



ICAO

ENVIRONMENT

ICAO Side Event:

Briefing on Aviation contributions to Sustainable
Development And Climate Change

Tetsuya Tanaka

Chief Climate Change
ICAO Secretariat





PROGRAMME

MODERATOR: Tetsuya Tanaka – Chief Climate Change, ICAO Secretariat

- 1. Tetsuya Tanaka – Chief Climate Change, ICAO Secretariat**
Recent developments and future actions by the ICAO and its Member States in addressing emissions from international aviation.
- 2. Anne Bondiou-Clergerie, Director R&D Affairs, Space and Environment, French Aerospace Industries Association**
Present and future aircraft technologies to reduce CO₂ emission.
- 3. Mavis Chung Yi Fang, Alternate Representative, Permanent Mission of Singapore to the International Civil Aviation Organization**
Present and future technologies on green airports and infrastructure.
- 4. Christoph Wolff, Head of Mobility Industries and System Initiative, Member of the Executive Committee, World Economic Forum**
Sustainable aviation fuels and renewable energy sources.
- 5. Gilles Bourgeois, Chief Environmental Protection and Standards, Transport Canada**
CORSIA implementation and contributions to ICAO Assistance, Capacity Building and Training on CORSIA (ACT-CORSIA) initiative.
- 6. Larissa Pamela Dianga Nzengue, Head of the Environmental Protection Department, Gabon National Civil Aviation Agency**
The key role of ICAO capacity building and pilot projects for aviation.



Established by the “Chicago Convention” in 1944

UN specialized agency

193 Contracting States

Standards, policies & guidance on environmental protection since 1960’s



Minimize the adverse effect of global civil aviation on the environment:

- ➔ limit or reduce the number of people affected by significant **aircraft noise**;
- ➔ limit or reduce the impact of **aviation emissions on local air quality**; and
- ➔ limit or reduce the impact of **aviation greenhouse gas emissions on the global climate**.

ICAO's environmental work contributes to 14 out of the 17 United Nations SDGs





ICAO Policy



ICAO Standards and Recommended Practices (SARPs)



