AFRAA

AFRAA FACTSHEET AND CALL TO ACTION ON

DECARBONISATION PATHWAY TO NET ZERO EMISSIONS

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1.0 Introduction

Reaching net zero emissions means removing an equal amount of CO2 from the atmosphere as we release into it. Put simply, net zero applies to a situation where global greenhouse gas emissions from human activity are in balance with emissions reductions. At net zero, carbon dioxide emissions are still generated, but an equal amount of carbon dioxide is removed from the atmosphere as is released into it, resulting in zero increase in net emissions. The expected carbon emissions on a 'business as usual' trajectory over the 2021-2050 period is approximately 21.2 gigatons of CO2.

Contributing to net-zero emissions by 2050 by African aviation is essential for the sector to stay aligned with global commitments like the United Nations Sustainable Development Goals (UN SDGs), the Long-Term Global Aspirational Goal (LTAG) for international aviation of net-zero carbon emissions by 2050, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), ICAO's Building Back Better approach, IATA resolution and the Paris Agreement. This journey will require focused efforts on several fronts: increasing the use of Sustainable Aviation Fuel (SAF), advancement of aircraft innovation and fleet renewal, optimizing operations and improving infrastructure; introduction of a carbon solidarity contribution, levied at the point of sale by airlines as an alternative to high national aviation taxes (This system could be differentiated by point of sale to ensure travelers from less- developed nations are not disproportionately impacted); and adoption of international carbon-reduction mechanisms such as the Paris Agreement Crediting Mechanism (Article 6), for instance, the approval of Gold Standard carbon projects as offsets for emissions not covered by CORSIA.

Sustainable Aviation Fuel (SAF) is expected to play a critical role in decarbonizing the aviation industry, potentially accounting for around 65% of the emissions reductions required to achieve net-zero by 2050, according to the International Air Transport Association (IATA). Africa holds significant potential for SAF production due to the availability of diverse feedstock, including agricultural residues, non-edible oils, and algae. Compared to other regions, Africa has vast areas of arable and marginal land that could be sustainably utilized for feedstock cultivation. Although SAF holds great potential for decarbonizing aviation, Africa faces hurdles such as high costs and limited production capacity. To address this, African airlines are urged to prioritize the adoption of SAF, invest in emerging propulsion technologies, (such as electric and hybrid-electric aircraft)and collaborate with airports and air traffic management to improve operational efficiency. Carbon offsetting and new technologies like carbon capture will also play a key role in reducing emissions in the short term.

Equally important is the development of human capital to support the transition to a greener aviation future. Airlines need to invest in training and upskilling their workforce to meet sustainability goals and operational demands. By taking these steps, African airlines can reduce their environmental impact, meet global emissions targets, and ensure long-term growth and competitiveness. AFRAA's leadership and coordination will be critical in driving these initiatives forward and ensuring that the African aviation industry remains competitive and sustainable in the future.

