Partnering for Aviation Decarbonisation: The ICAO-IRENA Approach

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The aviation sector is vital to global connectivity and trade but remains one of the hardest to decarbonise. In 2024, aviation (both domestic and international) emitted 915 million tonnes of CO_2, accounting for approximately 2.5 percent of global emissions and 12 percent of transport-related emissions[1]. With air traffic expected to double by 2045, emissions could increase substantially without mitigation.

Sustainable Aviation Fuel (SAF) offers a promising solution, capable of reducing lifecycle emissions by up to 80 percent compared to conventional jet fuel[2]. However, SAF accounted for less than 0.1 percent of global aviation fuel use as of 2021[3], limited by high production costs, policy gaps, and restricted access to finance.

To help close this investment gap, the International Renewable Energy Agency (IRENA) is leveraging its Energy Transition Accelerator Financing (ETAF) platform, a multi-partner climate finance mechanism focused on clean energy investments in developing countries. In partnership with the International Civil Aviation Organization (ICAO), IRENA is now extending the platform for the ICAO's Finvest Hub, a specialized module to mobilise capital for bankable SAF projects.

Leveraging a Proven Platform: IRENA and the ETAF Approach

Initially launched with a target of USD 1 billion, IRENA's ETAF platform has grown to over USD 4.15 billion in pledges from 14 partners[4], including multilateral development banks, insurers, and sovereign institutions. The platform is designed to mobilise capital and reduce risk for renewable energy projects.

ETAF supports project development through a structured facilitation process. This includes sourcing and evaluating proposals, providing feedback to improve bankability, and linking developers with financing and de-risking solutions offered by its partners. Since its launch, the platform has supported a broad mix of technologies, such as solar PV, wind, hydro, geothermal, bioenergy, and e-mobility.

This approach is now being extended to Sustainable Aviation Fuel (SAF) through a collaboration with ICAO. By applying the same investment-oriented framework, the partnership aims to help overcome the financial and technical hurdles that continue to limit SAF deployment.

A Strategic Collaboration to Accelerate SAF Investment

Building on this effort, ICAO and IRENA formalised their collaboration in 2024 through a Memorandum of Cooperation to explore pathways to operationalize the ICAO Finvest Hub. The partnership combines ICAO's technical expertise in aviation standards and carbon reduction mechanisms, including the Carbon Offsetting and

1 International Energy Agency (IEA), Aviation Sector Analysis, 2024. https://www.iea.org/energy-system/transport/aviation
2 World Economic Forum – Clean Skies for Tomorrow: https://www.weforum.org/reports/clean-skies-for-tomorrow-implementation-manual/
3 IATA – SAF Factsheet: https://www.iata.org/en/programs/environment/sustainable-aviation-fuels/
4 https://etafplatform.org/Partners

Reduction Scheme for International Aviation (CORSIA)[5], with IRENA's experience in project facilitation, bankability assessment, and capital mobilisation.

The two organisations bring complementary strengths. ICAO provides global reach and oversight on SAF sustainability certification and regulatory alignment, while IRENA focuses on evaluating the financial and commercial viability of projects, coordinating due diligence, and offering technical assistance to improve project readiness.

This combined approach aims to close the gap between technical viability and investment readiness, helping to bring more SAF projects to the market.

Structuring Support: Building a Viable SAF Pipeline

The FinvestHub applies a structured process to identify SAF projects that meet both climate and investment criteria. Projects are assessed for sustainability, technical readiness, regulatory compliance, and credible offtake arrangements, including in light of relevant ICAO policies and technical requirements such as those such as CORSIA.

Once qualified, projects may benefit from support measures available through ETAF's partners, including:

- Blended finance to reduce the cost of capital
- Equity to fill early stage funding gaps
- Guarantees and insurance to mitigate political, credit, or technology risks

These de-risking instruments are particularly important for first-of-a-kind SAF projects, which often encounter hesitation from investors due to limited operational data and evolving market dynamics.

Operationalising the Finvest Hub

Several developers have already expressed interest in accessing support through the Finvest Hub, and the foundation is being laid. The Hub is currently under development, with screening criteria in the final stages of design.

Once operational, it will guide projects through a structured process, from registration and eligibility screening to due diligence and financing engagement. The Hub will facilitate the initial review, match eligible projects with financing partners, and provide a framework for tracking progress through to financial close.

Early expressions of interest from both public and private sector actors reflect the growing demand for structured support to advance SAF projects toward investment readiness.

Turning SAF Commitments into Bankable Projects

The urgency to decarbonise aviation is intensifying as global policy momentum builds and demand for Sustainable Aviation Fuel continues to grow. Initiatives such as the European Union's ReFuelEU Aviation[6] and the United States' SAF Grand Challenge[7] signal increasing international ambition to scale up production and adoption.

Yet ambition alone is not enough. Unlocking finance for SAF at the scale required will demand coordinated efforts across institutions, the private sector, and governments.

The ICAO-IRENA partnership, through the Finvest Hub, offers a practical response to this challenge. By providing structure, credibility, and a pathway to capital, the Hub can help advance SAF projects from concept to investment readiness. As part of the broader ETAF platform, it serves as a timely instrument for aligning the aviation sector with global climate goals.

5 ICAO CORSIA: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx
6 European Commission, ReFuelEU Aviation Initiative, https://transport.ec.europa.eu/transport-modes/air/refueleu-aviation_en
7 U.S. Department of Energy, SAF Grand Challenge Roadmap, https://www.energy.gov/eere/bioenergy/sustainable-aviation-fuel-grand-challenge