



ICAO

ENVIRONMENT

NO COUNTRY LEFT BEHIND



State Action Plan Development Process

**ICAO Environment
Blandine Ferrier**



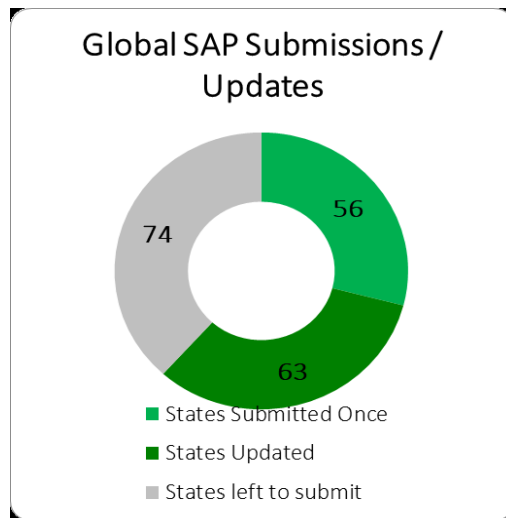


Current Status



119 States
representing
>97% of global RTK

have submitted a State Action Plan to ICAO





Objectives

Assembly Resolution A40-18

- 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...**



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 CO₂ 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)



Benefits of Developing a State Action Plan

- State Action Plans give ICAO Member States the ability to:
 - Promote cooperation
 - Establish partnerships
 - Facilitate technology transfer
 - Obtain assistance
- They provide an organized means for the State to:
 - Highlight their commitment to addressing environmental challenges
 - Outline their respective policies and actions



State Action Plan Minimum Contents

1

State Action Plan Focal Point contact information

2

Baseline scenario – international fuel consumption, CO₂ emissions and traffic data projected to 2050 (without action)

3

List of selected emissions mitigation measures

4

Expected results – international fuel consumption and CO₂ emissions projected to 2050 (with the actions in #3)

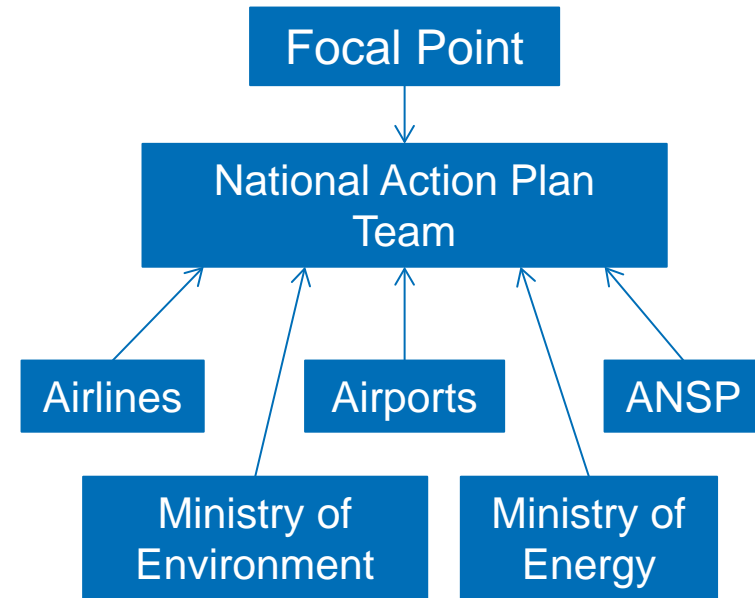
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Assistance needs (if needed)



The State Action Plan Process

- **The State:**
 - Designates a State Action Plan Focal Point and communicates their contact information to ICAO
- **The Focal Point:**
 - Coordinates with ICAO
 - Establishes a National Action Plan Team
 - Develops the State Action Plan and submits the document to ICAO





State Focal Point

The role of the Focal Point is to :

Lead the development of the action plan
ensure coordination between national actors
liaising with ICAO

- The Focal Point is the only person authorized to submit the action plan and to access the ICAO APER website.
- The focal point plays a key role in the successful development of an action plan. He/she will :
 - Leading diverse interests towards a common goal - Government Action Plan
 - Possess the leadership skills needed to engage and motivate people
 - is a "doer".
 - Is generally a member of the CAA / DGCA



