ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

CORSIA Eligible Fuels – Sustainable Aviation Fuels (SAF) SAF Policy, Regulatory Frameworks and Financing

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ICAO

International Aviation's Climate Goals

2010

Collective medium-term global aspirational goal: **carbon neutral growth from 2020** (CNG2020)

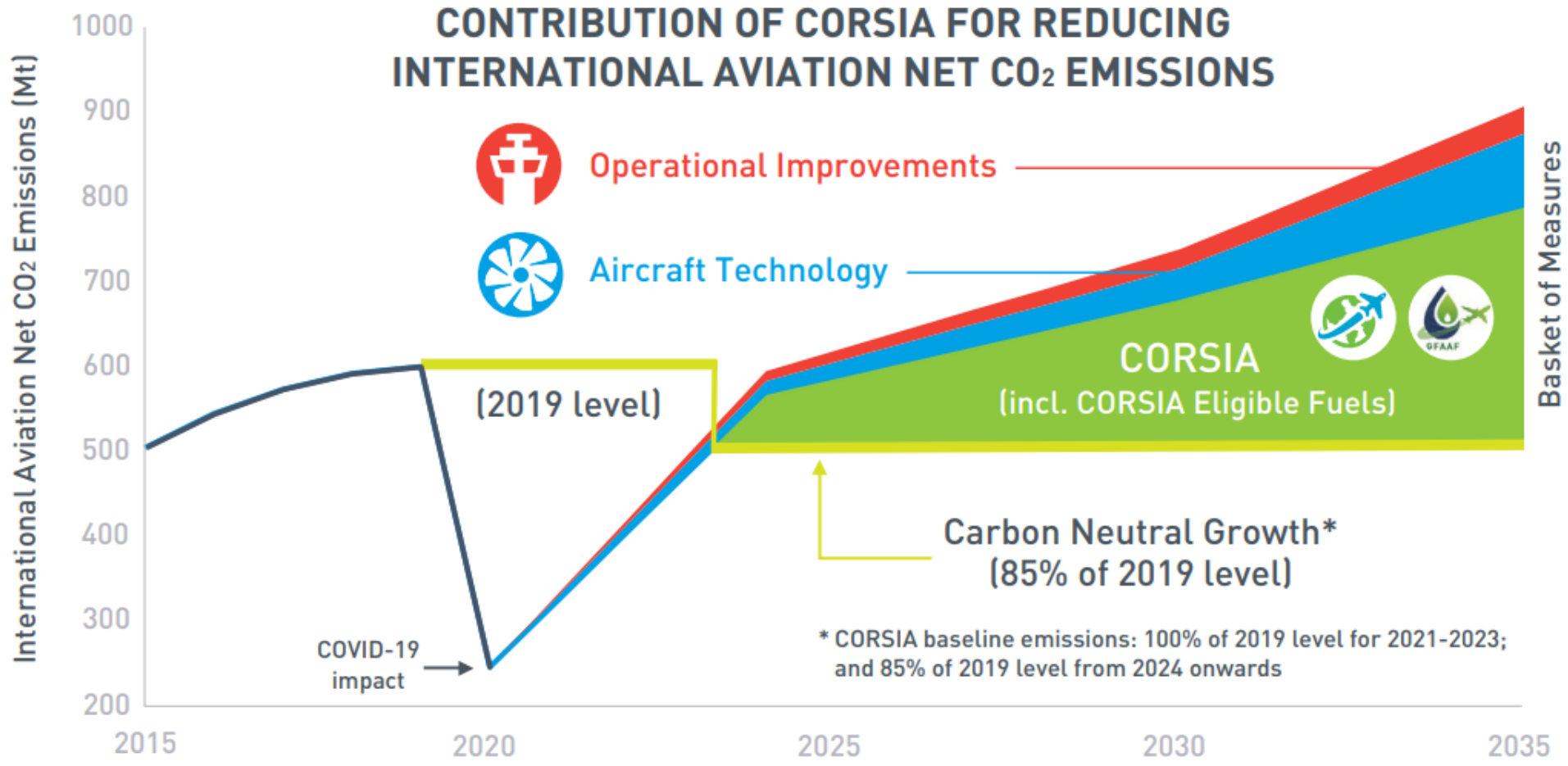
2022

Long-term global aspirational goal (LTAG): **net zero carbon emissions** from international aviation by **2050**

2023

Collective global aspirational Vision: to **reduce CO_2 emissions by 5% by 2030** using aviation cleaner energies.