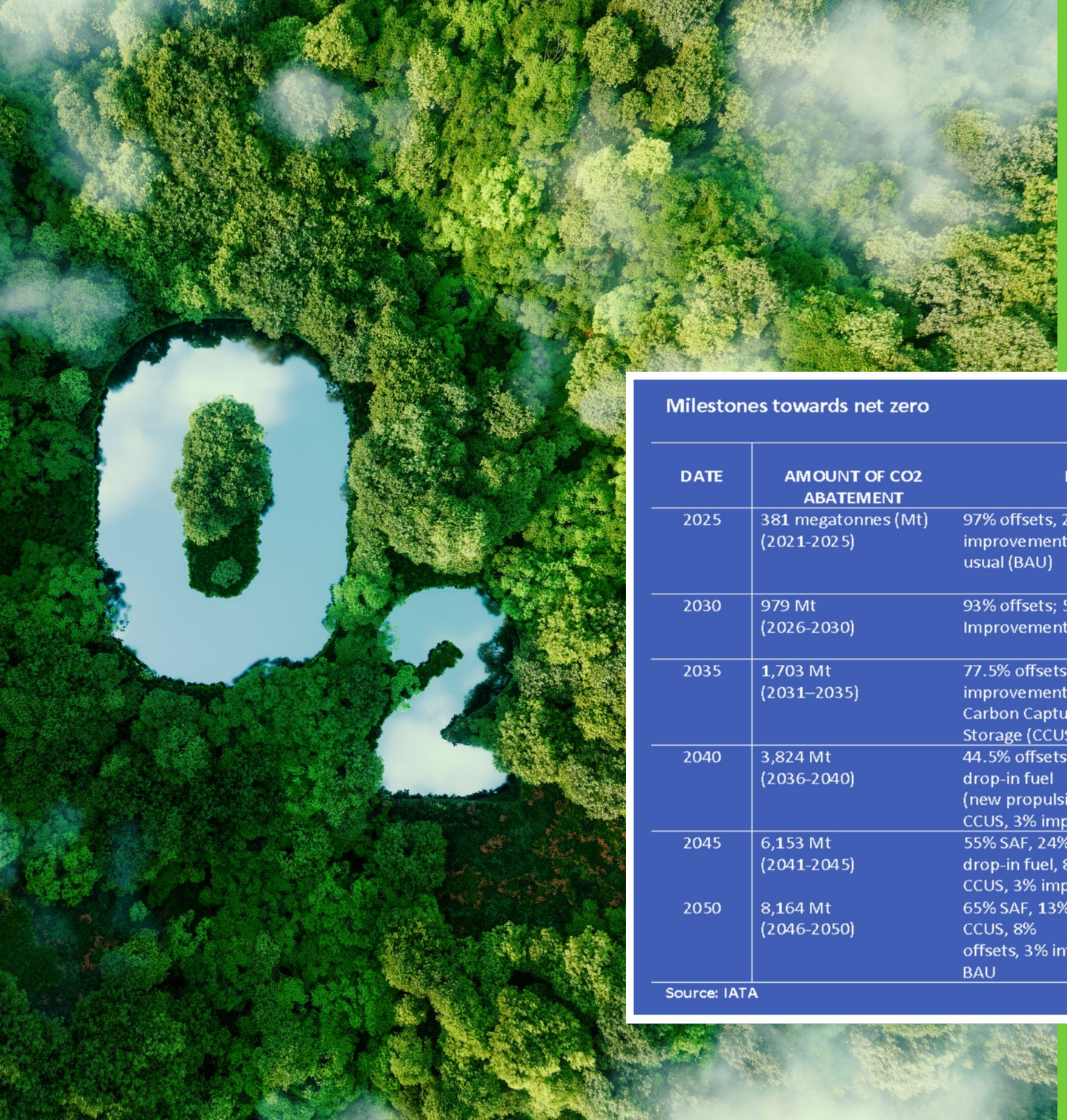
2.0 Background to Global Commitment

At the 77th IATA Annual General Meeting in Boston, USA, on 4 October 2021, a resolution was passed by IATA member airlines, committing to achieving net-zero carbon emissions from their operations by 2050. This pledge brings air transport in line with the objectives of the Paris Agreement to limit global warming to scenarios below 2.0°C. Having agreed to a Long Term Aspirational Goal (LTAG) on climate at the 41st Assembly of the International Civil Aviation Organization (ICAO) in October 2022, governments now share the same target for aviation's decarbonization.

