

**55<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

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AGENDA ITEM 7: AVIATION AND ENVIRONMENT

**INDONESIA'S PROGRESS IN REDUCING GREENHOUSE GAS  
EMISSIONS IN AVIATION SECTOR**

Presented by Indonesia

**SUMMARY**

This Paper provides an update on the implementation of the Indonesia State Action Plan for climate change and mitigation of greenhouse gas (GHG) emissions in aviation sector. This paper presents the current progress and future plan as well as seeks cooperation opportunity with Civil Aviation Authorities in Asia Pacific Region especially on the implementation of CORSIA Monitoring-Reporting-Verification (MRV).

Action by the Conference is included in paragraph 3.

## INDONESIA'S PROGRESS IN REDUCING GREENHOUSE GAS EMISSIONS IN AVIATION SECTOR

### 1. INTRODUCTION

1.1 The 39<sup>th</sup> Session of the ICAO Assembly through the Resolution A39-2 “*Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*” invited the ICAO member States to prepare or submit their State Action Plan regarding actions to reduce GHG emissions in aviation sector. In addition, the 54<sup>th</sup> Conference of Directors General of Civil Aviation for Asia and Pacific Regions in Ulaanbaatar has also requested States to develop, update and submit their action plans as soon as possible.

1.2 The Directorate General of Civil Aviation (DGCA) of Indonesia, Ministry of Transportation, submitted to ICAO in July 2013 its State Action Plan to reduce GHG emissions on the aviation sector and updated it in June 2015 as requested by the Assembly. The third updated document is planned to be delivered by October 2018.

1.3 The implementation of such Action Plan has been fully based in cooperation with national and international stakeholders which coordinated by the DGCA and this Paper aim to update the Conference, in its progress and achievements as well as to showcase successful models of cooperation which can be useful for other States.

### 2. DISCUSSION

2.1 Before its official third submission which planned in October 2018, the Indonesia State Action Plan team has updated the document for national action purposes. The updating activities are scheduled in yearly basis in order to find out the aggregated outcomes of actions every year. In principal, the basket of measures that considered for the updated Action Plans are similar as formulated in 2013 and 2015. The collaboration with national stakeholders, in particular the aircraft operators, airport operators, air navigation service providers and the national state oil company are essential for the successful updating of relevant measures.

2.2 The DGCA, in formulating its State Action Plan, took into account all measures introduced in the ICAO basket of measures to reduce CO<sub>2</sub> emissions from the aviation sector as the main program, as follows:

2.2.1 **Use of aircraft with technology.** It was estimated that the aircraft fleets are increasing by 10% to 15% up to 2018 for the domestic fleet, and by 5% each year up to 2017 for the international fleet, and that the additions to the fleets will be new technology aircraft.

2.2.2 **Use of sustainable alternative fuels for aircraft.** To promote the use of sustainable alternative fuel, the Government of Indonesia has been recommending to the state oil company to seriously prepare for producing bio-jet fuel. This action has been mandated in a Ministry of Energy and Mineral Resources Decree of 2015, which provides 3% blending of bio-jet fuels by 2020 and 5% by 2025.

Several possibilities for cooperation with some countries and international organizations such as FAA, Airbus and IATA have been initiated for gaining experience and sharing technology and practices. The last meeting with national and international stakeholders was held during the ICAO State Action Plan and CORSIA Seminar in Jakarta in April 2017. The meeting has scoping some efforts to be done in order to expedite the production of sustainable alternative fuels in Indonesia.

2.2.3 **Improving air traffic management and related infrastructure.** A Performance Based Navigation (PBN) programme has significantly increased since 2015. On PBN implementation, significant improvement is identified on the growth of approved RNP Approach procedures from only 6 in 2015 to be 52 procedures by mid of 2018. This result the amount of emissions reduction in 2017 has increased almost two times compared with 2015 reduction.

2.2.4 **Performing operational efficiency actions.** Two major national airlines have contributed to promoting the operational efficiency program through several actions. They include idle reverse on landing, one engine taxiing, take-off with packs-off, and determining the closest alternate airports for reducing fuel uplift. Since 2011 until 2016, it is estimated that about 402,798 tons of CO<sub>2</sub> emissions have been reduced through this measure.