CORSIA Baseline



Annex 16 volume 4 Definitions - Fuels and CORSIA

SAF conversion processes defined as "a type of technology used to convert a feedstock into aviation fuel".
SAF conversion processes are evaluated and approved by organizations such as ASTM International.

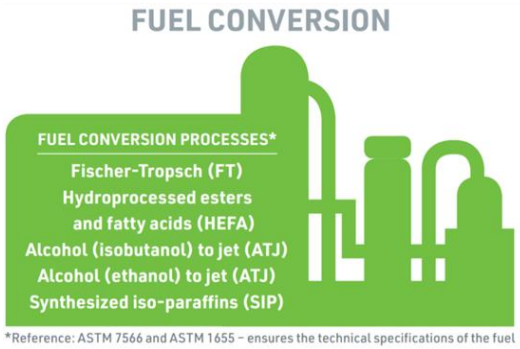
To be eligible for use within the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), SAF must also meet a set of sustainability criteria

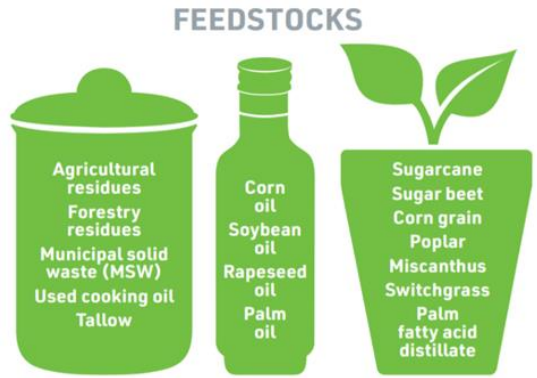
CORSIA Eligible Fuel: a CORSIA sustainable aviation fuel or a CORSIA lower carbon aviation fuel, which an operator may use to reduce their offsetting requirements.

- SAF is defined as a **renewable or waste-derived aviation fuel** that meets the CORSIA Sustainability Criteria

- LCAF is defined as a **fossil-based aviation fuel** that meets the CORSIA Sustainability Criteria

11
Approved conversion processes
(11+ under evaluation)





Regulatory framework - Globally-accepted environmental Standards for SAF

- **Annex 16 Vol IV SARPs on SAF**
  - CORSIA includes methodologies that allow aircraft operators to reduce its offsetting requirements through the use of SAF and Lower Carbon Aviation Fuels (LCAF).
  - These include globally-accepted **sustainability criteria** and **life cycle methodologies**.

CORSIA regulations are critically important for any Sustainable Aviation Fuel (SAF) projects.

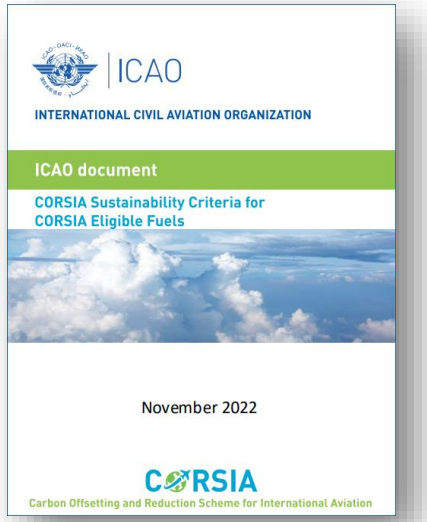
- States developing SAF projects **must ensure that fuels meet these criteria to be recognized under CORSIA**
  - ICAO developed **model CORSIA regulations**

