



ICAO

UNITING AVIATION



# Setting the Scene

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# International Civil Aviation Organization (ICAO)

UN specialized agency

Established by the “Chicago Convention” in 1944

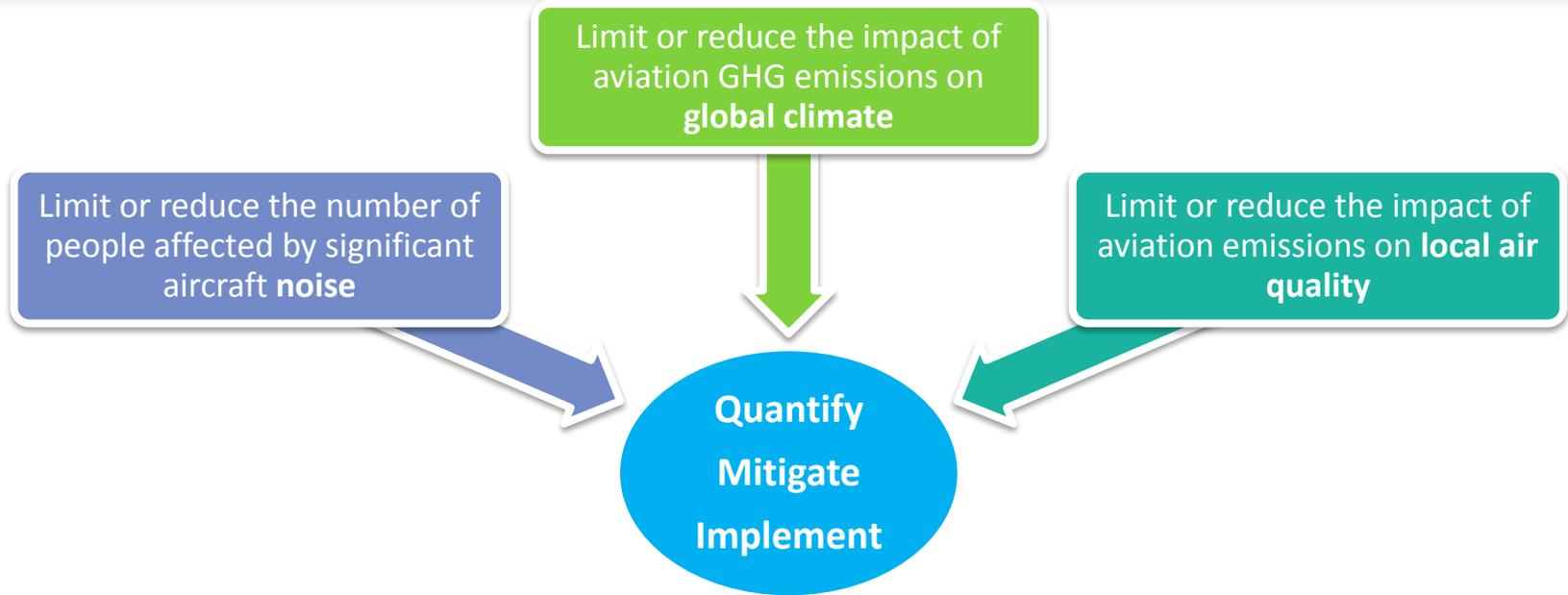
Forum for cooperation in all fields of civil aviation