National Action Plan Team

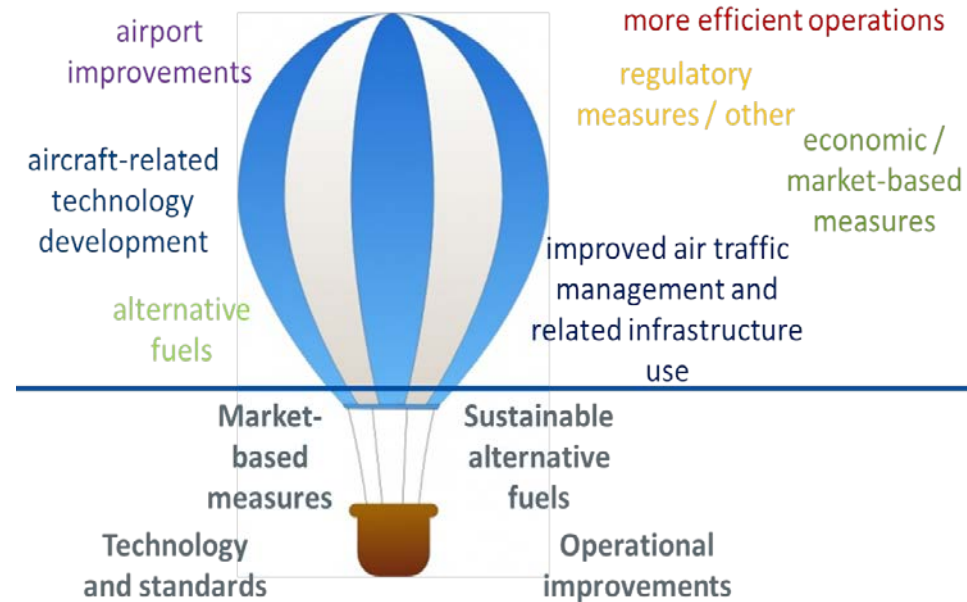
- In order to develop the national action plan, the focal point should work with a team comprising the different actors in the aviation sector
- Data needed to develop the national action plan and information on the implementation of mitigation measures - provided by the different team members (fuel consumption, traffic data, CO₂ emissions data).



National Action Plan Team

- Mitigation measures are numerous, as are the actors involved
- Depending on the exact measurements chosen, these can be
 - Airlines
 - Airports
 - ANSPs
 - Fuel suppliers
 - Cell/motor manufacturers
 - Other government entities
 - Universities and research institutes
 - Community Groups
 - Etc.

7 Categories de Measures



ICAO Basket of Measures



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Assistance needs (if needed)



Baseline Scenario

- The baseline scenario describes the **historic** evolution of fuel consumption, CO₂ emissions, and traffic in the State and the expected **future** evolution **in the absence of action**
- It should:
 - Include annual historic fuel consumption, CO₂ emissions and traffic from international aviation from the latest available year(s);
 - Estimate future fuel consumption, CO₂ emissions and traffic from international aviation to 2030, 2040 and 2050, in the absence of action (i.e. implementation of mitigation measures); and
 - Provide quantified data for the years 2030, 2040 and 2050.



Baseline Scenario

- Key points:
 - Differentiating between international and domestic emissions
 - Data from all air carriers can be aggregated
 - Understood to be an estimation only
 - Not the same as the CORSIA baseline



Differentiating between international and domestic emissions

- **International flight:** the operation of an aircraft from take-off at an **aerodrome of a State** or its territories, and landing at an **aerodrome of another State** or its territories.
- **Domestic flight:** the operation of an aircraft from take-off at an **aerodrome of a State** or its territories, and landing at an **aerodrome of the same State** or its territories.
- **Methodologies** to account for the CO₂ emissions attributed to international flights:
 - a) **ICAO:** each State reports the CO₂ emissions from the international flights operated by aircraft registered in the State (**State of Registry**)
 - b) **IPCC:** each State reports the CO₂ emissions from the international flights departing from all aerodromes located in the State or its territories (**State of Origin**)

