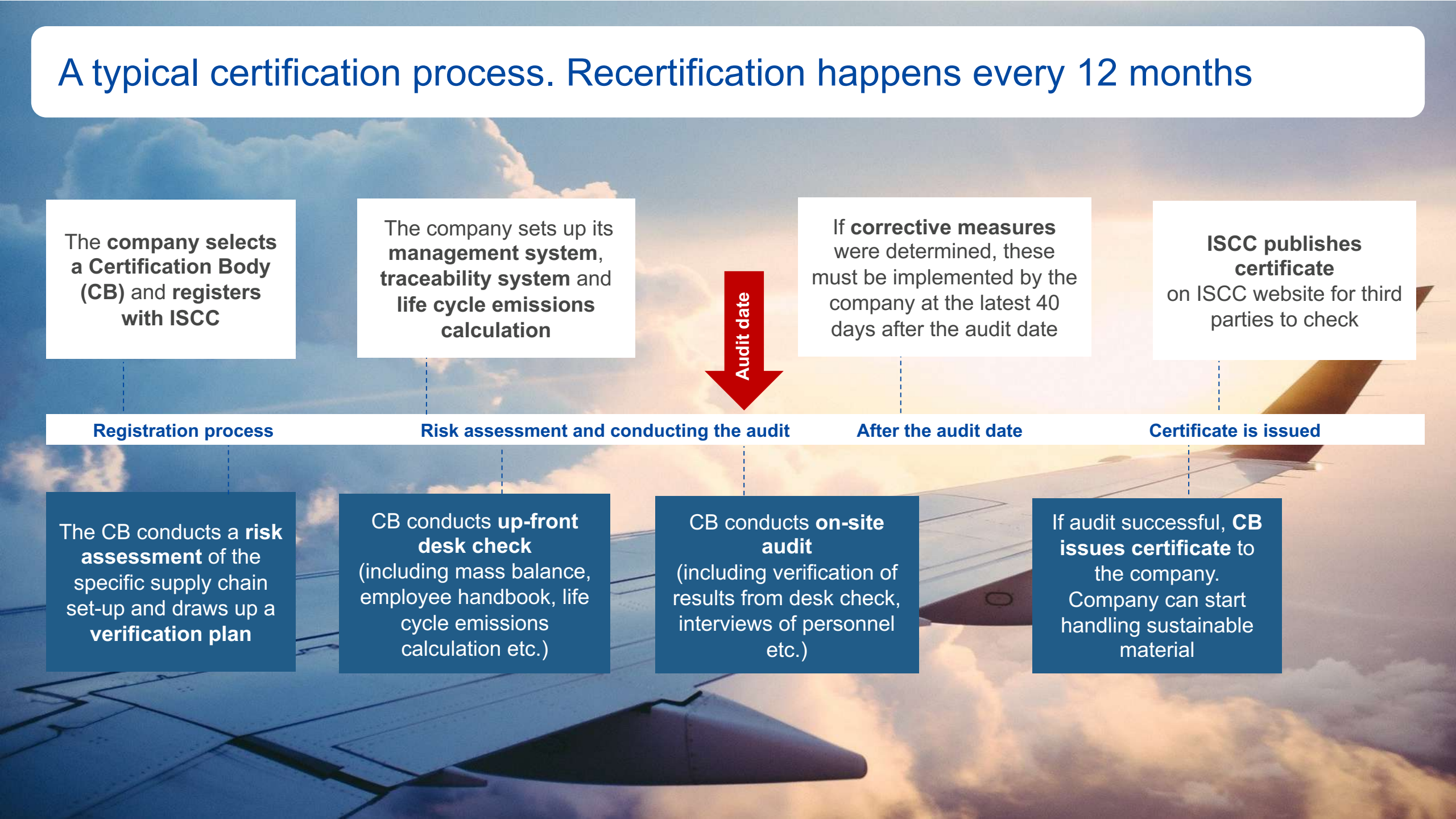
Extracts

ISCC CORSIA and ISCC CORSIA PLUS Audit Procedures for Farm/ Plantation

No.	Template	Remarks	Risk level	Audit intensity
0.	Basic data	Basic data of the farm/plantation audited	Not applicable	
1	Verification of land use and land use change	ISCC Principle 1, Requirements for the production of biomass according to ISCC 202 Sustainability requirements for the production of biomass		Risk assessment, and by that, the sample size has already been determined by the auditor in the framework of the audit of the first gathering point
	Ecological and social sustainability	ISCC Principle 2 – 6, Requirements for the production of biomass according to ISCC CORSIA document 202 Sustainability requirements for the production of biomass		
2	Traceability	Within Template No. 3 the risk of a flawed documentation has to be evaluated (applicable for individually certified farms/plantations)	High	The documents of three successive months should be checked completely
			Medium	The documents of one month should be checked completely and random samples should be taken from three successive months
			Regular	Documents taken from random samples of three successive months should be checked
3	Life Cycle Emissions	Application and calculation of Core Life Cycle Assessment (LCA) default values or Actual core LCA values (individually calculated values).	Not applicable	Mandatory