Regulatory framework - Globally-accepted environmental Standards for SAF

Sustainability of Aviation Fuels

a **set of Sustainability Criteria** was approved by the ICAO Council, in the context of consideration of Sustainable Aviation Fuels and Lower Carbon Aviation Fuels under CORSIA. These Criteria are registered in the ICAO document "CORSIA sustainability criteria for CORSIA eligible fuels".

https://www.icao.int/CORSIA/corsia-eligible-fuels



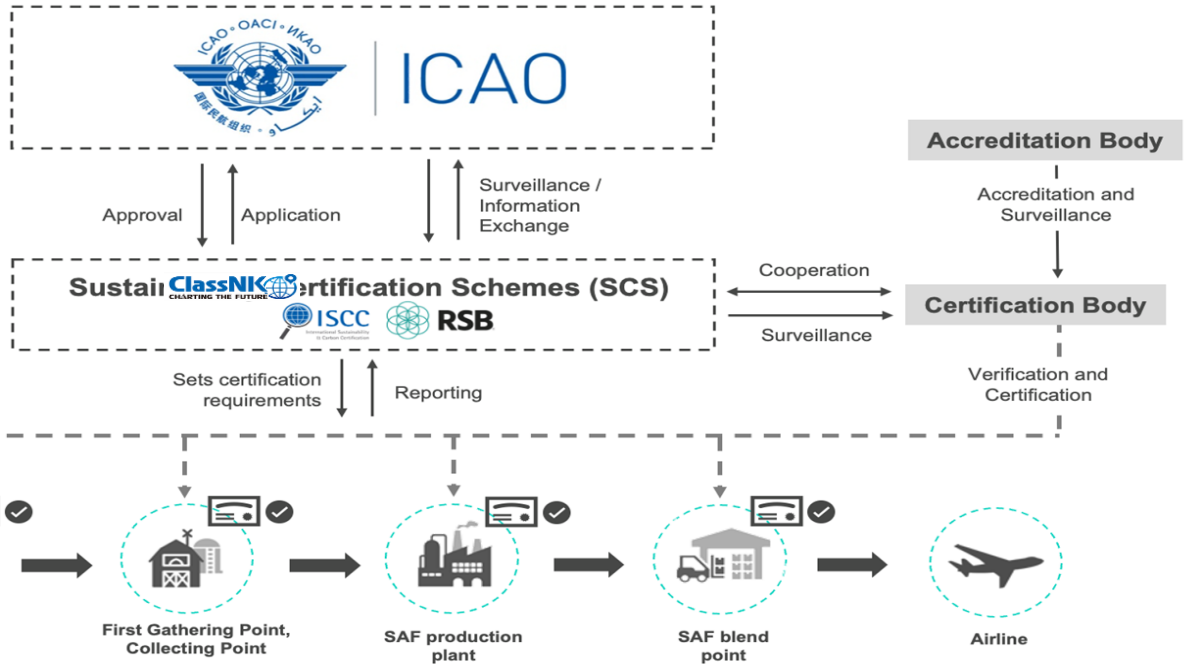
Sustainability themes	
1. Greenhouse Gases (GHG)	Carbon-reduction themes
2. Carbon Stock	
3. GHG emissions reduction permanence	Environmental themes
4. Water	
5. Soil	
6. Air	
7. Conservation	
8. Waste and chemicals	
9. Seismic and vibrational impacts (only for LCAF)	
10. Human and labour Rights	Socio-economic themes
11. Land Use Rights and Land Use	
12. Water use rights	
13. Local and social development	
14. Food security	

All themes applicable for batches of CEF produced by certified fuel producer **on or after 1 January 2024**

Regulatory framework - Sustainability Certification

Compliance with the **Sustainability Criteria** is granted on the basis of independent attestation by **CORSIA approved Sustainability Certification Schemes (SCSs).**

CORSIA eligible fuels come from fuel producers that are **certified** by a **Sustainability Certification Scheme (SCS) approved by the ICAO** Council to perform this certification.



[CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes]

Fourth Edition, June 2025

[CORSIA Approved Sustainability Certification Schemes*]

Third Edition, October 2024

https://www.icao.int/CORSIA/corsia-eligible-fuels

Annex 16 Vol IV: Offsetting requirements

AOs can reduce their offsetting requirements through:

- Cancelling CORSIA Eligible Emissions Units (CEEUs)
- Use of CORSIA eligible fuels, which include CORSIA SAF and CORSIA LCAF.

Calculating an aeroplane operator's offsetting requirements

- The **Sector's Growth Factor**: represents the international aviation sector's global average growth of emissions in a given year. It will be applied as a common factor for all individual operators participating in the scheme for the calculation of their offsetting requirements. **ICAO will calculate the Sector's Growth Factor** every year based on the reported CO2 emissions data from States to ICAO; and
- The **Individual Growth Factor**: represents an individual operator's growth factor of emissions in a given year.

From 2021 to 2032: 100% sectoral and 0% individual

From 2033 to 2035: 85% sectoral and 15% individual

Illustration- Calculating Offsetting requirements using CEFs

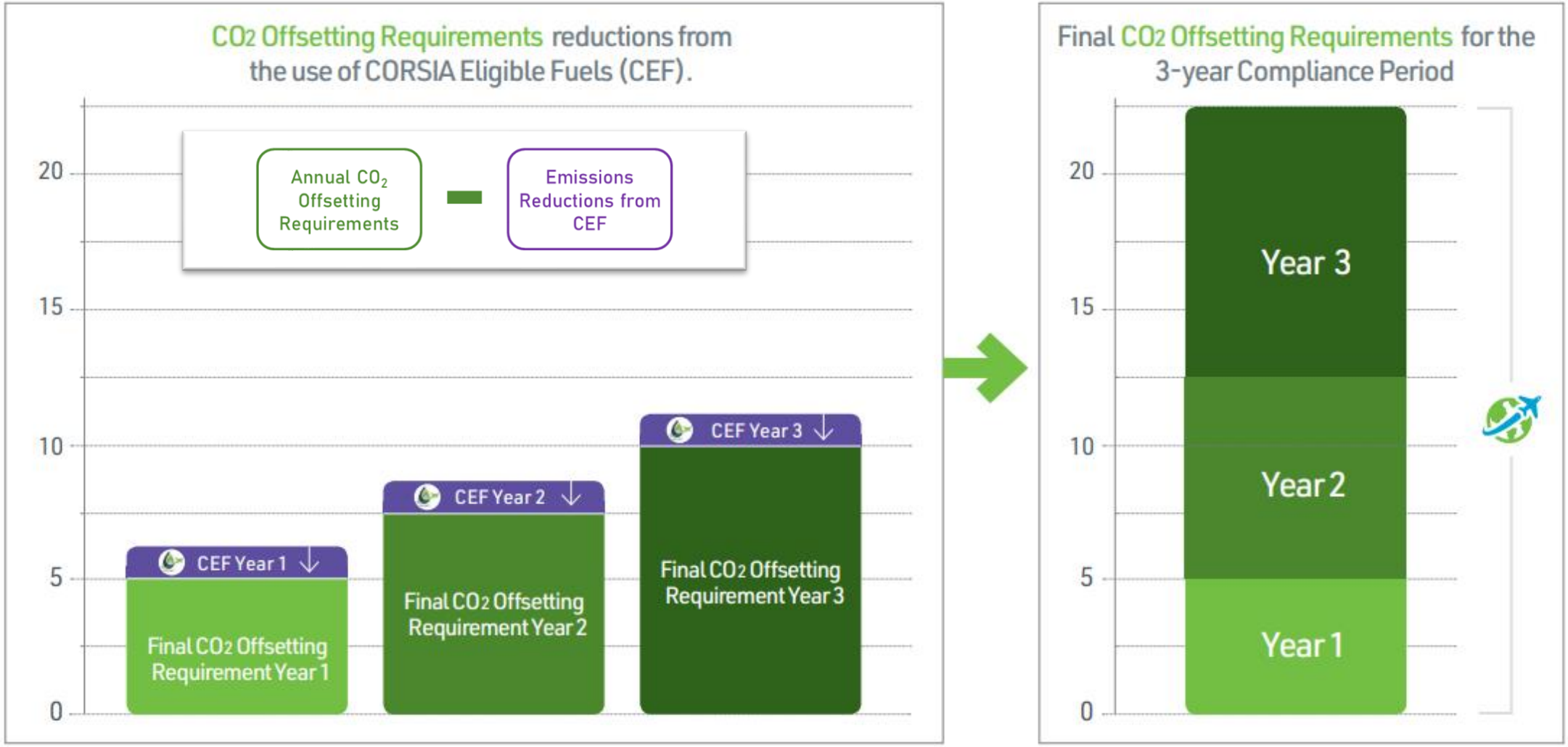


Illustration- Calculating Offsetting requirements using CEFs

FCF = Fuel Conversion Factor, fixed value, 3.16 for Jet-A/ Jet A/ TS-1 or No. 3 Jet fuel or 3.10 for AvGas/Jet B (kg CO_2/kg fuel)

L_{CEF} = Life cycle emission value for a CORSIA eligible fuel (g CO_2e/MJ)

$$ER_y = FCF * \left[\sum_f MS_{f,y} * \left(1 - \frac{L_{CEF}}{LC}\right)\right]$$

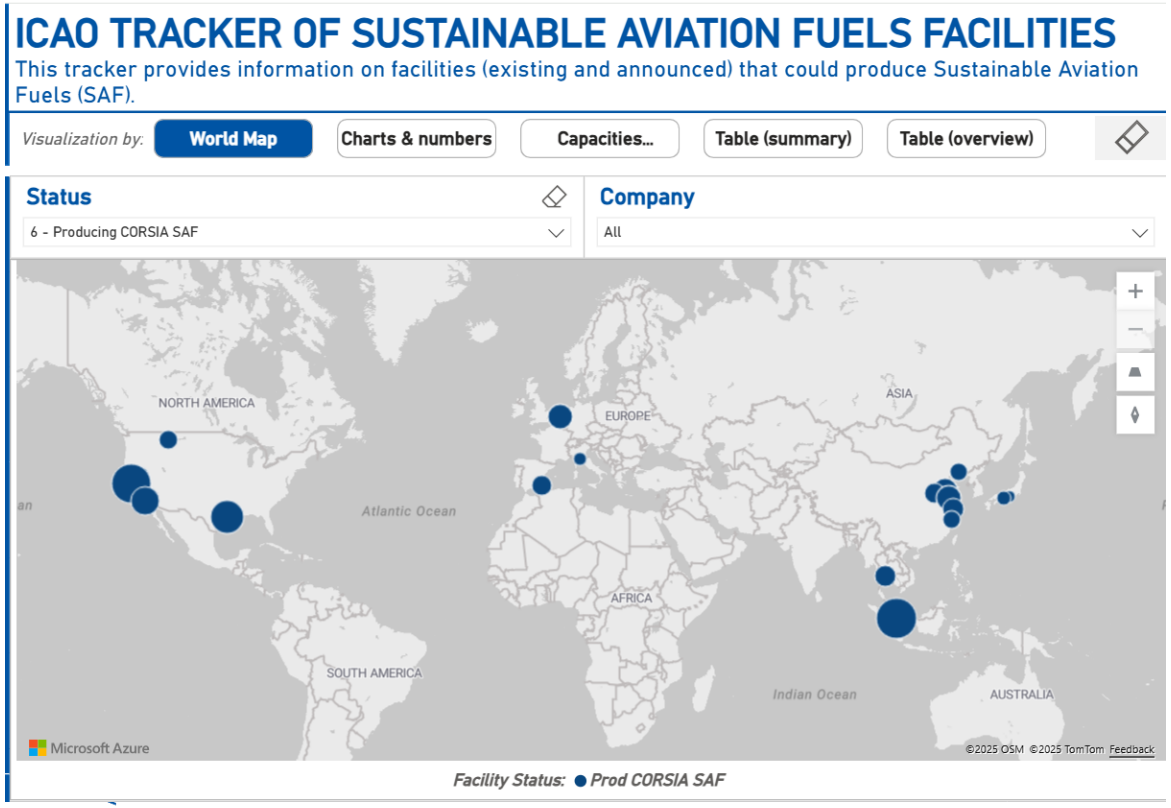
$MS_{f,y}$ = Total mass of CEF claimed in the year y

