



Agenda Item 2: Global and regional civil aviation requirements and challenges

Summary of A39 Resolutions related to the environment

(Presented by the Secretariat)

SUMMARY	
This working paper presents an analysis of Resolutions A39-1, A39-2 and A39-3 emanating from the 39 th Session of the ICAO Assembly, and the action required to comply with ICAO outstanding resolutions related to the environment.	
REFERENCES	
<ul style="list-style-type: none">• 39th Session of the ICAO Assembly.• Fourth meeting of Air Navigation and Safety Directors of the SAM Region (Lima, Peru, 2-4 October 2017)	
ICAO strategic objectives	<i>B: Capacity and efficiency</i> <i>D: Economic development</i> <i>E: Environmental protection</i>

1. Background

1.1 The ICAO Assembly is the sovereign body of the Organization and meets at least every three years, convened by the governing body of ICAO, the Council.

1.2 The 39th Session of the ICAO Assembly (A39) was held from 27 September to 7 October 2016 at ICAO Headquarters in Montreal, Canada, whose main task was to establish the global aviation policy for the triennium 2017-2019.

1.3 Improving environmental performance of aviation is a challenge for ICAO. In the fulfilment of its responsibilities, the Organization developed a series of standards, policies and guidance material for the implementation of comprehensive measures to address the issue of noise and emissions by aircraft, including technological measures, operational procedures, proper organisation of air traffic, adequate airport planning and land use, and the use of market-based mechanisms (MBMs) related to carbon dioxide (CO₂) emissions.

1.4 The Agenda of the 39th Assembly addressed the following issues related to environmental protection:

- a) Aircraft noise – Policy, standardisation, and support to implementation.
- b) Aircraft engine emissions that affect local air quality – Policies, standardisation and support to implementation.
- c) International aviation and climate change – Policies, standardisation and support to implementation.

2. Discussion

2.1 In order to help reduce the impact of aviation, ICAO included environmental protection in its strategic objectives. Under this objective, ICAO activities are focused on issues that benefit from a global common coordinated approach, namely noise and emissions by aircraft. Furthermore, ICAO works with other regulatory bodies of the United Nations that have expressed an interest in civil aviation, to which it periodically provides statements regarding ICAO activities related to emissions.

2.2 Work is carried out through the Committee on Aviation Environmental Protection (CAEP) of the ICAO Council, which reviews and updates a consolidated statement of continuing ICAO policies and practices related to environmental protection every three years for approval by the ICAO Assembly. The current version of this revision is reflected in Assembly Resolutions A39-1, A39-2 and A39-3, which were approved in October 2016.

A39-1: Consolidated statement of continuing ICAO policies and practices related to environmental protection — General provisions, noise, and local air quality

2.3 With respect to noise, air quality, and land-use management, the ICAO Assembly issued Resolution A39-1, which reflected evolution following the 38th Assembly. It further recognised the responsibility of ICAO and its member States in achieving maximum compatibility between the safe and orderly development of civil aviation and the quality of the environment. In carrying out its responsibilities, ICAO and its member States will strive to limit or reduce:

- a) the number of people affected by the significant aircraft noise;
- b) the impact of aviation emissions on local air quality; and
- c) the impact of aviation greenhouse gas emissions on the global climate

2.4 Regarding noise, the Resolution urges ICAO member States and international organisations to recognise the leadership role of ICAO on matters related to aircraft noise. It also notes the continuing benefits of the more stringent aircraft noise standard in Annex 16, Volume I, chapter 4, as well as the new resolutions that will come into effect between 2017 and 2018. It also includes points related to aircraft CO₂ emissions certification (standard to take effect on 1 January 2020). It also encourages States and other stakeholders to take voluntary action to limit or reduce emissions affecting local air quality and to keep ICAO informed. Since there are still no regulations on the emission of particulate matter, both volatile and non-volatile (PM and nvPM), it urges States to continue working towards scientific understanding, in cooperation with other organisations such as WHO, and towards a better understanding of the effects of aviation emissions of PM, NO_x and other gases on human health and welfare, and to aid the development of standards for nvPM emissions.

2.5 Regarding management of the areas surrounding aerodromes, which might be affected by aircraft noise, it urged States to take preventive measures where there is the opportunity to minimise aircraft noise problems. These measures may include land-use legislation, agreements with the community, and location of airports at an appropriate place, away from noise-sensitive areas.