191 Contracting States

Standards, policies & guidance for environment since 1960’s

Focus on aircraft noise, local air quality and global climate

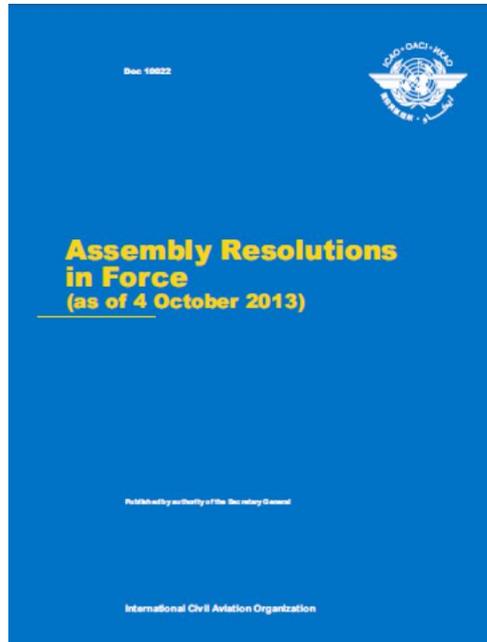




Minimize the adverse effect of global civil aviation on the environment



## ICAO Policies on Environment



- **A38-17:** Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality
- **A38-18:** Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change



# ICAO SARPs (Standards And Recommended Practices) and Guidance

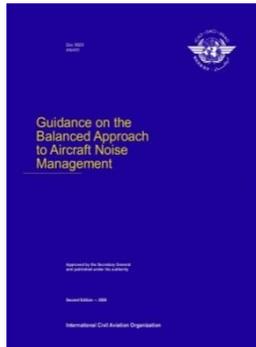


## ICAO SARPs

Annex 16 – Volume I, Aircraft Noise

Annex 16 – Volume II, Aircraft Engine Emissions

Annex 16 – Volume III, Aircraft CO<sub>2</sub> Emissions  
(under development)



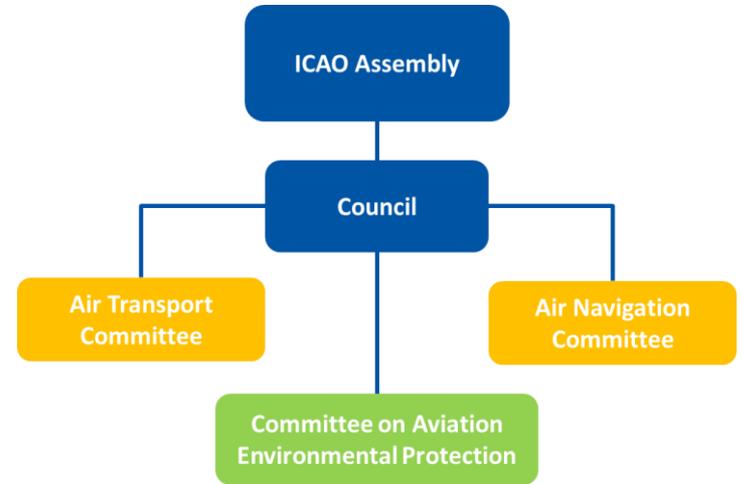
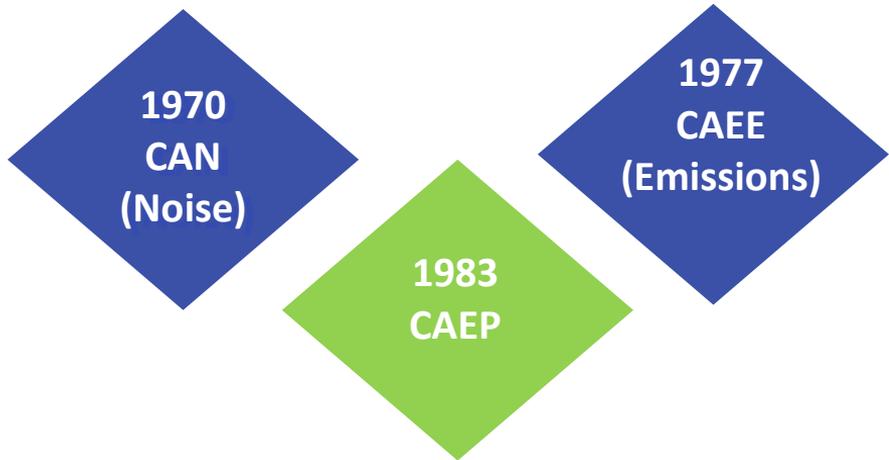
## ICAO Guidance (examples)

