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(NACC/DCA/08)**

Ottawa, Canada, 31 July to 2 August 2018

Agenda Item 7: Environmental Protection Matters

**PREPARATION AND UPDATE OF THE STATES' ACTION PLANS ON
CO2 EMISSIONS REDUCTION ACTIVITIES**

(Presented by Secretariat)

EXECUTIVE SUMMARY

This working paper presents the main developments at ICAO in the area of environmental protection. The working paper calls for the preparation and update of States' action plans on CO2 emissions reduction activities, and States' for the implementation of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) from 1 January 2019, in accordance with the Consolidated statements of continuing ICAO policies and practices related to environmental protection, namely, on climate change and a global market-based measure scheme, adopted by the 39th Session of the ICAO Assembly.

Action:	The suggested actions are presented in Section 6.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• Doc 10075, Assembly Resolutions in Force (as of 6 October 2016)• Doc 9988, Guidance on the Development of States' Action Plans on CO2 Emission Reduction

1. States' Action Plans

1.1 Launched in 2010, the ICAO States' Action Plans initiative on CO2 Emissions Reduction from International Aviation has become an essential pillar of the Organization's activities on environmental protection. By 1 May 2018, 107 Member States, representing more than 91.8 per cent of international aviation revenue tonne-kilometres (RTK) had voluntarily submitted action plans to ICAO. These successful results demonstrate the high level of interest and engagement of ICAO Member States in this initiative, as well as the impact of ICAO's assistance and capacity building activities.

1.2 With respect to the ICAO States' Action Plan Buddy Programme, Assembly Resolution A39-2 further encouraged States that have already submitted action plans to share information contained in such plans and build partnerships with other Member States in order to support those States that have not yet prepared them. In this regard, ICAO has been working with Member States to facilitate and support the establishment of these partnerships. To date, five partnerships have been established under the ICAO State's Action Plan Buddy Programme, as illustrated in Table 1 in **Appendix A**, while several ICAO Member States expressed their willingness to provide support to potential partner States. Additional information on the Buddy Programme is available on the ICAO public website: <https://www.icao.int/environmental-protection/Pages/ActionPlan-Questions.aspx>

1.3 The status of the nomination of States' Action Plan Focal Points and submission of Action Plans to ICAO amongst States in the NAM/CAR regions, as of 27 June 2018 is provided in Table 2, of Appendix A.

2. The ICAO-European Union Capacity-Building and Assistance Project

2.1 Under the framework of the ICAO-European Union (EU) capacity-building and assistance project, ICAO is currently supporting 14 selected States in the implementation of the mitigation measures contained in their action plans.

2.2 The Fourth Capacity Building Seminar for the beneficiary States of the Caribbean Region under the ICAO-EU project, was held in Punta Cana, Dominican Republic, from 12 to 13 July 2018. The Seminar served to review the implementation of the mitigation measures included in the State Action Plans developed under the project, showcase the results of the feasibility studies conducted in the beneficiary States, examine ICAO's latest guidance for the implementation of aviation low emissions measures and exchange information on the strategy and way forward for the sustainability of the results, as the project comes to an end.

2.3 ICAO also recently launched the results of two feasibility studies funded by the ICAO-EU project on the use of Sustainable Aviation Fuels (SAF) in Kenya, and on the use of renewable energy to power airport operations in Trinidad and Tobago, respectively. These studies highlight new opportunities for civil aviation authorities to implement low emissions aviation measures, as part of their Action Plans.

2.4 In order to further support the States involved in the ICAO-EU project and other States, ICAO partnered with the United Nations Institute for Training and Research (UNITAR) to develop an on-line training course for the development of State Action Plans. Launched on 30 November 2017, the course captures the lessons learned and best practices from the implementation of the ICAO-EU project in the selected States. The training course is available to all State Action Plan Focal Points free of charge, through the UNITAR website:

<https://www.uncclern.org/news/new-e-tutorial-co2-emission-reduction-aviation-sector>.

