ICAO ENVIRONMENT

Recent developments and the future of aviation and climate change

ICAO Secretariat
EUR/NAT Regional Office
15 June 2022 –ICAO – ECAC joint webinar

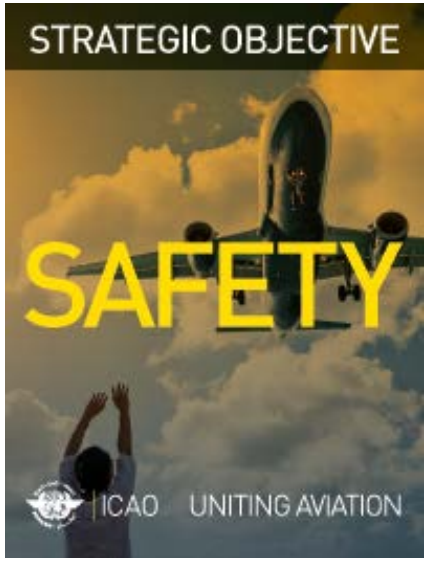
Vision

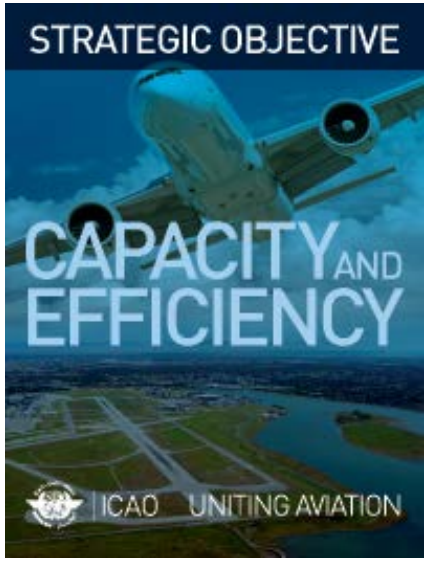
Achieve the sustainable growth of the global civil aviation system.

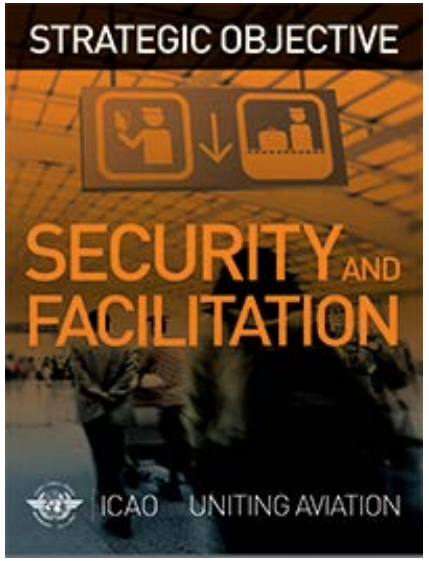
Mission

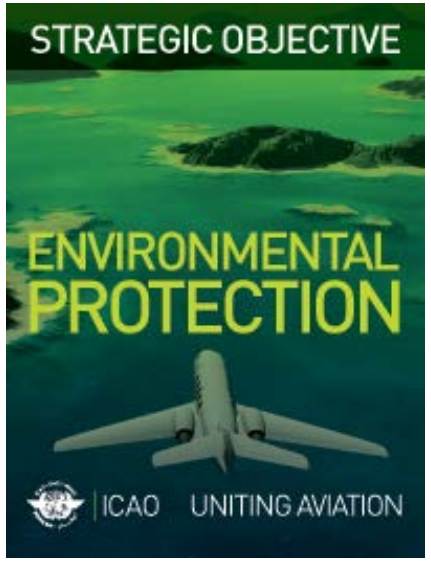
To serve as the global forum of States for international civil aviation.