NOISE – *Guidance on the Balanced Approach to Aircraft Noise Management* (Doc 9829)

EMISSIONS – *Airport Air Quality Manual* (Doc 9889)



## ICAO Committee on Aviation Environmental Protection (CAEP)



- **Established by the ICAO Council in 1983**, superseding the Committee on Aircraft Noise (CAN) and the Committee on Aircraft Engine Emissions (CAEE)
- **Assists the ICAO Council** in formulating new policies and adopting new SARPs for aircraft noise and aircraft engine emissions
- CAEP is a **technical committee and reports to the ICAO Council**



## CAEP Members and Observers

### 23 Members (23 States)

Argentina	Australia	Brazil
Canada	China	Egypt
France	Germany	India
Italy	Japan	Netherlands
Poland	Russian Federation	Singapore
South Africa	Spain	Sweden
Switzerland	Tunisia	United Kingdom
Ukraine	United States	

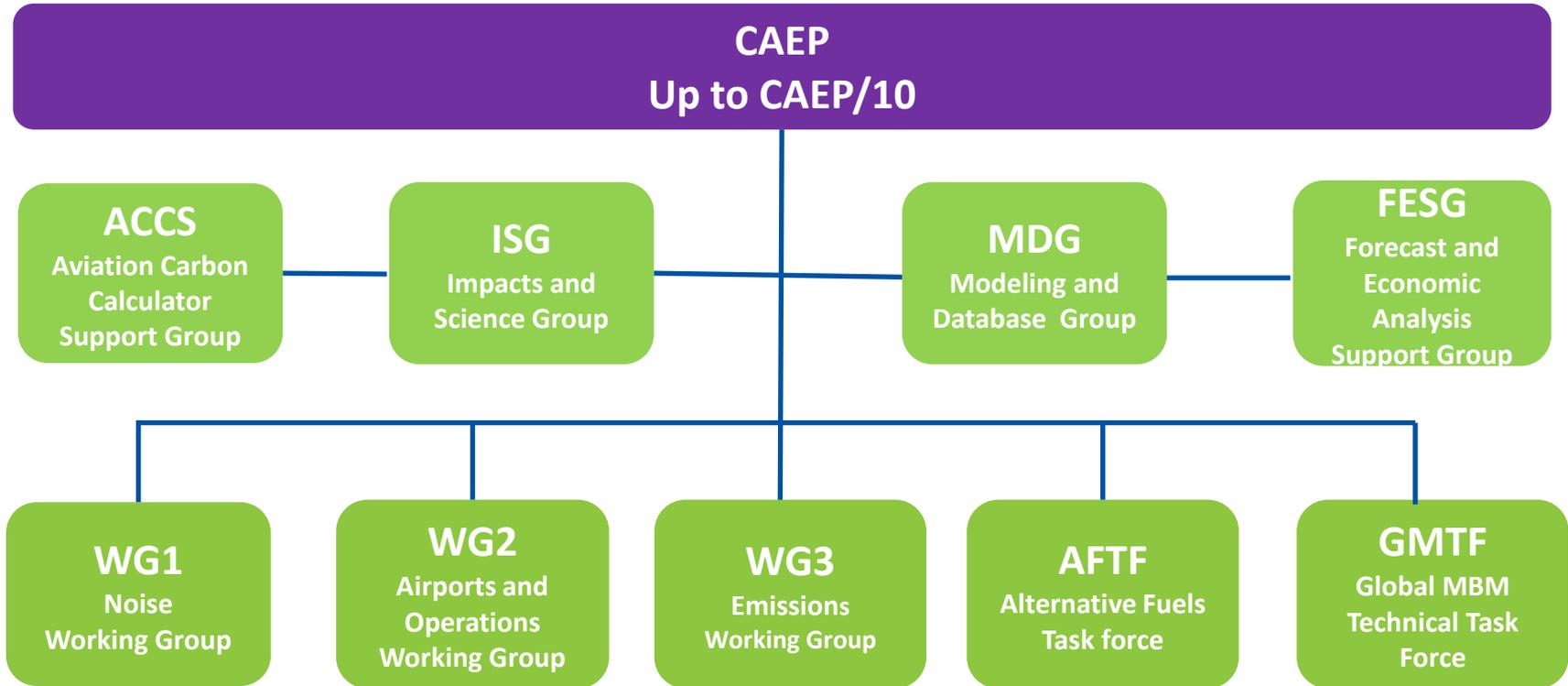
### 15 Observers (5 States and 10 Organizations)

