



WORKING PAPER

CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

Mexico City, Mexico, 11 to 13 October 2017

Agenda Item 1: Developments in research and certification of aviation alternative fuels

FOLLOW UP ON CAAF/1 RECOMMENDATIONS

(Presented by the ICAO Secretariat)

SUMMARY

Several recommendations were agreed during the first Conference on Aviation and Alternative Fuels (CAAF/1) held in Rio de Janeiro, Brazil from 16 to 18 of November, 2009. This working paper intends to provide a follow up on these recommendations.

Action by the Conference is in paragraph 7.

1. INTRODUCTION

1.1 During the first Conference on Aviation and Alternative Fuels (CAAF/1) held in Rio de Janeiro, Brazil from 16 to 18 of November 2009, ICAO Member States, industry and organizations from around the world gathered to consider the way forward for aviation alternative fuels (AAFs). Various issues concerning AAFs were considered, such as environmental sustainability and interdependencies, technological feasibility and economic reasonableness, measures to support development and use, as well as production and infrastructure. The Conference acknowledged the use of AAFs, and specifically sustainable aviation fuels (SAFs), as an important means of reducing aviation emissions. The report of the Conference was published as ICAO Doc 9933.

1.2 The Conference agreed on a declaration and several recommendations that were contained in CAAF/09-WP/24 Revised, and published in ICAO Doc 9933. The working papers (WP) and all the other documents that were discussed at the Conference are available on the CAAF/1 webpage¹.

1.3 This WP summarizes the progress that has been made towards the recommendations agreed at CAAF/1.

¹ <https://www.icao.int/Meetings/caaf2009/Pages/CAAF-Documentation.aspx>

2. ICAO GLOBAL FRAMEWORK FOR AVIATION ALTERNATIVE FUELS

2.1 As the result of CAAF/1 recommendations, the ICAO Global Framework for Aviation Alternative Fuels (GFAAF) was created and made available on the ICAO website². GFAAF is a global platform where information on worldwide initiatives and actions on AAFs are shared. The website includes a live feed of flights operating with AAFs, provides information about AAF initiatives and projects from around the world, the latest news, related facts and figures, and links to literature and other references. The GFAAF also contains a frequently asked questions section which provides background information on AAFs.

2.2 More than 500 announcements associated with AAFs have been registered on the GFAAF, and to this date, 35 initiatives have been registered on the website, from which 20 are still active in 2017. The framework has been continuously updated by ICAO, whenever new information is provided by Member States, International Observer Organizations, or other industry stakeholders.

3. INTERNATIONAL COOPERATION

3.1 Since CAAF/1, ICAO and its Member States have been working together expeditiously with the industry to foster the development and deployment of AAFs. These efforts have been registered in the respective State Action Plans on CO₂ Emissions Reduction Activities for international aviation, which are submitted by ICAO Member States to ICAO. As of July 2017, 103 ICAO Member States, which represent 90.1% of global revenue tonne kilometre (RTK), have voluntarily submitted Action Plans to ICAO. 35 of these Action Plans mention the intention of using AAFs to mitigate part of their CO₂ emissions associated with international aviation operations.

3.2 ICAO, as recommended by CAAF/1, has continued to seek funding possibilities to support the development and deployment of AAFs and other measures to reduce CO₂ emissions. Examples include the partnerships with the European Union (EU) and the United Nations Development Programme (UNDP), which continues to allow the realization of projects in some African States and the Caribbean. These projects enabled a change in the way these States work towards environmental aspects of aviation by triggering synergies amongst national stakeholders, facilitating the decision-making process and securing the financial and political support for the implementation of mitigation measures. More information on these initiatives is provided in CAAF/2-IP/02.

3.2.1 The partnerships formed as a part of these assistance projects also showcase the spirit of the ICAO “No Country Left Behind” (NCLB) campaign, established in 2014³. This campaign promotes improved communication between ICAO and its Member States and encourages increased coordination between Member States. Following the success of ICAO partnership projects, and in the interest of the NCLB campaign, ICAO will continue to promote similar partnerships between ICAO Member States in the future, including those that share information and best practices related to the development of supply chains for SAFs.