ICAO Strategic Objectives





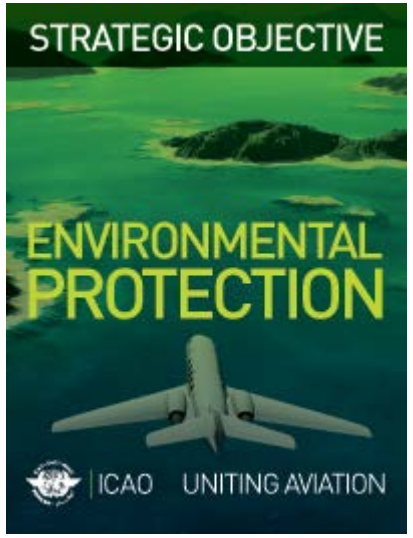




ICAO Strategic Objective

ICAO STRATEGIC OBJECTIVE

Minimize the adverse effect of global civil aviation on the environment



ICAO ENVIRONMENTAL GOALS

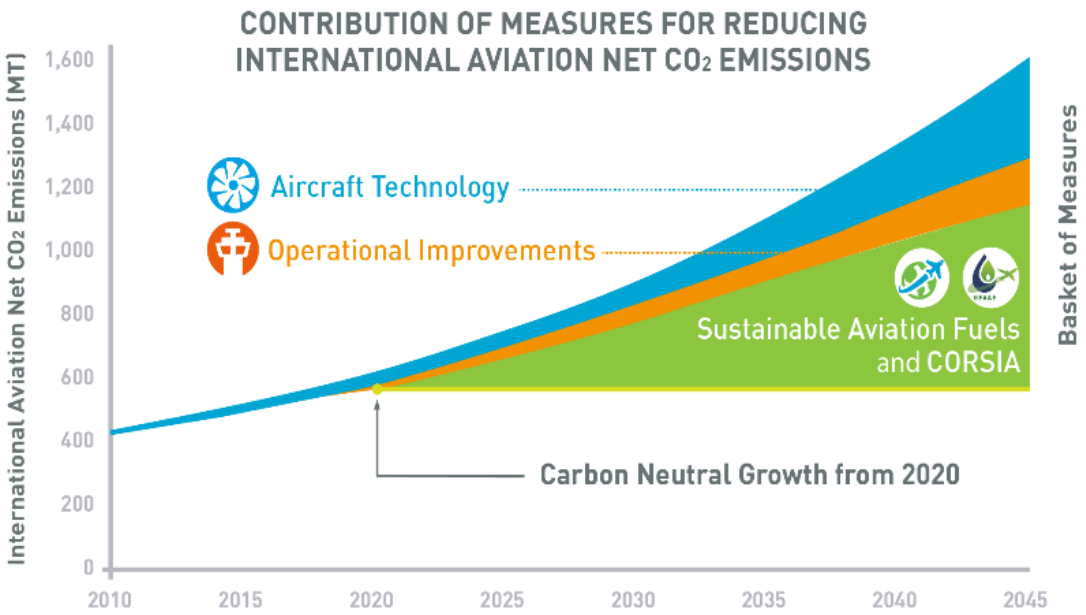
Limit or reduce the number of people affected by significant aircraft **noise**

Limit or reduce the impact of aviation GHG emissions on **global climate**

Limit or reduce the impact of aviation emissions on **local air quality (LAQ)**

Quantify
Mitigate
Implement

ICAO Global Aspirational Goals



2010

ICAO Assembly adopted two Global Aspirational Goals

1- 2% annual fuel efficiency improvement through 2050

2- Carbon neutral growth from 2020 (CNG2020)

2016

BASKET OF MEASURES

Complemented by

CORSIA

2019

ICAO Assembly requested to:

- explore the feasibility of a long-term global aspirational goal (LTAG) for international aviation

2022

ICAO Assembly will

- consider the results of work on the feasibility of LTAG

PROGRESS ON BASKET OF MEASURES

Aircraft technology	First-ever **global CO2 certification Standard** for new types and in-production aeroplanes. **Fast-paced innovation** (new designs, composite materials, hybrid-electric aircraft, renewable energy sources, etc.).
Operational improvements	CO2 benefits from **air traffic management**; **air navigation**; **green airports**; etc.
Sustainable aviation fuels	**9 conversion processes**; **46 airports** distributing SAF, **23 policy** adopted or under development, **25.8 billion liters** of SAF under offtake agreements
CORSIA	**Carbon Offsetting and Reduction Scheme for International Aviation** (CORSIA) **CORSIA implementation fully on track** **88 volunteer States for 2021, 107 States for 2022, over 109 States for 2023**

ICAO 40th Assembly Resolution

Resolution A40-18, paragraph 9 requested the LTAG work

Task

The Assembly… Requests the Council to

continue to explore the feasibility of a long term global aspirational goal for international aviation,

How to do the task

through conducting detailed studies assessing the attainability and impacts of any goals proposed, including the impact on growth as well as costs in all countries, especially developing countries,

Timeline

for the progress of the work to be presented to the 41st Session of the ICAO Assembly. [2022]

Consideration

Assessment of long term goals should include information from Member States on their experiences working towards the medium term goal.

