International Civil Aviation Organization

CAAF/2-WP/26
2/10/17
English only

WORKING PAPER

CONFERENCE ON AVIATION AND ALTERNATIVE FUELS

Mexico City, Mexico, 11 to 13 October 2017

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

CHINA'S POSITION ON THE DEVELOPMENT OF ICAO VISION FOR AAF

(Presented by China)

SUMMARY

China welcomes a practicable ICAO Vision for Aviation Alternative Fuels (AAF) to be developed through substantial consultation and discussion among States. This paper elaborates on China's efforts to facilitate the application of the aviation alternative fuels and serious concerns on some of ICAO's AAF initiatives, the assumption on the deployment objective and the standardization of "sustainability" in particular.

Action by the Conference is in paragraph 5.

1. INTRODUCTION

1.1 AAF is a one of the elements of the ICAO basket of measures. ICAO anchors its hope to achieve the so-called CNG 2020 goal on the commercial-scale adoption and deployment of AAF.

1.2 An optimistic scenario for the broad replacement of the fossil fuels with AAF assumes the reduction of the volume of CO_2 emissions in international civil aviation by 63 % as compared to 2005 base line[1].

1.3 Also, ICAO acknowledges that "significant challenges remain before alternative jet fuels will be available in significant quantities worldwide" and "Significant uncertainties exist in predicting the contribution of sustainable alternative fuels in the long-term". [2]

1.4 In the context of the building the eco-civilization, China is striving for the development of a green civil aviation based on national circumstances and capabilities and is willing to contribute its due share to advance a fair and reasonable, win-win cooperative multilateral system to address

[1] See A39-WP/56.
[2] See A39-WP/55, A39-WP/56.

international aviation emissions. China sees AAF as one of the potential measures to limit the emissions of civil aviation

1.5 Alternative Fuel Task Force (AFTF) of the CAEP is intending to develop some sustainability accreditation standards/criteria. Without the basis on sound science and full consideration of different national circumstances, such intention would hamper rather than facilitate States' willingness to promote the deployment of AAF.

2. CHINA'S EFFORTS TO ADOPT AND DEPLOY AAF

2.1 Since 2009, China has been in the pursuit of the adoption and deployment of AAF and been proactively participated in the ICAO CAAF-1 in 2009.

2.2 Airlines in China have worked jointly with stakeholders, home and abroad, to pursue the adoption of the AAF in the past few years.

2.2.1 Air China, with PetroChina, Boeing and Honeywell UOP, conducted a biofuel demonstration flight in 2011, partially powered by jatropha-based fuel.

2.2.2 China Eastern, with Sinopec and Airbus, conducted a biofuel demonstration flight in 2013, partially powered by palm-based fuel.

2.2.3 Hainan Airlines, with Sinopec and Boeing, made passenger flight from Shanghai to Beijing in 2015, using biofuel produced from waste cooking oil collected from restaurants in China.

2.2.4 According to some Chinese scholars and airlines, the biggest barrier for the wide adoption of the AAF is the high cost[3].

2.3 The Civil Aviation Administration of China (CAAC) granted the Chinese Technical Standard Order Authorization (CTSOA) for bio jet fuel production to Sinopec in 2014 and the biological jet fuel that Sinopec made from rape seed, cotton seed and waste oil is now qualified for industrial production.

2.4 The CAAC will continue to regulate and monitor the development of the AAF to ensure it meets relevant safety standards.

3. CONCERNS ON SOME OF THE ICAO AAF INITIATIVES

3.1 China, along with other States, welcomes initiatives to facilitate the maximum contribution of sustainable aviation fuels to the environmentally sustainable future of international aviation.

3.2 China has serious concerns on ICAO's assumed SAF production of 5 Mt/year for international aviation for the 2025 short-term deployment of SAF and the four SAF deployment scenarios (4%, 28%, 50%, and 100%) with associated assumptions presented in CAAF/2-WP/06. Such assumption,

[3] See http://www.chinadaily.com.cn/bizchina/2013-04/25/content_16447065_2.htm and http://www.eco-business.com/news/hainan-airlines-makes-nations-first-biofuel-powered-passenger-flight/

developed without fully political and technical consultations among States, is arbitrary in light of significant uncertainties of the production capacity of the AAF. For this reason, we share with CAAF/2-WP/14 the point that "*policy must be based on sound science and realistic assumptions about the availability of relevant feedstocks for the production of such fuels*".