3.3 Facilitation of international dialogue between AAFs stakeholders has been constantly pursued by ICAO, in line with recommendations provided in 2009. This has been translated in the convening of several events related to AAFs since 2009, such as the “**ICAO Aviation and Sustainable Alternative Fuels Workshop**”, in 2011; the “**United Nations Conference on Sustainable**

² www.icao.int/environmental-protection/GFAAF/Pages/default.aspx

³ <https://www.icao.int/about-icao/NCLB/Pages/default.aspx>

Development and ICAO’s special Flightpath to a Sustainable Future”, in 2012; the **“Destination Green Symposium**”, in 2013; the **“Fuelling Aviation with Green Technology Seminar**”, in 2014, and the **“ICAO’s Global Aviation Partnerships on Emissions Reductions (E-GAP): Multiplying Environmental Action Seminar**”, in 2015. These events are described in more detail in Appendix A to this paper. Specifically and most recently, the **“ICAO Alternative Fuels Seminar**” held from 8 to 9 February 2017 in Montreal, Canada, reviewed the state of worldwide activities on the use of AAFs, as a preparatory event for the current CAAF/2. The main conclusions of this Seminar are summarized in CAAF/2-WP/05.

3.4 Since CAAF/1, the Assembly Resolutions A37-19, A38-19, and A39-2 reflected ICAO’s continuous commitment in addressing climate change, and recognized the significance of AAFs on this objective.

4. ICAO COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION - ALTERNATIVE FUELS TASK FORCE

4.1 The CAAF/1 declaration recognized the need for a common definition of sustainability requirements at the international level, and also requested ICAO to facilitate efforts to develop a lifecycle analysis framework for comparing the relative greenhouse gas (GHG) emissions from SAFs to the life cycle of conventional aviation fuels (CAFs). In this regard, Resolution A39-2 requested ICAO Member States to “recognize existing approaches to assess the sustainability of all alternative fuels in general, including those for use in aviation which should achieve net GHG emissions reduction on a life cycle basis”. These issues are being analysed by the Alternative Fuels Task Force (AFTF), which was created in 2013 under the Committee on Aviation Environmental Protection (CAEP), which is a Committee of the ICAO Council. More information on AFTF work is provided in CAAF/2-IP/01.

4.2 During CAAF/1 it was also acknowledged that ICAO should encourage the development of policy actions by Member States to accelerate the appropriate advancements of SAFs. In this regard, Resolution A39-2 requested ICAO Member States to “set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate development, deployment and use of clean and renewable energy sources for aviation, including the use of sustainable alternative fuels, in accordance with their national circumstances”. On that matter, the work of CAEP has been ongoing with regard the creation of guiding principles and recommendations to support adoption of national/regional policies on SAFs. Information about that work is provided in CAAF/2-WP/11. Additionally, CAAF/2-WP/12 provides an outline of the challenges concerning policy making.

5. FINANCING

5.1 Financing for AAF projects was also considered during CAAF/1. ICAO is taking the necessary steps to foster a framework for financing infrastructure development projects dedicated to SAFs and incentives to overcome initial market hurdles. CAAF/2-WP/10 outlines sources of financing for AAFs projects. Additionally, CAAF/2-WP/09 identifies opportunities for possible generation of carbon credits through alternative fuel projects, as a possible means to mitigate projects’ investment cost.

6. UPDATE TO CONFERENCE OF THE PARTIES TO THE UNFCCC

6.1 As recommended by CAAF/1, ICAO updated the 15th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP15) in

December 2009 with the results of CAAF/1 on the development and deployment of AAFs. The CAAF/1 Declaration, the ICAO Global Framework for Aviation Alternative Fuels and the outcomes of the High-level Meeting on International Aviation and Climate Change (HLM-ENV) were presented as the ICAO input to COP15.