ICAO Guidance

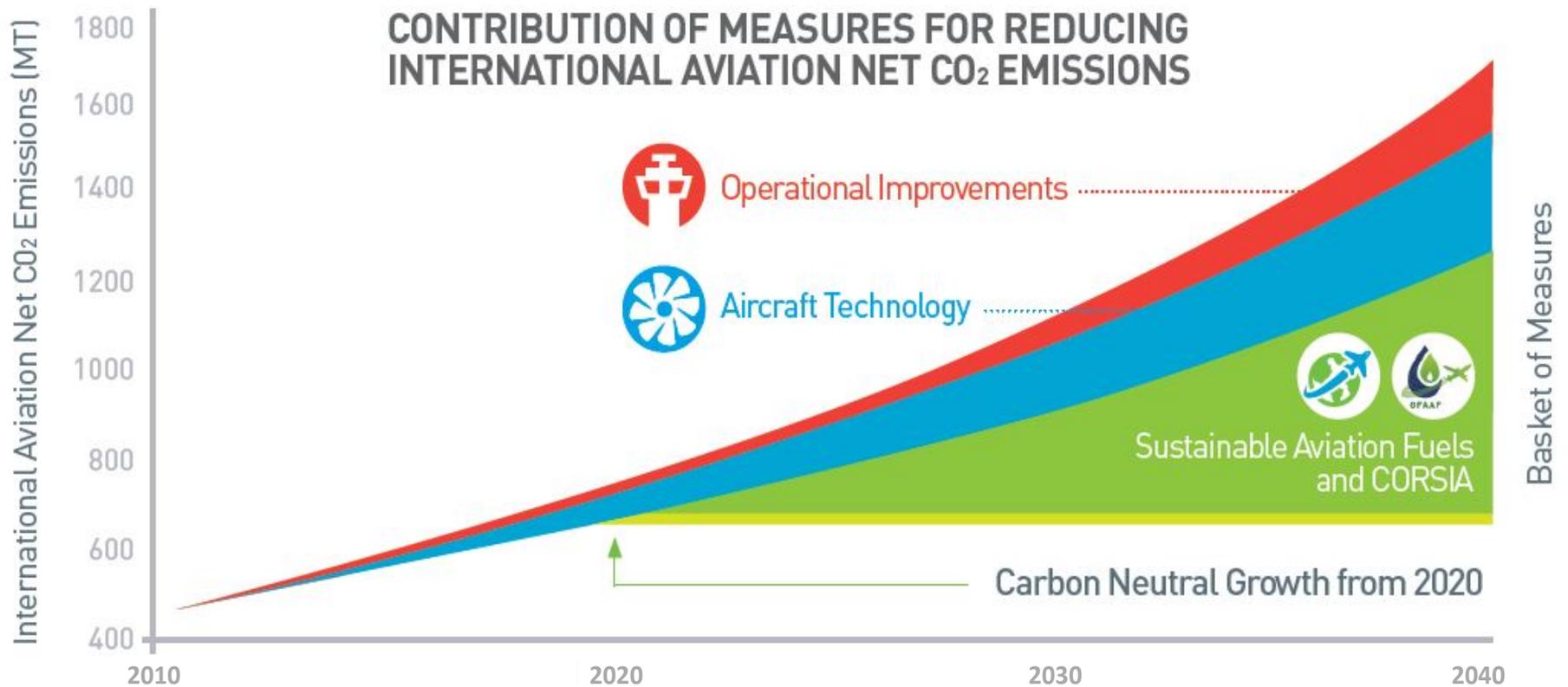


Chicago Convention
ICAO Assembly Resolutions A39-1, A39-2 and A39-3:
Consolidated statement of continuing ICAO policies and practices related to environmental protection

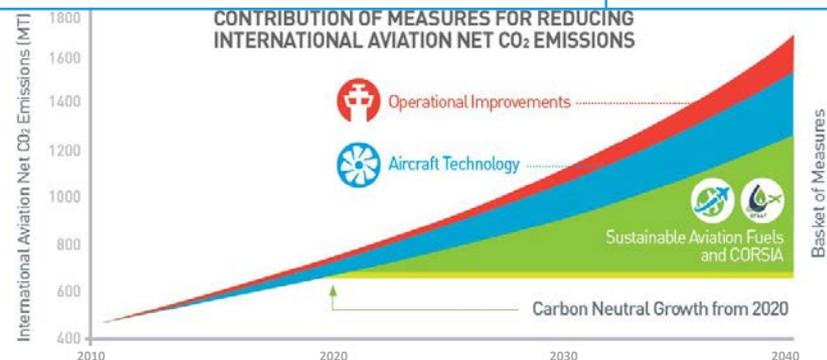
Annex 16 - Environmental Protection:
Volume I, Aircraft Noise
Volume II, Aircraft Engine Emissions
Volume III, Aeroplane CO₂ Emissions
Volume IV, CORSIA NEW

Various guidance on noise, LAQ and climate change, e.g.:
Environmental Assessment of Proposed ATM Operational Changes (Doc 10031)
Environmental Technical Manual Volume IV (Doc 9501) NEW

- ➔ 2% annual fuel efficiency improvement
- ➔ Carbon Neutral Growth from 2020 onwards (CNG2020)



<p>Aircraft technology</p>	<p>First-ever global CO₂ certification Standard for new types and in-production aeroplanes</p>	
<p>Operational improvements</p>	<p>CO₂ benefits from air traffic management; air navigation; green airports; etc.</p>	
<p>Sustainable aviation fuels</p>	<p>>180,000 commercial flights with drop-in aviation fuels; 6 conversion processes; 7 airports distributing drop-in aviation fuels</p>	
<p>Global market-based measure</p>	<p>Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)</p>	



→ ICAO facilitates the development and deployment of SAF

- Sharing information and best practices, through ICAO Global Framework for Aviation Alternative Fuels (GFAAF)
- Development of sustainability criteria and quantification of life-cycle environmental benefits

SAF Life-Cycle:



Global Framework for Aviation Alternative Fuels

SK027 / SAS027

OSL → AMS

SCHEDULED: 18:35 ACTUAL: 18:41

01:49 ago | 61:00:03

597.0 miles | 0.3 miles

REG: LN-693W | FLIGHT NO: SK027 | CALL SIGN: SAS027

Altitude: 0ft | Speed: 176kts | Course: 332°

Aircraft Type: Boeing 737-803

Current Activities



Or to see more information visit the [News and Activities](#) page
*Zoom in for best results

Current Initiatives



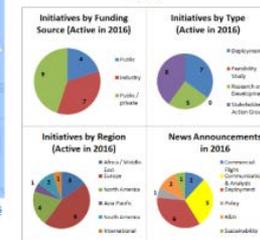
Or to see more information visit the [Initiatives & Projects](#) page.

