# 60th CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGIONS

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AGENDA ITEM 7: AVIATION & ENVIRONMENT

# STATE-LEVEL INITIATIVES FOR DEVELOPING SUSTAINABLE AVIATION FUEL (SAF) IN BANGLADESH

(Presented by Bangladesh)

**SUMMARY**

This paper presents Bangladesh's national initiative to develop a domestic framework for the production and use of Sustainable Aviation Fuel (SAF) to support decarbonization of the aviation sector. The initiative aims to enhance energy security, reduce dependency on imports, promote local industries, and align with global climate commitments such as ICAO's CORSIA and the United Nations Sustainable Development Goals.

The paper emphasizes the need for regional cooperation, capacity building, and climate financing to support developing Sustainable Aviation Fuel (SAF) implementation in developing States.

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## 1. INTRODUCTION

1.1 The aviation sector contributes approximately 2–3% of global $CO_2$ emissions and is considered one of the hardest sectors to decarbonize. ICAO, through CORSIA and the LTAG framework, emphasizes the role of Sustainable Aviation Fuels (SAF) as a critical solution to achieving carbon neutrality in international aviation by 2050. This paper outlines the policy responses and strategic initiatives undertaken by Bangladesh in support of LTAG and explores pathways for sustainable aviation within the Asia-Pacific region.

1.2 Recognizing the imperative to decarbonize aviation, Bangladesh has initiated a national SAF development programme to explore the local production of SAF using indigenous feedstocks and advanced conversion technologies.

## 2. DISCUSSION

2.1 The discussion outlines Bangladesh's SAF roadmap including raw material assessment, technology adaptation, infrastructure integration, and policy development, and identifies opportunities and challenges associated with local SAF deployment.

*Policy Rationale and Objectives*

2.2 The Sustainable Aviation Fuel (SAF) initiative is a strategic step toward achieving Bangladesh's national climate and energy goals. It supports the country's Nationally Determined Contributions (NDCs) under the Paris Agreement, aiming to reduce greenhouse gas emissions and promote low-carbon growth.

2.3 SAF also contributes to the Sustainable Development Goals (SDGs), particularly: SDG 7-Affordable and Clean Energy, by introducing renewable alternatives into the aviation fuel mix; and SDG 13- Climate Action, by helping to curb emissions from a rapidly growing aviation sector.

2.4 Internationally, the initiative aligns with ICAO's CORSIA framework, which mandates carbon neutrality in international aviation, and the ACI's Airport Carbon Accreditation program, promoting carbon management at airports.

2.5 Overall, the SAF initiative enhances environmental sustainability, strengthens energy security, and positions Bangladesh as a responsible player in global aviation.

*Strategic Vision*

2.6 Position Bangladesh as a regional leader in sustainable aviation. The Sustainable Aviation Fuel (SAF) roadmap in Bangladesh outlines a strategic vision to transform the aviation fuel sector through sustainable practices and innovation. A central goal is to establish a domestic SAF production industry, leveraging local resources, feedstocks, and technologies to build a resilient and low-carbon fuel supply chain. This development is intended to reduce dependence on imported jet fuel, enhancing national energy security and insulating the sector from global fuel price volatility.

2.7 In parallel, the roadmap aims to foster green economic growth by creating employment opportunities in emerging sectors such as biofuel production, logistics, research, and engineering. This transition is expected to stimulate industrial innovation, driving investment in new technologies, infrastructure, and partnerships.

2.8 Ultimately, the SAF roadmap aspires to position Bangladesh as a regional leader in sustainable aviation, showcasing the country's commitment to climate action while enabling long-term economic and environmental benefits across the aviation industry.

*Key Phases and Components of the SAF Development Initiative*

2.9 **Phase I – Feedstock Identification and Evaluation**

a) Targeted feedstocks: jute, algae, waste cooking oil, agricultural residues, jatropha.

b) Criteria: Availability, chemical composition, sustainability, non-competition with food supply.