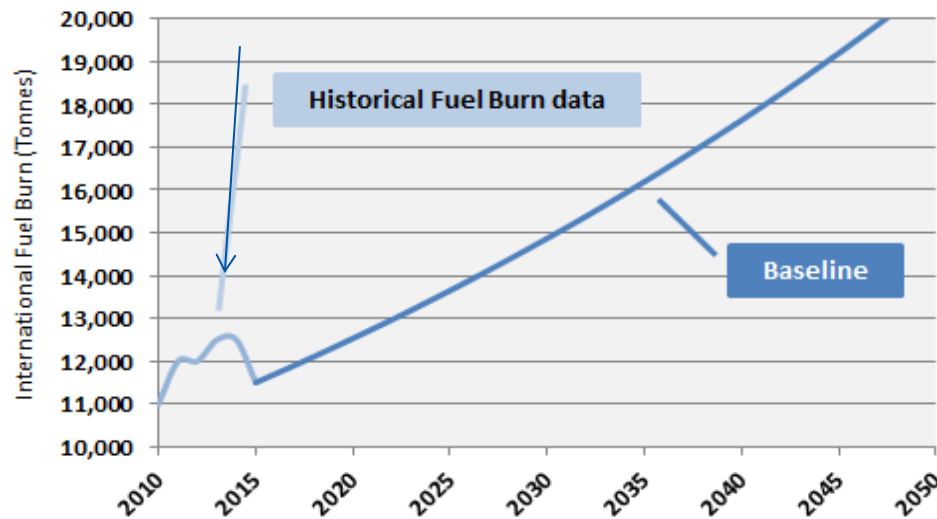


Doc 9988 Chapter 3

APER, EBT, ICEC

Baseline Scenario Example

Example			
Year	Historical Data		Fuel efficiency
	RTK * ('000)	Fuel Burn (tonnes)	
2010	25'000	11'000	0.440
2011	30'000	12'000	0.400
2012	32'000	12'000	0.375
2013	33'000	12'500	0.379
2014	32'000	12'500	0.391
2015	30'000	11'500	0.383



* **Revenue-Tonne Kilometre (RTK)** = revenue load (persons and cargo) in tonnes (t) * distance flown in kilometres (km)
 RTK represents a measure of the size of air transport



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Assistance needs (if needed)



Mitigation Measures

- Selection of measures and quantifying their expected results
 - Review of the basket of measures, their feasibility and emissions reduction potential
 - Prioritization and selection of mitigation measures
 - **Quantifying the effects** on fuel consumption and CO₂ emissions from the measures selected



Basket of CO₂ mitigation measures

<p>Aircraft technology</p>	<p>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.).</p>	
<p>Operational improvements</p>	<p>CO₂ benefits from air traffic management; air navigation; green airports; etc.</p>	
<p>Sustainable aviation fuels</p>	<p>Around 200,000 commercial flights with drop-in aviation fuels; 8 conversion processes; 9 airports distributing drop-in aviation fuels</p>	
<p>Market-based measures</p>	<p>Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)</p>	

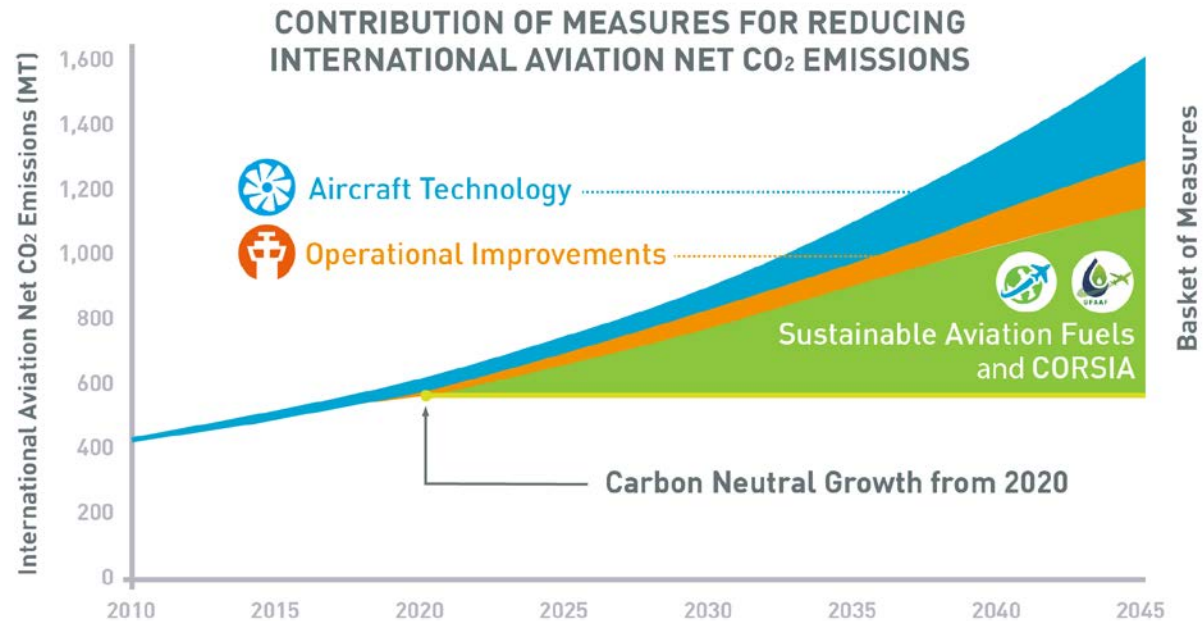


Doc 9988 Chapter 4

APER, EBT, IFSET, MACC

The Basket of Measures

- Aircraft Technology
- Operational Improvements
- Sustainable Aviation Fuels (SAF)
- Market-Based Measures