Frequently Asked Questions

1. [Why introduce alternative fuels in aviation?](#)
2. [What are sustainable alternative jet fuels?](#)
3. [What are the potential environmental benefit of alternative fuels?](#)
4. [Which alternative fuels can currently be used?](#)
5. [What are the challenges for the development and deployment of alternative fuels?](#)
6. [What are the initiatives worldwide for the development of alternative fuels?](#)
7. [What is ICAO doing in the field of alternative fuels?](#)

Facts and Figures

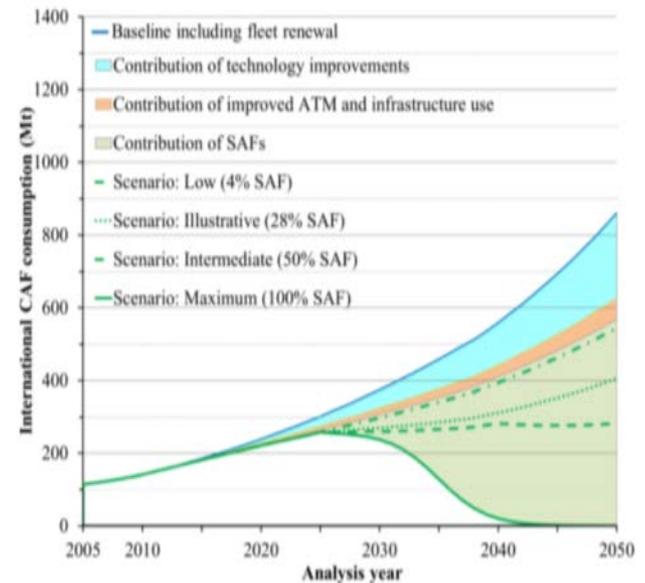
Click the image below to view Facts and Figures from 2016



- ICAO Conference on Aviation Alternative Fuels in Mexico City (CAAF/2) (11 to 13 October 2017) - <https://www.icao.int/Meetings/CAAF2/>

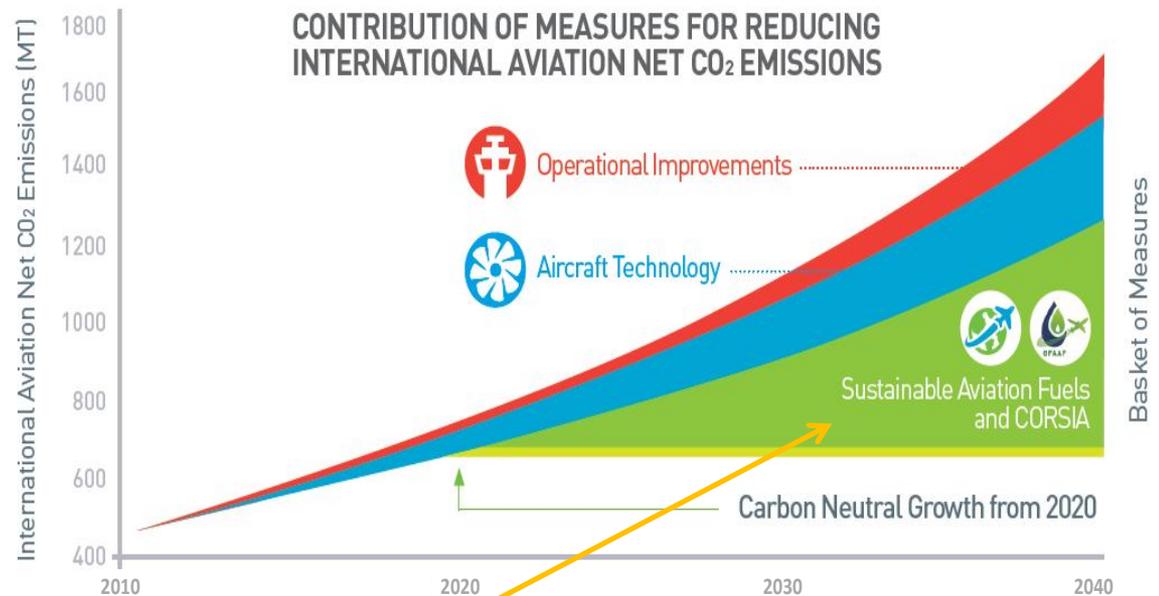


- Endorsement of the **2050 ICAO Vision for Sustainable Aviation Fuels**, which called for a **significant proportion of SAF use by 2050**
- **A quantified 2050 ICAO Vision** to be defined at CAAF/3 (by 2025), and **ICAO Stocktaking process** will support the quantification of this vision



