



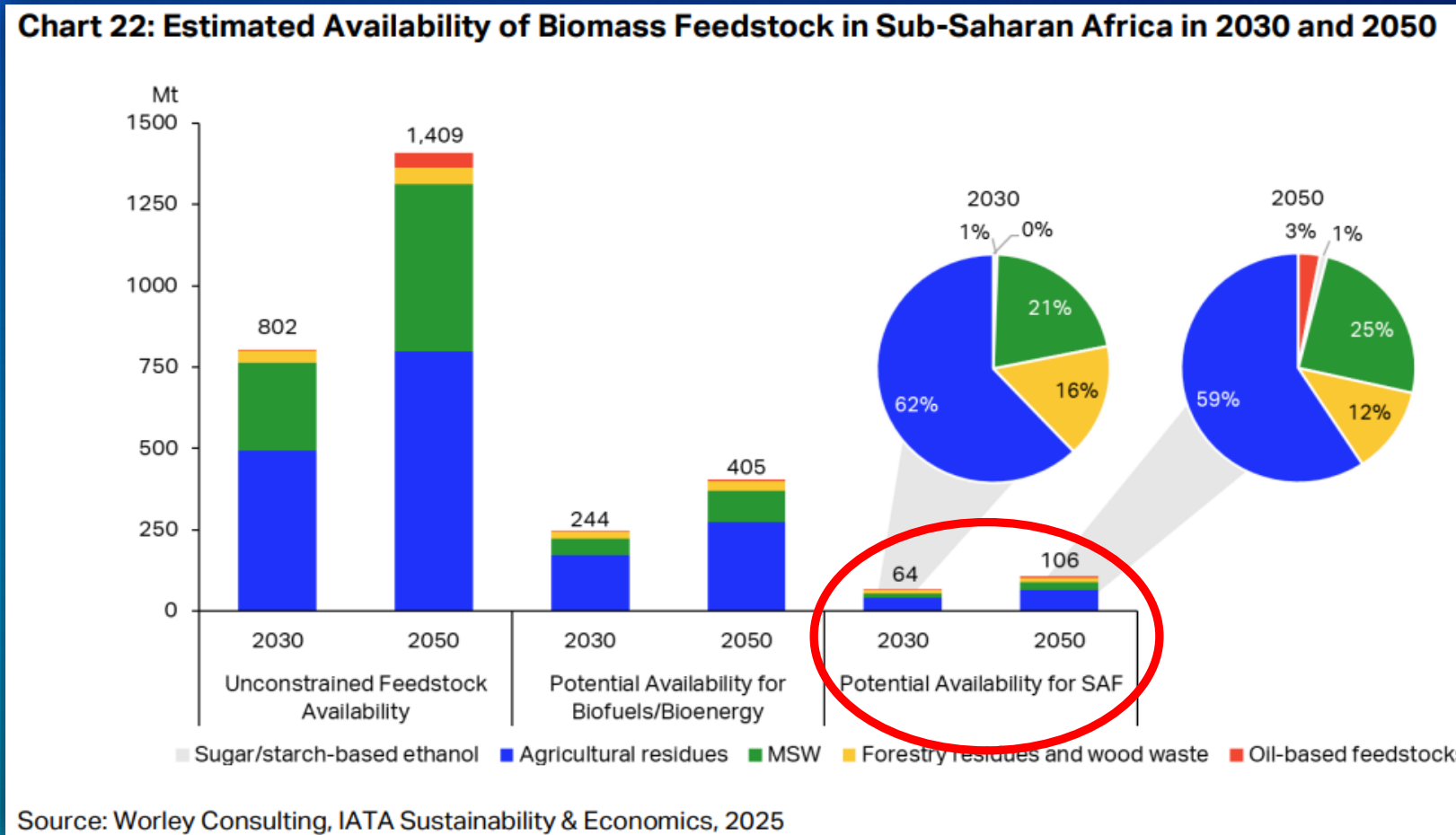
From Potential to Progress

Boeing's role in helping derisk SAF project investment

Andrew Sweeney | Middle East, Africa, Turkiye and Central Asia Sustainability Leader, Boeing