2.6 In general, Resolution A39-1 asks States to refrain from adopting environmental measures that would adversely affect the orderly and sustainable development of international civil aviation, recognising that standards dealing with noise and CO₂ emissions were not conceived to serve as a basis for imposing operating restrictions or emissions levies as a first resort but only after consideration of the benefits to be gained from other elements of the balanced approach and in a manner which is consistent with Appendix E to A39-1 and taking into account the possible impact of such restrictions at other airports.

A39-2: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change

2.7 A39-2 noted that ICAO and its member States recognise the importance of providing continuous leadership to international civil aviation in limiting or reducing its emissions that contribute to global climate change, as well as the vital role which aviation plays in global economic and social development, and the need to ensure that international aviation continues to develop in a sustainable manner.

2.8 ICAO set goals for attaining an environment-friendly aviation. Thus, it proposed to improve fuel efficiency by 2% per annum until 2020, and by 2% from 2021 to 2050, as a global goal, calculated on the basis of volume of fuel used per revenue tonne-kilometre performed. In order to attain this goal, the States and the relevant organisations will work through ICAO in the adoption of measures to reduce or offset CO₂ emissions in order to stabilise world net carbon emissions from international civil aviation starting in 2020.

2.9 The Assembly urged States to draft or update action plans and 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 compile information in relation to achieving its global goals. It also requested States that had already submitted action plans to share information contained in action plans and build partnerships with other States in order to support those States that have not yet prepared action plans, and to promote actions towards environmental protection, as described in item 18 of the Resolution.

2.10 The Assembly described the guiding principles for the design and implementation of market-based measures (MBMs) for international aviation, as shown in **Appendix A**.

A39-3: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global market-based measures (MBM) scheme

2.11 Assembly Resolution A38-18 decided to develop a global market-based measure (GMBM) scheme for international aviation, for decision by the 39th Session of the Assembly. It also requested the Council, with the support of member States, to organise seminars on a GMBM scheme for international aviation, addressed to officials and experts of member States as well as relevant organisations.

2.12 In 2015 and 2016, two Global Aviation Dialogues (GLADs) seminars were held to explore options for MBM implementation. At these seminars, the concern was expressed with the use of revenues obtained from aviation through MBMs, and ensuring the fair treatment of the international civil aviation sector in relation to other sectors.

2.13 The Assembly, in discussing these concerns, decided to implement a GMBM scheme, as opposed to a patchwork of State and regional MBMs, in the form of a carbon offsetting and reduction scheme for international aviation (CORSIA) to address any annual increase in total CO₂ emissions from international civil aviation above the 2020 levels.

2.14 The 39th Session of the Assembly analysed the scope of the CORSIA, taking into account aspects related to its implementation, as described in the Resolution in items 10 to 25, and presented in detail in **Appendix B**.

3. **Current status in the SAM Region**

3.1 Regarding the drafting and delivery of action plans for reducing CO₂ emissions, the status of implementation is shown in **Appendix C**.

3.2 To date, SAM States have not yet decided to join the pilot phase, nor the first phase of the CORSIA scheme. States should focus on capacity-building for the implementation of registration systems, emission units, and MRV systems by 2020, regardless of whether the State decides to join the CORSIA or not.

3.3 The SAM Plan includes an environmental protection axis. To support this axis, the Secretariat has developed a SAM ENV Plan focused on capacity-building in the States for the drafting of action plans, and the introduction of MRV systems, emission units, and the registration of emissions into national regulations. The SAM ENV plan has defined 2019 as the tentative date for starting activities.

3.4 In view of the above, the Meeting might consider formulating the following conclusion:

Draft Conclusion RAAC/15-XX – Action plan for CO₂ reduction and accession to the CORSIA Scheme

That, in order to contribute to the global ICAO goals in relation to environmental protection, SAM States:

- a) continue cooperating with ICAO for a better understanding of the effects of emissions from international aviation on the climate;
- b) consider, if they have not done it yet, the adoption of measures aimed at protecting the environment from emissions from international aviation, and develop their action plans for submission to the Secretariat before June 2018;
- c) consider the development of capacities and the inclusion of MRV systems, emission units, and registration systems into their national regulations to prepare the State for accession to the CORSIA scheme;
- d) contemplate accession to the CORSIA scheme in its first phase, or when the State considers that emission measurement, registration, and reporting systems have evolved enough; and
- e) support the objectives of the SAM Plan related to environmental protection.

4. **Suggested action**

4.1 The Meeting is invited to:

- a) take note of the information presented herein;
- b) review the information contained in section 2 and appendices A, B, and C, and, if applicable, approve the conclusion contained in paragraph 3.4; and
- c) analyse any other related issues as it may deem appropriate.

