International Civil Aviation Organization

CAAF/3-WP/23[1]
17/10/2023

WORKING PAPER

THIRD CONFERENCE ON AVIATION ALTERNATIVE FUELS (CAAF/3)

Dubai, United Arab Emirates, 20 to 24 November 2023

Agenda Item 2: Supporting policies to promote the development and deployment of cleaner energy for aviation

CLEANER ENERGY FOR AVIATION: IMPLEMENTATION CHALLENGES AND THE AVIATION INDUSTRY PREFERRED POLICY OPTIONS

(Presented by the Air Transport Action Group (ATAG), Airports Council International (ACI), Civil Air Navigation Services Organisation (CANSO), International Air Transport Association (IATA), International Business Aviation Council (IBAC) and International Coordinating Council of Aerospace Industries Associations (ICCAIA))

SUMMARY

Government policy has an instrumental role to play in deploying and up scaling the use of cleaner energies for aviation. The collective group of industry associations seek supportive policies from States that are globally harmonised, while being technology and feedstock agnostic. A balanced policy approach is urgently needed to ramp up the production of aviation cleaner energies, while avoiding any negative market distortion and carbon leakages.

Action by the Conference is in paragraph 5.

1. INTRODUCTION

1.1 In order to achieve net-zero emissions by 2050, between 53-71% of the total emissions reductions will be achieved by using sustainable aviation fuel, or SAF.[2][3] Industry believes that, by 2050, there would need to be a reduction in the carbon intensity of the fuel we use by around 80% compared to today's fossil fuel average. This would represent an increase from less than 0.24 Mt of SAF in 2022 to production and use of around 370-490 Mt annually by 2050, from every available sustainable feedstock. Furthermore, new SAF pathways not currently available at scale, particularly for advanced feedstocks[4], will need to be further matured and scaled-up.

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[1] English, Arabic, Chinese, French, Russian and Spanish versions provided by ATAG.

[2] Outlined in *Waypoint 2050* (www.aviationbenefits.org/W2050) and confirmed in other analysis including the IATA Net Zero Roadmaps: www.iata.org/en/programs/environment/roadmaps/

[3] The rest of the emissions will be addressed by more efficient operations, efficiency improvements achieved through aircraft technology, hydrogen aircraft and market-based-measures.

[4] Example of advanced feedstock include, but are not limited to wet wastes, algae oils, forestry and agricultural residues, food wastes, municipal solid waste (MSW), as well as continued research into green hydrogen and carbon capture considered for e-fuels.

1.2 Reaching this ambitious level will require substantial support from governments and value-chain partners. Government policy must play a pivotal role in encouraging the scaling-up of SAF production.

2. CURRENT STATE AND CHALLENGES

2.1 Lack of sufficient and effective policy enablers remain one of the biggest challenges[5] to rapid development and deployment of SAF. Under existing renewable fuel regulations and incentive programmes, the current SAF supply is scarce and, as a result, priced at a significant premium to both conventional jet fuel and other renewable fuels, such as renewable diesel. Purchasing this existing supply has come at an additional cost to the industry of between $322 million to $510 million in 2022[6], and will continue to increase exponentially as it strives to meet its net-zero target by 2050.

2.2 The right policies and investment should be focused on helping to drive up supply of SAF and bring down costs. Whilst it is understood that there may be a premium for SAF use for some time, it can be reduced through policy mechanisms to enable accelerated use – this should be the objective of all policy measures at a global and national level.

3. KEY CONSIDERATIONS FOR POLICY MAKERS

3.1 THE ROLE OF POLICY AND BUILDING BLOCKS FOR AN EFFECTIVE POLICY FRAMEWORK

3.1.1 Policies that address both near-term and longer-term cleaner energy deployment will provide the necessary certainty for producers and investors to allocate existing production capacity to cleaner aviation energy and facilitate more investments in new production infrastructures. Policies could also help to promote much needed research and development of new production pathways together with the associated supply chains.

3.1.2 A globally-harmonised approach to policy making could help to avoid unintended outcomes such as market distortions and carbon leakage. As part of its capacity building activities, ICAO could contribute to this policy approach harmonisation.

3.1.3 In general terms, policy should aim to be:

a) harmonised across countries and industries;
b) stable and predictable;
c) technology-neutral;
d) feedstock-agnostic;
e) setting primacy for globally-recognised sustainability standards (such as the ICAO CORSIA sustainability criteria for CORSIA-eligible fuels (CEF)) and allow reciprocity of sustainability criteria;

[5] Other challenges include, but are not limited to: absence of a harmonised approach in SAF accounting methodology; lack of access to SAF in existing fuel logistics and airport infrastructure; lack of understanding of SAF as an in-sector measure in addition to carbon offsets; limited availability of cost-effective and sustainable feedstock for SAF; limited investment and high costs of financing SAF production facilities; and competition for feedstock resources and incentives with other sectors such as road transport and renewable power.

[6] IATA SAF Deployment Policy Approach, May 2023

f) facilitating the certification of cleaner energy supply chains subject to internationally agreed sustainability standards;
g) stackable, i.e., allowing the coexistence of multiple initiatives; and
h) ensuring mechanisms to measure emissions reductions associated with the use of cleaner aviation energies.