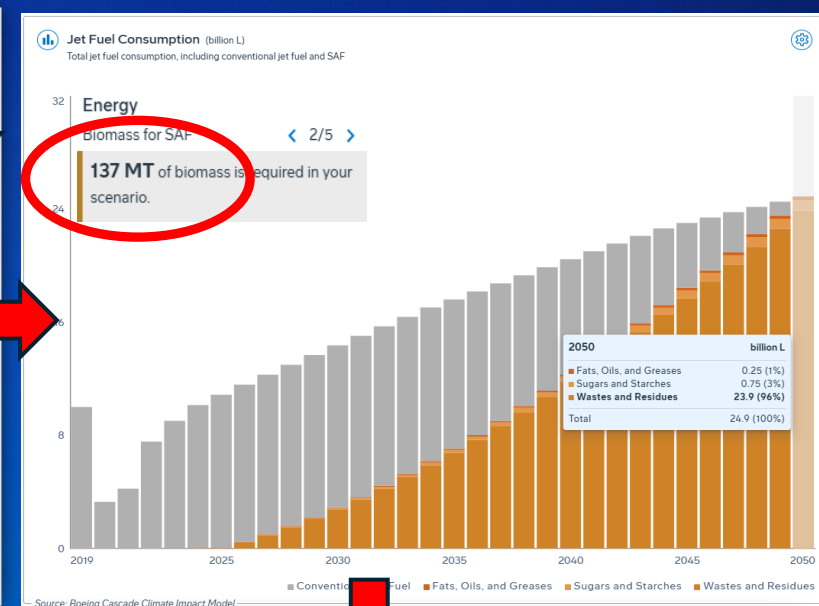
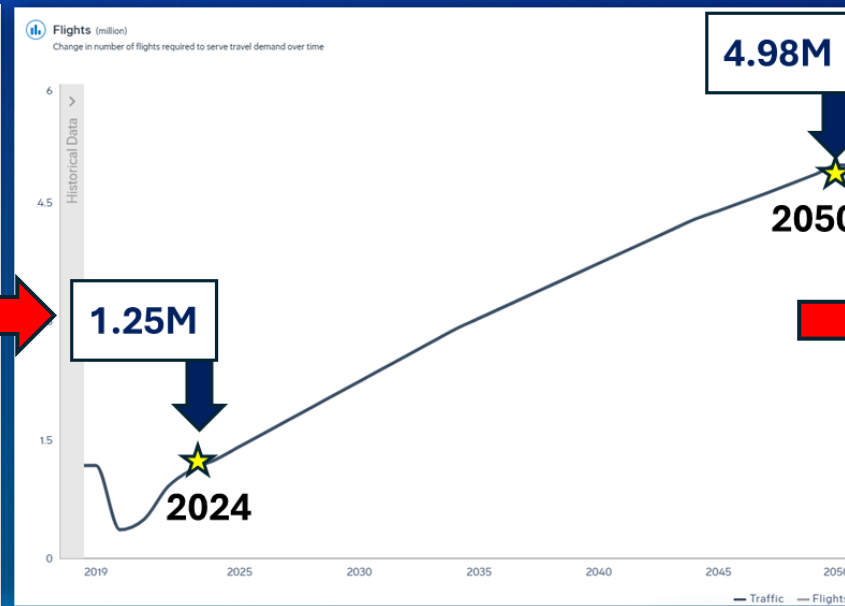
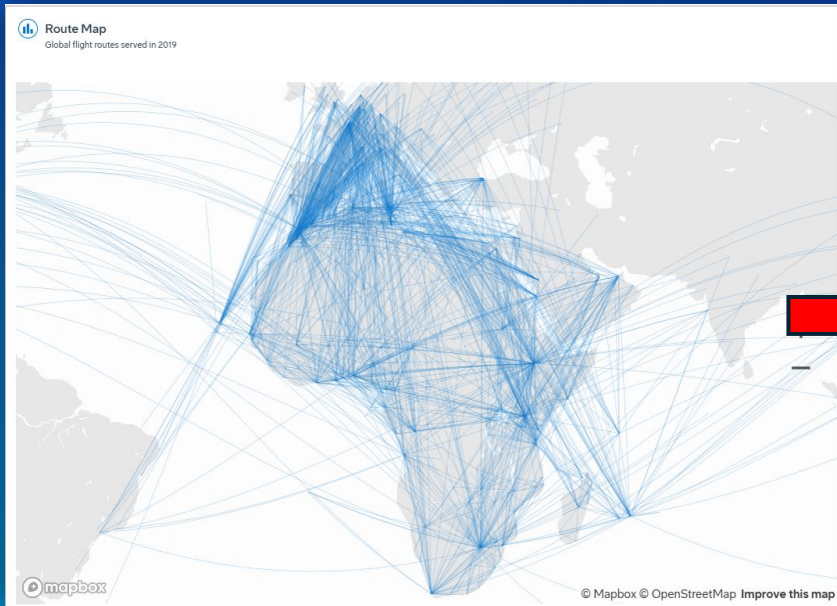
The Opportunity

