



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Setting-the-scene

Ms. Jane Hupe

Deputy Director, Environment, ICAO





ICAO

ENVIRONMENT

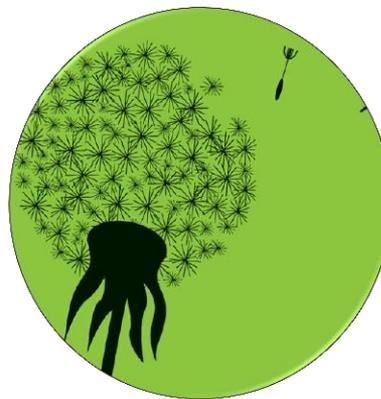
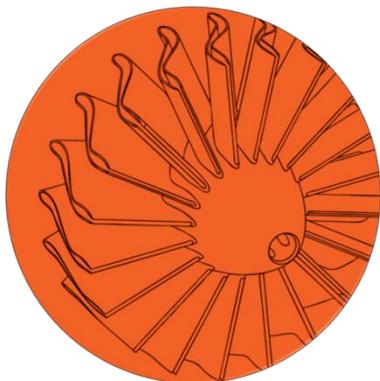
ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

What are “Green Airports”?

In the 1960's
(Noise)



In the 1970's Aircraft engine particles
(Local Air Quality)





ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

In the 1980's-1990's
(Environmental management
Systems)



Since 2000
(Climate change, Community
engagement, Clean Energy)



Global Framework for Aviation Alternative Fuels



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Why does it matter?





ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

HOW IS ICAO HELPING?





Guidance Documents and Policies

- Airport Planning Manual, Part 2 (Doc 9184)
- Balanced Approach to Aircraft Noise (Doc 9829)
- Airport Air Quality Manual (Doc 9889)
- Operational Opportunities to Reduce Fuel Burn and Emissions (Doc 10013)
- Guidance On Environmental Assessment Of Proposed Air Traffic Management Operational Changes (Doc 10031)
- Community Engagement for Aviation Environmental Management (Circ 351)



Operational improvements

- Contribute to mitigate noise
 - Pillar of the Balanced Approach
- Contribute to mitigate local pollutant
 - Reduce taxiing time
- Contribute to mitigate CO₂ emissions (Basket of Measures)
 - Combined ASBU B0/B1 analysis: 26.2 Mt of CO₂ to 48.2 Mt of CO₂, or savings of USD 5 to 9.2 billion by 2025.
 - PBN and Community Engagement



Successful implementation of operational measures requires a thorough assessment of **interdependencies** (Doc 10031) and **community engagement**.



| ICAO

ENVIRONMENT

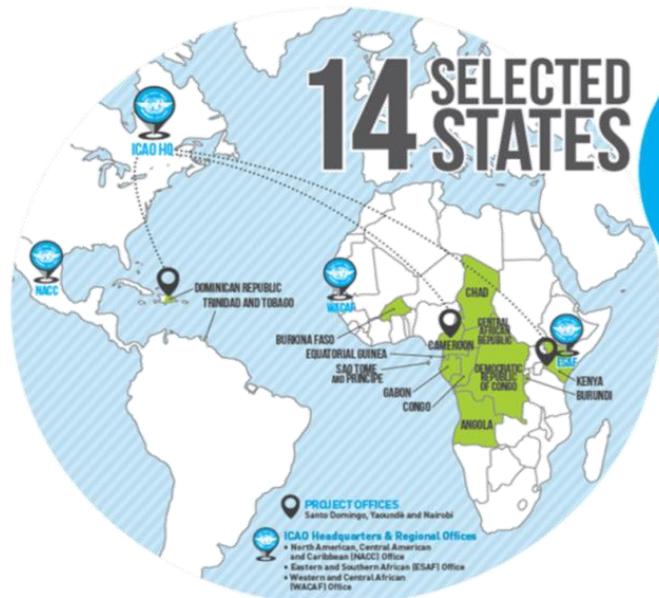
ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Capacity-Building and assistance

- Leverage efforts conducted by ICAO and its partners;
- Airports are key to the implementation of local projects;



ICAO-EU Capacity Building for CO₂ Mitigation from International Aviation



OBJECTIVE 1

ACTION PLANS DEVELOPMENT:
Improved capacity of the National Civil Aviation authorities to develop an Action Plan on CO₂ emissions reduction from international aviation in accordance with ICAO recommendations

