

AFRICAN CIVIL AVIATION COMMISSION



Global Developments of Sustainable Aviation Fuels – An Economic & Transport Decision for South Africa



AFCAC

African Civil Aviation
Commission

Secretariat@afcac.org

Sustainable Aviation Fuels – Global State of Play

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth

ICAO Cleaner Energy Tracker Tools

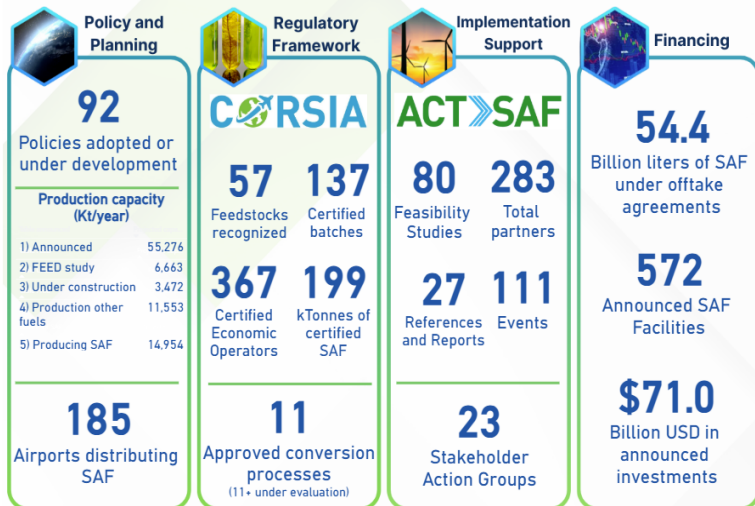


ICAO adopted a Vision to reduce CO₂ emissions in international aviation by **5 per cent by 2030** through the use of SAF, LCAF, and other aviation cleaner energies

This requires **23 million tonnes (Mt)** of cleaner energies use in international aviation on 2030
(source: LTAG report data)

This aviation cleaner energy trackers monitors progress under the ICAO Global Framework on this building blocks

(Click on each number to open the full Tracker dashboard)



Emissions vs Growth of aviation

Aviation contributes ~2-3% of global CO₂ emissions. Africa aviation growth projected at 4-5% per annum up to 2050.

ICAO LTAG

SAF, LCAF gives the largest potential for decarbonizing aviation emissions by 2050

ICAO CAAF/3

ICAO CAAF/3 confirms SAF, LCAF as key driver for LTAG net zero by 2050.

Dual impact of SAF, LCAF

SAF, LCAF not only environmental imperative but also an industrial, energy security and socio-economic imperative.

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<1%

Percentage of Global SAF supply

5%

ICAO target of CO2 reduction by 2030 through SAF, LCAF

~2-5x

Cost of higher than Jet A1 today

0

SAF, LCAF commercial scale production in Africa today

Key Take Aways

- Africa's aviation is expected to grow by 4% until 2050 (AU Agenda 2063 initiatives e.g. SAATM, AfCFTA)
- Africa's SAF potential: about 200 million tonnes which creates ~20 million new jobs
- Global SAF supply is concentrated outside of Africa
- SAF, LCAF offers opportunities for decarbonization & economic benefits
- Africa must not import its decarbonization, it must produce it
- Cost gaps should be addressed by policy and investment actions



Continental Direction – SAF, LCAF Strategy 2025-2050 (Building Blocks)

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth



A

Policy and Regulatory Framework

- Harmonized & ICAO aligned Policy framework
- Domestication into national & aviation policies
- Use of policy instruments to stimulate SAF, LCAF development in Africa

B

Institutional, Human & Technical Capacity

- Strong national and continental institutions for SAF, LCAF development
- Knowledge transfer through partnerships
- Collaboration among African academia, common curriculum & centers of excellence

C

Infrastructure & Technology Innovation

- Country & Regional specific assessments of infrastructure readiness
- Regional collaboration, cost and benefit sharing mechanisms
- Regional pilot projects

D

Technical Feasibility & Feedstock Assessments

- Robust techno-economic assessments
- Continental, regional and national feedstock mapping
- Feedstock aggregation and processing

E

Resource Mobilization & Partnerships

- Continental mobilization of public, private and climate financing
- Establishment of African SAF, LCAF funds
- Promote use of available instruments to the risk projects in Africa



Continental Direction – SAF, LCAF Policy Guidelines (Vision)

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth

Vision:

Build a competitive, sustainable, inclusive SAF/LCAF industry that supports aviation growth, creates jobs, strengthens energy security, and contributes to global climate goals.



Continental Direction – SAF, LCAF Policy Guidelines (Guiding Principles)

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth



Phased & Flexible

Guidelines is voluntary

Early stages (2025-2030) focuses on enabling environment.