African SAF Opportunity – Domestic Use Case



A recent IATA study analyzed biomass feedstock available for SAF production in several regions. They determined that there was 106 Mt available in Sub-Saharan Africa. A further 114 Mt was available in MENA (not shown in this graph)

African SAF Opportunity – Domestic Use Case



Sub-Saharan Africa theoretically has enough biomass available to meet the majority (77%) of Africa's 2050 jet fuel needs.

This has no consideration for the potential of 3rd generation fuels such as Power-to-Liquid.

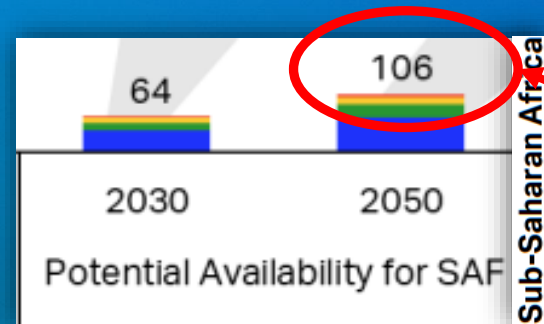
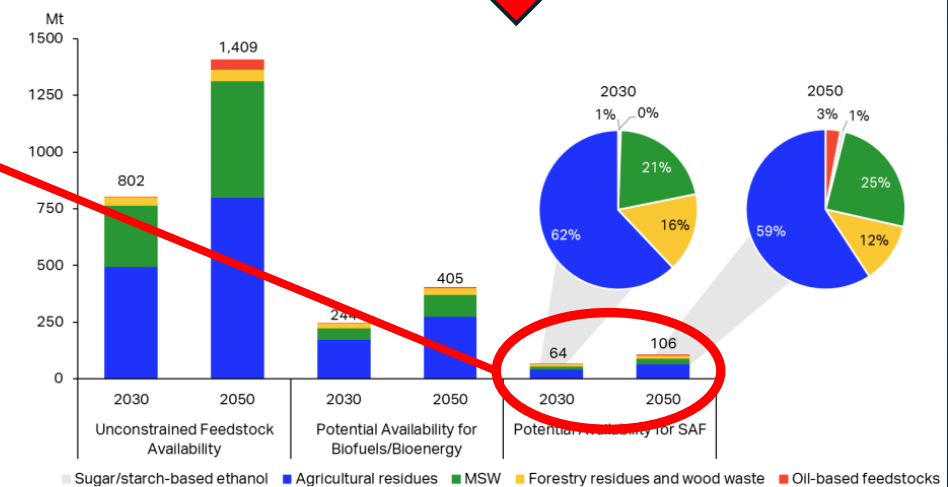


Chart 22: Estimated Availability of Biomass Feedstock in Sub-Saharan Africa in 2030 and 2050