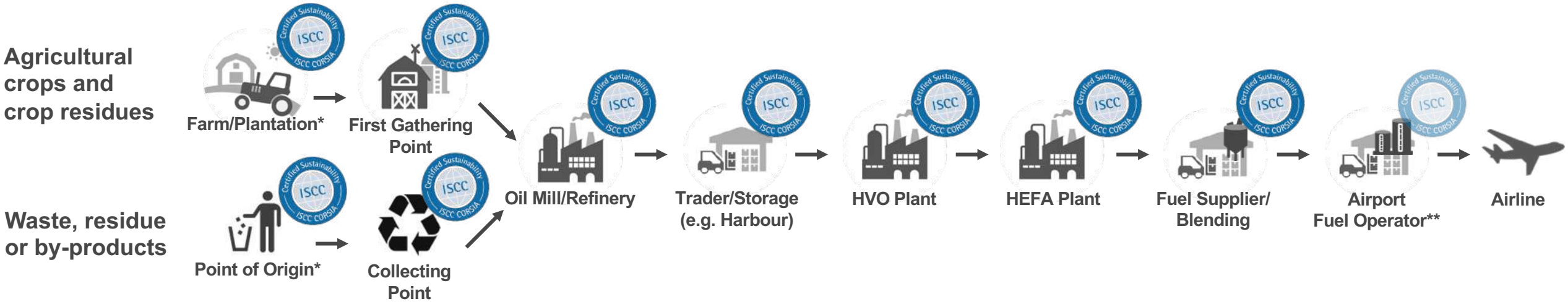
No.	Requirements	Verification guidance	Evidence/ Documents	Category		Findings	Conformity	
				Major Must	Minor Must		Yes	No
01.01.18	Are the current ISCC terms of use available and signed?	Verify if the current ISCC terms of use are available and signed. Check ISCC website for latest version.	Signed current ISCC Terms of use	X				
07.	**Farm/ Plantation**							
07.01.	**Audit of sustainability criteria**							
CORSIA Sustainability Criteria								
07.01.00	Is it ensured that biomass is not obtained from land converted after 1 January 2008 that was primary forest, wetlands, or peat lands and/or contributes to degradation of the carbon stock in primary forests, wetlands, or peat lands as these lands all have high carbon stocks?[2]	CORSIA eligible fuel shall not be made from biomass obtained from land converted after 1 January 2008 that was primary forest, wetlands, or peat lands and/or contributes to degradation of the carbon stock in primary forests, wetlands, or peat lands as these lands all have high carbon stocks. In the event of land use conversion after 1 January 2008, as defined based on IPCC land categories, direct land use change (DLUC) emissions shall be calculated.	Evidence of compliance can be demonstrated by e.g. comparing aerial photographs, satellite images, land register documents (e.g. field record system, documents of land registry, land certificates, GPS-based crop yield), maps, site surveys or management plans from 31.12.2007 or earlier with today's status of the farmland. Environmental assessments at expansions since 1st January 2008 show that no conversion of forestland took place. Appropriate assessment tools are e.g. databases like GRAS, Modis Land Cover Database, Intact Forest Landscapes database etc., and/ or maps by NGOs (e.g. IUCN, WWF-especially in Indonesia, Vida)	X				

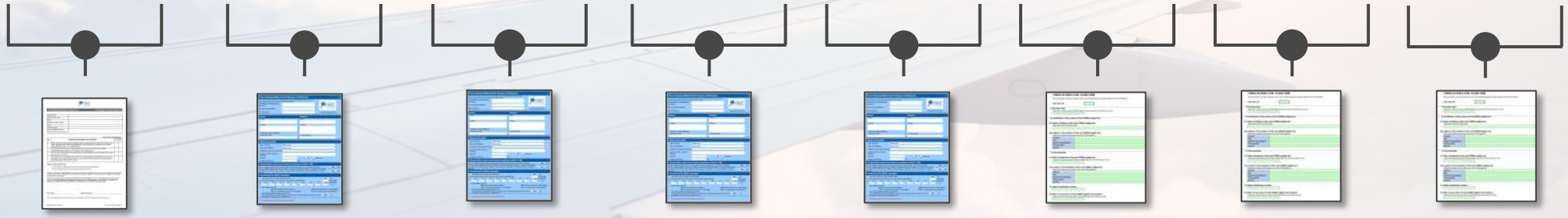
A typical certification process. Recertification happens every 12 months



Traceability of sustainable material is ensured through the certification of every supply chain element

Simplified supply chain

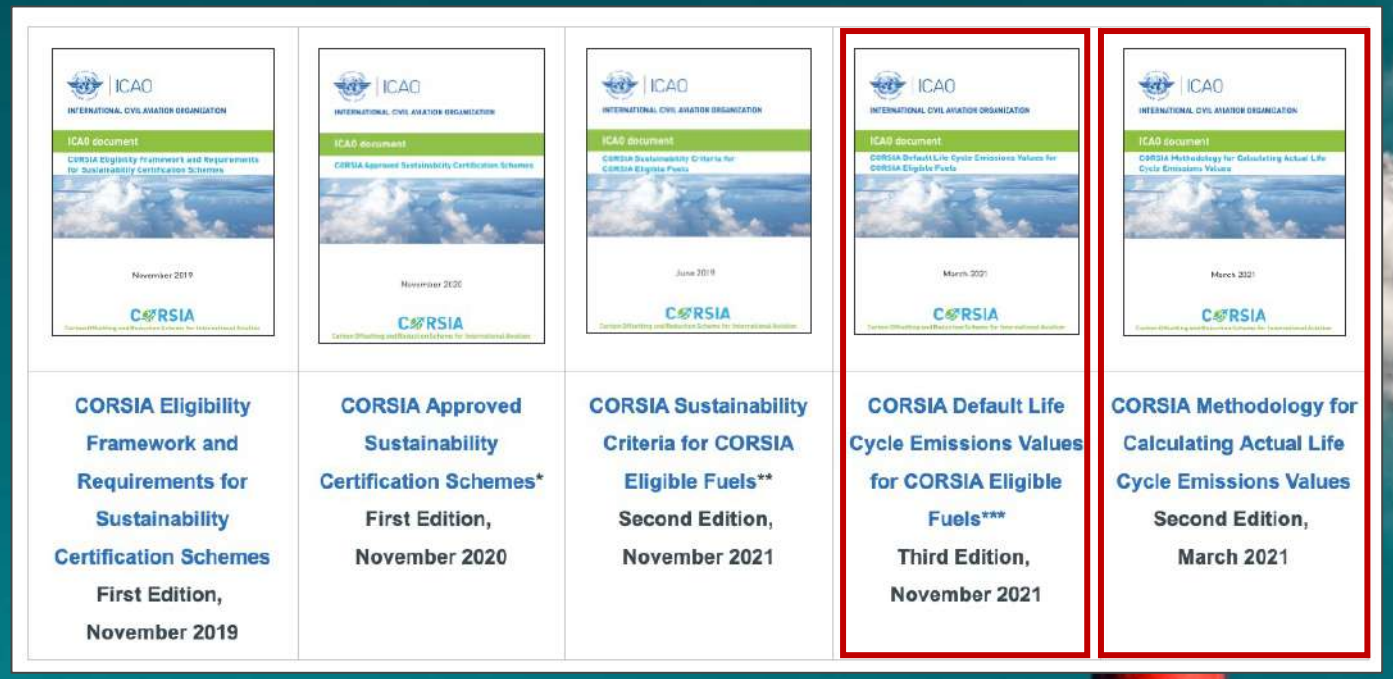




*Group certification approach possible

**ISCC is in the position to certify up to the Airport fuel operator (e.g. to enable full traceability)

ISCC provides the methodology and rules for calculating and verifying GHG emissions reductions of CORSIA eligible SAF



CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes
First Edition, November 2019

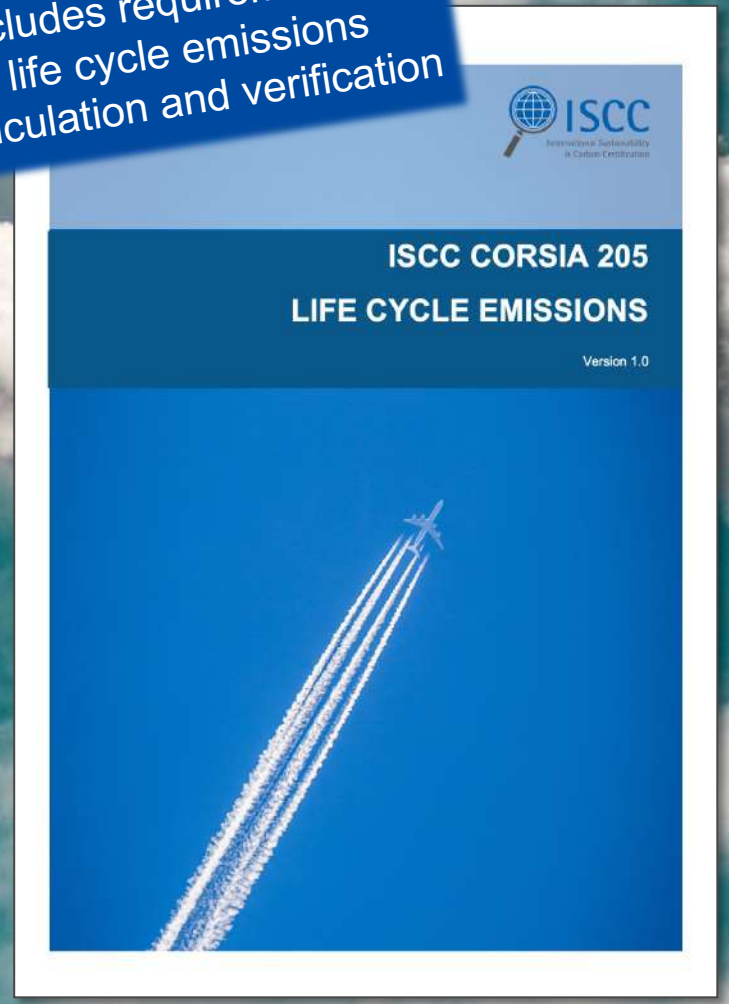
CORSIA Approved Sustainability Certification Schemes*
First Edition, November 2020

CORSIA Sustainability Criteria for CORSIA Eligible Fuels**
Second Edition, November 2021

CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels***
Third Edition, November 2021

CORSIA Methodology for Calculating Actual Life Cycle Emissions Values
Second Edition, March 2021

Includes requirements for life cycle emissions calculation and verification



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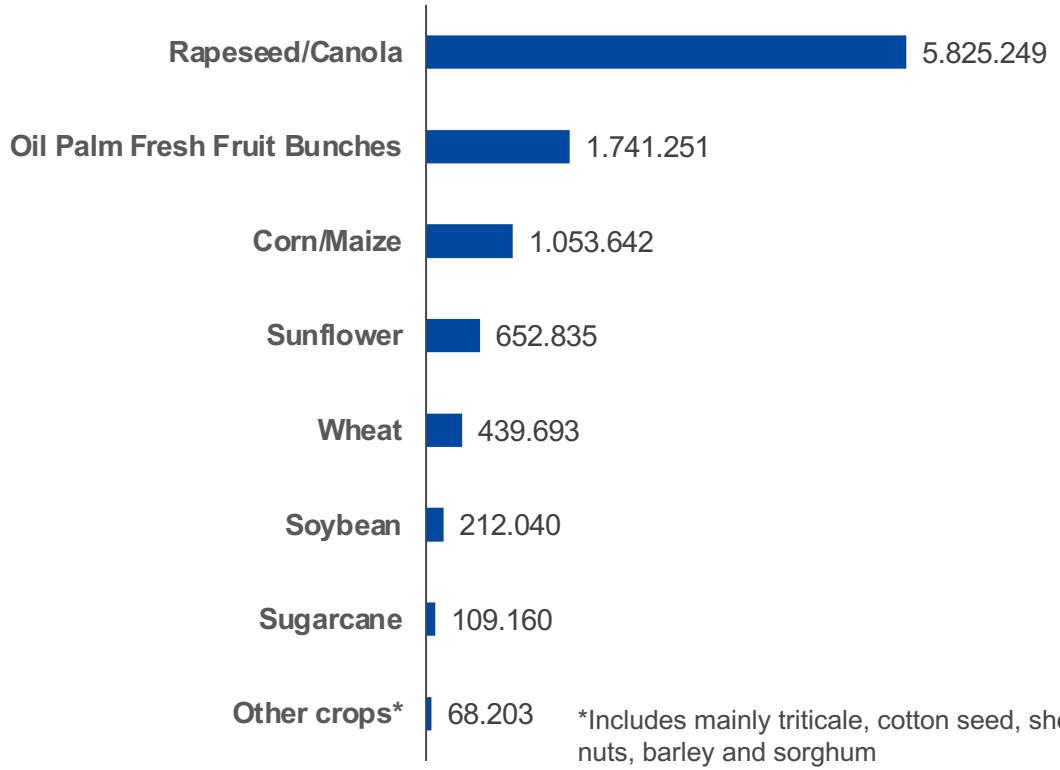
To enable rapid SAF scale-up, a broad feedstock basis will be needed.
More than 86 million metric tons of feedstock were ISCC certified in 2020