ICAO LTAG Report

The ICAO Committee on Aviation Environmental Protection (CAEP) undertook:

(1) data gathering from internal and external sources in a transparent and inclusive manner,

(2) ***development of combined in-sector scenarios*** from technology, fuels, and operations that represent a range of readiness and attainability, and

(3) ***conducted final analysis*** to:

- understand impacts on CO_2 emissions ,
- estimate costs associated with the scenarios,
- place results in context of the latest scientific knowledge.

The LTAG report is now available at the LTAG Website.

https://www.icao.int/environmental-protection/Pages/LTAG.aspx

(or search "ICAO LTAG")

Key Questions Addressed in ICAO LTAG Report

		Addressed in LTAG Report:	
Question 1:	**How could in-sector measures (i.e., technology, operations, and fuels) help reduce CO_2 emissions from international aviation through 2050 and beyond?**	*Section 4.2*	☑
Question 2:	**Given CO_2 emissions trends for each scenario, what would be the cumulative emissions from aviation? How do cumulative aviation emissions compare to requirements to limit the global temperature increase to 1.5°C and 2°C?**	*Section 4.3*	☑
Question 3:	**What investments are required to support the implementation of the in-sector measures associated with each scenario? What would be the cost impacts to aviation stakeholders?**	*Section 4.4*	☑
Question 4:	**What would be the impacts of various future aviation traffic levels?**	*Section 4.5*	☑
Question 5:	**How sensitive are the results to scenario assumptions?**	*Section 4.6*	☑

High-level LTAG timeline

2020

2021

we are here

2022

Data gathering, workshops and Stocktaking: Technology, Operations, Fuels, Climate Science