Pull mechanisms to stimulate investment



Tech, Feedstock neutral

No exclusion of ICAO qualified pathways
Promote local & production pathways.



Ensure wide regional feedstock choices



Prioritize benefits

Maximize socio-economic returns.



Linkage to industrial & rural development



Regional Integration

Critical to achieve scale, reduce costs and enable harmonization.



Cross border partnerships for attractive markets for investors



Sustainability, Food Sec

Priority on residues, non food crops on marginal lands.



Aligned to ICAO CORSIA Sustainability criteria



Innovative Finance

Essential linkage to concessional finance.



Creating bankable projects eligible for PPPs, Finvest etc



Continental Direction – SAF, LCAF Policy Guidelines (Policy Options)

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth



Stimulate Growth & Supply of SAF, LCAF

- Government support.
- Capital investments.
- Cost support



Create Demand for SAF, LCAF

- National SAF or GHG targets, roadmaps
- Offtake agreements, risk and benefits sharing



Enable markets & Value Chains

- ICAO Aligned sustainability standards
- Regional and cross border collaboration and trade facilitation



How to use the Options

No single option is sufficient on its own

States are encouraged to deploy a coherent mix of policy options, adapt to National circumstances and align regionally



Sustainable Aviation Fuel in South Africa – Exceptional Feedstock Availability

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth



SOLARIS



LIGNOCELLULOSIC WASTE



A-MOLASSES



INDUSTRIAL OFF-GASES



SAF production potential of 3.2 – 4.5 billion litres/year.



Potential to exceed jet A1 demand and enable import substitution & exports



Possible technology pathways include HEFA, FT, AtJ, PtL etc



Sustainable Aviation Fuel in South Africa – Techno Economically Feasibility

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth

4

South Africa



The potential:

A 1,000-BPD PtL facility using green hydrogen and industrial waste carbon could yield 39 million liters of SAF annually, covering about 3 percent of the country's jet fuel demand.

Challenges

High investment and processing costs

Opportunities

High potential to become an SAF hub

Existing technical foundation and expertise in the Fischer-Tropsch process for production

Investment needed:

\$156 million
(excl. cost of Green Hydrogen)

Recommendations: Rather than a one-size-fits-all approach, this report makes a case for a tailor-made approach to SAF production development in Africa.



Manage feedstock by prioritizing sustainable and cost-effective sources.



Invest in R&D through pilot projects and international partnerships.



Develop policy frameworks by introducing financial incentives like tax breaks and grants.



Reduce investment risk by leveraging support from multilateral development banks and other financial institutions.



Leverage book-and-claim mechanisms to incentivize decarbonization efforts to international stakeholders.



Scale production by strengthening public-private partnerships.



Sustainable Aviation Fuel in South Africa – Industrial Capability

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting the sector's growth

1

Expertise

- Fischer Tropsch technology by Sasol at 3 facilities hence operational experience
- SA identified by World Bank as well positioned for e-SAF, PtL

2

Strong infrastructure and Logistics

- Refinery, pipelines, storage and distribution

3

Socio Economics

- Potential for 100,000 Jobs
- Economic gains (R118-160 bn/yr in fuel trade – WWF analysis)

4

Strong Aviation Ecosystem

- Strong aviation market with over 2 Bn consumption of Jet Fuel annually and also major airlines operating in SA.

Existing strategic advantages (market, infrastructure, etc.), cost competitiveness and a stronger regional collaboration on feedstock supply could achieve the gains more quickly.



A Call to Action – Unlocking National Leadership

Enhance Environmentally Sustainable & Climate Resilient Air Transport in Africa while supporting sector's growth

A Policy Positioning

- Establish and empower inter Ministerial, multi agency SAF stakeholder committee (Transport, Energy, Environment, Finance, Agriculture, Industry, Private Sector etc)
- Reinforce or implement policies that recognizes SAF, LCAF as Strategic transport fuel.

B Market Stimulation

- Establishment of National SAF, LCAF Policy, roadmaps to stimulate Supply and Demand

C Regional Leadership

- Lead regionally & champion SADC SAF, LCAF collaboration under existing continental initiatives
- Promote regional feedstock aggregation, shared infrastructure and SAF corridors

D Bottom Line

- Early Action, Leverage on continental coordination of AFCAC
- Support public-private partnerships and offtake frameworks with airlines and airports.



Invitation



The African Air Transport Convention & Expo 2026 is a once-in-a-generation opportunity to align political will, industry action, and investment to promote Africa's aviation transformation.



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"TO PROMOTE THE DEVELOPMENT OF ACCESSIBLE, CONNECTED, AFFORDABLE, AND SUSTAINABLE AIR TRANSPORT IN AFRICA"



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