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# ICAO Strategy to deal with International aviation emissions





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UN specialized agency

Established by the “Chicago Convention” in 1944

Forum for cooperation in all fields of civil aviation

192 Contracting States

Standards, policies & guidance for environmental protection since 1960's

Focus on aircraft noise, local air quality and global climate

## International Civil Aviation Organization





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## 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:

Safety

Security &  
Facilitation

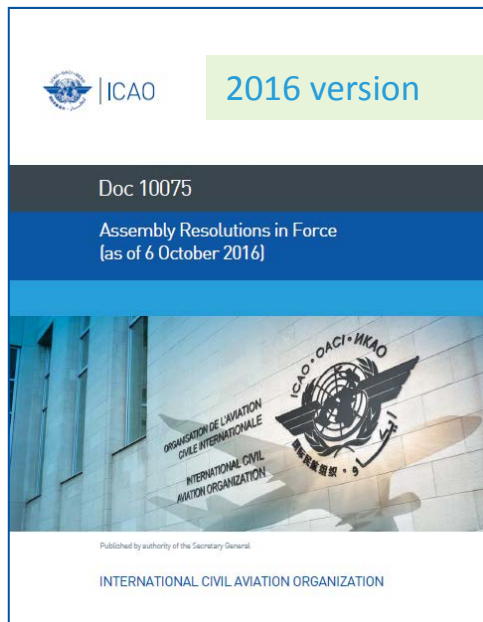
**Environmental  
Protection**

Air Navigation Capacity  
and Efficiency

Economic Development  
of Air Transport



## ICAO Environmental policies are defined in the ICAO Assembly Resolutions



**A40-XX:** Consolidated statement of continuing ICAO policies and practices related to environmental protection — **General provisions, noise and local air quality**

**A40-xx:** Consolidated statement of continuing ICAO policies and practices related to environmental protection — **Climate change**

**A40-xx:** Consolidated statement of continuing ICAO policies and practices related to environmental protection — **Global Market-based Measure (MBM) scheme CORSIA**



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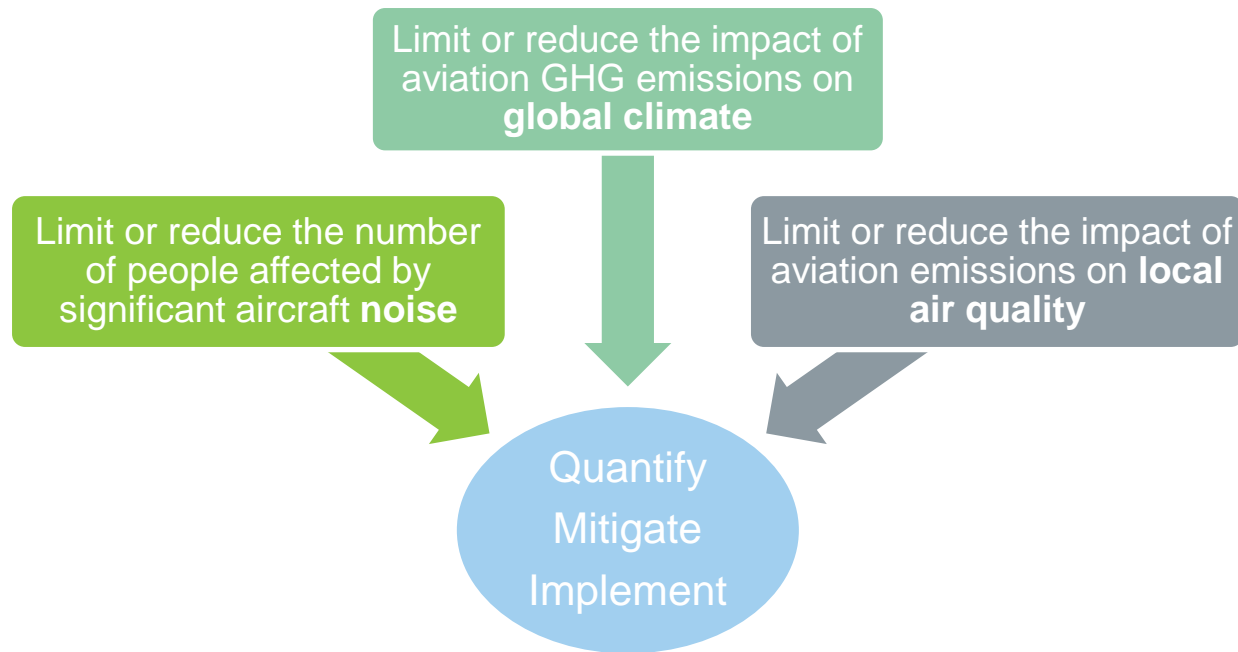
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## ICAO Environmental Goals

