



ICAO's work on Innovation for Sustainable Aviation

Second Phase of the ICAO Assistance Project with the EU Funding :
"Capacity Building for CO₂ Mitigation from International Aviation"

Third Meeting
25 to 27 July 2023



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Agenda

- Innovation in Aviation
- Innovation in Sustainable Aviation
 - Implementation Support
 - ICAO Stocktaking highlights
 - Engagement with industry
 - ICAO Global Coalition for Sustainable Aviation
 - Industry Consultative Forum
 - Promoting achievement of LTAG through financing
 - Developments in CORSIA
- Timeline towards CAAF/3



Innovation in Aviation

- ICAO Member States adopted Resolution A40-27, Innovation in Aviation
- Recognizes that innovations carry significant potential in improving aviation safety, efficiency, security, facilitation, **environment sustainability**, and economic development of air transport
- Impact of ICAO's work on innovation materialized through:



Awareness &
Promotion



Timely
deployment



Engagement
with industry



Engagement
with academia



Innovation
within ICAO



Continued emphasis on enhancing Implementation support

- Novel and innovative efforts to support States

2009 - Global Framework for Aviation Alternative Fuels (GFAAF)



2013-2019 ICAO EU: Capacity Building on CO₂ mitigation from international aviation (Phase I)

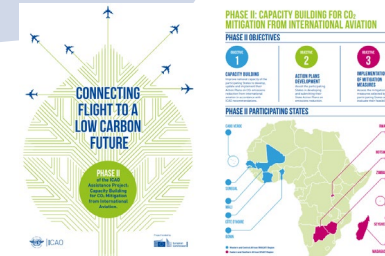


SAF feasibility studies, State Action Plan support, training and seminars, etc.

2015 – ICAO UNDP Project, financed by GEF

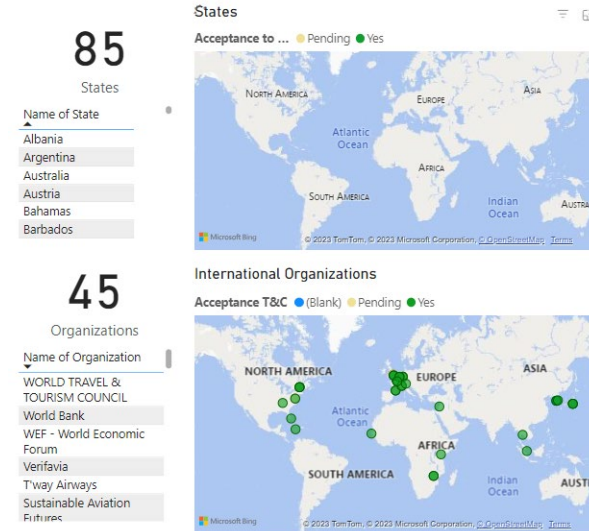


2020 to date – Continued progress under **Phase II of ICAO EU: Capacity Building on CO₂ mitigation from international aviation**








- **ACT-SAF launched in June 2022**, creates opportunities for States to develop their full potential in SAF development and deployment
- In line with ICAO No Country Left Behind, 2050 ICAO Vision for SAF, three main pillars for sustainable development recognized by the United Nations
- Provides tailored support for States
 - Facilitate partnerships and cooperation
 - Platform to facilitate knowledge sharing





ACT-SAF Series and implementation of feasibility studies

- Comprehensive training on SAF-related topics, with support of partner States and Organizations
- Implementation of feasibility studies commenced in Côte d'Ivoire, Rwanda and Zimbabwe (ICAO-EU Assistance Project)

ACT-SAF Series	Date	Topics	Contributor(s)	Abstract	Video and Presentation
#1	25 November 2022	An Introduction to SAF	ICAO	<ul style="list-style-type: none"> • Introduction to ACT-SAF • Basics of SAF 	 Download Presentation
#2	25 January 2023	SAF sustainability and reporting under CORSIA	ISCC RSB Verifavia	<ul style="list-style-type: none"> • process for sustainability certification of SAF • Reporting and verification of SAF Claims under CORSIA 	 Download Presentation
#3	23 February 2023	SAF technology and certification	Airbus US FAA Safran	<ul style="list-style-type: none"> • specifications for aviation turbine fuels • process for approval for new production pathways 	 Download Presentation