Context within ICAO Doc 9988

- **Chapter 4** – Selection of measures and quantifying their expected results
- **Appendix A** – Basket of measures to limit or reduce CO₂ emissions from international civil aviation
- **Appendix C** – Key stakeholders, analysis methods and tools
- **Appendix D** – Reference material relevant to the implementation of mitigation measures
- **Appendix E** - Examples of measures selected in action plans
- **Appendix F** – Costs and benefits related to the basket of measures



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Assistance needs (if needed)

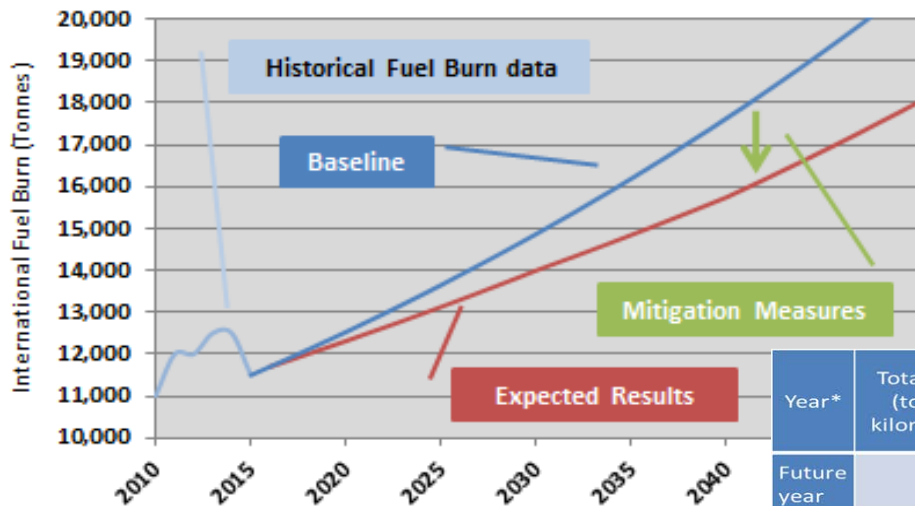


Expected Results

- The expected results provide the estimated fuel consumption, CO₂ emissions and traffic **with the implementation of the selected mitigation measures** from the latest available year to 2050.
- It should:
 - Projected fuel consumption, emissions, and traffic for the same future years provided in the baseline scenario; and
 - Quantify the effect of the selected mitigation measures.



Expected Results



Baseline scenario

List of Mitigation Measures

Expected Results

Year*	Total RTKs (tonne-kilometres)	International RTKs* (tonne-kilometres)	Total fuel (litres)	International fuel (litres)*	Total CO ₂ emissions (metric tonnes)	International CO ₂ emissions* (metric tonnes)
Future year						
2020						
Future year						
2050						

*Minimum data to be entered.
 Note: the future years should match the baseline's future years.
 Note: the traffic data (RTK) may not be identical to the baseline. Some measures may enable an increase in traffic or aim to reduce demand.



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Assistance needs (if needed)



Assistance Needs

- Clearly define the assistance needed to implement mitigation measures and to achieve the expected results
 - Technical, financial, research, training/capacity building
- Could facilitate support from other government entities, financial institutions, potential future ICAO assistance projects



