

**55th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

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AGENDA ITEM 7: AVIATION AND ENVIRONMENT

**AIRPORT EMISSIONS REDUCTION ACTIONS IN INDONESIA
THROUGH THE ESTABLISHMENT OF ECO AIRPORT COUNCIL
AND EMISSIONS INVENTORY**

Presented by Indonesia

INFORMATION PAPER

SUMMARY

This paper presents the need for efforts by the Asia Pacific countries to provide input into the standardization of Airport Emissions Inventory already applicable in their respective countries to ICAO as a part of emissions reduction actions at airports as well as the establishment of Eco Airport Council, in order to obtain a regulation that can be applied regionally.

Moreover, this paper also aims to raise the importance of airport emissions inventory for States / airport operators / community to enhance environmental awareness.

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1. INTRODUCTION

1.1 The 39th Session of the ICAO Assembly invites States that choose to prepare or update action plans to submit them to ICAO as soon as possible preferably by the end of June 2018 and once every three years thereafter, in order that ICAO can continue to compile the quantified information in relation to achieving the global aspirational goals, and the action plans should include information on the basket of measures considered by States, reflecting respective national capacities and circumstances, quantified information on the expected environmental benefits from the implementation of the measures chosen from the basket, and information on any specific assistance needs.

1.2 ICAO Assembly Resolution A39-1 Appendix H par 10 in particular requests the Council to work with States and stakeholders in promoting and sharing best practices applied at airports in reducing the adverse effects of aviation emissions on local air quality.

1.3 The Directorate General of Civil Aviation (DGCA) of Indonesia, Ministry of Transportation, submitted to ICAO in 2015 its State Action Plan to reduce GHG emissions on the aviation sector and will be updated in 2018 as requested by the assembly, showing Indonesia's commitment in supporting the global policy regarding aviation environmental protection.

1.4 The Indonesia's Action Plans consists of several programs to reduce carbon emission on air transportation sector including emission from airport operation such as the use of renewable energy for airport facilities and continuous implementation of eco-airport program.

1.5 Eco Airport programs aim to reduce airport emissions through several actions whilst creating a healthy environment for the airport and its surroundings. Significant growth of air transport in Indonesia leads to increase in airport activities including airside and landside movements which result in the increment of airport carbon emissions.

1.6 Even though ICAO has published ICAO Doc 9889 regarding Airport Air Quality Manual, there are differences in regulations and formula applied to calculate airport carbon emissions in every Asia Pacific country, due to differences in the perception of specifications of source and type of emissions. Therefore, it is necessary to give inputs in order to make a regional airport emission regulation.

2. DISCUSSION ON THE ESTABLISHMENT OF ECO AIRPORT COUNCIL AND REGIONAL STANDARDS ON AIRPORT EMISSION INVENTORY

2.1 In the year of 2009, Indonesia revised its Aviation Law in which environment protection in aviation is noted in its clauses. Focused on Environment Protection in Airport, DGCA's commitments are realized through Government Regulations, DGCA Blue Print and DG Decrees. By all those regulations, Indonesia has a complete guideline to establish airports that implement values of green airport, which are called Eco Airport.

2.2 In 2017, DGCA Indonesia stipulated DG Decree regarding actions to reduce emissions from airport operations. Through this decree, airports in Indonesia shall report its carbon emissions to the Director General including emissions production and reduction. This decree aims to measure the effectiveness implementation of eco-airport program and the progress of emissions reduction target which stated in Indonesia State Action Plans.

ECO AIRPORT

2.3 **ECO AIRPORT** (*Ecological Airport*) is an airport which has passed a detailed measurement concerning components that potentially give effect to the surrounding environment. The objective is to create a healthy environment for the airport and its surroundings. The aims of an eco airport are:

- an airport with a global environmental perspective
- an airport that is integrated with the local environment;
- an airport that can achieve sustainable development based on reduce, reuse, recycling

Environmental factors of an eco airport consist of:

- Natural environment
- Atmosphere
- Energy
- Noise and Vibration
- Water
- Soil
- Waste
- Other

2.4 DGCA as a part of Indonesia's government encourage airport operators to establish and implement values of Eco Airport. Actions or main programs which could be done by airport operators in each environmental factor are listed below:

- **Natural Environment:** Conserve and create ecosystems within the airport to a healthy natural environment
- **Atmosphere:** by reducing the volume of air pollutants
- **Energy:** Reduce energy consumption from airport operations
- **Noise & Vibration:** by reducing the level of noise and vibration
- **Water:** Prevent pollution and contamination of waterways and groundwater from drainage water
- **Soil:** Prevent ground pollution from oil, chemicals and agents and other materials used in airport
- **Waste:** Encourage greater reuse of waste products generated at the airport as resources
- **Other:** Set environmental targets in accordance with the individual character of each airport

2.5 Good management and coordination are required to actualize eco airport concept. That are the reasons why Eco Airport Council is required.

Eco Airport Council has duties and responsibilities to:

- **Stipulate** Airport Environmental Plan;
- **Undertake** the management and monitoring of airport environment;
- **Evaluate** the undertaken management and monitoring actions for airport environment;
- **Report** the management and monitoring of airport environment to the Director General of Civil Aviation.

As one of duties and responsibilities of Eco Airport Council, the establishment of Airport Environmental Plan consists of:

- Environmental Management Plan;
- Environmental Monitoring Plan;
- Implementation target of each environmental factors;
- Estimated time of accomplishment.

2.6 Indonesia's State Action Plans declares three main strategies under Eco Airport program to reduce airport emissions including utilization of renewable energy, installation of light emitting diode (LED) and implementation of airport greening program. Moreover, the establishment of a tool to record production and reduction emissions from aviation sector particularly in airport operations is needed to measure the effective implementation of State Action Plans.

AIRPORT EMISSION INVENTORY

2.7 According to DG Decree regarding actions to reduce emissions from airport operations, DGCA orders airport operator to:

- 1) **Undertake actions** to reduce carbon emissions from airport operations as stated in State Action Plans including:
 - a) Utilization of renewable energy at airports such as solar energy;
 - b) Implementation of airport greening program;
 - c) Conservation of fossil fuel through the utilization of biofuel for GSE and other airport vehicles;
 - d) Installation of light emitting diode (LED) for airport lightnings and air navigation aids.
- 2) **Record** in monthly basis the consumption of energy (fuel and electricity) in airport.
- 3) **Report** periodically to the Director General:
 - a) Airport emissions inventory by using ACI's ACERT (Airport Carbon and Emissions Reporting Tool);
 - b) Any action efforts to reduce carbon emissions resulted from airport operations.

2.8 Directorate of Airports at DGCA should:

- **Consolidate** the emissions reduction actions at each airport in Indonesia;
- **Monitor** the fulfillment of documentation of energy consumption at each airport in Indonesia;
- **Monitor** the fulfillment of airport operator's obligation to report concerning emissions inventory and emissions reduction actions;
- **Calculate** the reduction amount of carbon emissions at airports based on all airport operator's reports;
- **Evaluate and verify** the effective implementation of emissions reduction actions at airports.

2.9 DGCA Regional Offices should:

- **Consolidate** the emissions reduction actions at each airport under their territories;
- **Monitor** the implementation of carbon emissions reduction for each airport under their territories.

2.10 ACI's ACERT is selected by DGCA Indonesia as a temporary assist tool for airport operator in calculating emissions due to airport operation. Even though ICAO Doc 9889 regarding Airport Air Quality Manual has already guided State to calculate emissions inventories, the assumption and guidance used in the document is mainly based on US and EU practices and therefore a regional Asia Pacific guidance on airport emissions inventory is proposed to be established.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.