More than **70 million metric tons of crops** were certified under ISCC in 2020

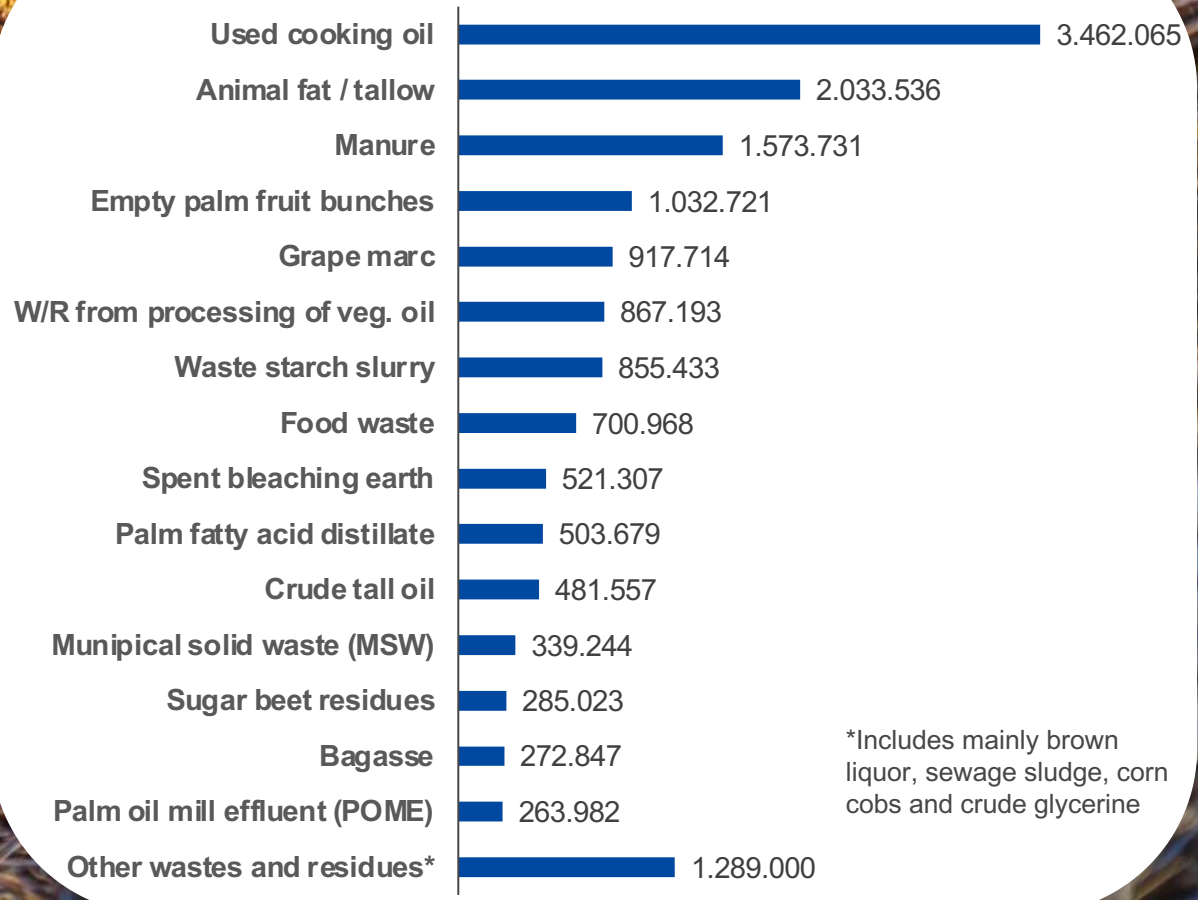
Crops – Certified Cultivation Area (in hectare)



*Includes mainly triticale, cotton seed, shea nuts, barley and sorghum

More than **15 million metric tons of waste and residues** were certified under ISCC in 2020

Wastes and Residues (in metric tons)



*Includes mainly brown liquor, sewage sludge, corn cobs and crude glycerine

Feedstocks with low LUC risk can contribute to the feedstock basis.
There are two approaches for producing low LUC risk feedstock under CORSIA