2.10 **Phase II – Technology Simulation and Pilot Testing**

a) Technologies: Hydrotreated Esters and Fatty Acids (HEFA), Fischer-Tropsch (FT), Alcohol-to-Jet (A2J).

b) Actions: Lab-scale trials, simulation modeling, pilot projects to validate processes and fuel quality (ASTM D7566 compliance).

2.11 **Phase III – Infrastructure Integration**

a) Assessment of blending, distribution, and storage capacity within existing fuel supply chains.

b) Collaboration with national refineries and fuel logistics providers to ensure compatibility.

2.12 **Phase IV – Techno-Economic and Environmental Assessment**

a) Life Cycle Assessment (LCA) of GHG emissions reduction.

b) Evaluation of economic viability, job creation, and scalability.

c) Policy and fiscal analysis for investment returns and operational sustainability.

2.13 **Phase V – Performance Assessment and Standardization**

a) Feedstock sustainability and conversion efficiency metrics.

b) Process benchmarking and SAF quality certification.

c) Environmental and socio-economic impact studies.

*Stakeholder Engagement Framework*

2.14 The rollout of Sustainable Aviation Fuel (SAF) in Bangladesh depends on active collaboration among diverse stakeholders:

a. **Aviation Stakeholders:** Airlines will lead SAF blending trials, while airport authorities prepare infrastructure for storage and fueling.

b. **Energy Sector and Refineries:** Entities like Eastern Refinery Limited (ERL) will support SAF co-processing and blending using existing refinery systems.

c. **Agriculture and Waste Management:** Farmers, cooperatives, and municipal waste managers will supply feedstocks such as biomass and organic waste.

d. **Technology Providers and Academia:** International tech firms will aid in adapting SAF technologies, supported by research from universities and technical institutes.

e. **Regulatory and Policy Bodies:** The Civil Aviation Authority of Bangladesh (CAAB) will guide SAF regulations, while national bodies will develop incentives, certifications, and compliance systems.

f. **Financial Institutions and Donors:** Development banks, climate funds, and private investors will provide financing through concessional loans and public-private partnerships (PPPs).

*Key Challenges in SAF Development*

2.15 Bangladesh acknowledges several key challenges that may impact the effective deployment of Sustainable Aviation Fuel (SAF), including:

a. Limited access to proven SAF technologies and associated intellectual property (IP), which restricts local development and adaptation.

b. High capital and operational costs related to the establishment of SAF production and distribution infrastructure

c. Lack of a dedicated policy and regulatory framework to guide and incentivize SAF development.

d. Uncertainties in feedstock availability and supply chain logistics, alongside land-use constraints for sustainable biomass sourcing.

e. Insufficient availability of localized performance data and the need for broader public-private stakeholder engagement to build confidence and investment momentum.

*Recommendations and Way Forward*

2.16 To advance sustainable aviation fuel (SAF) deployment across the region, the following actions are recommended for consideration at both regional and global levels:

a. **Establish a Regional SAF Platform under ICAO APAC**: Promote collaboration in research and development, encourage joint ventures, and support the development of harmonized regional SAF certification standards.

b. **Mobilize Climate Finance for SAF Projects**: Leverage financing through multilateral development banks (e.g., ADB, World Bank), green bonds, and donor-funded initiatives to support SAF infrastructure and innovation.

c. **Develop National and Regional Feedstock Mapping and Supply Chains**: Encourage investment and research in sustainable agriculture and waste-based resources to ensure reliable and scalable SAF feedstock availability.

d. **Strengthen Technical Guidelines and Policy Support for Developing States**: Facilitate access to SAF-related technologies, enhance institutional capacity, and support the establishment of enabling policy and regulatory frameworks.

e. **Implement a SAF Pilot Programme in Bangladesh by 2030:** Launch demonstration projects on SAF blending and distribution in coordination with national airlines and airports to assess feasibility and readiness for scale-up.

## 3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) Acknowledge Bangladesh's initiative to develop a domestic SAF industry as a model for developing States;

b) Support ICAO's role in promoting SAF technology transfer, certification, and financing;

c) Encourage regional cooperation and knowledge sharing on SAF development and deployment;

d) Recommend integration of SAF goals into national aviation, energy, and climate strategies.

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