The key elements of the global emissions reduction strategy are:

- The use of Sustainable Aviation Fuel (SAF), sourced from feedstocks that do not degrade the environment or compete with food or water.
- Investment in new aircraft technology, including radical new aerodynamic and alternative propulsion (electric or hydrogen) solutions.
- Continued improvement in infrastructure
- Operational efficiency, with particular focus on improved air traffic management
- The use of approved offsets including carbon capture and storage technology

Further, an aspect of the aviation industry's emissions reduction strategy is the promotion of sustainable aviation practices across the entire value chain. This includes initiatives to reduce waste and improve recycling efforts both on board aircraft and at airports. Airlines are exploring opportunities to enhance energy efficiency in their operations, such as through the use of renewable energy sources for ground operations. Additionally, partnerships with other industries and stakeholders are being leveraged to drive innovation and develop new technologies that further reduce the environmental impact of aviation. By adopting a holistic approach to sustainability, the industry aims to achieve its emissions reduction goals while continuing to meet the growing demand for air travel.



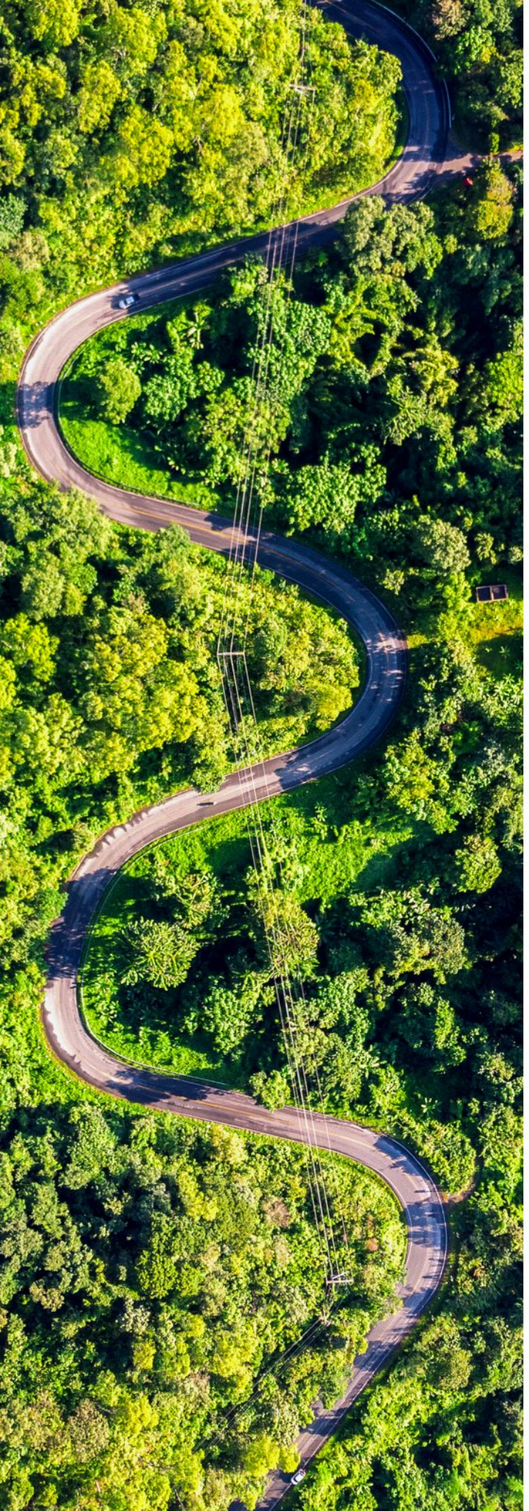
3.0 Global Aviation Industry Milestones towards Net Zero Emissions

Under the auspices of IATA, the global air transport industry set the below milestones towards net-zero by 2050. The milestones include a mix of abatement measures (pathways) and some key actions envisaged by stakeholders.