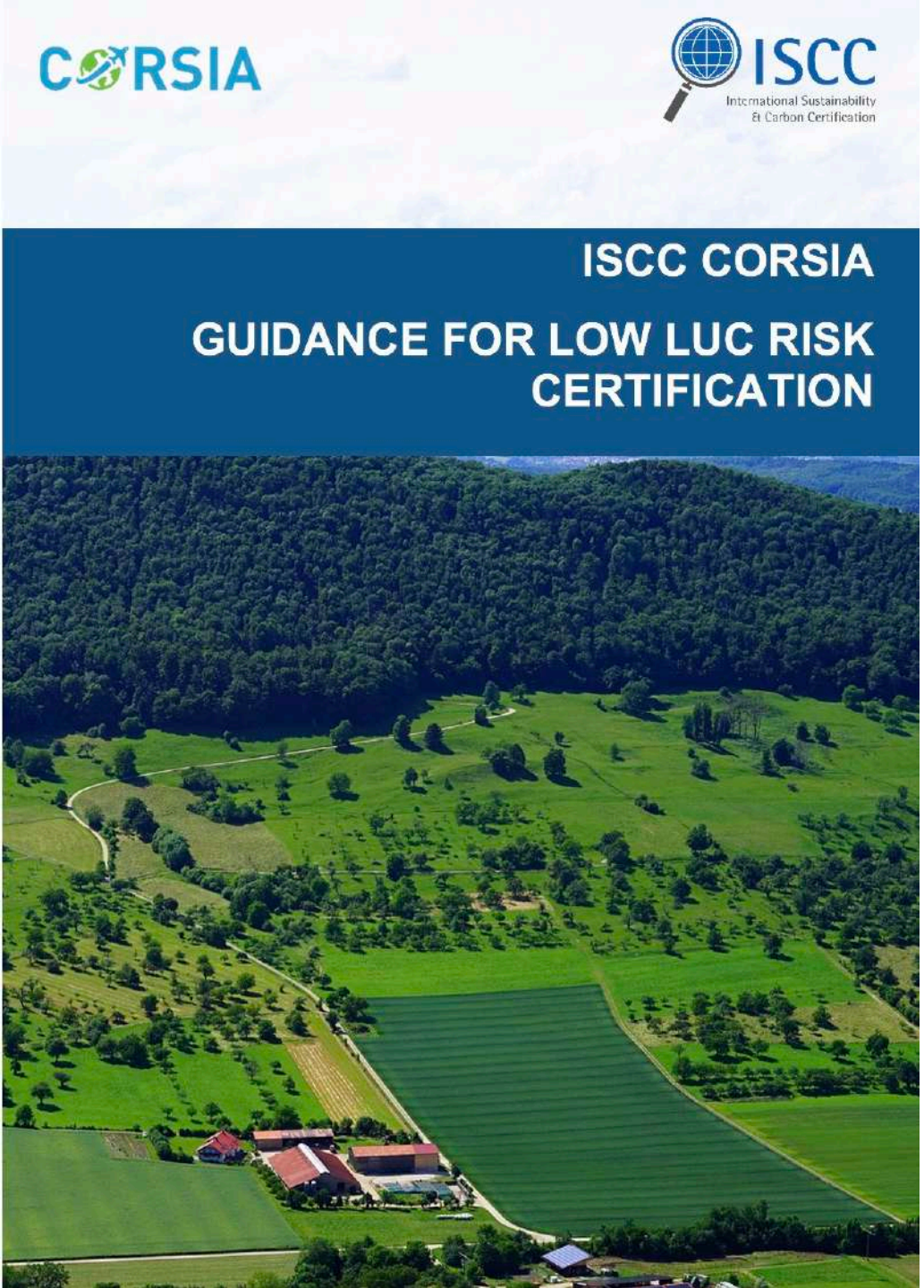
Yield Increase Approach

Where feedstock producers are able to increase the amount of available feedstock out of a fixed area of land

Unused Land Approach

Where previously unused land is used to cultivate sustainable feedstocks for CORSIA eligible fuel production

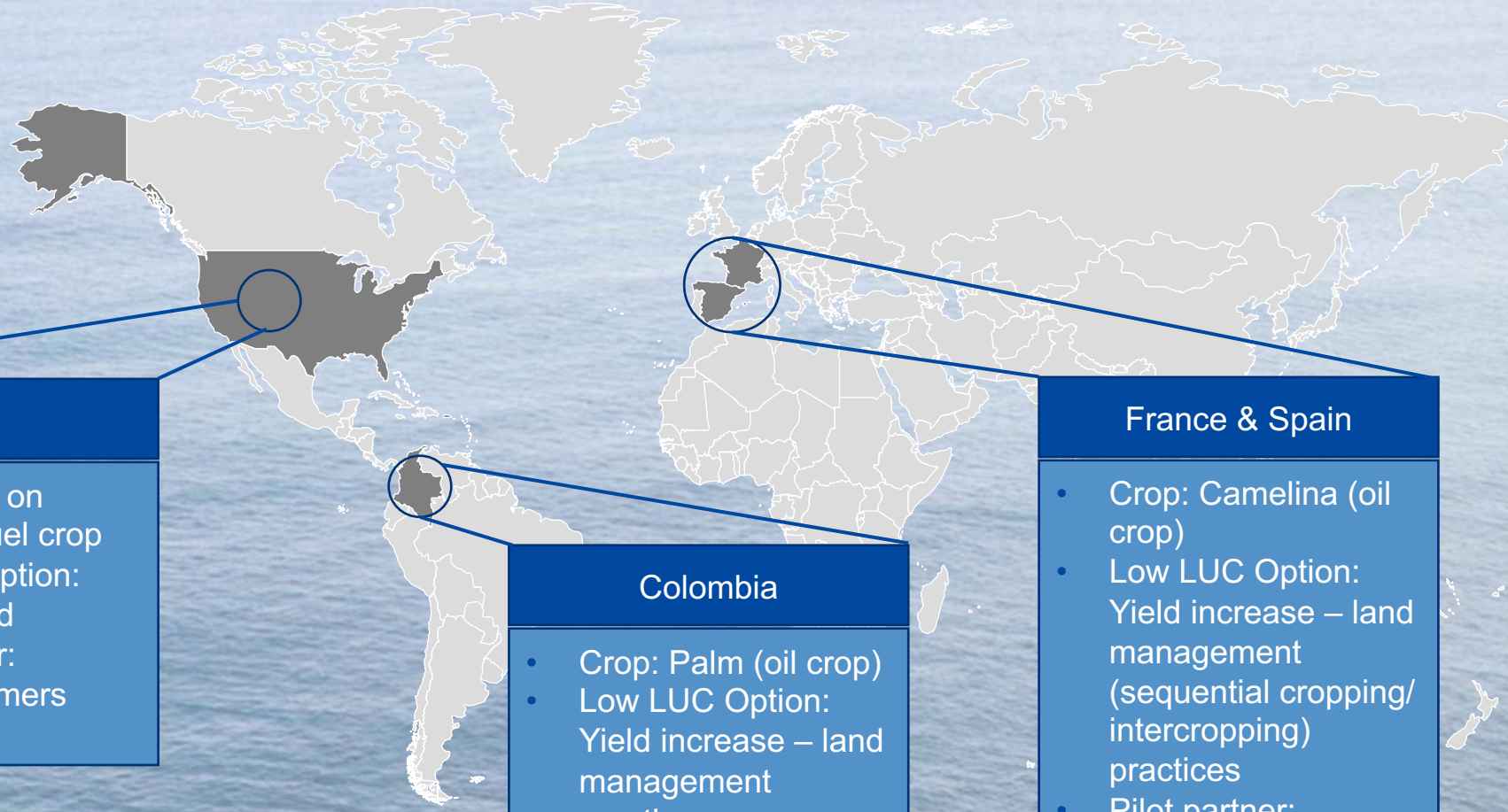
Source: ICAO document - CORSIA Methodology For Calculating Actual Life Cycle Emissions Values; ISCC CORSIA Guidance for Low LUC Risk Certification



ISCC has developed the ISCC CORSIA low LUC risk add-on

- The add-on allows for the **certification of low LUC risk feedstock** for CORSIA eligible fuel
- The add-on complements the general ISCC CORSIA certification
- ISCC has drafted a guidance document, including **detailed guidelines and practical examples** for both farmers and auditors
- Audit procedures have been drafted to allow for a **consistent and robust verification** by ISCC auditors
- **Approach is continuously refined** through learnings from pilots

Different low LUC risk approaches under ISCC CORSIA have already been successfully tested in pilot audits. First actual certifications are in the pipeline



USA

- Crop: focus on typical biofuel crop
- Low LUC Option: Unused land
- Pilot partner: regional farmers