2021 LTAG GLADs

Scenario development

Final analysis

CAEP/12 meeting

2022 LTAG GLADs

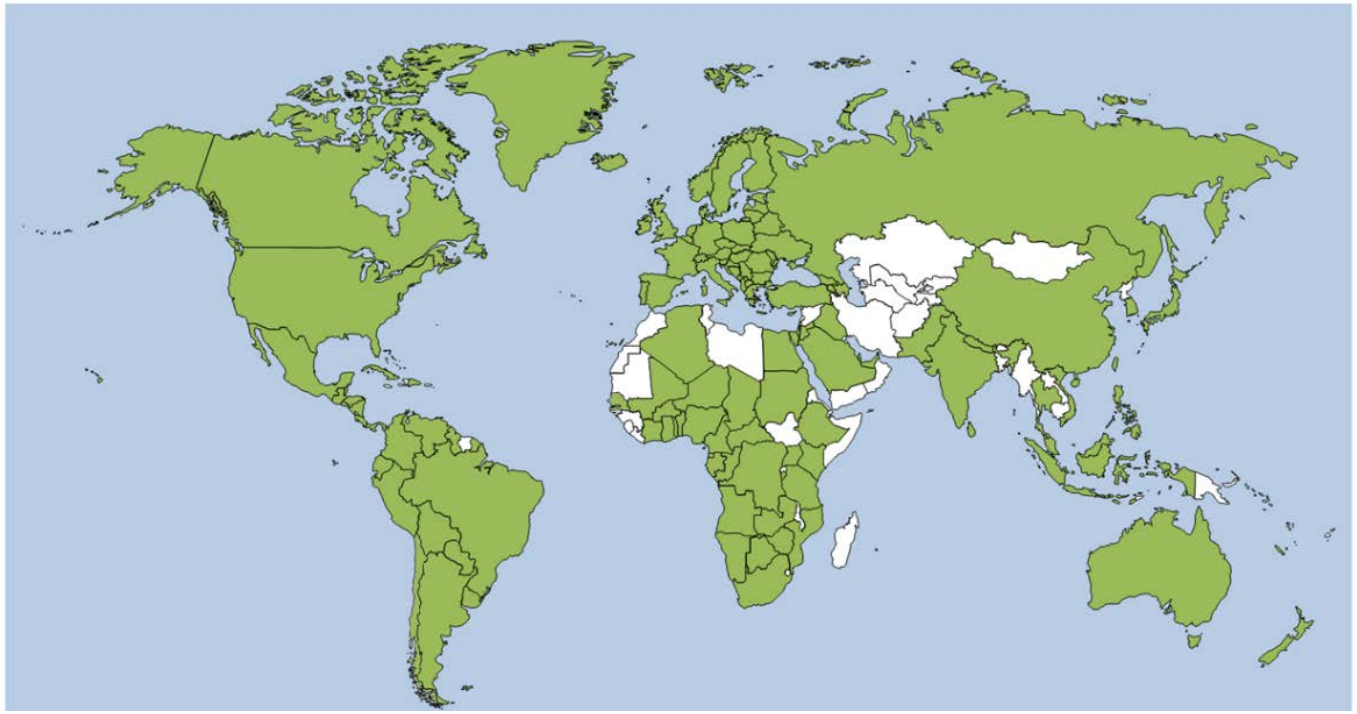
High-level meeting

41st Session of ICAO Assembly

Consideration by ICAO Governing Bodies

State Action Plan (SAP) initiative

By April 2022, **129 Member States**, representing **98.08** % of international aviation traffic, voluntarily submitted action plans to ICAO.



ICAO Assistance Projects- Phase I & II with EU funding

ESAF

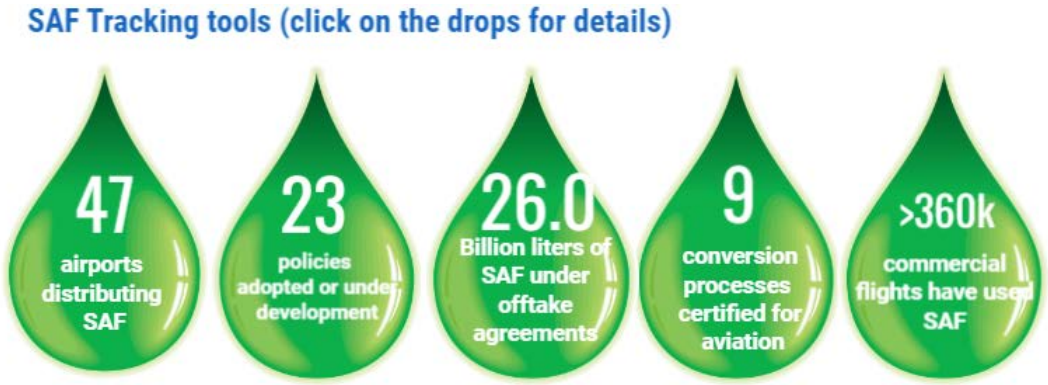
Botswana
Madagascar
Rwanda
Seychelles
Zimbabwe

WACAF

Benin
Cabo Verde
Cote d'Ivoire
Mali
Senegal

Sustainable Aviation Fuels (SAF) and Lower Carbon Aviation Fuels (LCAF)

- Exponential increase in SAF-related initiatives
- States' commitments to embracing the introduction of SAF, in line with the 2050 ICAO Vision
- States are encouraged to support third ICAO Conference on Aviation Alternative Fuels (CAAF/3), in 2023



New - SAF facilities map
see the facilities (existing and announced) that can produce SAF

ACT-SAF

ACT-SAF - ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuels

- ICAO ACT-SAF Programme was launched on 1st June 2022
- States and Organizations are invited to join ACT SAF – 15 July 2022
- opportunities for States to develop their full potential in SAF development and deployment
- ICAO brings the partners together and support capacity building and implementation

https://www.icao.int/environmental-protection/Pages/act-saf.aspx

https://www.icao.tv/videos/icao-assistance-capacity-building-and-training-for-sustainable-aviation-fuels