Milestones towards net zero

DATE	AMOUNT OF CO2 ABATEMENT	PATHWAY	ACTION
2025	381 megatonnes (Mt) (2021-2025)	97% offsets, 2% SAF, 1% improvements above business as usual (BAU)	ICAO agree long-term goal for international aviation (2022); energy sector commits to at least 6 million tonnes SAF production; agreement of full implementation of Article of Paris Agreement
2030	979 Mt (2026-2030)	93% offsets; 5% SAF, 2% Improvements above BAU	Use of 100% SAF on aircraft, ANSPs fully implement ICAO Aviatior System Block upgrades to deliver fuel efficiency improvements of 0.3% by 2030
2035	1,703 Mt (2031–2035)	77.5% offsets, 17.5% SAF, 3% improvements above BAU, 2% Carbon Capture Utilization and Storage (CCUS)	Evolutionary technology achieving 30% reduction in fuel burn, electric/hydrogen aircraft for regional markets (50-100 seats, 30-90 min flights) become available
2040	3,824 Mt (2036-2040)	44.5% offsets, 40% SAF, 7.5% non drop-in fuel (new propulsion technologies), 5% CCUS, 3% improvements above BAU	Feasibility of new aircraft such as blendedwing bodies demonstrated with full-scale working prototypes, electric/hydrogen for short-haul markets (100-150 seats, 45-120 min flights) become available.
2045	6,153 Mt (2041-2045)	55% SAF, 24% offsets, 10% non drop-in fuel, 8% CCUS, 3% improvements above BAU	Necessary infrastructure for new energy requirements (low carbon electricity/hydrogen) becomes available
2050	8,164 Mt (2046-2050)	65% SAF, 13% non dropin fuel, 11% CCUS, 8% offsets, 3% improvements above BAU	Commercially viable annual SAF production of 449 billion litres available

Source: IATA



4.0 Global Aviation Industry Milestones towards Net Zero Emissions

The aviation industry's focus has always been to progressively reduce emissions while accommodating the growing demand for air travel. The ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is a key initial pillar to attaining this goal. CORSIA aims to stabilize international emission levels in the short-to-medium term.

The current focus among African aviation actors is to reduce as much CO2 as possible through investment in new and modern aircraft, operating more efficiently and investing in smarter airport infrastructure and facilities. African airlines' commitment to sustainable environmental practices are noticeable through operational decisions and policy changes as recommended by IATA and ICAO in the following areas:

- Striving for the most efficient operations – flying more direct routes, aircraft continuous climb, and decent operations (CCO and CDO)
  - AFRAA and other partners engaging African airlines in User Preferred Route/Free Route Airspace trials towards FRA implementation in the entire African airspace.
- Investing in new and modern aircraft
- Taking measures to reduce carbon footprint
- Introducing recycling initiatives at airlines including aircraft cabin and airport facilities
- Integrating environmental programs into all planning and decision-making processes
- Adapting energy and water efficient practices
- Encouraging improvement in the performance of suppliers through the development of environmental criteria within the framework of procurement policies.

4.1 Some Specific Airline Initiatives

Seventeen (17) African countries have signed up for the voluntary phase of the CORSIA emissions monitoring and reporting. In cooperation with IATA, Ethiopian Airlines, Kenya Airways, and South African Airways, among others, launched Carbon Offset Programs that offer customers the opportunity to contribute towards offsetting the CO2 emissions related to their flights. The money raised through these schemes is invested in re-forestation projects in the respective countries.

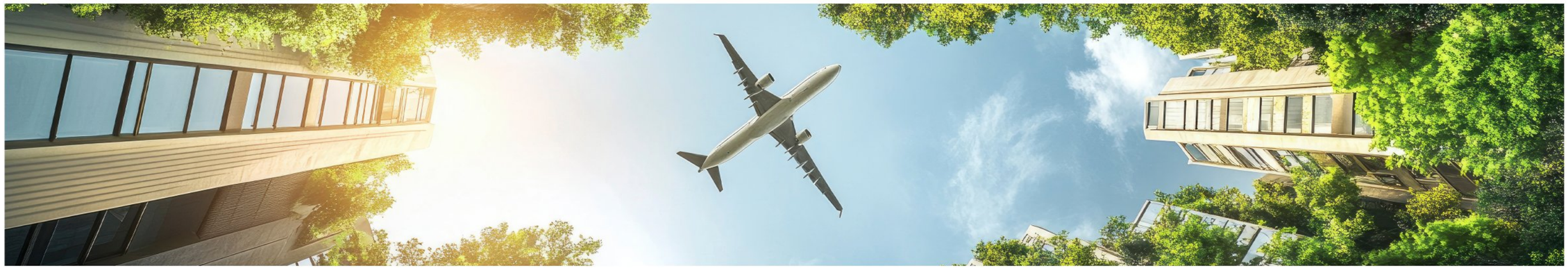
In Ethiopia and Kenya, Boeing is working with the airlines and governments to help develop SAF feedstock production capacity. Boeing is also working with Ethiopian Airlines to include aviation sustainability in the curriculum of the Ethiopian Aviation Academy.