**ICAO Strategic  
Objective on  
Environmental  
Protection:**

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

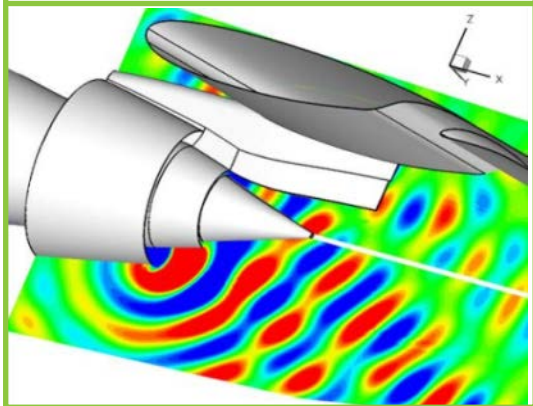






## ICAO's work on Environment

**NOISE:** late '60s SARPs on Annex 16, Volume I since 1971



**LOCAL AIR QUALITY:** late '70s SARPs on Annex 16, Volume II, since 1981

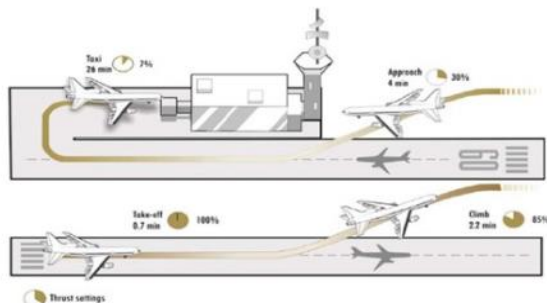


Figure 1 - Illustration of ICAO Emissions Certification Procedure LTO Cycle.  
Source: ICAO.

**CLIMATE CHANGE:** late '80s SARPs on Annex 16, Volume III, and Volume IV





## What is a State Action Plan?

- State Action Plans are a voluntary planning and reporting tool for States to communicate information on their activities to address CO<sub>2</sub> emissions from international civil aviation to ICAO
  - It is a living document and should be updated at least every three years
- The initiative was established in 2010 as a result of Assembly Resolution A37-19 and support was reaffirmed in 2013 (A38-18), and 2016 (A39-2)



## History

- Initiative established in 2010 with the adoption of Assembly Resolution **A37-19**:

9. *Encourages* States to submit their action plans outlining their respective policies and actions, and annual reporting on international aviation CO<sub>2</sub> emissions to ICAO;

- Reaffirmed support in 2013 with ICAO Assembly Resolution **A38-18**:
  - Para 11: “action plans should include information on the basket of measures considered by States, reflecting their respective national capacities and circumstances, and information on any specific assistance needs”*
- And reaffirmed support in 2016 with ICAO Assembly Resolution **A39-2**:
  - Para 11: “Invites those States that choose to prepare or update action plans to submit them to ICAO” and include “quantified information on the expected environmental benefits from the implementation of the measures chosen from the basket”*
  - Para 12: “Encourages States that have already submitted action plans to share information contained in action plans and build partnerships with other member States in order to support those States that have not prepared action plans, and to make the submitted action plans available to the public, taking into account the commercial sensitivity of information contained in States’ action plans”*