Source: Worley Consulting, IATA Sustainability & Economics, 2025

African SAF Opportunity – Domestic Use Case

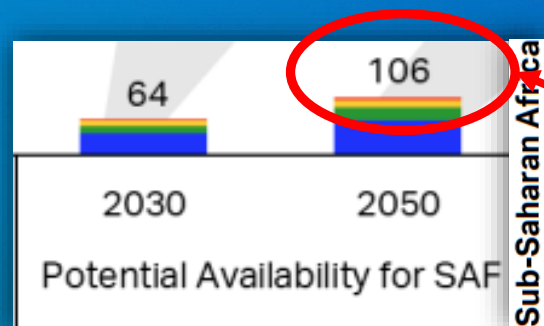
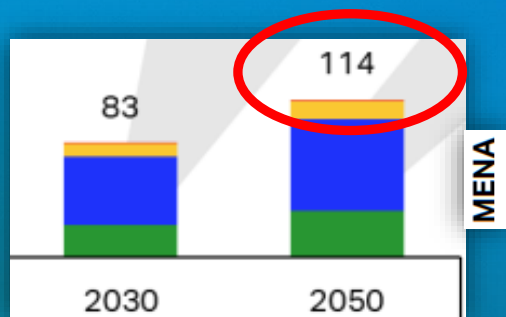