State Reporting to CORSIA Central Registry

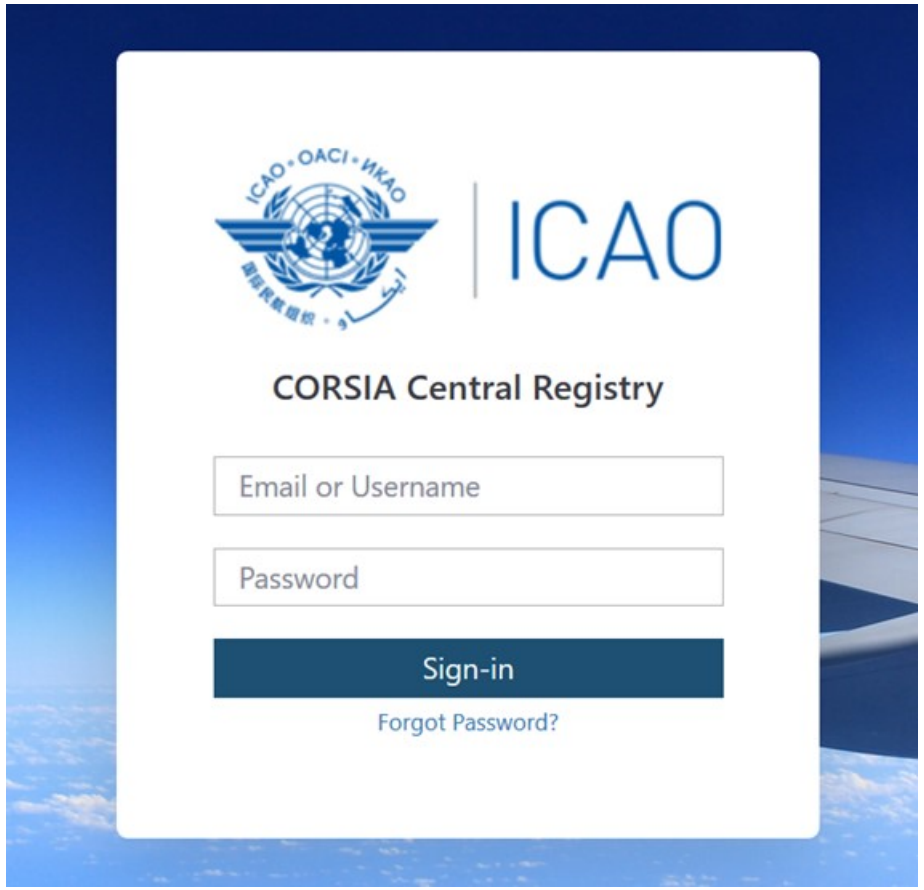
Status as of April 2022

177
CCR States Accounts

260
CCR Users Accounts

599
Aeroplane Operators reported

60
Accredited Verification Bodies reported



117
2019 CO_2 Reports in CCR

606*
Mtonnes of 2019 CO_2 Emissions

110
2020 CO_2 Reports in CCR

265*
Mtonnes of 2020 CO_2 Emissions

** Totals include CO_2 emissions submitted by States and emissions provided by ICAO to fill the emissions gaps*

For CORSIA Newsletter, visit: ww.icao.int/corsia

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Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

- **88** States in 2021 → **112** States in 2022

  (with two additional States having confirmed participation in 2023)

- States notify ICAO of their decision to voluntarily participate in CORSIA **before 30 June**
- *CORSIA States for Chapter 3 State Pairs* will available on the ICAO CORSIA and is updated on an annual basis
- ACT-CORSIA buddy partnerships involving 16 supporting States and 118 requesting States, to support the timely implementation of CORSIA, including notable efforts from several States to the initiative

Timeline and Actions (2022)