Financial contributions to support ACT-SAF activities





ICAO Stocktaking on Aviation in-sector CO₂ emissions reductions

- In its 5th edition, event covered all aviation in-sector CO₂ reduction measures and **innovations**, including technologies, operations, fuels and cleaner energies to monitor progress towards achievement of the LTAG
- 2023 event focused on fuel and clean energy related approaches, innovations, and solutions
- Pre-CAAF/3 Policy and Finance Consultations





Examples of initiatives shared at Stocktaking

- ✓ **Airbus:** Up Next eXtra Performance Wing by 2025;
- ✓ **Boeing:** Aircraft 100% SAF compatible by 2030;
- ✓ **Vports:** AAM corridors for Cargo between Canada and the US by 2028;
- ✓ **Lanzajet:** First alcohol to jet plant in 2023 with a goal of 1 billion gallons of US production by 2030;
- ✓ **Gevo:** Net Zero 1 SAF facility from 2026;
- ✓ **Arcadia eFuels:** First plant in Denmark to start in 2026 with a production capacity of 66 ktonnes of eSAF;
- ✓ **1 Point Five, Carbon engineering :** Project Stratos by mid 2025 with annual CO₂ capture capacity of 1 Mtonnes/year;
- ✓ **CSIR IPP:** Demonstration plant in December 2023 of 80 gallons/day by UPL;
- ✓ **SAF+ Consortium:** SAF plant in 2027 with a production capacity of 90 M liters/year.
- ✓ And more...





Simultaneous SAF-LAB Exhibition (NEW)

- Showcasing various stages of fuel-related supply chain:
 - Feedstock
 - Processing
 - Distribution and certification
 - Broader CO₂ emissions reduction innovations
- Fostered deeper understanding and wider view on basket of measures to support the achievement of the LTAG





ICAO Global Coalition for Sustainable Aviation

- Forum of stakeholders aimed at facilitating the development of new ideas and accelerate the implementation of **innovative solutions** to reduce GHG emissions at source, on the ground, or in the sky
- **Innovation Driving Sustainable Aviation**
 - Publication launched at COP26 providing an overview of innovations presented during 2021 Stocktaking, with updates on initiatives from Coalition partners





ICAO Industry Consultative Forum (ICF)

- Resolution A40-27: “Directs the Council to urgently consider the establishment of a high-level body with the industry to regularly provide strategic advice to the Council concerning innovation in aviation”
- The **ICAO Industry Consultative Forum (ICF)** was established to provide strategic insights to the Council on innovations that could be applied to the aviation sector
- **Inaugural meeting** on 29-30 June 2021 – **Climate change** identified as ‘existential threat’ to the sector, and ICAO **committed to explore this topic during subsequent ICF meetings**





Second ICF Meeting

- 21 March 2022
- 19 panelists - manufacturers, fuel producers, airport operators and airlines
- **Dedicated to SAF and LCAF**
 - Address current industry achievements
 - Expectations for the future
 - Focus on research priorities
 - How ICAO can be a driver
 - Facilitate the definition of an ICAO strategic vision for SAF/LCAF

Third ICF Meeting

- 12-13 June 2023
- Discussed challenges and opportunities of the use of alternative propulsion systems for the sector
- How ICAO can enable their development and deployment through policies, SARPs, and guidance material



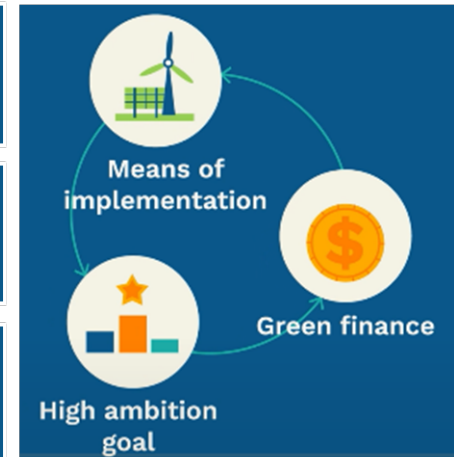
Promoting achievement of LTAG through financing

- Recognizing that means of implementation commensurate to the level of ambition, including financing, will promote the achievement of the LTAG (A41-21 Para 17)

**A41-21
18a** Facilitate... better access to private investment capacities, as well as funding from financial institutions...

**A41-21
18b** Further consider the establishment of a **climate finance initiative or funding mechanism** under ICAO...

**A41-21
28a** Invite industry, financial institutions... to actively participate in **exchange of information and best practices**...