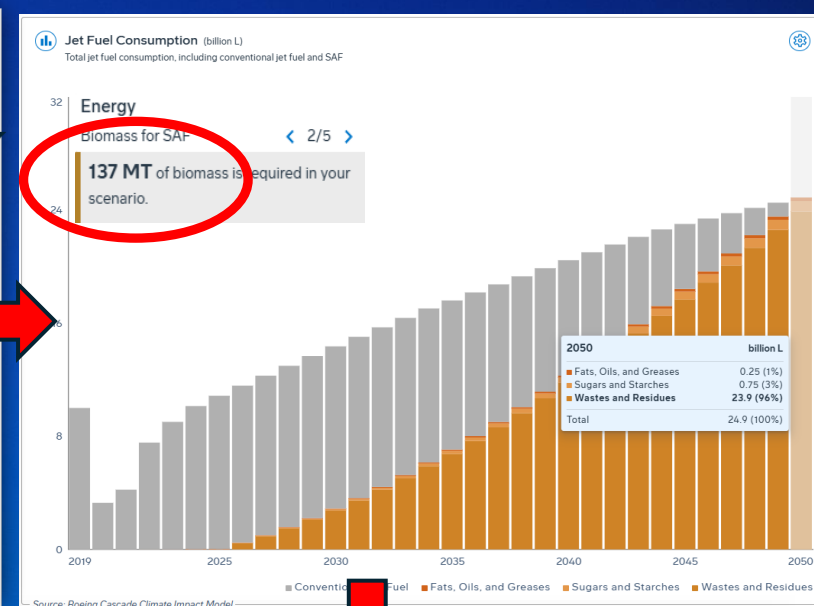
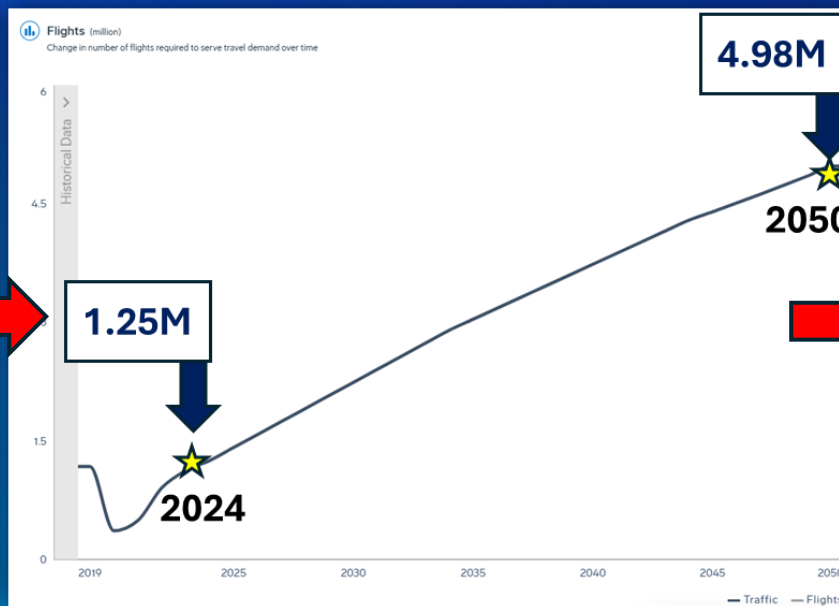
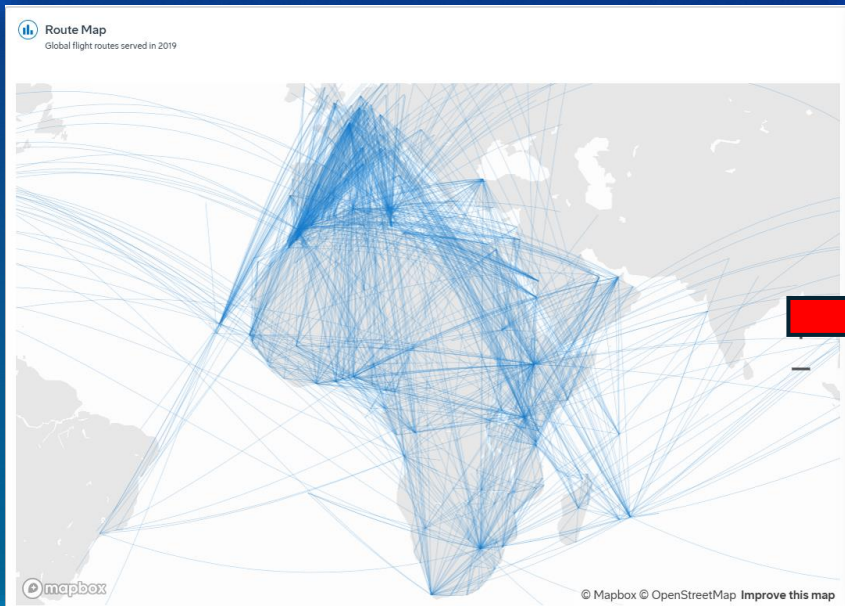
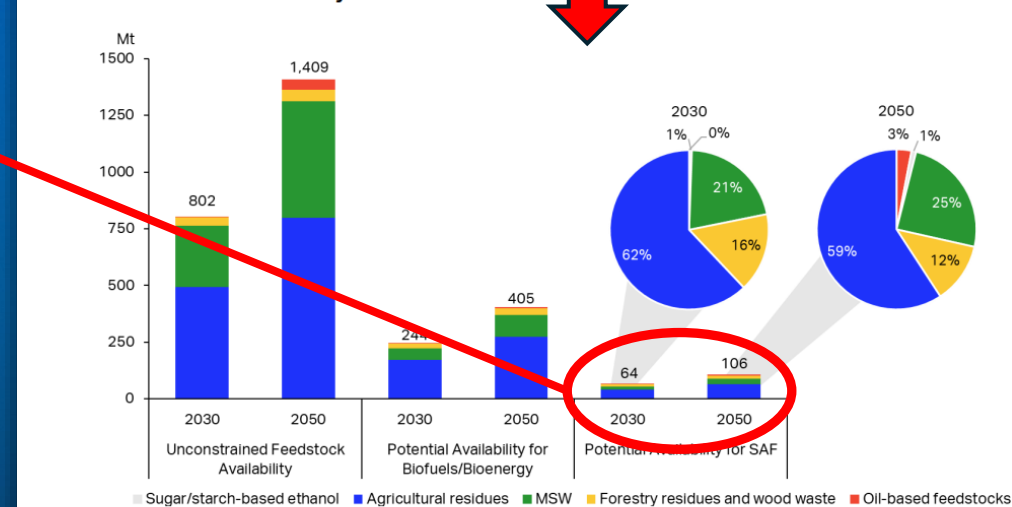