LC = Baseline life cycle emissions fixed value, 89 for Jet-A/ Jet A/ TS-1 or No. 3 Jet fuel or 95 for AvGas (gCO_{2e}/MJ)

Example: If, in 2021, an operator uses 10,000 tonnes of Jet-A Fuel produced from Used Cooking Oil (Default $\mathbf{L_{CEF} = 13.9g\ CO2e/MJ}$), the amount of emissions reductions will be:

$$\mathbf{ER_{2021}} = 3.16 \times \left|10.000 \times \left(1 - \frac{13.9}{89}\right)\right| = 26.665 \text{ tonnes of } CO_2$$

Production facilities – CORSIA eligible fuels



CORSIA-certified refineries are getting in service

4.4MT/year

Current production capacity - CORSIA-certified SAF

(25 SAF refineries)

88% of current SAF production capacity is CORSIA compliant

(25 out of 49 operating SAF refineries)

https://www.icao.int/SAF/SAF-production-facilities

ICAO Guidance provides details on various policy options, divided into 3 impact areas and 8 categories

- The **ICAO Global Framework for Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other Aviation Cleaner Energies**
  - includes a collective global aspirational Vision to *reduce CO2 emissions in international aviation by 5 per cent by 2030*, compared to zero cleaner energy use; and
  - is built across four building blocks: *policy and planning; regulatory frameworks; implementation support; and financing*.
    - These building blocks are interconnected and need to advance and work together to achieve their intended purpose.

ICAO Guidance provides details on various policy options, divided into 3 impact areas and 8 categories

- The **Long-term global aspirational goal (LTAG)**
  - The 41st ICAO Assembly adopted a long-term global aspirational goal (LTAG) for international aviation of net-zero carbon emissions by 2050 in support of the UNFCCC Paris Agreement's temperature goal; and
  - The LTAG report shows that SAF has the greatest potential to reduce CO2 emissions from International Aviation.
- ICAO guidance on policy measures for SAF development and deployment (2024).
  - summarizes potential policies and coordinated approaches for the deployment of SAF, completing a toolbox of guidance material for use by ICAO Member States together with the ICAO SAF Rules of Thumb.
  - *provides some examples of policy approached implemented by ICAO Member States.*

ICAO Guidance provides details on various policy options, divided into 3 impact areas and 8 categories

Impact area: Stimulating Growth of SAF Supply

1 Government funding for RDD	2 - Targeted incentives and tax relief to expand SAF supply infrastructure	3 - Targeted incentives and tax relief to assist SAF facility operation	4 - Recognition and valorization of SAF environmental benefits
1.1 - Government R&D 1.2 - Government demonstration and deployment	2.1 - Capital grants ; 2.2 - Loan guarantee programs 2.3 - Eligibility of SAF projects for tax advantaged business status ; 2.4 - Accelerated depreciation/'bonus' depreciation 2.5 - Business Investment Tax Credit (ITC) for SAF investments 2.6 - Performance-based tax credit 2.7 – Bonds / Green Bonds	3.1 Blending incentives: Blender's Tax Credit 3.2 – Production incentives: Producer's Tax Credit 3.3 - Excise tax credit for SAF 3.4 - Support for feedstock supply establishment and production	4.1 – Recognize SAF benefits under carbon taxation 4.2 - Recognize SAF benefits under cap and-trade systems 4.3 - Recognize non-carbon SAF benefits: improvements to air quality 4.4 - Recognize non-carbon SAF benefits: reduction in contrails