In 2016, South African Airways (SAA) became the first African passenger airline to operate a flight using sustainable aviation fuel (SAF). Similar SAF-operated flights were subsequently conducted in Ethiopia and Kenya. However, the enthusiasm is difficult to sustain due to the non-availability and high cost of SAF, lack of airport infrastructure, and lack of incentives, among other challenges.

Since 2023, Royal Air Maroc (RAM) has also operated select flights with a 40% SAF blend. Beyond testing the product, this initiative aims primarily to raise awareness across the entire ecosystem, encouraging stakeholders to mobilize and organize for the long-term production and supply of SAF in the region.

To build capacity, AFRAA, AFCAC, IATA and ICAO have, at different times, organized workshops and seminars to train and sensitize airlines on the environmental impact of their operations and the mitigation measures that will assure sustainability and lead to net zero emissions. These events have brought awareness of measures to be adopted to improve the situation and build capacity at the operational level.

There is also a push to encourage working with governments and regulatory bodies to develop and implement policies that support emissions reduction efforts in the aviation sector that will create a conducive environment for sustainable practices.

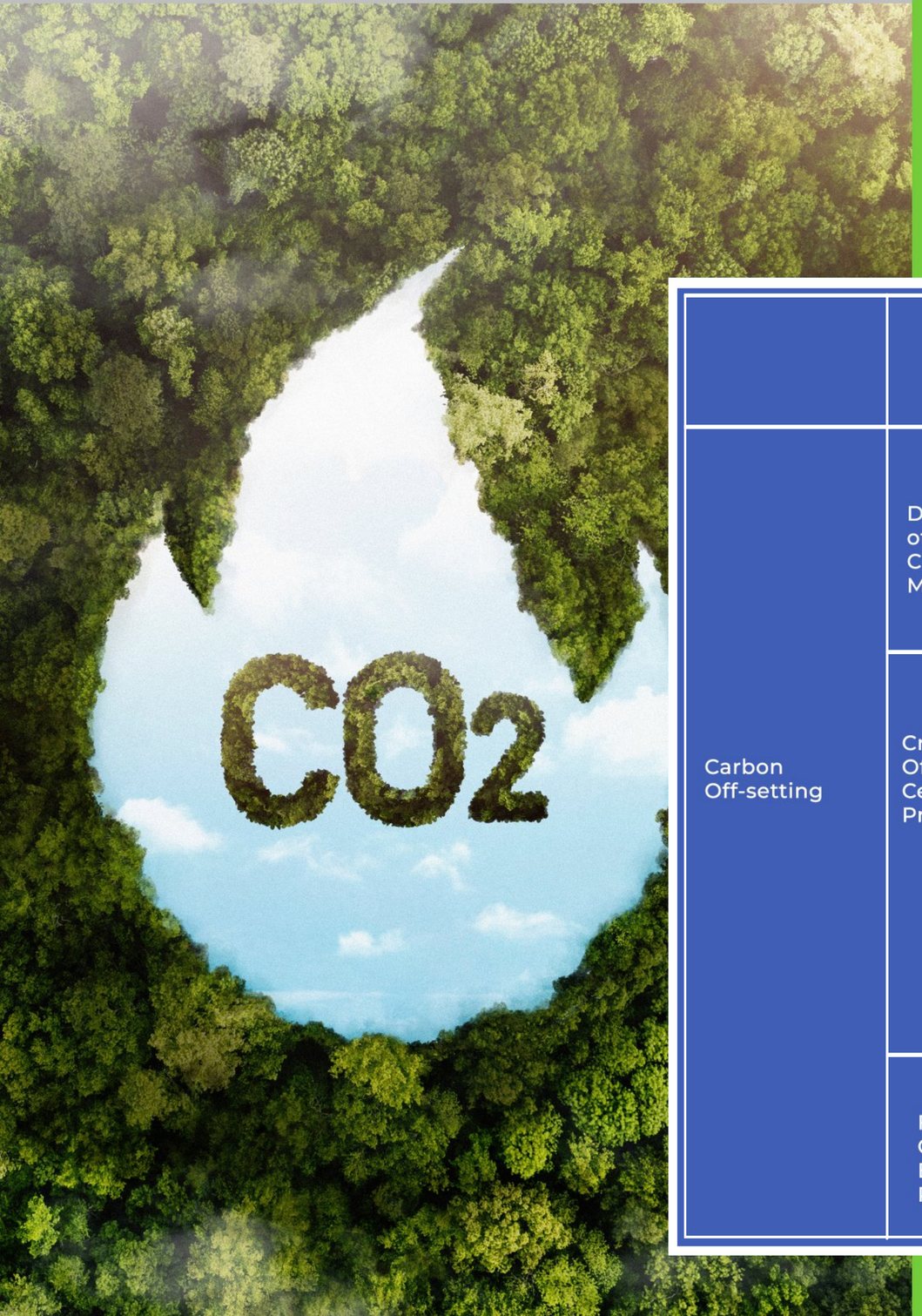


5.0 AFRAA Call to Action on Decarbonisation Pathway to Net Zero

The AFRAA “Call to Action” serves as a roadmap for African airlines to achieve net-zero emissions by 2050. It outlines key pathways that include adopting Sustainable Aviation Fuel (SAF), investing in new technologies, optimizing operations and infrastructure, implementing effective carbon offsetting strategies, and developing human capital to support the transition. As the market evolves rapidly, it is crucial to remain adaptable, particularly in the realm of carbon offsetting, which is facing increasing scrutiny. This coordinated effort requires active participation from AFRAA, airlines, governments, and other stakeholders to ensure that the African aviation industry not only meets global environmental targets but also remains competitive and sustainable in a rapidly evolving global market.