Greece	Indonesia	Norway
Turkey	United Arab Emirates	ACAC
ACI	CANSO	EU
IATA	IBAC	ICCAIA
ICSA	IFALPA	UNFCCC

Around **600** specialized experts involved



## CAEP Structure





## Basket of Measures to reduce aviation emissions

- Aircraft-related technology development
- Improved air traffic management and infrastructure use
- More efficient operations
- Market-based measures (MBMs)
- Sustainable alternative Fuels



## States' Action Plans to reduce aviation CO<sub>2</sub> emissions

- **For States**

Opportunity to identify and communicate measures to address CO<sub>2</sub> emissions from international aviation as well as any assistance needs to implement the measures



- **For ICAO**

Assess the global progress towards the achievement of aspirational goals and address specific assistance needs of States.



## States' Action Plans – ICAO Capacity Building Programme

- **Guidance Document for the Development of States' Action Plans (Doc 9988)**
- **ICAO Interactive Web-Interface**
- **Hands-on Training seminars in all ICAO Regions**
- **Over 200 Teleconferences and Meetings with States' Focal Points**
- **Support provided by ICAO Regional Offices and Technical Cooperation Bureau**



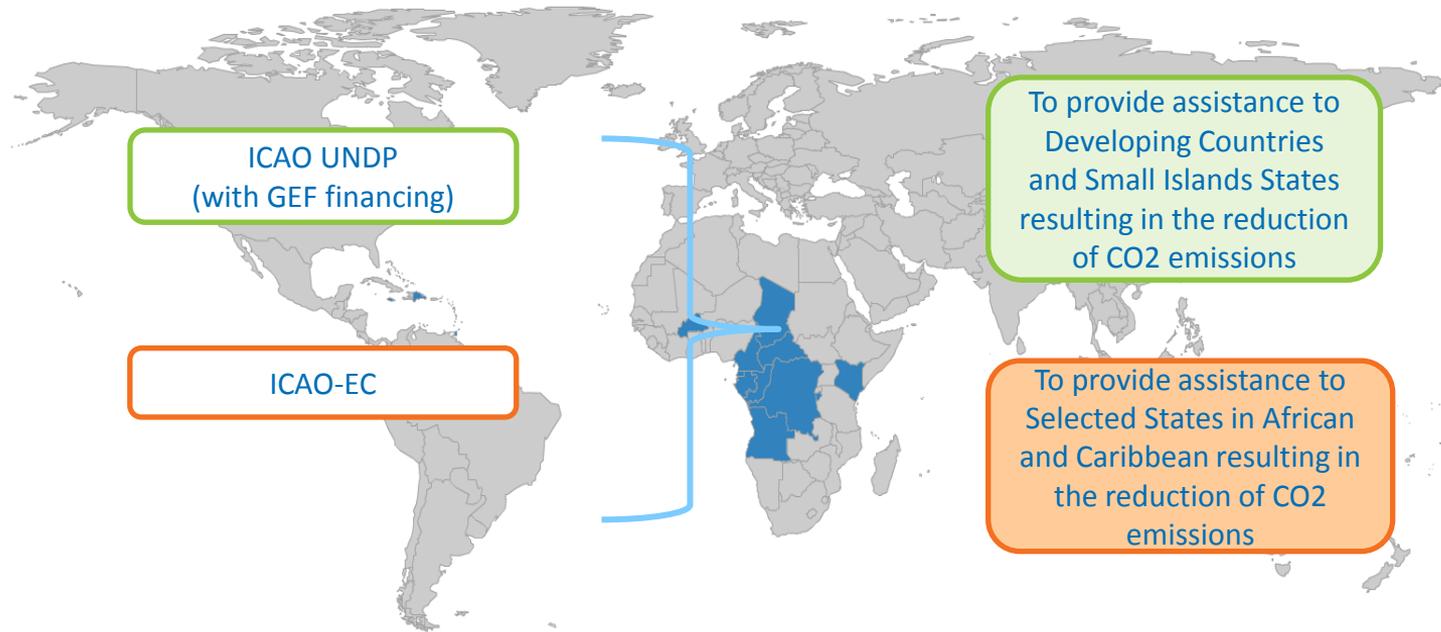
## 74 States, representing around 82% international RTK , submitted a first action plan as of June 2014



