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WORKING PAPER

CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

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Agenda Item 4: Defining the ICAO vision on aviation alternative fuels and future objectives

DEVELOPMENT OF SUSTAINABLE AVIATION FUELS AND THE ICAO VISION

(Presented by Mexico[1])

SUMMARY

This paper summarizes the current status for the development and deployment of sustainable aviation fuels (SAF), and supports the need for an international Vision to encourage States to take policy actions on the national and international levels to further develop and deploy.

Action by the Conference is in paragraph 5.

1. INTRODUCTION

1.1 Mexico fully supports the role of ICAO being at the forefront in facilitating the development and deployment of sustainable aviation fuel (SAF) on a worldwide basis. In 2009, ICAO held the first Conference on Aviation and Alternative Fuels. Mexico is now pleased to host the Second Conference on Aviation and Alternative Fuels.

1.2 In demonstrating its commitment to production and use of alternative jet fuels, Mexico has done specific actions and taken important steps to reduce CO_2 emissions from aviation, including the use of SAF.

1.3 In 2012, on the occasion of the United Nations Conference on Sustainable Development, so called Rio+20 conference, ICAO organized the first-ever series of connecting flights powered by aviation alternative fuels on which the ICAO Secretary General travelled from Montréal, Canada to Rio de Janeiro, Brazil. To date, more than 40,000 commercial flights have been operated globally using at least some SAF, and the number is expected to grow significantly in the coming years, as more alternative fuel development and deployment projects are announced every year.

1.4 Regarding the fuel certification, ASTM has certified five pathways for the development of aviation alternative fuels. These pathways enable a broad selection of feedstocks to be converted into aviation alternative fuels. Numerous additional pathways are currently under review for ASTM approval.

[1] The Spanish version of this paper was provided by Mexico.

1.5 These achievements demonstrate that drop-in aviation alternative fuels are a technically sound solution that would not require changes to aircraft or fuel delivery infrastructure. Deploying these fuels in aviation as a means to limit carbon emissions is of particular relevance as aviation, unlike road-transportation, has no alternatives to liquid fuels for the foreseeable future. In addition, the concentration of aviation fuel distribution on a limited set of locations can facilitate the deployment of novel fuels for which the aviation sector has confirmed a strong interest.

2. SUSTAINABLE AVIATION FUELS – RECENT DEVELOPMENTS

2.1 ICAO's CAEP recently reported CO_2 emissions trends from international aviation to the ICAO 39th Assembly. These trends show that up to 2 per cent of aviation fuel consumption could consist of sustainable aviation fuels in 2020. While significant uncertainties exist in predicting the contribution of sustainable aviation fuels in the long-term, CAEP evaluated scenarios showing it may be possible that up to 100 per cent of international aviation jet fuel demand could be met using sustainable aviation fuels in 2050. A summary of this trends assessment was provided in CAAF/2-WP/06.

2.2 The future development and use of SAF will highly depend on the policies and incentives in place for such fuels, and also the environmental and economical effectiveness of their use. Based on the analysis assumptions, if enough SAF were produced in 2050 to completely replace petroleum-derived jet fuel, it would reduce net CO_2 emissions by 63 per cent.

2.3 In 2011, the Mexican Federal Government´s decentralized agency, Airports and Auxiliary Services (ASA) developed a comprehensive fuel programme that identified existing and missing elements for the supply of AAF in Mexico. The objective of the program was to supply 15% of the aviation fuel demand with aviation and alternative fuels (AAF) by 2020. This program has allowed the first commercial flights operated on AAF to be conducted between 2011 and 2012. Consequently with this development in Mexico, ASA has an inventory of alternative fuels available for use in greener flights.