AFRAA CALL TO ACTION MATRIX

	Activity & Key Stakeholders	AFRAA Action & Timeline	Airline Action
Sustainable Aviation Fuel	Joint Purchase Initiative	During the AFRAA Fuel Tender Program 2025/26, conducted from February to June 2025, SAF tendering was included specifically for European locations to help participating member airlines meet the 2% SAF blending mandate that took effect in February 2025. The tendering charter(RFP) was reviewed and updated by the AFRAA Fuel Committee to include clauses relevant to SAF purchase agreement. This approach aims to reduce SAF costs by leveraging the large pooled volumes within the existing AFRAA tender framework.	i. Airlines must **formally express interest in** participating in AFRAA's joint SAF procurement to be included in negotiations and agreements. ii. Airlines need to **provide projected SAF volume requirements**, especially for regions like the EU, to help determine collective demand and shape contracts. iii. Airlines are encouraged to **enter long-term SAF off-take agreements** to provide demand certainty for suppliers and support production scale-up. iv. Airlines should **integrate SAF into their sustainability strategies** to meet emissions reduction goals and ensure long-term environmental commitments.
	Capacity Building	AFRAA is helping member airlines build the expertise required to integrate SAF into their operations through workshops and webinars. *a. Joint AFRAA/ICAO/IATA Webinar held* ***in June 2024*** *b. 3rd SAF/LCAF Webinar in* ***September 2024.*** *c. ACT-SAF EU-AI Project* ***September 2024*** *d. Updates during Industry Briefing* ***(Monthly)*** *e. AFRAA and ENVISA Workshop 2025* *f. sustainability webinar with ENVISA and has held a webinar focused on*	Airlines to **invest in specialized SAF training programs** for their technical, operational, and environmental teams to ensure they are well-versed in the handling, integration, and operational requirements of Sustainable Aviation Fuel (SAF).