Adopted through Assembly Resolution 39-3 and is the first global MBM scheme for any industry sector

→ To achieve carbon neutral growth from 2020 (CNG 2020), CORSIA is one complementary element in the basket of measures



CORSIA addresses the remaining "emissions gap" to achieve CNG2020

→ Adoption of Annex 16, Volume IV, and Environment Technical Manual, Volume IV

→ Progress on CORSIA Implementation Elements

- ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT)
- CORSIA Central Registry (CCR)
- CORSIA Eligible Fuels
- CORSIA Eligible Emissions Units

→ CORSIA Outreach and Capacity Building

- ICAO Regional/HQ Seminars
- Outreach Materials (Videos, Brochure/Leaflets, FAQs...)
- ACT-CORSIA Buddy Partnerships



The screenshot shows the ICAO Environment website. The header includes the ICAO logo and the word "ENVIRONMENT". A navigation menu contains links for "About ICAO", "Global Priorities", "Meetings and Events", "Information Resources", "Careers", and "Subscribe". The main content area is titled "Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)". It features a "News" section with a recent update: "10/18 - Dominican Republic and Guyana confirm participation in CORSIA from its outset." Below this, there are two columns of resources. The left column, "CORSIA IMPLEMENTATION", lists: Assembly Resolution A39-3, SARPs - Annex 16 Volume IV, Environmental Technical Manual - Volume IV, ICAO CORSIA Implementation Elements, CORSIA States for Chapter 3 State Pairs, ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT), CORSIA Eligible Fuels, CORSIA Eligible Emissions Units, and CORSIA Central Registry (CCR). The right column, "ACT CORSIA", lists: CORSIA Buddy Partnerships, Model Regulations, Frequently Asked Questions, Brochure and Leaflets, Videos, Seminars, Online Tutorials, and Background Information. At the bottom, there is a section for "Additional Material for CORSIA Implementation" with the "CORSIA" logo and the URL "www.icao.int/corsia". A circular logo on the right side of the screenshot features a globe, an airplane, and the text "ACT CORSIA Assistance, Capacity-building and Training".



ICAO

UNITING AVIATION

ICAO ASSISTANCE, CAPACITY-BUILDING AND TRAINING ON CORSIA (ACT-CORSIA)

ACT >>> CORSIA Phase I Assistance, Capacity-building and Training on CORSIA

AUSTRALIA 1. BRUNEI DARUSSALAM 2. INDONESIA 3. NAURU 4. PAPUA NEW GUINEA 5. SRI LANKA 6. THAILAND	JAPAN 1. AFGHANISTAN 2. BANGLADESH 3. BHUTAN 4. CAMBODIA 5. MALAYSIA 6. MYANMAR
CANADA / FRANCE 1. BURKINA FASO 2. CAMEROON 3. CHAD 4. COMOROS 5. CONGO 6. COTE D'IVOIRE 7. D. R. OF CONGO 8. DJIBOUTI 9. GABON 10. HAITI 11. MADAGASCAR 12. MALI 13. MAURITANIA 14. MAURITIUS 15. NIGER 16. SENEGAL 17. TOGO	KENYA 1. RWANDA 2. SEYHELLES 3. SOUTH SUDAN 4. UGANDA
CANADA / FRANCE / SPAIN 1. ALGERIA 2. EGYPT 3. IRAQ 4. JORDAN 5. MOROCCO 6. SAUDI ARABIA 7. TUNISIA	MEXICO / SPAIN / USA 1. BELIZE 2. COSTA RICA 3. EL SALVADOR 4. GUATEMALA 5. HONDURAS 6. NICARAGUA
GERMANY 1. JAMAICA 2. TAJIKISTAN 3. TRINIDAD & TOBAGO	NEW ZEALAND 1. FIJI 2. SAMOA 3. SOLOMON ISLANDS 4. VANUATU
GERMANY / ECAC 1. ALBANIA 2. ARMENIA 3. AZERBAIJAN 4. REPUBLIC OF MOLDOVA 5. SERBIA 6. NORTH MACEDONIA 7. TURKEY	NIGERIA 1. GAMBIA 2. GHANA 3. LIBERIA 4. SIERRA LEONE 5. SUDAN
ITALY 1. ANTIGUA AND BARBUDA 2. BAHAMAS 3. ERITREA 4. ETHIOPIA 5. GUYANA 6. SOMALIA 7. SURINAME 8. UNITED REPUBLIC OF TANZANIA	REPUBLIC OF KOREA 1. LAO PEOPLE'S D. R. 2. MONGOLIA 3. PAKISTAN 4. PHILIPPINES 5. VIETNAM
ITALY & BRAZIL 1. ANGOLA 2. CABO VERDE 3. COLOMBIA 4. MOZAMBIQUE 5. PARAGUAY 6. SAO TOME AND PRINCIPE	SOUTH AFRICA 1. BOTSWANA 2. LESOTHO 3. MALAWI 4. NAMIBIA 5. ZAMBIA 6. ZIMBABWE
	SPAIN 1. BOLIVIA 2. CUBA 3. PERU 4. URUGUAY
	USA 1. ARGENTINA 2. DOMINICAN REPUBLIC 3. ECUADOR 4. PANAMA