## Objectives

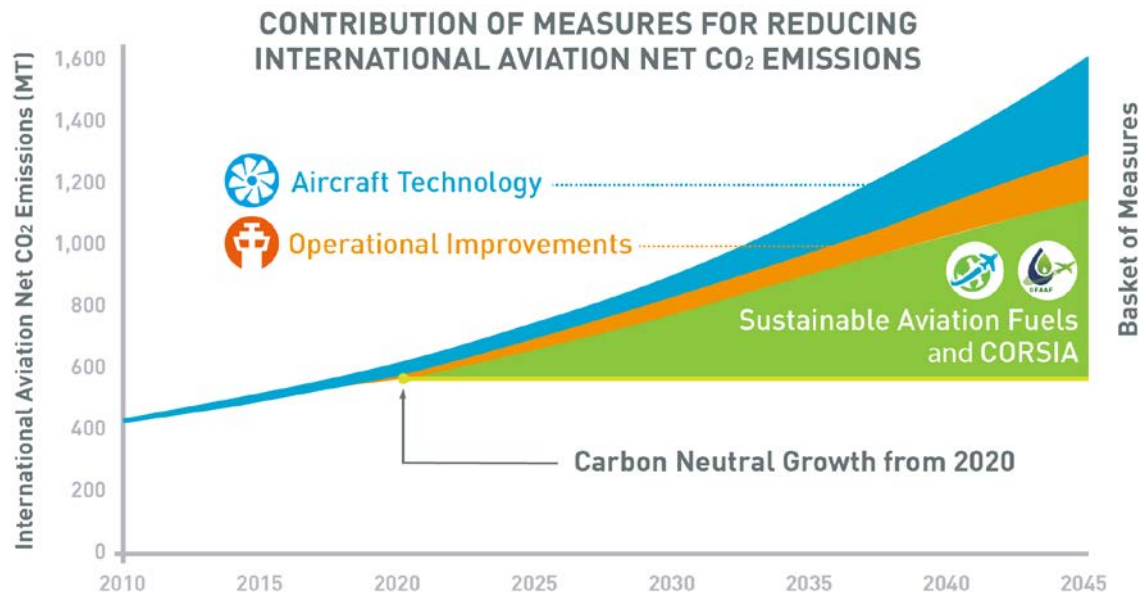
### Assembly Resolution A39-2

- Para. 4. States and relevant organizations will work through ICAO to achieve a global **annual average fuel efficiency improvement of 2 per cent until 2020** and an aspirational global **fuel efficiency improvement rate of 2 per cent per annum from 2021 to 2050...**
- Para. 6. ...work together to strive to achieve a collective medium term global aspirational goal of **keeping the global net carbon emissions from international aviation from 2020 at the same level...**

**Goals reiterated by the A40 Resolution A40-XX**



## Global Aspirational Goals



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



# Voluntary States Action Plans

Concrete action to address CO<sub>2</sub> emissions

- For States
  - Opportunity to identify measures that will improve fuel efficiency and reduce emissions
- For ICAO
  - Assess future progress toward the achievement of ICAO global aspirational goals





## Minimum Content

1

Contact information

2

Baseline (without action) fuel consumption CO<sub>2</sub> emissions and traffic (2010 or earlier to 2050)

3

List of selected mitigation measures

4

Expected results (fuel consumption, CO<sub>2</sub> emissions and traffic with the actions in #3 being taken 2017 to 2050)

5

Assistance needs (if needed)

ICAO assesses all submitted State Action Plans against the same criteria

Feedback forms sent to the Focal Points



## Current Status



**116** States representing  
**>93%** of global RTK have  
submitted an action plan  
to ICAO

**1171** experts trained from  
**132** States

## 7 ICAO Buddy Partnerships

## 2 capacity-building and assistance projects



## States

Action Plans submitted to ICAO

- ICAO Secretariat follows-up with State focal point regarding any questions

Annual reporting on fuel consumption

Action Plans submitted are made available to the public, if requested by the authoring State

Results from all States are aggregated to estimate future progress toward Assembly goals

Council and Assembly are informed of results





# Feedback form

ICAO State Action Plan Feedback Form

Required

Optional

|                       |              |                     |  |
|-----------------------|--------------|---------------------|--|
| <b>State:</b>         |              | <b>ICAO Region:</b> |  |
| SAP Submission Date:  | [dd-mm-yyyy] | <b>Notes:</b>       |  |
| Previous Submissions: | [dd-mm-yyyy] |                     |  |
|                       | [dd-mm-yyyy] |                     |  |
|                       | [dd-mm-yyyy] |                     |  |