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		fostering partnerships along the SAF value chain to support SAF adoption and distribution in Africa.	
Carbon Off-setting	Deployment of an African Carbon Offset Market Place	AFRAA to develop a regional platform to connect airlines with certified carbon offset providers across Africa, making it easier for airlines to purchase offsets. AFRAA to reach out to Offset entities i.e. SkyNRG and CarbonPlace on feasibility of an African Carbon Offset Market Place	Airlines to actively participate by purchasing verified carbon credits from the AFRAA marketplace Platform to offset their flight emissions, particularly for international routes. Airlines to encourage passengers to voluntarily contribute by offering the option during ticket purchases.
	Creation of an Offset Certification Program	AFRAA to set and provide guidelines for projects that qualify as cabon-offset projects. *AFRAA to reach out to Offset entities i.e. RSB and SkyNRG on viable models and African customized guide.*	Airlines to invest in projects that can be carbon-offset certified as per AFRAA's guidelines.
		AFRAA to establish an African certification process for African airlines carbon offset projects, ensuring that only high-quality, impactful initiatives are supported. *AFRAA to partner with RSB and develop an African themed certification process.*	Airlines to prioritize investing in AFRAA-certified offset projects, ensuring their carbon offsets meet the highest environmental standards. This could be integrated into their sustainability reporting and marketing strategies.
	Facilitate Carbon Education Programs	AFRAA to develop affordable and specialized training for airline staff on carbon footprint measurement and offsetting strategies, empowering them to implement these practices internally.	Airlines to **train** their employees, from flight crews to operations staff, on **carbon footprint reduction techniques.** This includes optimizing flight routes, reducing fuel burn, and communicating offset opportunities to passengers.

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Technology	Promotion of Fleet Modernization	AFRAA to champion and collaborate with Financial Institutions in creating customized aircraft acquisitions/ financing/leasing products for African airlines. *AFRAA to initiate discussion and follow up on the aircraft acquisition products with AFREXIM and AFDB*	Airlines to utilize the AFRAA/Financial Institutions Platform in leasing newer, fuel-efficient models offer a more practical option to modernize their fleet without high upfront costs. Airlines to optimize aircraft utilization: During fleet planning and management, Airlines can ensure that the newest, most fuel-efficient aircraft are used on high-demand routes, maximizing the emissions savings from fleet modernization efforts.
	Implementation of Digital Platforms for Efficiency	AFRAA to encourage and support airlines in adopting digital tools for optimizing flight paths, reducing fuel consumption, and improving overall operational efficiency through advanced data analytics and artificial intelligence. *AFRAA reached out to solution providers i.e. Osprey Flight Solutions who provide predictive risk analysis tools and presented during the September 2024 Aero Political Committee Meeting*	Airlines to implement real-time data analytics and route optimization platforms to minimize fuel consumption during flights. Airlines to deploy digital tools to monitor aircraft systems and perform maintenance only when necessary, reducing fuel wastage from inefficient engines.
	Establishment of Green Technology Incubators	Partner with airlines and entities to launch technology incubators or innovation hubs focusing on sustainable aviation solutions. *AFRAA - Kenya Airways African Aviation Innovation Summit – Oct 2024*	Airlines to actively engage with green technology incubators by sharing operational data and real-world challenges, helping shape the development of practical solutions. Airlines to co-fund incubator projects focused on sustainable aviation solutions or provide mentorship to start-ups working on innovative green technologies.