Chart 22: Estimated Availability of Biomass Feedstock in Sub-Saharan Africa in 2030 and 2050

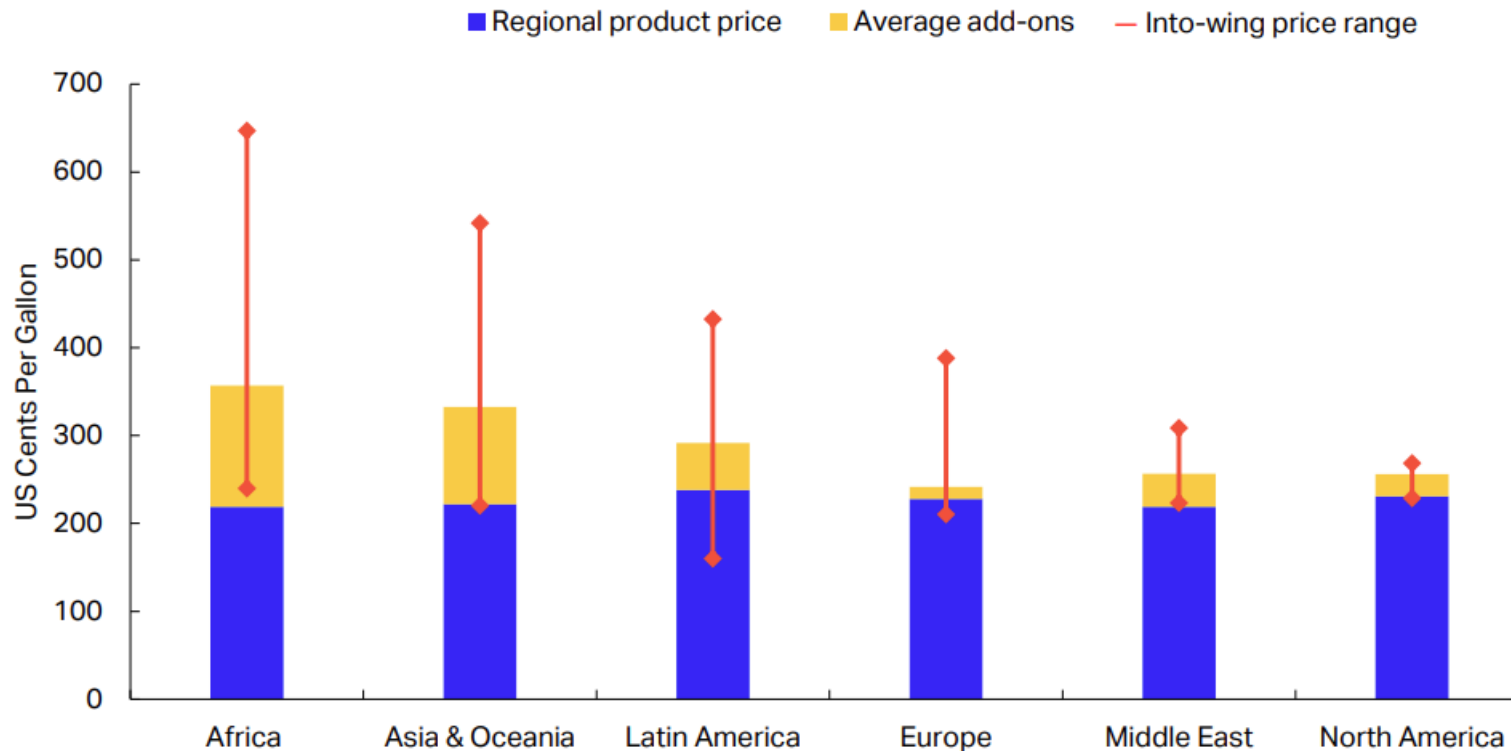


In North Africa, it is likely there will be surplus available for potential exports.

African SAF Opportunity – Cost Risk or Opportunity

Regional fuel cost variation affects competitiveness

Into-wing jet fuel price range by region, US cents per gallon



Source: IATA'S Airline Survey for May 2023 uplift and S&P Global Commodity Insights