## Overview

|  |                        |
|--|------------------------|
| Preliminary requirement for the development of a State Action Plan   |                        |
| Has the State nominated a State Action Plan Focal Point?   | [Yes / No]             |
| State Action Plan Minimum Requirements (from ICAO Doc 9988, Box 1)   | Included?              |
| Baseline scenario (without action) fuel consumption, CO <sub>2</sub> emissions, and RTK  | [Yes / Partially / No] |
| Measures to mitigate CO <sub>2</sub> emissions   | [Yes / No]             |
| Expected results (estimated impact of selected mitigation measures on the baseline, including fuel consumption, CO <sub>2</sub> emissions) | [Yes / Partially / No] |
| <b>Other</b>   |                        |
| Does the State Action Plan request assistance?   | [Yes / No]             |
| <b>Notes:</b>  |                        |

## Baseline Scenario

| Elements of a State Action Plan | Included?              | Notes |
|---------------------------------|------------------------|-------|
| Historical data                 | [Yes / No]             |       |
| Baseline scenario               | [Yes / Partially / No] |       |
| ↳ from (first year)             | [Year]                 |       |
| ↳ to (last year)                | [Year]                 |       |
| ↳ data on annual basis          | [Yes / No]             |       |
| → if no, provide step used      | [Number]               |       |

ICAO State Action Plan Feedback Form

Required

Optional

## Mitigation Measures

| Elements of a State Action Plan | Included?                | Notes |
|---------------------------------|--------------------------|-------|
| Measures evaluated              | [Fully / Partially / No] |       |
| ↳ data on annual basis          | [Yes / No]               |       |
| → if no, provide step used      | [Number]                 |       |

☐ Fully Quantified
 ☐ Partially Quantified
 ☐ Not Quantified

## Expected Results

| Elements of a State Action Plan | Included?              | Notes |
|---------------------------------|------------------------|-------|
| Expected results data           | [Yes / Partially / No] |       |
| ↳ from (starting date)          | [Year]                 |       |
| ↳ to (ending date)              | [Year]                 |       |
| ↳ data on annual basis          | [Yes / No]             |       |
| → if no, provide step used      | [Number]               |       |

☐ Fully Quantified
 ☐ Partially Quantified
 ☐ Not Quantified



|                          |
|--------------------------|
| <b>Additional Notes:</b> |
|                          |



## ICAO's Facilitating Role

ICAO has facilitated the States' Action Plans initiative since 2010 by:

- developing guidance material and tools
- enabling capacity-building and assistance projects
  - ICAO / European Union Joint Assistance Project
  - ICAO / UNDP Joint Assistance Project financed by the Global Environment Facility (GEF)
- partnering States through the State Action Plan Buddy Programme
- organizing workshops and training seminars
- answering questions and providing support

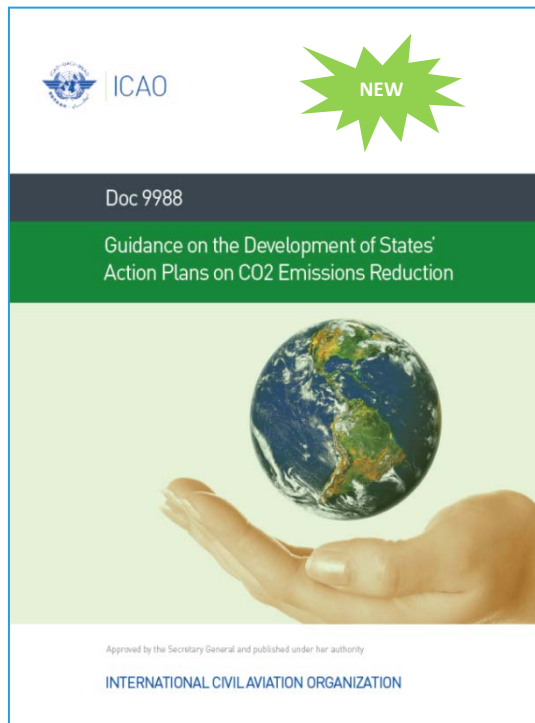


## Advantages to States

- Action plans give ICAO Member States the ability to:
  - establish partnerships
  - promote cooperation and capacity building
  - facilitate technology transfer
  - obtain assistance
- They provide an organized means for the State to
  - report international aviation CO<sub>2</sub> emissions to ICAO
  - outline their respective policies and actions
  - provide information on the basket of measures considered, reflecting their respective national capacities and circumstances, and on any specific assistance needs