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Operations & Infrastructure	Championing of Implementation of Optimized Flight Profiles	AFRAA to promote the use of optimized flight profiles (continuous climb and descent operations) and **direct routing systems** to reduce fuel burn during takeoff, cruise, and landing phases. *AFRAA Free Routing Trials with ET, KQ, RwandAir, EgyptAir, Airlink, Royal AirMaroc & Air Arabia.*	Airlines to train pilots and adopt technology that supports continuous climb and descent operations (CCO/CDO), reducing fuel consumption by avoiding level-off segments during takeoff and landing. Airlines to collaborate with air traffic controllers to request and execute direct routing, minimizing unnecessary deviations and optimizing fuel efficiency by flying the shortest possible routes.
	Facilitate and encourage Airport Collaborative Decision Making (A-CDM):	AFRAA to identify trial airports and work with airports, airlines, and air traffic controllers to implement Airport Collaborative Decision Making (A-CDM) systems that optimize flight schedules, reduce delays, and cut unnecessary fuel consumption.	Airlines to work closely with airports to synchronize ground operations like refueling, baggage handling, and catering services, reducing unnecessary delays and fuel wastage from prolonged APU usage. Airlines to ensure their operations teams are fully engaged in A-CDM processes by assigning dedicated staff to collaborate with airports and ground handlers, optimizing resource allocation and reducing ground time.
	Carbon-Neutral Airport Certification	AFRAA to support and encourage African airports to achieve carbon-neutral certification by adopting sustainable infrastructure practices, and providing a roadmap for airlines to collaborate in these efforts. *a. AFRAA's collaboration with ENVISA on carbon-neutral certification for airports* *b. AFRAA's continuous collaboration with ACI – Africa*	Airlines to partner with airports to co-invest in joint sustainability projects, such as solar energy installations, green terminals, or electric vehicle charging stations, helping airports achieve carbon-neutral status faster. Airlines to actively participate in airport sustainability programs by adopting and supporting carbon-neutral initiatives like electric ground vehicles and green energy sourcing.

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Human Capital	Establish Regional Training Programs for Sustainable Aviation (Environmental, Social, and Governance (ESG)	AFRAA can coordinate with airlines and training institutions to create standardized regional programs focusing on sustainable aviation specializing in Environmental, Social, and Governance (ESG) *AFRAA Joint Workshops with ENVISA (2025) & EASA*	Airlines to introduce simulation-based training for pilots, ground staff, and technicians to practice fuel-saving measures, energy-efficient maintenance, and optimized flight operations. Airlines to establish specialized modules within their training programs that focus on the different roles in aviation, ensuring tailored education i.e: - **For Pilots:** Train on fuel-efficient flight techniques, continuous climb and descent operations, SAF handling, and route optimization. - **For Engineers:** Provide courses on maintaining and servicing electric aircraft, hydrogen propulsion systems, and SAF-powered engines. - **For Ground Staff:** Educate on electric ground vehicle operations.
	E-Learning	AFRAA to encourage creation of a centralized e-learning platform offering courses on sustainable aviation practices, carbon offsetting, and new technologies like SAF and electric aircraft. AFRAA's continuous Virtual Trainings	Airlines to integrate flight simulation software to train pilots in fuel-efficient flight techniques, such as continuous climb/descent operations and optimized routing.
	Certified Trainings	AFRAA to work with SMEs to create certification programs for airline professionals focused on green aviation technologies, emissions management, and sustainable practices.	Airlines to encourage staff to complete sustainability training or certification programs by offering incentives such as bonuses, promotions, or public recognition.
	Next Generation of Aviation Professionals	Partner with universities and technical institutions to create a talent pipeline for the next generation of aviation professionals, focusing on sustainability, emissions reduction, and green technology development.	Airlines offer internships and opportunities to mentor and grow NGAP.