- 74 States submitted an Action Plan by June 2014
- Remaining States



## ICAO's Assistance Partnerships







## Why this ICAO “Fuelling Aviation with Green Technology” Seminar? A vision for the future.

- Improved understanding and analysis capabilities of current and future aircraft technologies permit continued improvement in aircraft designs.
- New objectives and future constraints may require unconventional configurations.
- Exploiting new technologies can change the rules of the game, leading to very different solutions – Transformational changes.
- Progress requires unprecedented imagination, innovation and communication among aircraft designers, scientists, computational and other specialists outside the aviation sector.



# Session I – Aircraft Technology



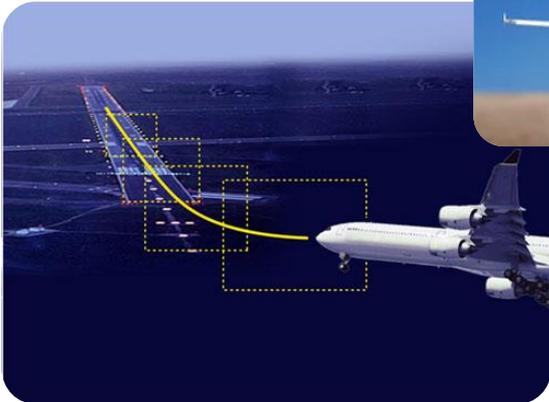
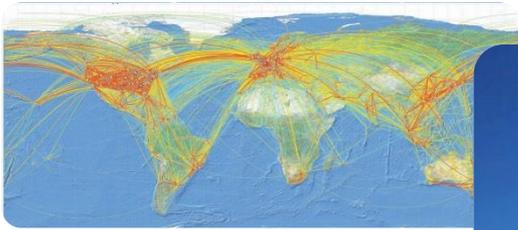


# Session II – Aircraft End-of-Life



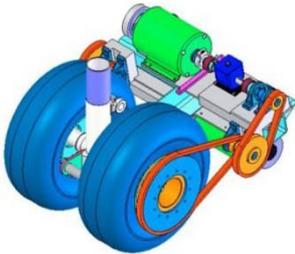
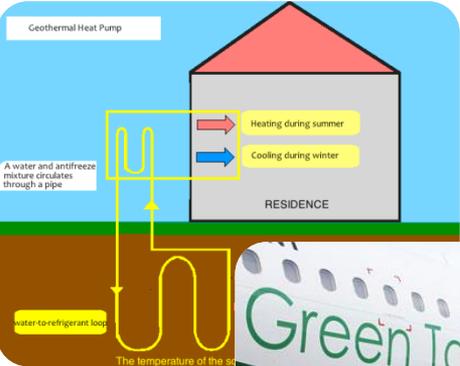