2.4 In 2016, the Mexican government, through the Sectorial Energy Sustainability Fund (SENER-CONACYT), approved the financing of a research and development program for sustainable aviation fuels in Mexico. The program is a collaboration between the Potosino Institute for Scientific and Technological Research (IPICYT), 8 public research centers, 2 international research institutes, Boeing and Aeroméxico. It includes the development of raw materials such as Jatropha and Salicornia, as well as the construction of 2 demonstrative plants with different processing technologies; the certification of sustainability and the creation of business plans that contribute to the viability of this type of fuels. An example of inter-institutional collaboration is the "Clúster bioturbosina" program that works in collaboration with several Mexican ministries, mainly the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), and the Secretariat of Environment and Natural Resources (SEMARNAT).

2.5 Mexico, within the framework of the Committee on the Environment for Aviation (CMAA) established to support efforts to mitigate greenhouse gas emissions in the atmosphere of Mexican civil aviation, has created a Sub-Working Group on "Biofuels" integrated by ASA, the Potosino Institute of Scientific and Technological Research AC (IPICyT), air transport carriers and entities interested in the research and application of technology to establish the necessary means for the sustainability of the manufacture of biofuels for use in aviation, envisaging the active participation of the Ministries of Agriculture of the States of the Mexican Republic and the development of the appropriate regulation for this purpose.

3. GLOBAL FRAMEWORK FOR AVIATION ALTERNATIVE FUELS

3.1 Following the Conference on Aviation Alternative Fuels in Rio de Janeiro, States urged ICAO to highlight the significance of the CO_2 reduction potential from SAF in part by establishing a Global Framework for Aviation Alternative Fuels (GFAAF) on aviation and sustainable alternative fuels. Since then, the GFAAF has become an essential reference on SAF, a place to communicate what individual and shared efforts expect to achieve with sustainable aviation fuel, and a source of inspiration for aviation in the future.

3.2 Mexico has found the information available through GFAAF to be very valuable. It provides an opportunity to exchange information and experiences between ICAO members interested in or in the process of developing activities for the use and exploitation of SAF.

3.3 The Resolution A39-2, adopted by the 39th Assembly in 2016, requested Member States to develop policy actions to accelerate the appropriate development, deployment and use of sustainable aviation fuels, as part of a basket of measures to limit carbon emissions from international aviation.

3.4 At this the Second Conference on Aviation and Alternative Fuels it is appropriate time to take stock of the recent achievements and subsequently to develop a global ICAO vision to encourage States to take policy actions on the national and international levels to further develop and deploy SAF. This would further strengthen the contribution of ICAO and its Member States to the UN Sustainable Development Goals.

3.5 Also, this second Conference on Aviation and Alternative Fuels provides a unique opportunity to consider in a broad and inclusive manner, the challenges that still prevail for production, use and deployment of sustainable aviation fuels. Some of the challenges that Mexico believes should be discussed and agreed in a common understanding are: financing and incentives; sustainability of the supply chain; carbon price; timely transfer of technology; as well as a flexible and balanced approach to the SAF, enabling the Conference to settle an ambitious Vision. There is no doubt to achieve the above, public and private partnerships, as well as cooperation between States and other interested parties in the multilateral framework offered by ICAO will be important.

4. CONCLUSION

4.1 While significant technological advances have been made and various initiatives are taken by governments and the aviation/alternative fuel industry so far, a global vision needs to be developed under ICAO for SAF as a way of encouraging necessary actions in further developing and deploying sustainable aviation fuels. Mexico considers that the proposed ICAO Vision 2050, as an inspirational Vision, is adequate to this objective that will require action by the Member States.

5. ACTION BY THE CAAF/2

5.1 The CAAF/2 is invited to:

a) acknowledge the need for a unified vision of what the SAF industry must accomplish to achieve the CO_2 emissions reductions that have been endorsed by the international aviation industry;

b) invite States to promote, through the national entities concerned, activities for the research and sustainable development of aviation alternative fuels, with relevant activities on their regulation and economic viability.

c) agree that the proposed ICAO Vision is adequate to the objective of encouraging States to take action at national and international levels to further develop and deploy sustainable aviation fuels; and

d) agree to work collaboratively to achieve the ICAO Vision 2050.

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