2.5 In terms of the future of the partnership between ICAO and the EU on capacity-building and assistance for ICAO Member States, both organizations signed a Declaration of Intent to continue their cooperation in a second phase of the assistance programme from 2019, with a focus on supporting readiness for CORSIA implementation.

3. The ICAO-UNDP-GEF Capacity Building and Assistance Project (United Nations Development Programme/Environment fund)

3.1 The ICAO-UNDP-GEF capacity-building project was finalized in July 2018, having supported the implementation of solar-at-gate pilot projects at two international airports in Jamaica. The one million USD “solar-at-gate” pilot projects at Norman Manley International Airport in Kingston, Jamaica, and the facilitation of a gate electrification project at Montego Bay airport, which could be replicated in other States, have been a key element of the ICAO-UNDP-GEF assistance project.

3.2 The “solar-at-gate” pilot project at Norman Manley International Airport involved the installation of a solar panel array producing 100 kW of power, covering the full power required by the equipment for the aircraft operations at gate. It also incorporates lessons learned from the solar facilities impacted by hurricanes Irma and Maria during the autumn of 2017, resulting in the first solar project in the Caribbean with revised category V hurricane design standards. The environmental benefits associated with the project are equivalent to the CO₂ savings of removing 113 cars from the road in one year.

3.3 Building upon the strong interest expressed by Small Island Developing States (SIDS) in the Caribbean and Asia Pacific Regions, options will be explored to pursue further cooperation with the UNDP and the GEF to scale-up the “solar-at-gate” approach in SIDS. In this regard, ICAO organized in 2018 two Capacity Building Seminars on Low Emissions Aviation Measures for the ICAO-UNDP-GEF project beneficiary States and SIDS in the Caribbean and Asia Pacific Regions, in Kingston, Jamaica (April) and in Nadi, Fiji (May). The objective of these capacity building seminars was to provide States with the guidance required to implement aviation environmental protection activities, by sharing information on the lessons learned, best practices and deliverables of the project. In particular, the Seminars highlighted the guidance material developed under the project, and showcased the pilot project in Jamaica.

3.4 Among the objectives of the ICAO-UNDP-GEF Project is the identification and facilitation of the implementation of measures to reduce international aviation emissions. A series of guidance documents were developed on: Renewable energy for Aviation – Practical Applications to Achieve Carbon Reductions and Cost Savings, Financing Aviation Emissions Reductions, Regulatory and Organizational Framework to Address Aviation Emissions, and Sustainable Aviation Fuels. These guidance documents are available on the ICAO public website.

3.5 Lastly, as part of the ICAO-UNDP-GEF project, a Marginal Abatement Cost (MAC) curve tool has been developed to assess the costs and benefits associated with the implementation of aviation low emissions measures in developing States and SIDS. This new tool is complementary to the tools that have already been developed by ICAO to assist States to better understand the benefits of mitigation measures (e.g. the Environmental Benefits Tool (EBT)) and to produce their action plans. This tool will be made available to State Action Plan Focal Points soon. In addition, an integrated Environmental Technical Platform has been developed to allow for the sharing of knowledge and resources, as well as outreach initiatives, to ICAO Member States (<https://www.icao.int/environmental-protection/knowledge-sharing/Pages/default.aspx>)

3.6 The Secretariat continues to receive requests for support from States in the preparation and implementation of action plans, and is currently exploring means and partnerships to support SIDS in the Asia Pacific Region, Central and South America, and Africa through a second phase of the ICAO-UNDP-GEF project and the replication of the “solar-at-gate” pilot project.

4. Sustainable Aviation Fuels

4.1 ICAO Assembly Resolution A39-2 reaffirmed the need for alternative fuels to be developed and deployed in an economically, socially and environmentally acceptable manner, and requested Member States to adopt measures to ensure the sustainability of alternative fuels for aviation, building on existing approaches or combination of approaches; to monitor, at a national level, the sustainability of the production of alternative fuels for aviation; and to work together through ICAO and other relevant international bodies, to exchange information and best practices, including for the harmonization on the sustainability criteria of aviation alternative fuels.