2.2.5 **Implementing global market-based measures.** Continuing Indonesia support on the implementation of the Global Market-based Measures (GMBM) that also known as Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), Indonesia has actively participated in familiarization or capacity building program of CORSIA implementation where its MRV program to be initiated by 2019. Indonesia hosted the ICAO Regional Seminar on CORSIA in Jakarta from 11 to 13 April 2017. Taking into account the CORSIA SARPs adoption in 2018 and its MRV implementation by 1 January 2019, Indonesia is in the process of preparing the establishment of CORSIA infrastructures. In the last semester of 2018, DGCA Indonesia is focus on assistance program for aircraft operators in formulating their CORSIA Emissions Monitoring Plans as well as preparing the MRV procedures. In the same frame, DGCA Indonesia has deployed a series of meeting and discussion with Indonesia National Accreditation Body in order to set-up a procedure framework in accrediting the independent verifiers for CORSIA in Indonesia.

2.2.6 **Formulation of regulatory measures and performing capacity building program.** The DGCA Indonesia in collaboration with national stakeholders has initiated the necessary regulatory measures to support the actions on promotion of sustainable alternative fuels utilization; to operate new technology aircraft and engines; PBN implementation; and start-up of preparation of CORSIA legal instrument including MRV establishment. In addition, more than 40 capacity building activities have been conducted since 2014 up to now. The DGCA has also initiated the establishment of an environmental unit to support the work related to aviation environmental protection policy and program measures. Recently, DGCA Indonesia is in progress in developing the Environmental Management System (EMS) where all information will be reported by operators, monitored by every responsible Directorate in DGCA and coordinated by the future DGCA Environmental Unit.

2.2.7 **Implementation of eco-airport.** On the action of eco-airport implementation, the installation of solar panel for electricity generation has increased from 25 in 2015 to 39 airports in 2017. The four biggest solar system installed in four small airports in East part of Indonesia in total can generate up to 1,2 MW power. According to the Ministry of Transportation national strategic plan from 2014 to 2019, it was planned 13 airports Light Rapid Transit (LRT) to be built. It is now already operated in Kualanamu airport, Medan and in-progress at Jakarta Soekarno-Hatta Airport, Palembang Sultan Mahmud Badarudin, Padang Minangkabau International Airport and Solo AdiSumarmo International Airport. In addition, it is now tried to reactivate the eco-airport council in Indonesia in order to harmonize and expedite the action plans of eco-airport. DGCA Indonesia in cooperation with airport operators is also in progress to establish a new regulation for GHG monitoring reporting and verification at airports.

## 2.3 **Program Support**

2.3.1 Several support actions have been conducted to streamline the implementation of measures in reducing CO<sub>2</sub> emissions from the aviation sector. This program support is mainly focused on promoting cooperation with national and international stakeholders to implement the measures and capacity building programs to improve the relevant knowledge of DGCA personnel and national stakeholders as well as support the establishment of dedicated environmental unit within the DGCA Indonesia.

2.3.2 In terms of collaboration, cooperation with the ICAO, US Federal Aviation Administration (FAA), Airbus and IATA have been initiated since 2014. Such cooperation is aimed to facilitate an exchange of skills and knowledge in deploying the aviation environmental programs in any action. It is also expected that this cooperation can stimulate wider cooperation amongst industries in realization programs that requiring large investment such as implementation of sustainable alternative fuels and eco-airport. Currently, discussions among the neighbour States in the region have been performed to frame a mutual collaboration in preparing CORSIA implementation.

2.3.3 Since contributing in the global discussion is considered very important to keep updated with the global information on aviation environmental protection, DGCA Indonesia has been actively involved in the ICAO Committee on Aviation Environmental Protection (CAEP). Almost 20 experts from various organizations in Indonesia have been nominated to join and follow the discussion within seven working groups in CAEP. In March 2016, during the 207<sup>th</sup> Council Meeting, Indonesia has been officially appointed to be an ICAO CAEP Member, after serving as Observer since 2012.

### **3. ACTION BY THE CONFERENCE**

3.1 The Conference is invited to:

- a) note the content of this paper describing Indonesia's actions in supporting global commitment to reduce CO<sub>2</sub> emissions in aviation sector;
- b) share the experience and information of States in Asia Pacific regions in implementing the State Action Plan; and
- c) promote cooperation on the achievement of global goals to reduce green house gas emissions and to facilitate exchanges and mutual support for the implementation of their respective Action Plans especially on the preparation of CORSIA implementation.

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