Colombia

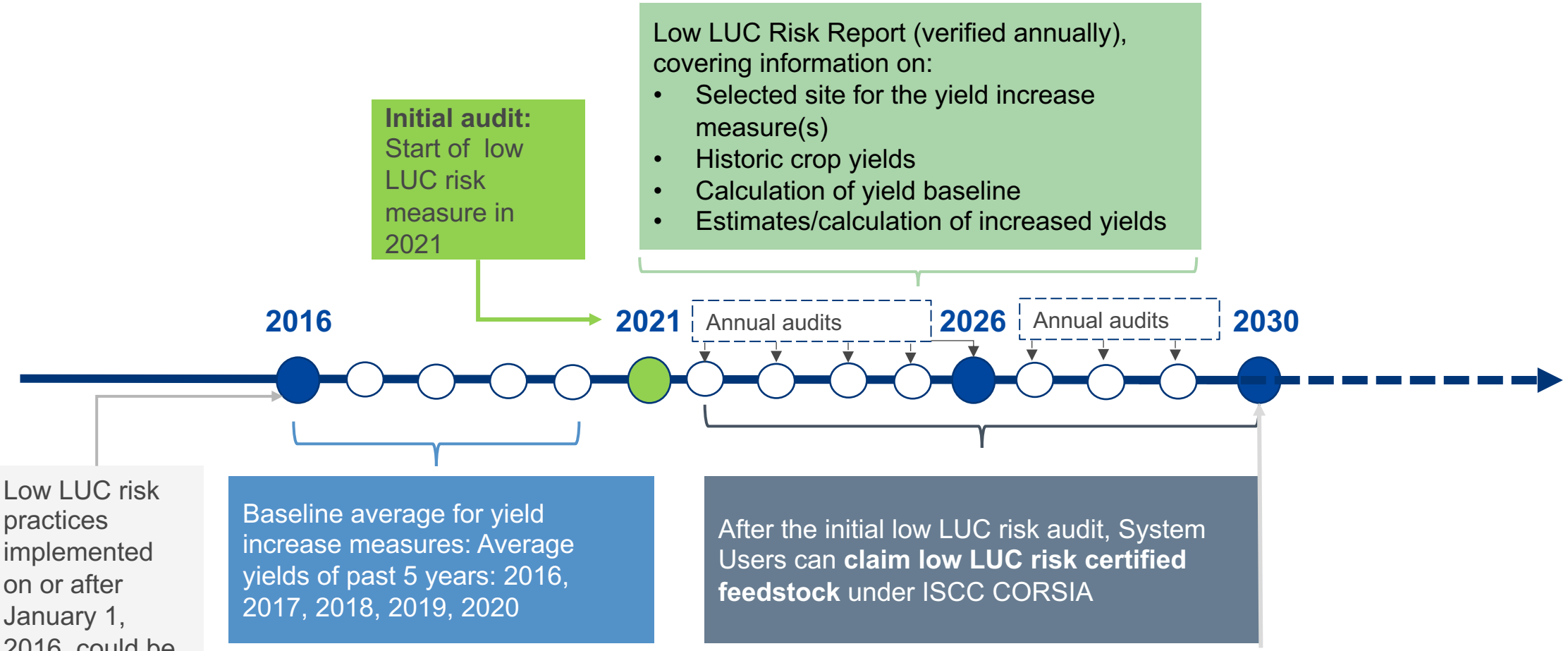
- Crop: Palm (oil crop)
- Low LUC Option: Yield increase – land management practices
- Pilot partner: palm oil producer

France & Spain

- Crop: Camelina (oil crop)
- Low LUC Option: Yield increase – land management (sequential cropping/ intercropping) practices
- Pilot partner: camelina seed producer, regional farmers

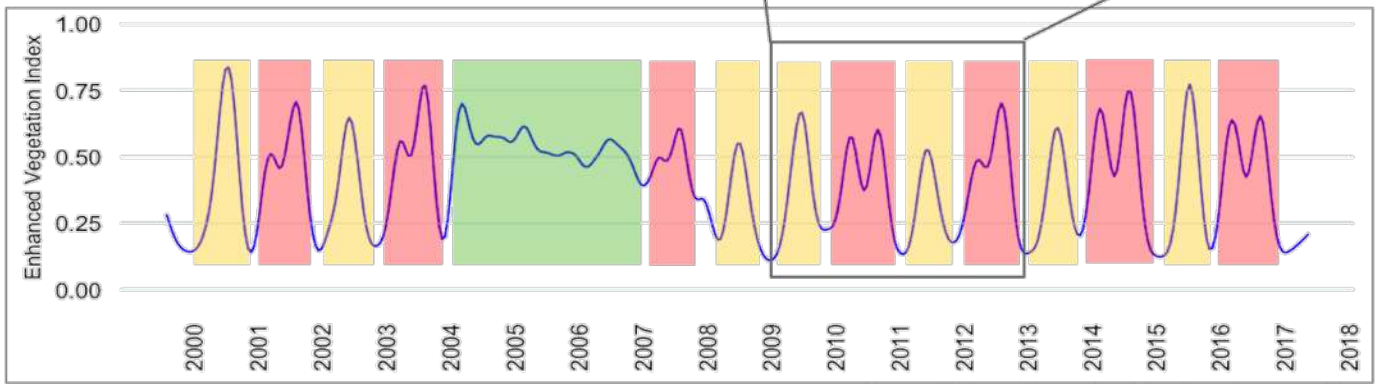
Example: Timeline for low LUC risk audits

Example for yield increase approach



Remote sensing is a useful tool to support the certification of low LUC risk feedstock. Example a) Verifying yield increase measures

Season	Land use	EVI Interpretation
2009/2010	Corn	High peak
2010/2011	Wheat & Soybean (2 harvests)	Two peaks identified Double cropping
2011/2012	Corn	Small peak (drought)
2012/2013	Barley & Soybean (2 harvests)	Two peaks identified Double cropping



Example from Argentina, Province Buenos Aires

Figure provided by GRAS Global Risk Assessment Services

- The **Enhanced Vegetation Index (EVI)** provides information on the "amount of green vegetation" of an area and thus can be used to determine and verify land use, deforestation, etc.
- **ISCC uses GRAS** (Global Risk Assessment Services), as an integrated web-tool to verify and monitor land use change change activities