4.2 The second ICAO Conference on Aviation Alternative Fuels (CAAF/2), held in Mexico City, Mexico from 11 to 13 October 2017, adopted Recommendations and a Declaration was approved for further work by ICAO, Member States and other stakeholders. As part of the Declaration, the Conference endorsed the 2050 ICAO Vision for Sustainable Aviation Fuels as a living aspirational path and calls on States, industry and other stakeholders, for a significant proportion of conventional aviation fuels (CAF) to be substituted with sustainable aviation fuels (SAF) by 2050. The Conference noted that this path is based on the assumption of a progressively increased use of SAF, and should be periodically reviewed through a stocktaking process, including through the convening of regular workshops and seminars, to continuously assess progress on SAF development and deployment. This stocktaking process will lead to the convening of CAAF/3, by no later than 2025, with a view to updating the 2050 ICAO Vision to include a quantified proportion of CAF to be substituted with SAF by 2050, and carbon reductions achieved by SAF.

4.3 In addition, the CAAF/2 recognized that the sustainability of aviation alternative fuels is of essential importance to the efforts to reduce international aviation CO₂ emissions, with the understating that the application of sustainability criteria is currently under consideration by ICAO, as part of the work on CORSIA.

5. Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

5.1 By adopting Assembly Resolution A39-3, ICAO Member States decided to implement CORSIA, the first global market-based measure for any industrial sector. CORSIA is a complementary element of a broader basket of measures to help ICAO achieve its aspirational goal of carbon-neutral growth from 2020 onwards; this basket of measures includes aircraft technology, operational improvements, and sustainable aviation fuels.

5.2 CORSIA aims at addressing an increase in total CO₂ emissions from international civil aviation above the 2020 levels. The average level of CO₂ emissions from international aviation covered by CORSIA between 2019 and 2020 represents the baseline for carbon neutral growth from 2020, against which emissions in future years are compared. In order to calculate the CORSIA baseline accurately, all operators conducting international flights are required to undertake the monitoring, reporting and verification (MRV) of CO₂ emissions starting on 1 January 2019.

5.3 At the time of issuance of this paper, a total of 72 States, representing 75.95 per cent of international aviation activity, had announced their intention to participate in CORSIA from the start of its pilot phase (2021-2023), including the following NACC States: Canada, Costa Rica, El Salvador, Guatemala, Jamaica, Mexico and United States.

5.4 Adoption of the First Edition of Annex 16, Volume IV

5.4.1 Following the decisions by the 212th Session of the Council and the 206th Session of the Air Navigation Commission (ANC) in November 2017, State letter AN 1/17.14 – 17/129 was issued on 5 December 2017 to receive comments by States and international organizations on the proposed First Edition of Annex 16 – *Environmental Protection*, Volume IV – *Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)* and the related ICAO CORSIA Implementation Elements.

5.4.2 The ANC and the Council Advisory Group on CORSIA (AGC) considered the comments received from States and international organizations in response to the above-mentioned State letter, and their recommendations were considered by the Council at its 214th Session (June 2018), leading to the adoption of Annex 16, Volume IV. At the time of issuance of this paper, the Secretariat was preparing the State letter (AN1/17.14 – 18/78) by which the adopted First Edition of Annex 16, Volume IV will be shared with Member States, and which will also include an implementation task list (**Appendix B** to this working paper reproduces this implementation task list).

5.5 Progress of the Work on the ICAO CORSIA Implementation Elements

5.5.1 The Council, at its 214th Session, approved the 2018 version of the ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT). The 2018 version of the ICAO CORSIA CERT, available on the ICAO CORSIA website, will allow operators to estimate their annual CO₂ emissions from international flights, in order for them to assess whether MRV requirements are applicable to them, and if so, whether they are eligible to use ICAO CORSIA CERT for simplified MRV procedures during the 2019-2020 period. At the same time, the Council also approved the functional requirements of the ICAO CORSIA Central Registry (CCR), which will manage information from States and operators required for the implementation of CORSIA. On the basis of the approved CCR functional requirements, the Secretariat will undertake a procurement process to select a vendor by the end of 2018.