Timeline	Responsibility	Action
1 January to 31 December 2022	Operator	Monitor 2022 CO_2 emissions from international flights
1 January to 30 April 2022	Operator and Verification Body	- Operator to compile 2021 CO_2 emissions data - Verification body to verify 2021 Emissions Report
30 April 2022	Operator and Verification Body	Submit Emissions Report and associated Verification Report to the State of attribution
1 May 2022 to 31 July 2022	State	Conduct order of magnitude check of verified Emissions Report
31 July 2022	State	Submit aggregate 2021 CO_2 emissions data to ICAO through the CCR
31 October 2022	ICAO	- Publish 2021 CO_2 emissions - Publish 2021 SGF
30 November 2022	State	Submit to ICAO through the CCR: - List of operators attributed to the State - List of verification bodies accredited in the State
31 December 2022	ICAO	Publish list of aeroplane operators and list of verification bodies

Next Steps

- **Global action on climate change is being taken through a number of processes:**

STOCKHOLM+50
2-3 June 2022

UN environment
United Nations Environment Programme

UNFCCC

- **High-Level Meeting on LTAG – from 19 to 22 July 2022 – hybrid**

  Objective: consider the CO2 emissions reduction scenarios and options for LTAG, its means of implementation and the monitoring of progress.

- **2022 ICAO Stocktaking – 18 July 2022**

  Objectives: Share the latest innovations on technology, operations and fuels, and complement information available to the High-level Meeting.

- **ICAO Council (late August/early September 2022):**

  Objectives: consider the outcomes of the HLM, and deliberate on the Assembly Working Paper on LTAG

- **ICAO 41st Assembly (from 27 September 2022)**
- **Third ICAO Conference on Aviation Alternative Fuels (CAAF/3), in 2023**.

ICAO

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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