OBJECTIVE 2

AVIATION ENVIRONMENTAL SYSTEMS (AES):
Efficient CO₂ emissions monitoring system for international aviation developed in each selected Member State

OBJECTIVE 3

IMPLEMENTATION OF MITIGATION MEASURES:
Priority mitigation measures identified, evaluated and partly implemented



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

ICAO-EU Capacity Building for CO₂ Mitigation from International Aviation

SOLAR-AT-GATE PROJECT





ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

ICAO-UNDP-GEF

Solar canopy



PCA and 400 Hz GPU



Mr. Rohan Campbell, Deputy Director General, Regulatory Affairs, Jamaica Civil Aviation Authority and Ms. Jane Hupe, Deputy Director, Environment, ICAO

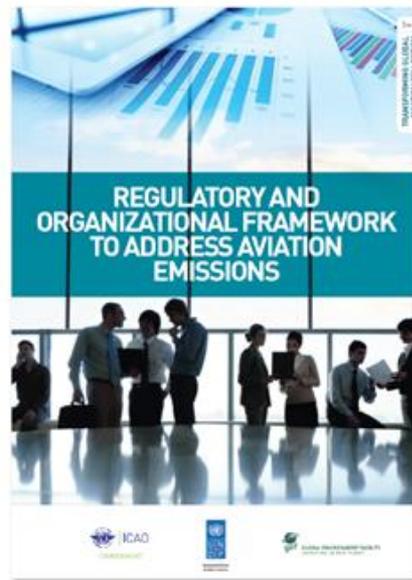
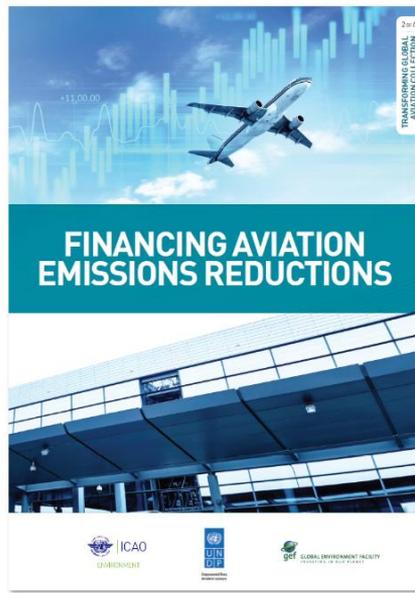
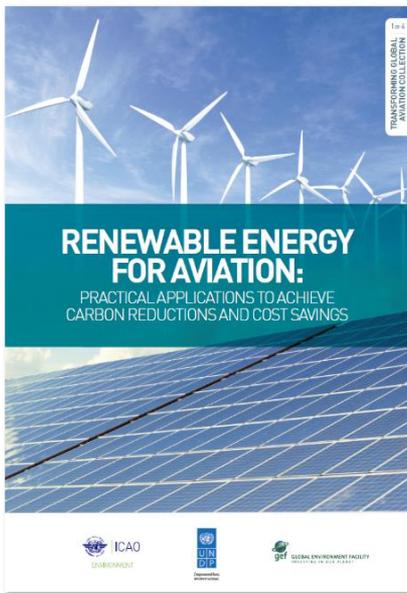


ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

ICAO-UNDP-GEF





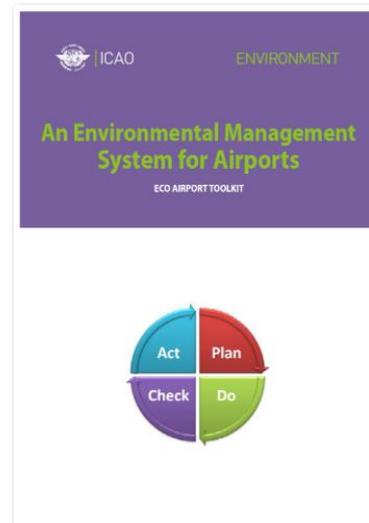
ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

OUTREACH

- Eco-Airport Toolkit e-collection
 - Practical information
 - Ready-to-use
 - Concrete options / case studies
- Seminar on Green Airports
 - November 2017
 - May 2019





ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON

GREEN AIRPORTS

FUTURE CHALLENGES FOR GREEN AIRPORTS





ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Technology



Next generation aircraft



3D printing



Material science



Maintenance



| ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

- <https://www.youtube.com/watch?v=fBBjuKSfoJE&feature=youtu.be>



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Aircraft
End-of-life

Waste
Management



Renewable
Energy &
Energy
Efficiency

Natural
Resources

Sustainable
Design and
Construction



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS

Climate Change Adaptation



Flooding at Kansai International Airport, Japan after typhoon Jebi.
Photo: JJI PRESS / Getty Images



Svalbard Airport, Norway



ICAO

ENVIRONMENT

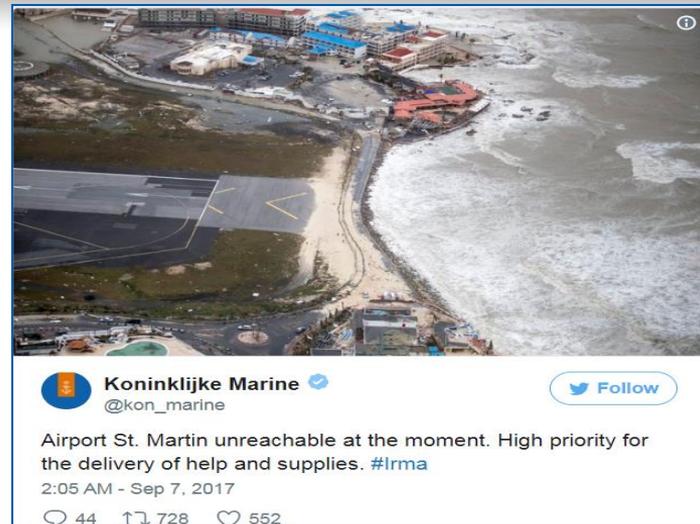
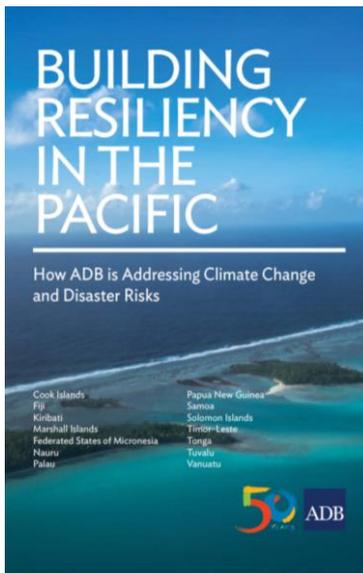
ICAO SEMINAR IN COOPERATION WITH ACI ON GREEN AIRPORTS

Airlines race to get as many flights as possible out of Irma's path before a wave of cancellations

- Airlines are scrambling to get as many passengers out of Irma's path as possible.
- More than 1,000 flights have been cancelled through Saturday in main South Florida airports.
- Carriers are expected to cancel more flights.
- Airlines want to avoid passengers and planes being stranded in hurricane-hit airports.

Leslie Josephs | @lesliejosephs

Published 4:06 PM ET Thu, 7 Sept 2017 | Updated 5:35 PM ET Thu, 7 Sept 2017





Science-based work

- CAEP ISG White Paper on Climate Adaptation
- JSC Report to ICAO Council presented during the 206th Session (C-WP/14321): possible effects of climate change on air navigation services over the North Atlantic
- **Climate Adaptation Synthesis (2019)**
 - understand the impacts of climate change on aviation operations and infrastructure and level of preparedness
 - Based on literature review and State Letter survey
- **Conclusion:** globally recognized risk assessment methodology is needed.



Climate Adaptation Synthesis

- **Objective:** understanding of the impacts of climate change on aviation operations and infrastructure and level of preparedness
 - Based on literature review
 - State Letter survey (AN 1/17 -17/56 sent on 15 May 2017)
- **Conclusion:** globally recognized risk assessment methodology is needed.



Conclusions

- “Green airport” is an evolving concept;
- There is no definition of what a green airport is but comprehensive environmental management is a solid foundation;
- A “Green Airport” should also be resilient.



ICAO

ENVIRONMENT

ICAO SEMINAR IN COOPERATION WITH ACI ON
GREEN AIRPORTS



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