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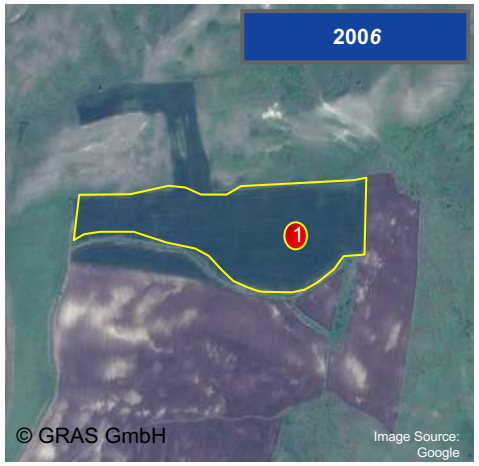
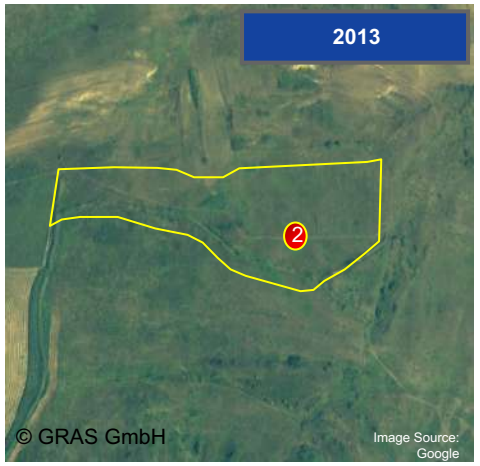
Remote sensing is a useful tool to support the certification of low LUC risk feedstock. Example b) Identifying and verifying unused land status





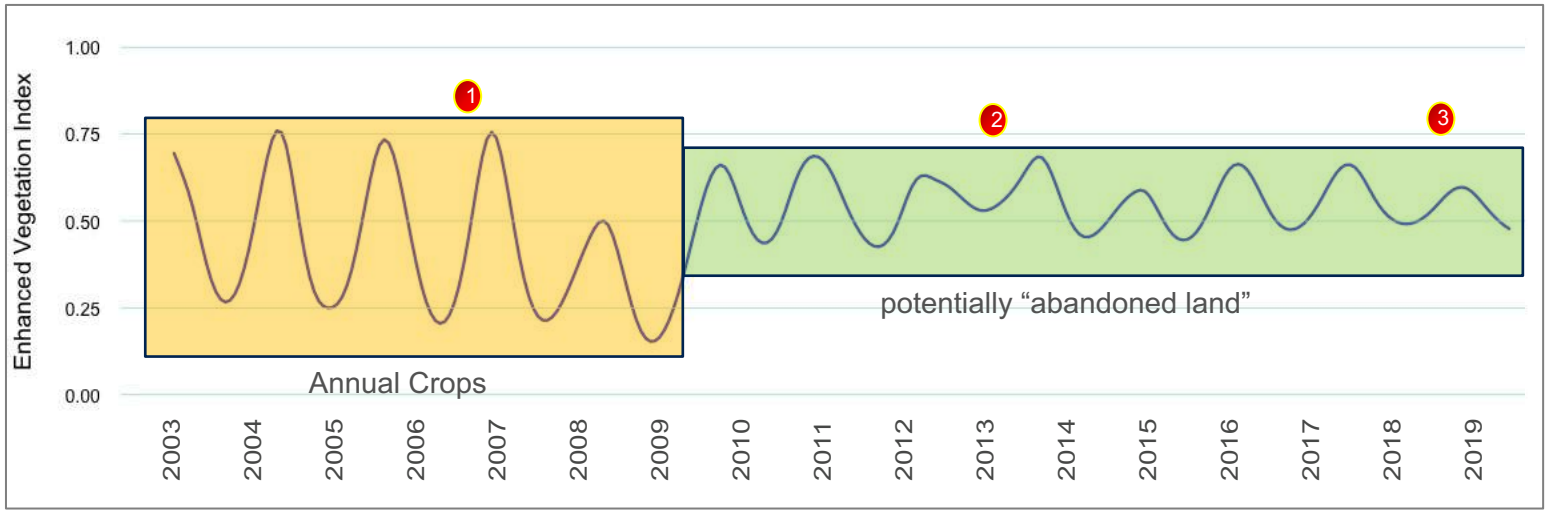


Figure provided by GRAS Global Risk Assessment Services

- The vegetation profile and image interpretation also provides information on potentially “unused land”
- Scenario example:
- This **land** was detected through the **heatmap** as **potentially unused** since **2009**
- If the **unused land status** is **confirmed on-site** and the **sustainability criteria** are verified, measures to re-start cultivation in e.g. 2022 could lead to the production of **low LUC risk feedstock**

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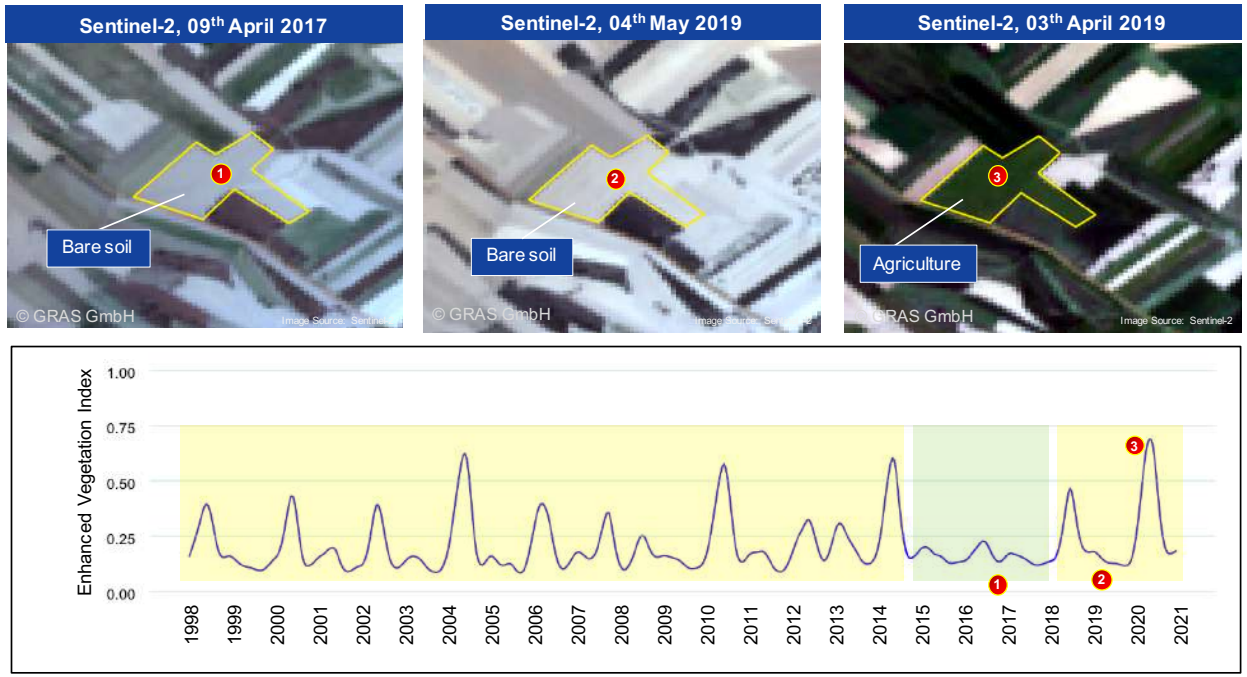
Example from pilot project: Assessment of land use history and status in Toledo, Spain, via satellite images and the EVI