## Guidance: ICAO Doc 9988



State Action Plan Focal Points have dedicated access to *Guidance on the Development of States' Action Plans on CO<sub>2</sub> Emissions Reduction Activities* Doc 9988 - ICAO Secure Portal - APER

It describes the required elements of a State Action Plan and provides a step-by-step guide on how to develop it

- Overview and introduction
- Baseline calculation
- Mitigation measures and expected results
- Implementation and assistance
- Appendix with examples and detailed information



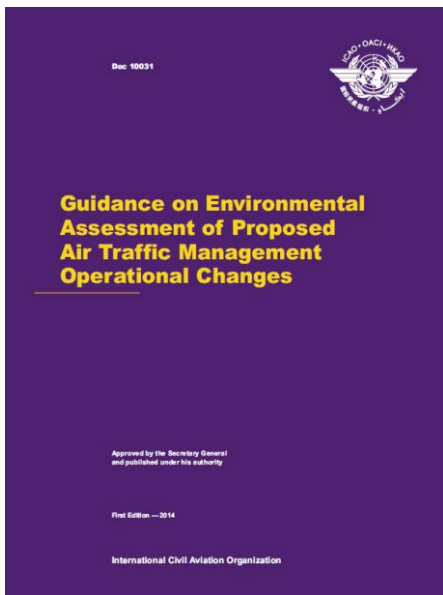
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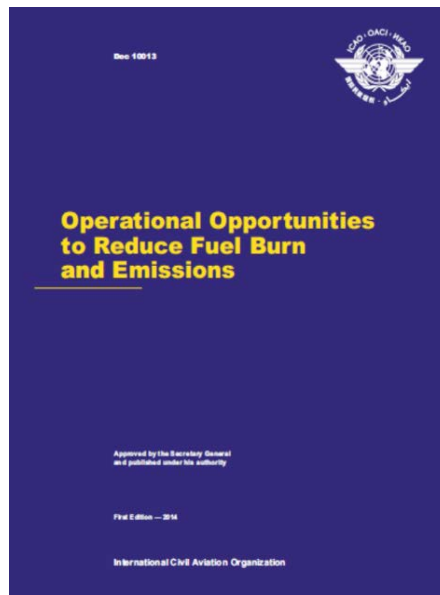
## Supporting Guidance Documents



### ICAO Doc 10031

Assessment of environmental effects from operations changes

Available on ICAO public website



### ICAO Doc 10013

Airport operations, maintenance, weight reduction, air traffic management etc.