Impact area: Creating Demand for SAF

5- Creation of SAF mandates	6 - Update existing policies to incorporate SAF	7 – Demonstrate government leadership
5.1 - Mandate renewable energy volume requirements in the fuel supply 5.2 - Mandate reduction in carbon intensity of the fuel supply	6.1: Incorporating SAF into existing national policies 6.2: Incorporating SAF into existing subnational, regional or local policies	7.1 Policy statement to establish direction 7.2: Government commitment to SAF use, carbon neutral air travel

Impact area: Enabling SAF Markets

8 - Market enabling activities
8.1 - Adopt clear and recognized sustainability standards and life cycle GHG emissions methods for certification of feedstock supply and fuel production 8.2 - Support development/recognition of systems for environmental attribute ownership and transfer 8.3 - Support SAF stakeholder initiatives

Considerations when developing a SAF ROADMAP

Collecting context specific data (feedstock, renewable energy sourcing, etc.)

feasibility studies to identify the capacity and propose specific roadmaps to develop local supply chains

Setting a vision for promoting SAF

States' decisions can influence market expectations, set targets, develop long-term strategies, establish national goals for SAF

Developing national SAF roadmaps

develop suitable regulations and incentives to support the scale-up of commercial production facilities and ensure economic viability and competitiveness

Managing risk

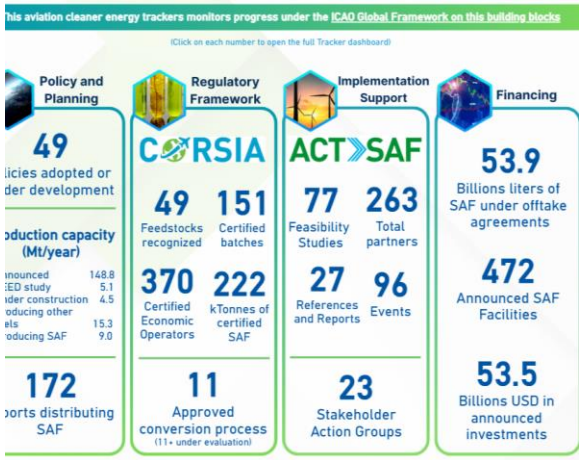
different strategies and policy to promote SAF, depending on the States' specific market background and feedstock availability – maximize environmental benefits

Flexible and inclusive policy

determine if the SAF roadmap should be sector-specific or be a part of a broader national energy strategy