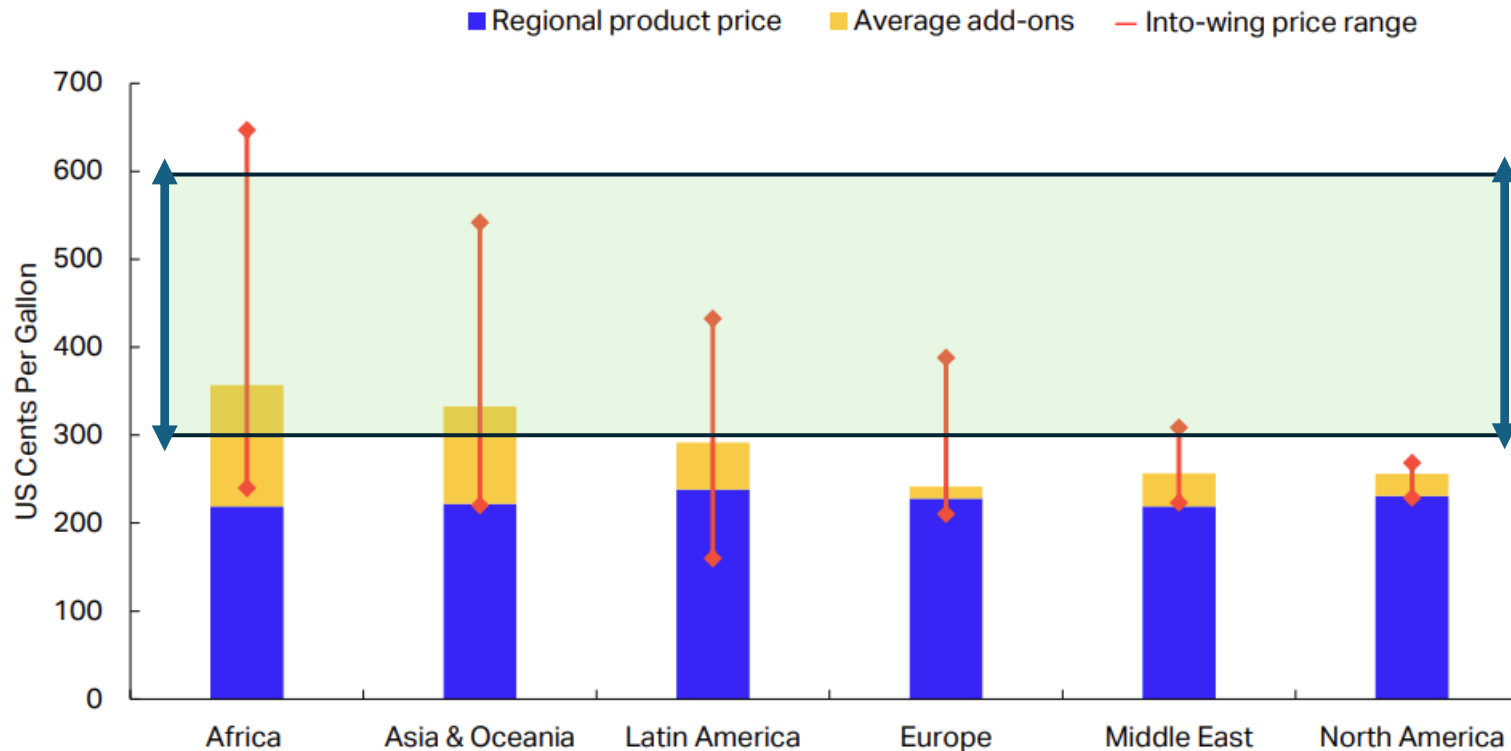
At up to \$6.50/gallon, Africa has the highest average fuel price globally. This is due to:

- Insufficient refinery capacity
- Limited supply competition
- High logistics and import costs
- Low procurement volumes
- Taxes

African SAF Opportunity – Cost Risk or Opportunity

Regional fuel cost variation affects competitiveness

Into-wing jet fuel price range by region, US cents per gallon



Source: IATA'S Airline Survey for May 2023 uplift and S&P Global Commodity Insights

Delivered SAF costs \$3.11-\$6.14 per gallon worldwide (Nov 2025). The cost of SAF for African airlines may be closer to the price they pay for fossil fuels as it has the potential to:

- Increase refinery capacity
- Increase supply competition
- Reduce logistics and import costs

Financing & Risk

SAF competes against commercially mature fossil production:



Mature production and supply chain infrastructure

Highly subsidized.