Available on APER website



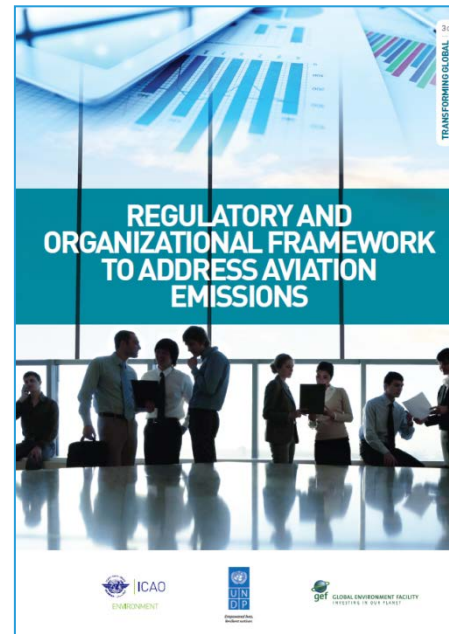
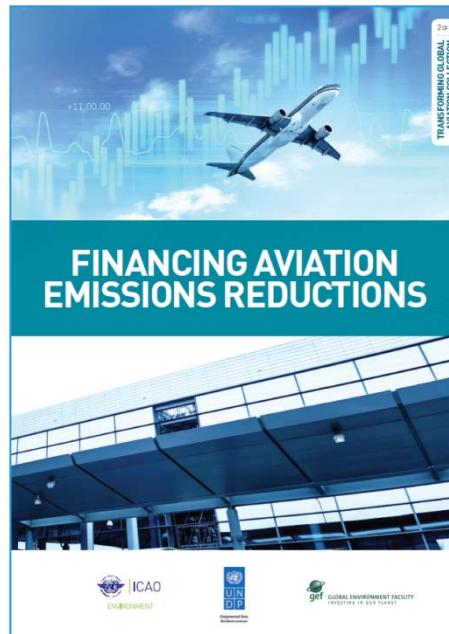
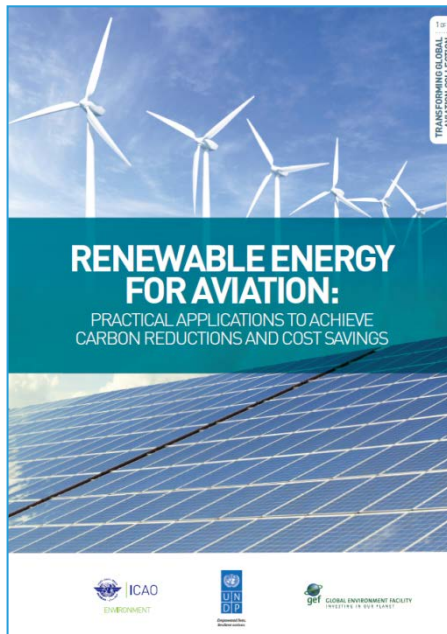
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# Additional Guidance documents



Financed by the Global Environment Facility - GEF





## ICAO Environmental Tools Suite



### ICAO Carbon Emissions Calculator

Allows passengers/cargo to estimate CO<sub>2</sub> emissions from air travel



### ICAO Fuel Savings Estimation Tool (IFSET)

Assists States in estimating fuel savings from operational improvements



### ICAO Green Meetings Calculator

Supports decision making in minimizing CO<sub>2</sub> emissions from air travel to attend meetings



### ICAO CORSIA CERT

ICAO CORSIA CERT supports aeroplane operators in fulfilling their monitoring and reporting requirements in CORSIA by populating the standardized Emissions Monitoring Plan and Emissions Report templates

<https://www.icao.int/environmental-protection/Pages/Tools.aspx>



# ICAO Environmental Tools Suite

## Additional tools\* to facilitate the preparation of State's Action Plans:

- **ICAO Environmental Benefit Tool**  
Helps States to develop their Action Plan (Baseline, Mitigation Measures, Expected Results)
- **Marginal Abatement Cost Curve**
- **ICAO Aviation Environmental System (AES)**  
Allows CAAs to monitor CO<sub>2</sub> emissions from international aviation at State level
- **ICAO Online Training INTERNATIONAL AVIATION: States' Action Plan**



\* Developed for specific uses and for specific users.



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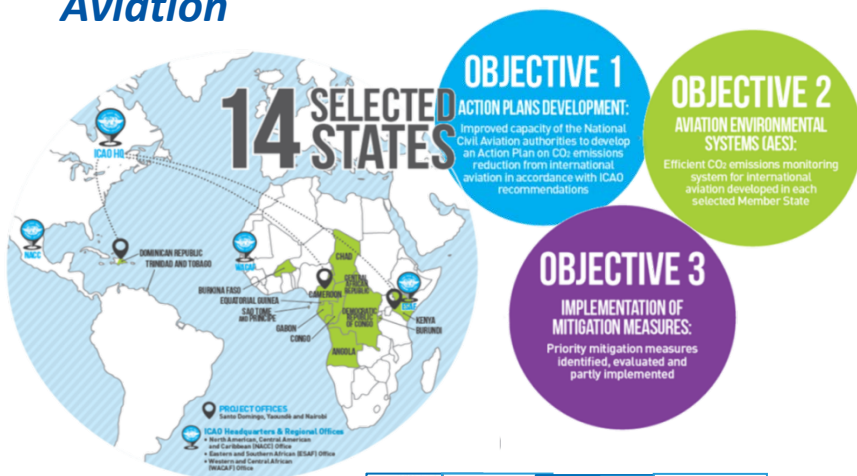
## ICAO capacity building, assistance, and partnerships