6.2 Additionally, ICAO continued to make submissions to UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) on the work on AAFs during COP 17 (Durban, South Africa, 2011), COP18 (Doha, Qatar, 2012), COP19 (Warsaw, Poland, 2013), COP20 (Lima, Peru, 2014).

6.3 COP16 (Cancun, Mexico, 2010), and COP 22 (Marrakech, Morocco, 2016) reported on AAFs by appending the most recent ICAO Resolution on Climate Change. COP21 (Paris, France, 2015), included the *ICAO Council Declaration on International Aviation and Climate Change* (18 November 2015), which reaffirms action on AAFs.

7. ACTION BY THE CAAF2

7.1 The CAAF2 is invited to:

- a) recognize the international progress that has been made since CAAF/1;
- b) acknowledge the ICAO efforts to foster international cooperation by means of dedicated workshops and seminars;
- c) request States and International organizations to establish proper processes to ensure that ICAO is informed of new initiatives associated with SAFs, for a proper update of the GFAAF website;
- d) continue to support ICAO efforts for international cooperation on SAFs development and deployment; and
- e) acknowledge the work that remains to be done and identify areas of priority.

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APPENDIX

EVENTS PROMOTED BY ICAO ON AAFs

- The **“ICAO Aviation and Sustainable Alternative Fuels Workshop”**, held from 18 to 20 October 2011 in Montreal, Canada, discussed the sustainability of AAFs from the perspective of States and International Organizations, providing views from Industry as well as Research fields. The workshop also discussed regulatory and sustainability frameworks, life cycle analysis and deployment challenges.
- **“United Nations Conference on Sustainable Development and ICAO’s special Flightpath to a Sustainable Future”** This initiative took place as a side event during the United Nations Conference on Sustainable Development (Rio +20), held in Rio de Janeiro, Brazil, in 2012, and included the first-ever series of connecting flights powered by AAFs, on which the ICAO Secretary General set out from Montreal to Rio de Janeiro for the Conference.
- The **“Destination Green Symposium”** held on 13-16 May 2013 in Montreal, Canada, discussed several topics associated with aviation and environment, such as SAFs, environmental goals, data and tools, technology and operations, global emissions and market-based measures, partnerships and cooperation with other organizations, financing and assistance. Future challenges were also identified and discussed.
- The **“Fuelling Aviation with Green Technology Seminar”** organized on 9 and 10 September 2014 in Montreal, Canada, provided an opportunity to gain knowledge and share information on the latest and most innovative technologies for use in the reduction of aviation emissions as well as addressing topics such as next generation aircraft, research programmes, airplane recycling, green operations, eco-airports, clean energy for aviation and financing. This Seminar served as the basis for the Organization’s contribution to the 2014 UN Summit on Climate Change.
- The **“ICAO’s Global Aviation Partnerships on Emissions Reductions (E-GAP): Multiplying Environmental Action Seminar”** took place on 16 and 17 September 2015 in Montreal, Canada. It provided a forum to showcase the synergetic effects of ICAO’s ongoing partnerships with governments and other organizations for actions to reduce emissions from international aviation, giving consideration to the results achieved through high-level engagement of Member States, in cooperation with other stakeholders, under the ICAO State Action Plans strategy for capacity building and assistance.
- The **“ICAO Alternative Fuels Seminar”** held from 8 to 9 February 2017 in Montreal, Canada, reviewed the state of worldwide activities on the use of AAFs, life cycle analysis methodologies and sustainability criteria, financing and assistance programmes, and the legal and regulatory frameworks that support the development and deployment of AAFs. The Seminar also discussed the role of AAFs in States’ Voluntary Action Plans for reducing CO₂ emissions, financing and assistance projects, and policy challenges including the role of SAFs in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This was a preparatory event for the current CAAF/2, and its main conclusions are summarized in CAAF/2-WP/05.