## Session III – Green Aircraft Operations



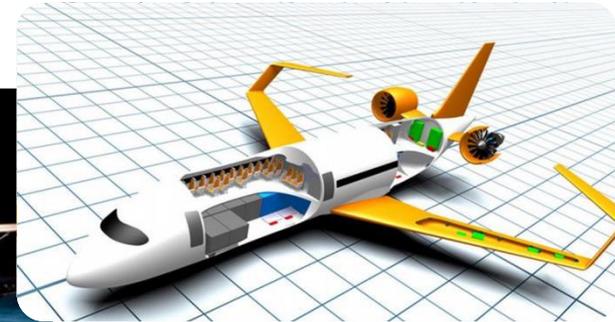


# Session IV – Eco-airports



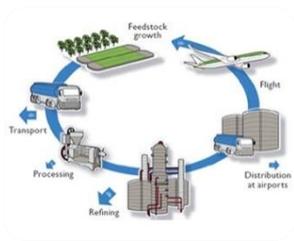


# Session V – Renewable Energy for Aviation



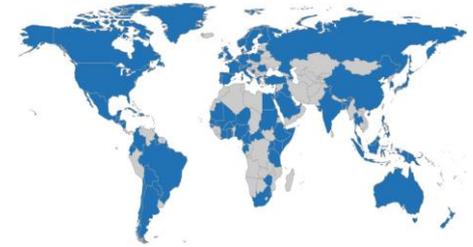


# Session VI – Sustainable Alternative Fuels



# Session VII – Financing and Assistance

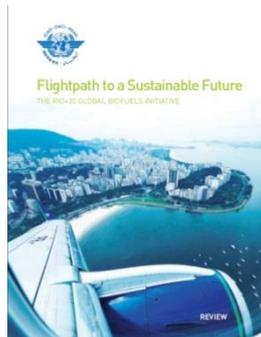
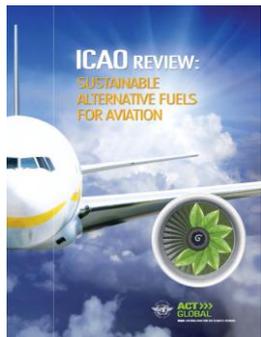
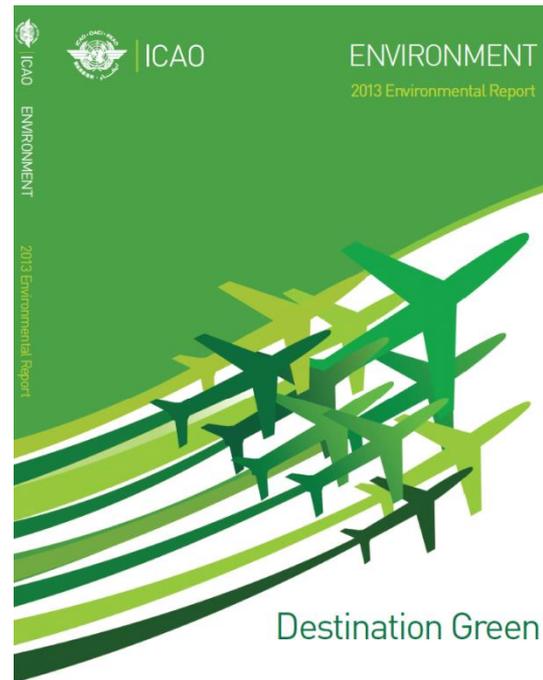
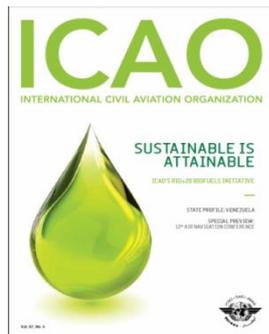
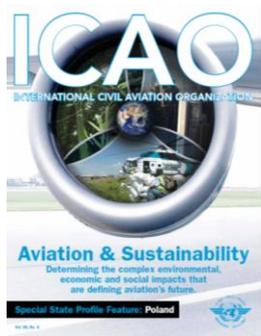




**THE BEST WAY TO PREDICT  
THE FUTURE  
IS TO  
CREATE IT**



ICAO UNITING AVIATION



For more information on our activities, please visit [www.icao.int/env](http://www.icao.int/env)