5.5.2 Work on other ICAO CORSIA Implementation Elements, namely on CORSIA eligible emissions units and CORSIA eligible fuels, continues under the Council's Committee on Aviation Environmental Protection (CAEP), for further consideration and approval by the Council.

5.6 2018 ICAO Regional Seminars on CORSIA and CORSIA-related Outreach and Capacity Building Plan

5.6.1 Five ICAO Regional Seminars on CORSIA (State letter ENV 6/6 – 18/5) were held in March and April 2018 in Australia, Egypt, Guatemala, South Africa, and The former Yugoslav Republic of Macedonia. A total of 405 participants, representing 101 States and 14 international organizations, attended the regional seminars.

5.6.2 This series of seminars aimed to provide the participants with a clearer understanding of the CORSIA MRV requirements, as well as the associated actions and timelines by respective stakeholders (i.e. States, operators, ICAO). There was wide recognition of the urgency for the development of operators' Emissions Monitoring Plans, which should be in place for operators to start monitoring their fuel use from 1 January 2019. Several participants mentioned the need for more capacity building, seminars and training to support the implementation of CORSIA, including additional partnerships between States and with ICAO.

5.6.3 In this regard, with a view to providing further capacity building and tailored assistance to States across all regions, the Secretariat has mapped the assistance needs of States and prepared a plan with various modalities of assistance, including CORSIA buddy partnerships among States, and direct assistance by the Secretariat. In this regard, it is imperative that States nominate focal points for CORSIA as soon as possible, as per State letter ENV 6/6-18/1, in order to facilitate communication between the Secretariat and the nominated focal points. To date, 111 Member States have nominated their CORSIA Focal Points, including nine NACC States: Cuba, Dominican Republic, Honduras, Mexico, Nicaragua and United States.

5.6.4 The ICAO Secretariat is also exploring a cooperative partnership with the International Accreditation Forum (IAF) for the training of national accreditation bodies and possible verification bodies related to CORSIA verification requirements, with a view to facilitate the availability of accredited verification bodies by the time the operators' Emissions Reports need to be verified in early 2020.

5.6.5 Upon adoption of Annex 16, Volume IV and related approval of the 2018 version of the ICAO CORSIA CERT and the functional requirements of the ICAO CCR, ICAO convened the 2018 ICAO Seminar on CORSIA, held in Montréal, Canada, from 2 to 3 July 2018. The seminar provided participants with further training on the CORSIA implementation requirements.

5.6.6 Clear synergies between States' action plans and CORSIA have been recognized by States engaged in the development of their action plan. For example, action plans that contain a robust data collection, monitoring and reporting mechanism may provide a good basis from which the CORSIA MRV requirements can be implemented.

6. Action by The Meeting

6.1 The Meeting is invited to:

- a) encourage all NACC States to assign a Focal Point to lead the development of the State Action Plan, to coordinate amongst national stakeholders, to liaise with ICAO, and to submit the State Action Plan, including updated State Action Plans, as soon as possible, leading up to the 40th Session of the ICAO Assembly;
- b) take note of the synergies between the States' Action Plans initiative and CORSIA, and consider these synergies as appropriate in the preparation and update of the State Action Plans;
- c) acknowledge the progress that has been made on CORSIA, and encourage all NACC States to be ready to implement the Standards and Recommended Practices (SRPs) contained in the First Edition of Annex 16, Volume IV, while also taking into consideration the implementation task list related to Annex 16, Volume IV, as will be contained in to SL AN1/17.14 – 18/78, and as recreated in the Appendix B to this working paper;
- d) encourage all NACC States to designate a CORSIA Focal Point to facilitate communication and provision of assistance for implementation of CORSIA as detailed in paragraph 5.6.3; and
- e) encourage all NACC States to participate in the voluntary phase of CORSIA.