3.2.1 How to narrow down the gap between the desired contribution of AAF and the required investment is far from clear. During 1975-2011, the total annual volumes of global ethanol and biodiesel production is 10-45Mt/year and the number of new biorefineries is 5-60/year while the desired AAF contribution to GHG emission reduction from international aviation requires the AAF production of 30-870 Mt/year and the capital investment of $1B-$50B/year by 2050[4], depending on different scenarios of GHG emission reduction.

3.2.2 The air, water and land use concerns on AAF has yet to be addressed. According to *biofuel.org.uk*[5], biofuel production uses anywhere from 2 to 84 times as much water as fossil fuel production and requires a large amount of land to meet the need of the global aviation industry, which in turn would induce starvation risk for countries, developing countries with large population in particular.

3.2.3 As a result, there is a big uncertainty of AAF on its contribution to the emissions reduction of international aviation. The so-called CNG2020 goal which is majorly based on commercial-scale adoption of AAF is hence arbitrary and less scientific, a fortiori, impracticable.

3.3 AFTF of ICAO CAEP is intending to develop some standards or criteria to define the sustainability of AAF, which the AFTF has different ideas and China has very serious concerns on.

3.3.1 China agrees that only sustainable AAF has a capacity for the real CO_2 emissions reduction. However, to define sustainability is more a political option than a mere technical assumption and one-cut-for-all standards/criteria for sustainability will never work.

3.3.2 Different national circumstances will result in different implications for sustainability. That is why a publicly accepted sustainability specification has yet to be provided. Any standardization of AAF sustainability without taking into full account the interests of developing countries would set up barriers for the sustainable development of developing countries and the world, which is surely departing from the UN SDGs and the objectives of ICAO's campaign of "No Country Left Behind".

3.3.3 The life cycle analysis (LCA) is used to calculate the amount of CO_2 released during the whole process including cultivation, production, transportation and combustion. However, based on different assumptions used in the model the results vary significantly. The assumptions used in the model are not publicly available. The effects of deployment of AAF from different feedstock on CO_2 emission reduction is still controversial.

3.3.4 With that said, it is unconvincing and arbitrary to adopt the criterion of *at least 10%* for the "SAF" compared to fossil jet fuel on a life cycle basis and the amortization period of *25 years* for the ILUC.

[4] See A39-WP/56.
[5] See http://biofuel.org.uk/biofuel-facts.html

4. AN ICAO VISION FOR AVIATION ALTERNATIVE FUELS

4.1 To develop an ICAO Vision for AAF, ICAO should follow the following guiding principles:

a) The UN SDGs shall be in line with to serve the coordination and harmonization between environment protection and the development of the international aviation.

b) The principle of national sovereignty of environmental resources shall be complied with.

c) The interests of all States, particularly developing States, should be taken into consideration.

d) Any goal for the adoption of AAF should be practicable and well-argued.

e) Any standardization of "sustainability" of AAF without the basis on sound science and full involvement of developing countries should be refrained from.

f) The deployment of the AAF/SAF should help meet the social and development needs of all States, particularly developing States and shall not constitute an arbitrary discrimination or disguised restriction on developing States' efforts to develop their international aviation.

5. ACTION BY THE CAAF/2

5.1 The CAAF/2 is invited to:

a) recognize China's efforts to adopt and deploy AAF;

b) recognize China's concerns on some of the ICAO AAF initiatives in para 3 above and request the ICAO Council to take tangible actions to address them;

c) recognize the principles listed in para 4.1 when developing the ICAO Vision for AAF; and

d) request the ICAO Council to re-evaluate the practicability and reliability of the CNG2020 goal in light of the significant uncertainties of AAF and to ensure the feasibility exploration of any long-term aspirational goals to take into full consideration the results of such evaluation.

— END —