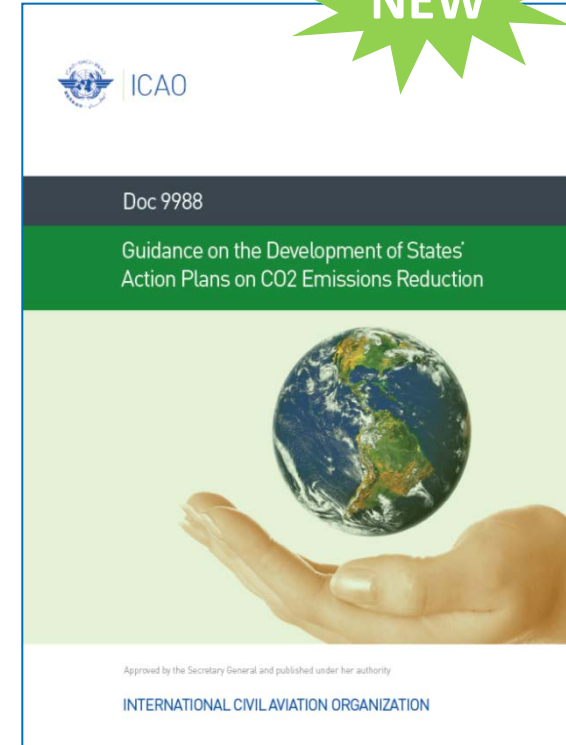
ICAO's Facilitating Role

- 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)
 - Organizing workshops and training seminars
 - Partnering States through the State Action Plan Buddy Programme
 - Answering questions and providing support



ICAO Doc 9988

- *Guidance on the Development of States' Action Plans on CO₂ Emissions Reduction Activities*
 - Describes what a State Action Plan should include and provides a step-by-step guide on how to develop it
- More details about everything presented in this Seminar can be found in this document
 - Overview and introduction
 - Baseline calculation
 - Mitigation measures and expected results
 - Implementation and assistance
 - Appendix with examples and detailed information





Action Plan Emissions Reduction (APER) Website

- **Resources**

- Document 9988 - Guidance Material for the Development of States' Action Plans
- Document 10031 - Guidance on Environmental Assessment of Proposed Air Traffic Management Operational Changes
- Transforming Global Aviation Collection
- Feasibility Studies

- **Tools for the Focal Points and the National Action Plan Team**



ICAO Environmental - ENV Tools Suite



ICAO Carbon Emissions Calculator – for States

Allows passengers to estimate CO₂ emissions from their air travel



ICAO Fuel Savings Estimation Tool (IFSET)

To assist States in estimating fuel savings from operational improvements



ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT)

To assist States and aeroplanes operators - monitoring and reporting requirements



ICAO E-Learning Course – Module 1. State Action Plan



ICAO Green Meetings Calculator

To support decision making in minimizing CO₂ emissions from air travel to attend meetings

ICAO EBT – Environmental Benefit Tool



ICAO MAC Curves





ICAO Environmental Tools

- Publically available: www.icao.int/env

ICAO Carbon Emission Calculator (ICEC)



ICAO Fuel Savings Estimation Tool (IFSET)



UNITAR Training Course





Feedback form

ICAO assesses all submitted State Action Plans against the same criteria

Feedback forms sent to the Focal Points

Required

ICAO State Action Plan Feedback Form

Optional

State:		ICAO Region:	
SAP Submission Date:	[dd-mmm-yyyy]	Notes:	
Previous Submissions:	[dd-mmm-yyyy]		
	[dd-mmm-yyyy]		
	[dd-mmm-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 ₂ emissions, and RTK	[Yes / Partially / No]
Measures to mitigate CO ₂ emissions	[Yes / No]
Expected results (estimated impact of selected mitigation measures on the baseline, including fuel consumption, CO ₂ emissions)	[Yes / Partially / No]
Other	
Does the State Action Plan request assistance?	[Yes / No]
Notes:	

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]	

Required

ICAO State Action Plan Feedback Form

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

Additional Notes:



ICAO Buddy Partnership

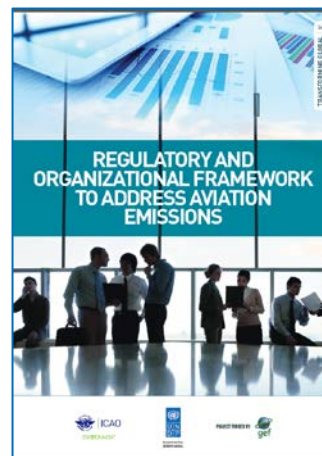
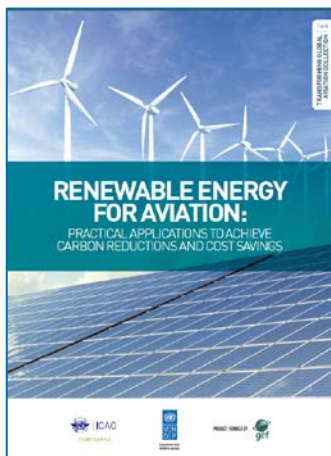
ICAO State Action Plan Buddy Programme invites States that have already submitted their State Action Plan on CO2 Emissions Reduction Activities to ICAO to partner with Member States that have not prepared their State Action Plans