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APPENDIX A

Table 1. List of State Action Plan Buddy Programme Partnerships

Partner State providing support	Partner State
Bulgaria	The former Yugoslav Republic of Macedonia
Spain	Ukraine
São Tomé and Príncipe	Cabo Verde
Namibia	Zambia
Kenya	Botswana

Table 2. Status of Action Plan Focal Points and Submission of Action Plans, Amongst NACC States

STATE	FOCAL POINT APPOINTED	ACTION PLAN
Antigua and Barbuda	Yes	Not Submitted
Bahamas	No	Not Submitted
Barbados	Yes	Not Submitted
Belize	Yes	Submitted
Canada	Yes	Updated
Costa Rica	Yes	Submitted
Cuba	Yes	Updated
Dominican Republic	Yes	Updated
El Salvador	Yes	Submitted
Grenada	No	Not Submitted
Guatemala	Yes	Submitted
Haiti	No	Not Submitted
Honduras	Yes	Submitted
Jamaica	Yes	Submitted
Mexico	No	Updated
Nicaragua	Yes	Submitted
Saint Kitts and Nevis	No	Not Submitted
Saint Lucia	No	Not Submitted
Saint Vincent and the Grenadines	No	Not Submitted
Trinidad and Tobago	Yes	Updated
United States	Yes	Updated

APPENDIX B

IMPLEMENTATION TASK LIST IN RELATION TO NEW EDITION OF ANNEX 16, VOLUME IV

1. Implementation Task List

1.1 Essential steps to be followed by a State in order to implement the proposed new edition to Annex 16, Volume IV:

- a) identification of the rule-making process necessary to transpose the new ICAO provisions into national regulations;
- b) establishment of a national implementation plan that takes into account the new ICAO provisions;
- c) conduct a gap analysis between the new ICAO provisions and national framework;
- d) drafting of the necessary modifications to the national regulations;
- e) official adoption of the national regulations and means of compliance; and
- f) notification of differences, if any, to ICAO.

1.1 The following represents a checklist of important actions by States for the implementation of CORSIA from 2018 through to 2019 and 2020:

2018: Recommended Preparatory Actions Timeline for action	
Recommended Preparatory Actions (2018)	
Designate a focal point for CORSIA implementation	February 2018
Participate in ICAO's CORSIA training and capacity building	March/April 2018
Coordinate necessary actions with focal points of aeroplane operators attributed to your State	Summer 2018
Approve the aeroplane operator's Emissions Monitoring Plan	30 November 2018
Establish necessary national regulatory framework	December 2018
2019 - 2020: Baseline Period Actions (2019)	
Approve the aeroplane operator's Emissions Monitoring Plan	30 April 2019
Submit lists of aeroplane operators attributed to your State and verification bodies accredited in your State to ICAO	30 April 2019
Obtain and use ICAO document entitled "CORSIA Aeroplane Operator to State Attributions"	31 May 2019
2019 - 2020: Baseline Period Actions (2020)	
Conduct an order of magnitude check of the aeroplane operator's verified Emissions Report for 2019	1 June – 31 August 2020
Notify ICAO of your State's participation in CORSIA offsetting in year 2021	30 June 2020

Notify ICAO which option your State has selected for calculating the aeroplane operator's CO ₂ emissions during the 2021-2023 period	30 June 2020
Obtain and use the ICAO document entitled "CORSIA States for Chapter 3 State Pairs"	1 August 2020
Submit CO ₂ emissions data of 2019 to ICAO	31 August 2020
Submit updates to the list of aeroplane operators attributed to your State and updates to the verification bodies accredited in your State to ICAO	30 November 2020
Obtain and use the ICAO document entitled "CORSIA Aeroplane Operator to State Attributions"	31 December 2020