ICAO ACT SAF

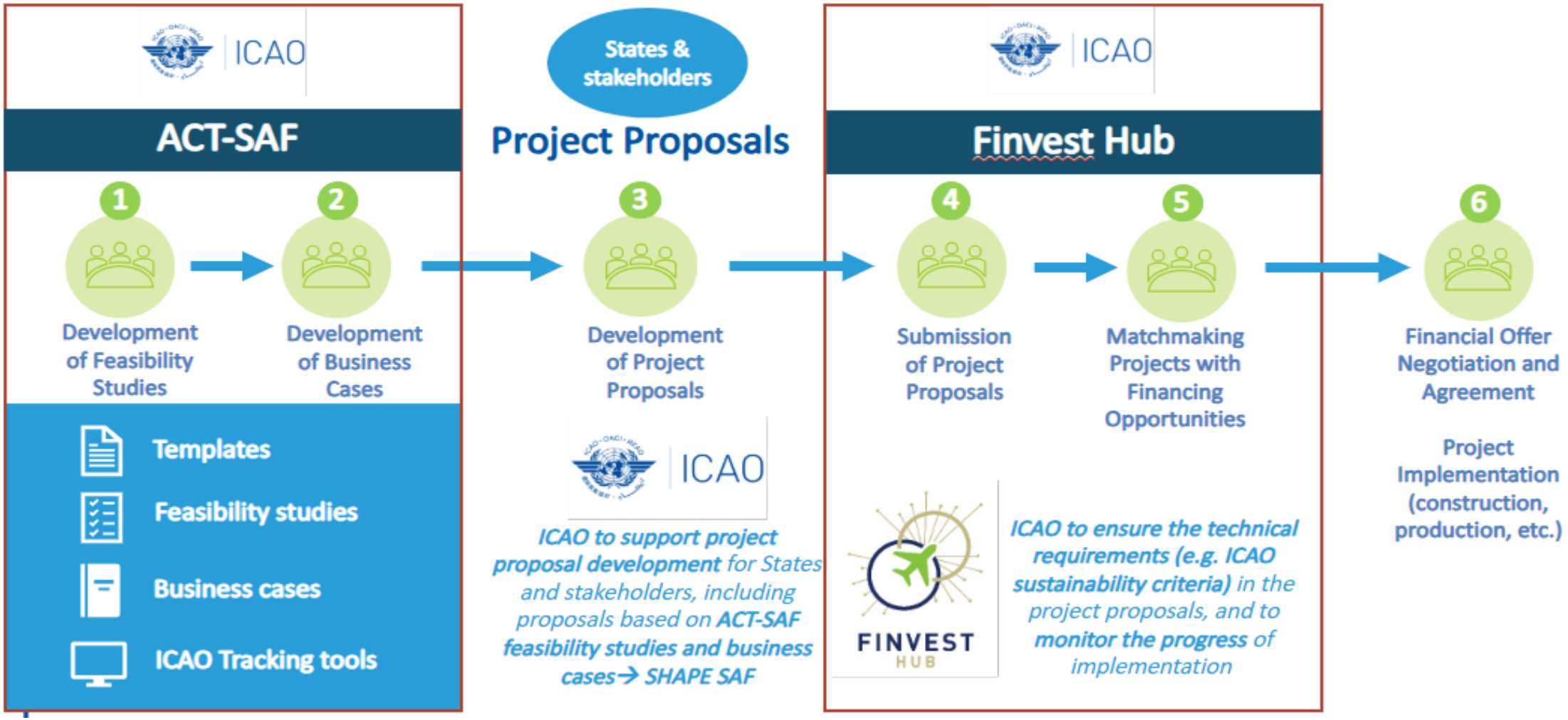
Programme aims to provide tailored support for States in various stages of SAF development and deployment



ICAO Cleaner Energy Tracker Tools monitors the progress under the ICAO Global Framework

The Finvest Hub

FINVEST is an initiative of the ICAO designed to **enable, facilitate, and connect Sustainable Aviation Fuel (SAF) projects with investment and financing opportunities**.



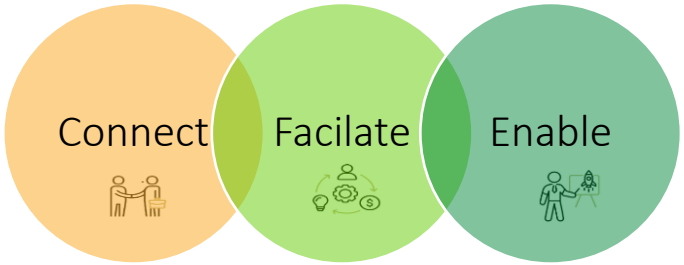
Launch of the Finvest Hub

Part of ICAO's commitment to decarbonizing international aviation, FINVEST aims to be a bridge **between sustainable aviation fuel projects and the capital required** to scale it globally.

Finvest@ETAF platform

The **Energy Transition Accelerator Financing (ETAF) Platform**, led by the **International Renewable Energy Agency (IRENA)**, is a multi-stakeholder climate finance facility designed to mobilise more than **USD 4 billion annually by 2030** for renewable energy projects in developing countries.

ICAO Finvest aims to accelerate the aviation clean energy transition by **linking the right projects with the right capital** and ensuring they are prepared to succeed. Our activities are built around three pillars



Thank You

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