3.2 POLICY OPTIONS TO SCALE-UP CLEANER ENERGIES FOR AVIATION

3.2.1 The two most common policy options for cleaner aviation energies are generally seen to be financial incentives and mandates. Financial incentives could be introduced through policy interventions that can help to improve access to capital, reduce the burden of high upfront costs, lower financing costs, and support creation of new markets – all of which make SAF much more accessible for use and ultimate scaling. Mandates on the other hand, are state-imposed obligations to use a minimum share of cleaner energies. Such obligations can be imposed on suppliers or buyers.

3.2.2 However, a wide range of **policy incentives**[7] exists, including the following examples:

a) tax relief, tax exemptions and tax rebate on production, sale, or procurement;
b) public capital support (grants) and loan guarantees for production facilities;
c) feedstock subsidies or similar support mechanisms;
d) financial market policies such as preferential treatment of tailored financial instruments[8];
e) accounting policies, including amortisation schedules; and
f) research and development programs and support.

3.2.3 While mandates could provide a powerful market signal to SAF producers, they must be accompanied by positive measures to increase the availability and economic viability of SAF. If applied at the current time, mandates would benefit the well-established hydrotreated esters and fatty acids (HEFA) pathway, which today accounts for almost all SAF production. Scaling-up production of other advanced SAF pathways will become increasingly important to diversify the feedstock pool into more scalable solutions. If government mandates are to be pursued, the following must be considered:

a) they should only be used as an additional tool within a broader strategy to increase the production of SAF;
b) they should be complemented with incentive programmes that facilitate innovation, scale-up and unit cost reduction;
c) they should encourage capacity growth, but not exceed what is commercially feasible in order to prevent market price distortions;
d) should not be specific to any feedstock or technical solution, given that various pathways are still under development;
e) SAF pathways with low maturity levels should receive supply-side support to de-risk technologies and investment;
f) mandates need to be neutral in terms of their impact on fuel supply competition, ensuring price transparency of add-on calculations, access to infrastructure, and fair allocation of available SAF versus penalty charges; and

[7] More examples of policy incentives can be found in ICAO's Guidance on SAF policies: www.icao.int/environmental-protection/Documents/SAF/Guidance%20on%20SAF%20policies%20-%20Version%202.pdf
[8] Details can be found in IATA's recently-published finance roadmap: www.iata.org/contentassets/8d19e716636a47c184e7221c77563c93/finance-net-zero-roadmap.pdf

g) they should be imposed on the supply-side, requiring blending and supply by existing jet fuel suppliers.

4. THE IMPORTANCE OF A GLOBAL AND ROBUST CLEANER ENERGIES ACCOUNTING FRAMEWORK FOR AVIATION

4.1 A global and harmonised cleaner energies accounting framework is a must-have for deployment of cleaner aviation energies and their commercial viability. A fit-to-purpose accounting framework or a network of interoperable systems would enable airlines to claim the environmental benefits from their purchases of cleaner aviation energies to fulfil their commitments in a safe, transparent, and credible manner, while also enabling states to have accounting of aviation cleaner energy production, availability and use in their jurisdiction.

4.2 The provisions in CORSIA already recognise that emissions reductions from the use of CEF by airlines are claimed based on mass of CEF according to purchasing and blending records.[9] Furthermore, the CEF can be produced and uplifted anywhere in the world, as long as they satisfy CORSIA reporting requirements in accordance with the CORSIA Standards and Recommended Practices (SARPs).[10]

4.3 The utilisation of existing, accepted, global and robust accounting mechanisms established in other sectors for use with aviation cleaner energies unlocks additional benefits for increased efficiency in its production and transport, minimising cost and the associated incremental lifecycle emissions. Furthermore, it provides airlines with expanded access to SAF while at the same time, giving a bigger market access to SAF producers in new locations, particularly in developing States.

4.4 For further information: SAF accounting principles[11] and SAF accounting benefits[12].

5. ACTION BY CAAF/3

5.1 The Conference is invited to:

a) recognise the role of policy in the production, deployment and scaling-up the use of cleaner energies for aviation and the need for a balanced policy approach especially in the context of the agreed collective vision from CAAF/3;

b) recognise the building blocks of an effective policy framework for cleaner aviation energies; and

c) recognise and accept the use of a global SAF accounting framework based on robust chain of custody approaches to facilitate a level-playing field by providing equal access of SAF to all airlines around the world.

— END —

[9] Note 1, Clause 2.2.4 of ICAO CORSIA SARPs, Annex 16 Vol IV, Part II, Monitoring of CORSIA eligible fuels claims
[10] Clause 3.3.5.5 ICAO Doc 9501, Environmental Technical Manual, Volume IV, Use of CORSIA eligible fuels
[11] IATA SAF Accounting Principles: www.iata.org/contentassets/d13875e9ed784f75bac90f000760e998/saf-accounting-policy-paper_20230905_final.pdf
[12] IATA SAF Accounting Benefits: www.iata.org/contentassets/d13875e9ed784f75bac90f000760e998/iata---saf-accounting-benefits.pdf