Location: -2.948659°, 40.012443°

Years	Land Use History
1998 – 2014	Agriculture with some years of no vegetation in between
2015 – 2017	Indication of no vegetation
2007 – 2016	Agriculture every second year

- The EVI shows a first indication of the land use in previous years, as well as potential irregularities (e.g. no indication of vegetation between the years 2015-2017)
- After the analysis, the farmer was contacted to get further information on the years 2015-2017
- The rotation according to the farmer (sowing - harvest):
  - 2015-2016: barley
  - 2016-2017: fallow
  - 2017-2018: barley
  - 2018-2019: fallow
  - 2019-2020: camelina
  - 2020-2021: fallow
- The farmer has indicated that 2016 harvest was an extremely dry year – which means that the crop was already ready for harvest (not green) in May 2016

Figure provided by GRAS Global Risk Assessment Services

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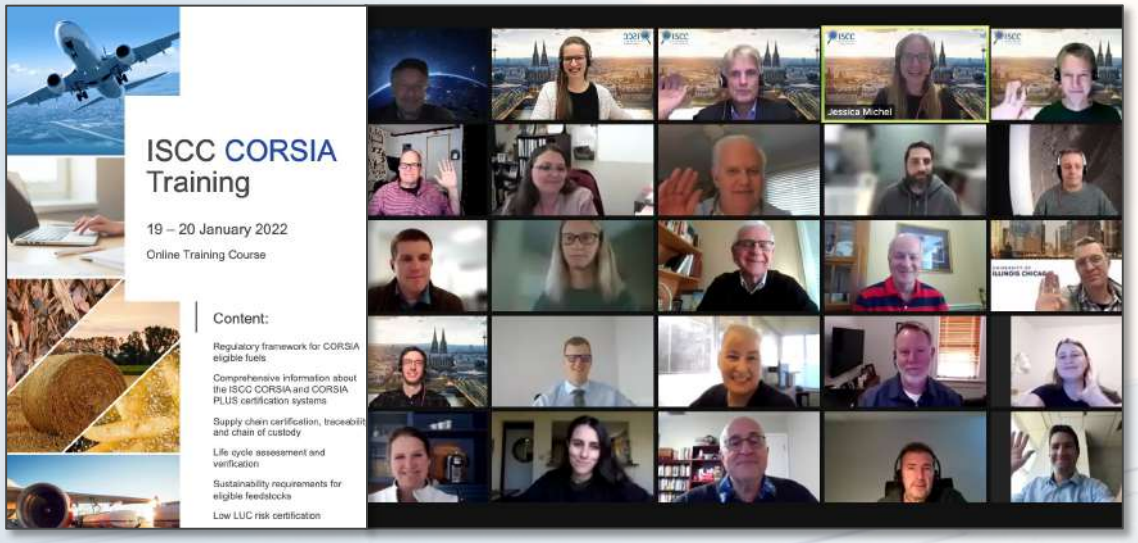
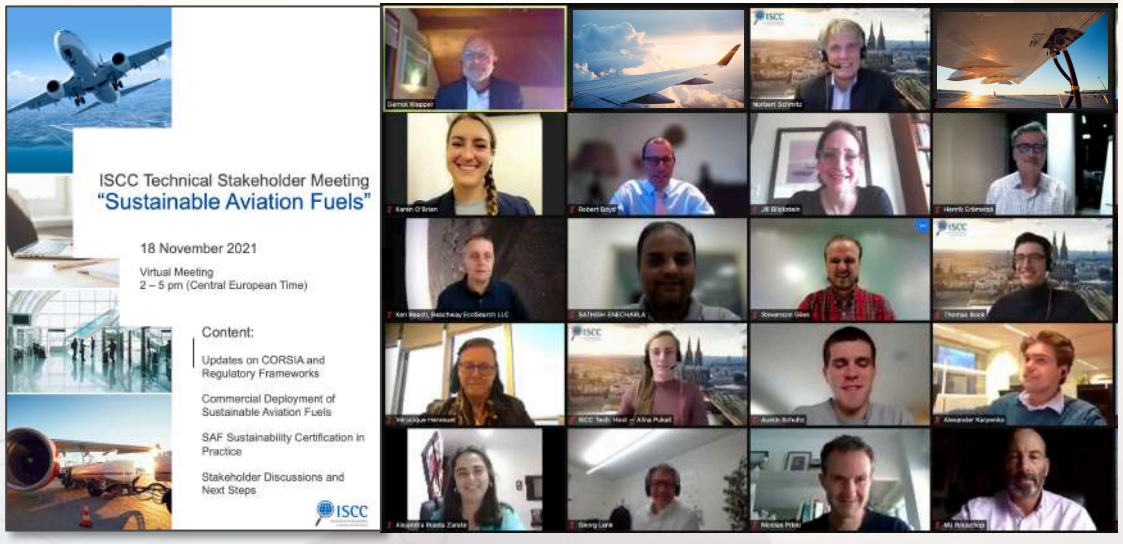
ISCC puts emphasis on stakeholder dialogue and qualification of system users and auditors

ISCC CORSIA Training



- **Provides in-depth training** around the ISCC CORSIA standard to auditors and third parties
- **Three trainings** conducted so far with **150+ participants**, including regulators, airlines, SAF producers and suppliers
- **50+ auditors** have successfully passed the training and are in the position to conduct ISCC CORSIA audits

Technical Stakeholder Committee „Sustainable Aviation Fuels“



- Set up to enable a **regular stakeholder dialogue on SAF**
- **150+ participants** attended the first meeting
- **Topics under discussion** include regulatory developments, SAF market ramp-up, SAF sustainability certification and more
- **Contributors and speakers** include regulators, airlines and operators along the SAF supply chain

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Thank you for your attention!

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