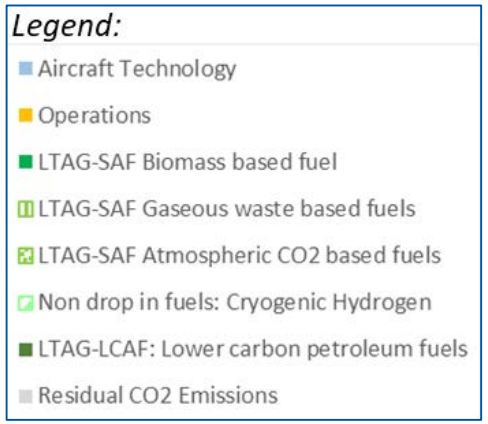
THANK YOU

www.icao.int/corsia

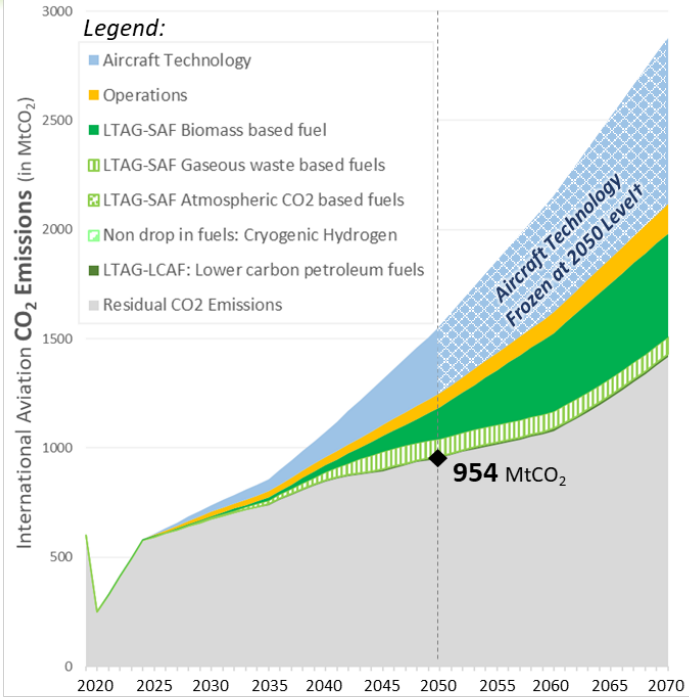
CORSIA

ACT CORSIA
Assistance, Capacity-building and Training

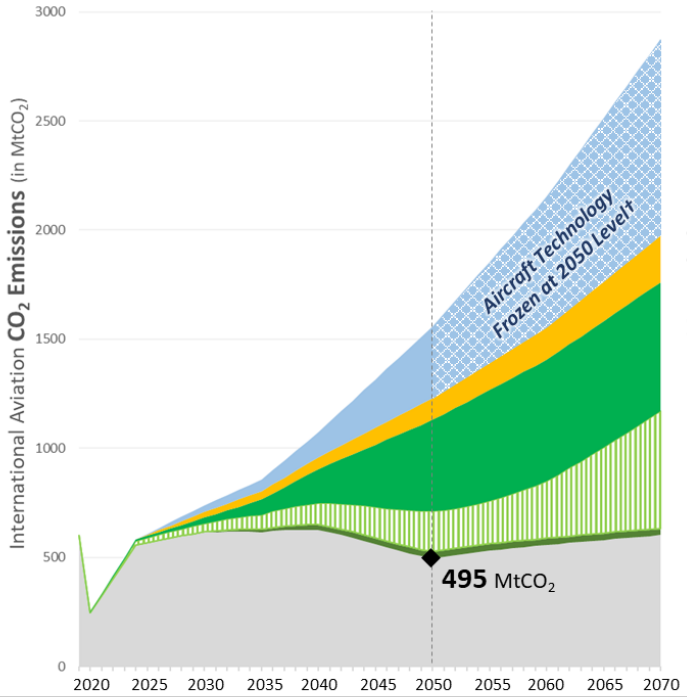
Main takeaway from the LTAG Report



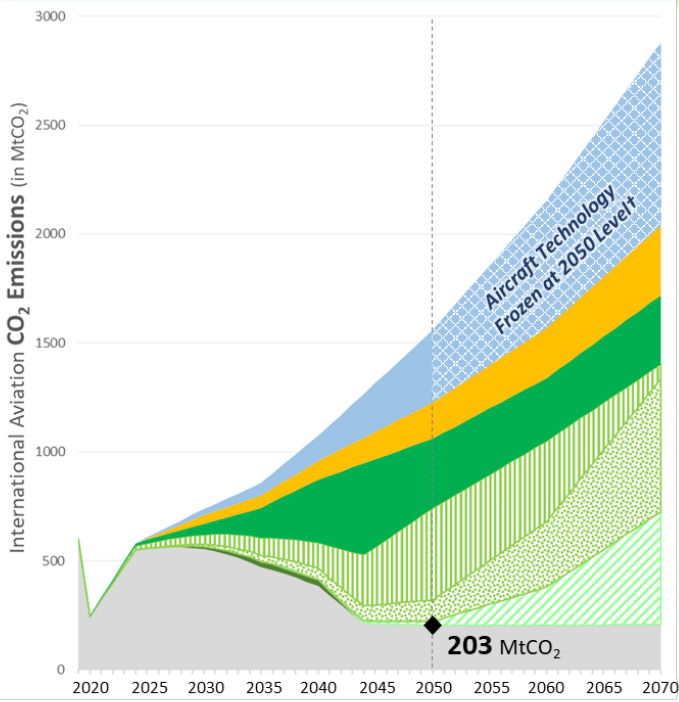
IS1 LTAG Integrated Scenario 1



IS2 LTAG Integrated Scenario 2



IS3 LTAG Integrated Scenario 3



Metrics	IS1	IS2	IS3
CO_2 Emissions in 2050 after Reductions	**≈950 $MtCO_2$** in 2050 *(**160%** of 2019 CO_2 emissions)*	**≈500 $MtCO_2$** in 2050 *(**80%** of 2019 CO_2 emissions)*	**≈200 $MtCO_2$** in 2050 *(**35%** of 2019 CO_2 emissions)*
Reduction in 2050 from the Baseline	**39% total** through: Technologies - 20%, Operations - 4%, Fuels - 15%	**68% total** through: Technologies - 21%, Operations - 6%, Fuels - 41%)	**87% total** through: Technologies - 21%, Operations - 11%, Fuels - 55%
Cumulative residual Emissions from 2020 to 2070	23 $GtCO_2$ (2020 to 2050) 23 $GtCO_2$ (2051 to 2070)	17 $GtCO_2$ (2020 to 2050) 11 $GtCO_2$ (2051 to 2070)	12 $GtCO_2$ (2020 to 2050) 4 $GtCO_2$ (2051 to 2070)