APPENDIX A**The guiding principles for the design and implementation of market-based measures (MBMs) for international aviation**

- a) MBMs should support sustainable development of the international aviation sector;
- b) MBMs should support the mitigation of GHG emissions from international aviation;
- c) MBMs should contribute towards achieving global aspirational goals;
- d) MBMs should be transparent and administratively simple;
- e) MBMs should be cost-effective;
- f) MBMs should not be duplicative and international aviation CO₂ emissions should be accounted for only once;
- g) MBMs should minimize carbon leakage and market distortions;
- h) MBMs should ensure the fair treatment of the international aviation sector in relation to other sectors;
- i) MBMs should recognize past and future achievements and investments in aviation fuel efficiency and in other measures to reduce aviation emissions;
- j) MBMs should not impose inappropriate economic burden on international aviation;
- k) MBMs should facilitate appropriate access to all carbon markets;
- l) MBMs should be assessed in relation to various measures on the basis of performance measured in terms of CO₂ emissions reductions or avoidance, where appropriate;
- m) MBMs should include *de minimis* provisions;
- n) where revenues are generated from MBMs, it is strongly recommended that they should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions, including mitigation and adaptation, as well as assistance to and support for developing States;
- o) where emissions reductions are achieved through MBMs, they should be identified in States' emissions reporting; and
- p) MBMs should take into account the principle of common but differentiated responsibilities and respective capabilities, the special circumstances and respective capabilities, and the principle of non-discrimination and equal and fair opportunities.

APPENDIX B**Aspects to be considered regarding the study for Plan CORSIA Implementation**

9. *Decides* the use of a phased implementation for the CORSIA to accommodate the special circumstances and respective capabilities of States, in particular developing States, while minimizing market distortion, as follows:
- a) Pilot phase applies from 2021 through 2023 to States that have volunteered to participate in the scheme. States participating in this phase may determine the basis of their aircraft operator's offsetting requirements from paragraph 11 e) i) below;
 - b) First phase applies from 2024 through 2026 to States that voluntarily participate in the pilot phase, as well as any other States that volunteer to participate in this phase, with the calculation of offsetting requirements in paragraph 11 a) below;
 - c) All States are strongly encouraged to voluntarily participate in the pilot phase and the first phase, noting that developed States, which have already volunteered, are taking the lead, and that several other States have also volunteered;
 - d) The Secretariat will make public on the ICAO website updated information on the States that volunteered to participate in the pilot phase and first phase;
 - e) Second phase applies from 2027 through 2035 to all States that have an individual share of international aviation activities in RTKs in year 2018 above 0.5 per cent of total RTKs or whose cumulative share in the list of States from the highest to the lowest amount of RTKs reaches 90 per cent of total RTKs, except Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs) unless they volunteer to participate in this phase;
 - f) States that are exempted or have not yet participated are strongly encouraged to voluntarily participate in the scheme as early as possible, in particular those States that are members of a regional economic integration organization. States who decide to voluntarily participate in the scheme, or decide to discontinue the voluntary participation from the scheme, may only do so from 1 January in any given year and they shall notify ICAO of their decision by no later than 30 June of the preceding year;
 - g) Starting in 2022, the Council will conduct a review of the implementation of the CORSIA every three years, including its impact on the growth of international aviation, which serves as an important basis for the Council to consider whether it is necessary to make adjustments to the next phase or compliance cycle and, as appropriate, to recommend such adjustments to the Assembly for its decision;
10. *Decides* that the CORSIA shall apply to all aircraft operators on the same routes between States with a view to minimizing market distortion, as follows:
- a) all international flights on the routes between States, both of which are included in the CORSIA by paragraph 9 above, are covered by the offsetting requirements of the CORSIA;