15 DONOR STATES
98 RECIPIENT STATES

- Donor States provides assistance to recipient States to build their national capacity to implement CORSIA
- Assistance in the form of donor State offering expert(s) on CORSIA to provide individual training and necessary follow-up with the CORSIA focal points of the recipient States, in close coordination with the ICAO Secretariat
- Involving 15 donor States and 98 recipient States (as of June 2019)

Communication Tool between ICAO and States

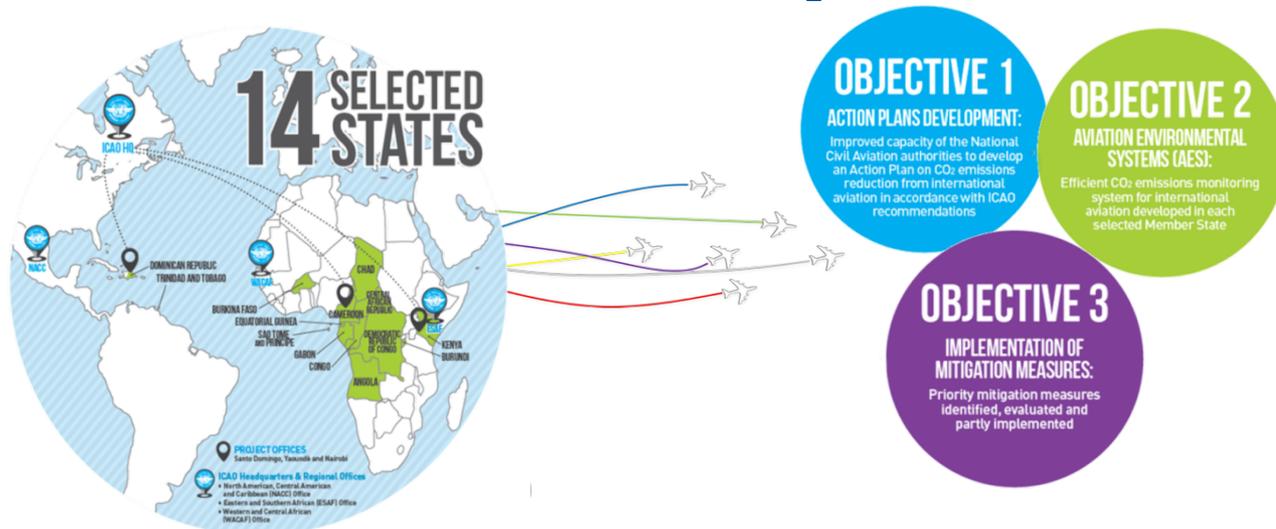
→ **114 States** with more than 93% of international aviation activity voluntarily submitted action plans

→ Assembly encouraged States to submit **complete and robust data** in their action plans

→ **Guidance and assistance** for States to develop and update their action plans (such as guidance material, tools, regional seminars, capacity building projects).



➔ ICAO-EU project, *Capacity Building for CO₂ Mitigation from International Aviation*



➔ ICAO-UNDP project, *Transforming the Global Aviation Sector: Emission Reduction from International Aviation*

- Development of **guidance documents on Biofuels, Renewable Energy, Governance, and Financing of Clean Energy projects**
- Implementation of a **pilot project on renewable energy (solar-at-gate)** at two international airports in Jamaica.



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The key role of ICAO capacity building and pilot projects for aviation.

ICAO plans to launch **Global Coalition For Sustainable Aviation (GC4SA)** at 2019 UN Climate Summit to advance environmental innovation for the aviation sector





ICAO UNITING AVIATION



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