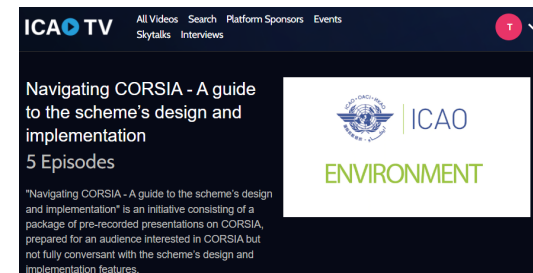
Financing for aviation decarbonization

- Since 2022, ICAO has been reaching out around 50 public and private financial institutions (e.g. regional workshops, individual discussions, support for the Council informal meetings in March and June 2023)
- Financing is one of key pillars for possible CAAF/3 outcomes, and one full-day was dedicated for financing at 2023 Stocktaking and pre-CAAF/3 event (11 to 13 July 2023)
- ICAO Climate Finance Initiative – concept is under consideration to address A41-21, para 18 a) and b) above, which is linked to Resource Mobilization efforts of the Organization, and also in support of developing specific projects under the ICAO Technical Cooperation Programme, as per A41-21, para 18 e)



Significant progress in CORSIA

- **First batches of SAF certified under CORSIA**
 - Certified by ISCC and RSB
 - Produced in China, the Netherlands, United States
- Testament of robustness of CORSIA global framework for sustainability assessment
- **40+ Feedstocks recognized under CORSIA**
- **Navigating CORSIA** – A recently launched pre-recorded guide to the scheme's design and implementation, available on ICAOTV





Third Conference on Aviation and Alternative Fuels (CAAF/3)

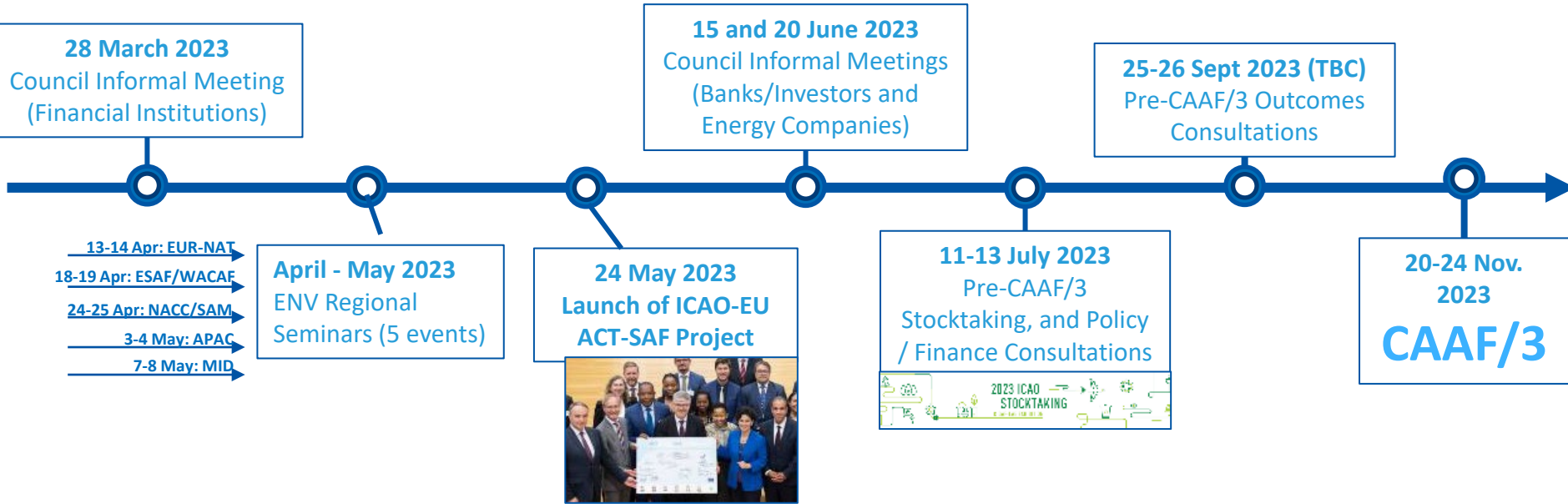


The Assembly requested the convening of:

... **the CAAF/3 in 2023 for reviewing the 2050 ICAO Vision for SAF**, including LCAF and other cleaner energy sources for aviation, in order to **define a global framework** in line with the No Country Left Behind (NCLB) initiative and **taking into account national circumstances and capabilities** (A41-21 Para 28f)



ICAO CAAF/3 PROCESS AND TIMELINE





ICAO

North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

ICAO
Headquarters
Montréal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
Cairo

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok



THANK YOU