- b) all international flights on the routes between a State that is included in the CORSIA and another State that is not included in the CORSIA by paragraph 9 above are exempted from the offsetting requirements of the CORSIA, while retaining simplified reporting requirements; and
 - c) all international flights on the routes between States, both of which are not included in the CORSIA by paragraph 9 above, are exempted from the offsetting requirements of the CORSIA, while retaining simplified reporting requirements;
11. *Decides* that the amount of CO₂ emissions required to be offset by an aircraft operator in a given year from 2021 is calculated every year as follows:
- a) an aircraft operator's offset requirement = [% Sectoral × (an aircraft operator's emissions covered by CORSIA in a given year × the sector's growth factor in the given year)] + [% Individual × (an aircraft operator's emissions covered by CORSIA in a given year × that aircraft operator's growth factor in the given year);
 - b) where the sector's growth factor = (total emissions covered by CORSIA in the given year – average of total emissions covered by CORSIA between 2019 and 2020) / total emissions covered by CORSIA in the given year;
 - c) where the aircraft operator's growth factor = (the aircraft operator's total emissions covered by CORSIA in the given year – average of the aircraft operator's emissions covered by CORSIA between 2019 and 2020) / the aircraft operator's total emissions covered by CORSIA in the given year;
 - d) where the % Sectoral = (100% – % Individual) and;
 - e) where the % Sectoral and % Individual will be applied as follows:
 - i. from 2021 through 2023, 100% sectoral and 0% individual, though each participating State may choose during this pilot phase whether to apply this to:
 - a) an aircraft operator's emissions covered by CORSIA in a given year, as stated above, or
 - b) an aircraft operator's emissions covered by CORSIA in 2020;
 - ii. from 2024 through 2026, 100 % sectoral and 0% individual;
 - iii. from 2027 through 2029, 100 % sectoral and 0% individual;
 - iv. from 2030 through 2032, at least 20% individual, with the Council recommending to the Assembly in 2028 whether and to what extent to adjust the individual percentage;
 - v. from 2033 through 2035, at least 70% individual, with the Council recommending to the Assembly in 2028 whether and to what extent to adjust the individual percentage;
 - f) the aircraft operator's emissions and the total emissions covered by CORSIA in the given year do not include emissions exempted from the scheme in that year;

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- g) the scope of emissions in paragraphs 11 b) and 11 c) above will be recalculated at the start of each year to take into account routes to and from all States that will be added due to their voluntary participation or the start of a new phase or compliance cycle;
12. *Decides* that a new entrant¹ is exempted from the application of the CORSIA for three years or until the year in which its annual emissions exceed 0.1 per cent of total emissions in 2020, whichever occurs earlier. From the subsequent year, the new entrant is included in the scheme and treated in the same way as the other aircraft operators.
13. *Decides* that, notwithstanding with the provisions above, the CORSIA does not apply to low levels of international aviation activity with a view to avoiding administrative burden: aircraft operators emitting less than 10,000 metric tonnes of CO₂ emissions from international aviation per year; aircraft with less than 5,700 kg of Maximum Take Off Mass (MTOM); or humanitarian, medical and firefighting operations;
14. *Decides* that the emissions that are not covered by the scheme, as the results of phased implementation and exemptions, are not assigned as offsetting requirements of any aircraft operators included in the scheme;
15. *Notes* the work of the Council, with the technical contribution of CAEP, on: a) the monitoring, reporting and verification (MRV) system; b) recommended criteria for emissions units to be purchased by aircraft operators that take into account developments in the UNFCCC process; c) and registries under the CORSIA, and *requests* the Council, with the technical contribution of CAEP, to complete its work as soon as possible including the provision of capacity building and assistance, so as to enable the full implementation of the CORSIA from 2020;
16. *Decides* a three year compliance cycle, starting with the first cycle from 2021 to 2023, for aircraft operators to reconcile their offsetting requirements under the scheme, while they report the required data to the authority designated by the aircraft operator's State of registry every year;
17. *Decides* on the need to provide for safeguards in the CORSIA to ensure the sustainable development of the international aviation sector and against inappropriate economic burden on international aviation, and *requests* the Council to decide the basis and criteria for triggering such action and identify possible means to address these issues;
18. *Decides* that a periodic review of the CORSIA is undertaken by the Council, for consideration by the Assembly, every three years from 2022 for the purpose referred to in paragraph 9 g) above and to contribute to the sustainable development of the international aviation sector and the effectiveness of the scheme. This will involve, inter alia:
- a) assessment of: progress towards achieving the ICAO's global aspirational goal; the scheme's market and cost impact on States and aircraft operators and on international aviation; and the functioning of the scheme's design elements;
 - b) consideration of the scheme's improvements that would support the purpose of the Paris Agreement, in particular its long-term temperature goals; and update the scheme's design elements to improve implementation, increase effectiveness, and minimize market distortion, taking into account the consequential impact of changing the scheme's design elements, e.g., to MRV requirements; and

- c) a special review by the end of 2032 on termination of the scheme, its extension or any other improvements of the scheme beyond 2035, including consideration of the contribution made by aircraft technologies, operational improvements and sustainable alternative fuels towards achieving the ICAO's environmental objectives;
19. *Determines* that the CORSIA or any other scheme decided by the Assembly is to be the market-based measure applying to CO₂ emissions from international aviation;
20. *Requests* the following actions be taken, with a view to establishing necessary mechanisms for implementation of the CORSIA from 2020:
Regarding the implementation of the MRV system,
- a) the Council to develop, with the technical contribution of CAEP, the SARPs and related guidance material for the implementation of the MRV system under the CORSIA, including simplified MRV procedures, for adoption by the Council by 2018;
 - b) all Member States whose aircraft operator undertakes international flights to develop the necessary arrangements, in accordance with the MRV SARPs, for implementation from 1 January 2019;