Partners		Status of Action Plan		
State providing support	State receiving support	Under development	Submitted to ICAO	Posted on the ICAO website
Bulgaria	The former Yugoslav Republic of Macedonia		X	X
Spain	Ukraine		X	X
São Tomé and Príncipe	Cabo Verde	X		
Namibia	Zambia		X	
Kenya	Botswana	X		
Dominican Republic	Panama		X	X
Namibia	Gambia	X		
Brazil	Mozambique		X	





ICAO – United Nations Development Programme (UNDP) Assistance Project (financed by the Global Environment Facility (GEF))





Data confidentiality

- To protect confidentiality, the State may elect not to make certain data publicly available, or aggregate/de-identify the data before including it in the action plan
- In the event that confidential data is collected (e.g., from individual air carriers or on specific international routes), appropriate procedures should be followed by the State for the designation and treatment of such information in accordance with the applicable national legislation and regulations
- A State could improve transparency by explaining in its action plan how confidential information has been treated
- Action plans are submitted to ICAO on a confidential basis. They are **only published on the ICAO public website at the request of the State**
- Assembly Resolution A40-18 *“Encourages States (...) to make the submitted action plans available to the public, taking into account the commercial sensitivity of information contained in States’ action plans;”*, in which case States can anonymize data, e.g. by aggregating/de-identifying the data before including it in the action plan



Updating an Action Plan

- States are invited to submit and subsequently update their Action Plan **every three years** preferably on the year prior to the Assembly year
- Regular updates of the State Action Plan are essential to fully deliver the benefits of the initiative at the national level.

Regular updates **increase the robustness of the data collection process**, the understanding of stakeholders operating needs and constraints, the **ownership of the content of the document**, the preparedness for the implementation of mitigation measures and the **ability to demonstrate progress.**

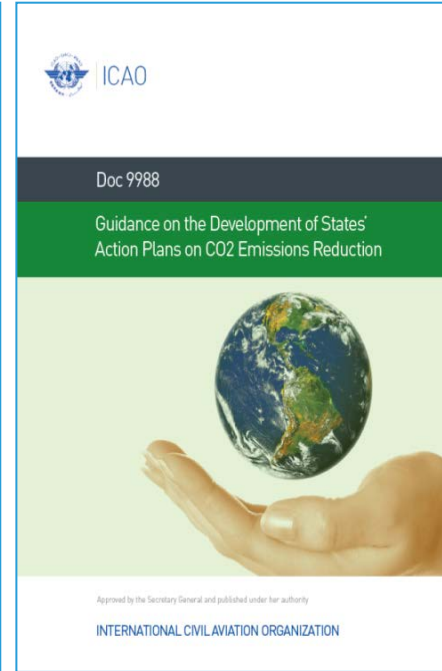
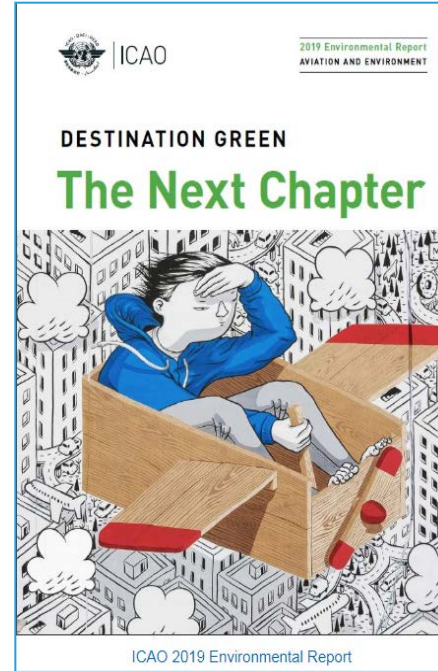
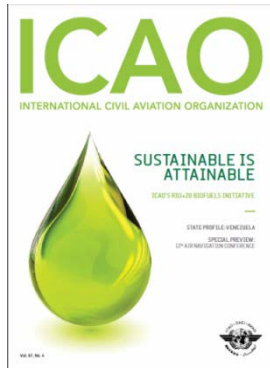


In Summary

- 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



Additional Information



For more information, please visit our website: <http://www.icao.int/env>



ICAO

ENVIRONMENT

NO COUNTRY LEFT BEHIND



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