- ➔ **Facilitate financing for development and implementation of States' Action Plans**
  - ICAO-EU project: *Capacity Building for CO<sub>2</sub> Mitigation from International Aviation*
  - ICAO-UNDP project: *Transforming the Global Aviation Sector: Emission Reduction from International Aviation*
- ➔ **Support States for the implementation of CORSIA**
  - ICAO-Germany *Small-Scale Implementation Project of the CORSIA MRV system*
- ➔ **Various projects supporting the basket of measures for international aviation**
  - United Nations Framework Convention on Climate Change (UNFCCC)
  - United Nations Institute for Training and Research (UNITAR)
  - Accreditation with the Green Climate Fund (GCF)



# ICAO capacity building, assistance, and partnerships, continued

## → ICAO-EU project *Capacity Building for CO<sub>2</sub> Mitigation from International Aviation*



## → ICAO-UNDP project *Transforming the Global Aviation Sector: Emission Reduction from International Aviation*

- Development of guidance documents on Sustainable Aviation Fuels, Renewable Energy, Governance, and Financing Aviation Emissions Reductions
- Implementation of a pilot project on renewable energy at two international airports in Jamaica





## In Summary

- ICAO encourages all Member States to develop a State Action Plan and keep it up-to-date – every 3 years – **NEXT UPDATE 2021**
- State Action Plans provide States an opportunity to identify measures that will improve fuel efficiency and reduce emissions
- Assembly encourages robust and quantified State Action Plans allow ICAO to assess future progress toward the achievement of ICAO global aspirational goals
- Prompt the exchange of information between national stakeholders to facilitate the implementation of mitigation measures



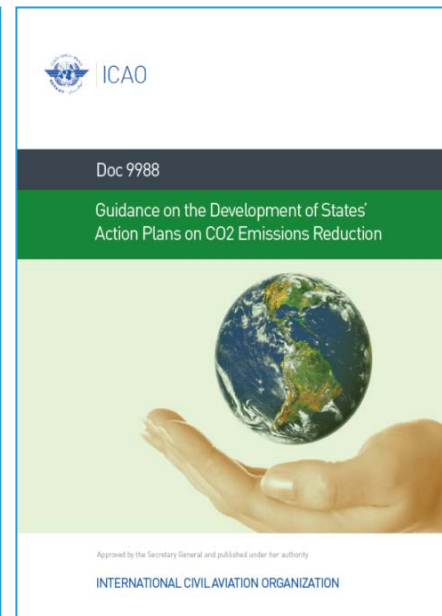
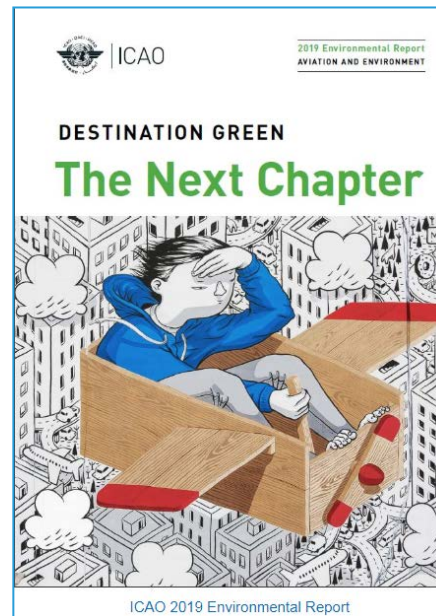
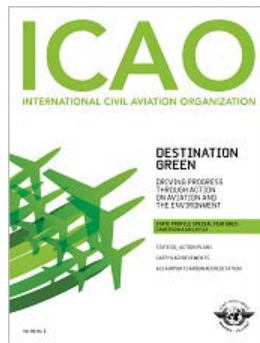
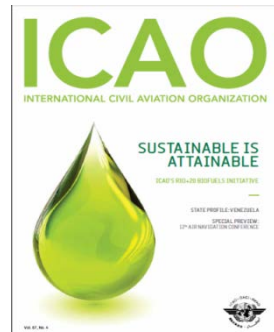
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## Additional Information



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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

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(APAC) Sub-office  
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