Regarding the Emissions Unit Criteria (EUC),

- c) the Council to develop, with the technical contribution of CAEP, the SARPs and related guidance material for Emissions Unit Criteria (EUC) to support the purchase of appropriate emissions units by aircraft operators under the scheme, taking into account relevant developments in the UNFCCC and Article 6 of the Paris Agreement, for adoption by the Council as soon as possible but not later than 2018;
- d) the Council to establish, with the technical contribution of CAEP, a standing technical advisory body on the Emissions Unit Criteria (EUC) to make recommendations to the Council on the eligible emissions units for use by the CORSIA;
- e) the Council, with the technical contribution of CAEP, to periodically review the EUC SARPs and related guidance material, as appropriate, to promote compatibility with future relevant decisions under the Paris Agreement;

Regarding the establishment of Registries,

- f) the Council to develop, with the technical contribution of CAEP, policies and related guidance material to support the establishment of registries under the scheme, for adoption by the Council by 2018;
- g) the Council to establish a consolidated central registry under the auspices of ICAO, for operationalization no later than 1 January 2021;
- h) Member States to develop necessary arrangements for the establishment of their own registries or group registries established by groups of States, or to arrange for participation in other registries, in accordance with the ICAO guidance;

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Regarding the governance of the CORSIA,

- i) the Council to oversee the functioning of the CORSIA, with support provided by the standing technical advisory body and CAEP as needed;

Regarding the regulatory framework,

- j) Member States to take necessary action to ensure that the necessary national policies and regulatory framework be established for the compliance and enforcement of the scheme by 2020.
21. *Decides* that emissions units generated from mechanisms established under the UNFCCC and the Paris Agreement are eligible for use in CORSIA, provided that they align with decisions by the Council, with the technical contribution of CAEP, including on avoiding double counting and on eligible vintage and timeframe;
22. *Decides* that ICAO and Member States take all necessary actions in providing the capacity building and assistance and building partnerships for implementation of the CORSIA from 2020, including:

Regarding the implementation of the MRV system,

- a) the Council to take necessary action to expand the provision of capacity building and assistance for the preparation and implementation on Member States' action plans, in order to accommodate capacity building and assistance for implementation of the MRV system by Member States from 1 January 2019, including organization of seminars and training in all regions from 2017, and facilitation of financial support where needed, in particular for those States that volunteer to participate in the pilot phase and require support to do so;
- b) Member States to build partnerships among themselves to cooperate on the implementation of the MRV system;

Regarding the establishment of Registries,

- c) the Council to take necessary action to expand the provision of capacity building and assistance for the preparation and implementation on Member States' action plans, in order to accommodate capacity building and assistance for establishment of registries by States, including organization of seminars and training in all regions from 2017, and facilitation of financial support where needed, in particular for those States that volunteer to participate in the pilot phase and require support to do so;
 - d) Member States to build partnerships among themselves to cooperate on the establishment of their own registries or group registries established by groups of States, and possible pilot implementation;
23. *Decides* that the CORSIA will use emissions units that meet the Emissions Unit Criteria (EUC) in paragraph 20 above;
24. *Requests* the Council to promote the use of emissions units generated that benefit developing States, and *encourages* States to develop domestic aviation-related projects;

25. *Requests* the Council to explore further development of aviation-related methodologies for use in offsetting programmes, including mechanisms or other programmes under the UNFCCC, and *encourages* States to use such methodologies in taking actions to reduce aviation CO₂ emissions, which could further enable the use of credits generated from the implementation of such programmes by the CORSIA, without double-counting of emissions reduction.

APPENDIX C**Current Status of Action Plans of CO₂ Emissions Reduction in the SAM Region**

States	Submitted	Date of updated
Argentina	Yes	Feb/2013
Brazil	Yes	Set/2016
Bolivia	No	
Chile	No	
Colombia	Yes	Aug/2012
Ecuador	Yes	Oct/2016
French Guyana	Yes	Jun/2015
Guyana	No	
Paraguay	No	
Panama	No	
Peru	No	
Suriname	No	
Uruguay	Yes	Sep/2017
Venezuela	Yes	Jun/2012