Scale of projects

Standardized contracts

Predictable revenue with high liquidity

Proven technology

Beyond 1st generation biofuel production (HEFA-SPK), SAF facilities are often First-Of-A-Kind plants/ technologies

SAF projects often require significant supply chain development

Initial plants often limited in size/ scale

Some technologies are unproven

Unproven revenue model, “green/energy security premium” and less liquidity



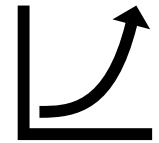
Reducing Technical Risk

- SAF approvals are coordinated through the international standards body ASTM. Alongside this sits an OEM panel that ensures systems compatibility and safety standards are met.
- The panel's near-term focus is on "drop in" fuels. The OEM panel has approved 8 technology pathways up to approved blend limits.
- The endorsement of the OEM community over safety and compatibility lowers the technical risk for SAF projects to help attract investment.
- The next steps will consider how to increase blend limits for pathways to 100%, as well as approving new pathways – this increases competition, which helps reduce cost.

Annex	Pathway	Full Name	Feedstock	Max Blend
A1	FT-SPK	Fischer-Tropsch Synth / Paraffinic Kerosene	Waste, biomass or gas (e.g. rubbish, wood, natural gas)	50%
A2	HEFA-SPK	Hydroprocessed Esters & Fatty Acids	UCO, tallow, animal fats, camelina oil	50%
A3	SIP	Synthesised Iso-Paraffins	Sugars (fermentation to farnesene)	10%
A4	FT-SPK/A	FT with Aromatics	Biomass, municipal solid waste	50%
A5	ATJ-SPK	Alcohol-to-Jet / Synth. Paraffinic Ker.	Ethanol, isobutanol from sugars/cellulose	50%
A6	CHJ	Catalytic Hydrothermalolysis Jet	Fats, oils, greases	50%
A7	HC-HEFA	Hydroprocessed Hydrocarbons (algae)	Algae (plant like organisms in water)	10%
A8	ATJ-SKA	Synthetic Paraffinic Kerosene with Aromatics	Alcohols from Biomass	10%

The Offtake Dilemma & the Role of Policy

- SAF is one of the main decarbonization levers the aviation sector will depend upon to achieve ICAO's Long Term Aspirational Goal (LTAG) of Net Zero by 2050.
- The SAF market is nascent, projected to reach 0.7% of global jet fuel production in 2025. Most industry bodies expect the market will need to scale beyond 50% of jet fuel production by 2050.
- To increase supply investment must flow into projects. Investors look at financing through a risk lens. They need to ensure a project is guaranteed to sell its product over the life of the loan/ investment (typically 8-10 years), or they risk losing their investment.
- SAF currently costs significantly more than conventional aviation fuel. Costs are expected to reduce as supply and commercial maturity increase, but few airlines can commit to long term offtake at current prices.
- The only way to bridge this gap is through robust policy measures that increase offtake certainty.



Boeing Assistance & Capacity Building

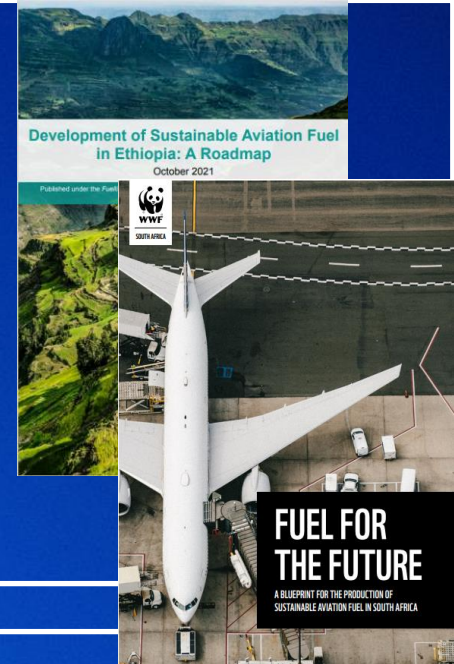
SUSTAINABLE
AEROSPACE
TOGETHER

Training:

- Delivered to Ethiopian stakeholders, in partnership with Roundtable for Sustainable Biomaterials (RSB).
- SAF training and roundtable dialogues with AFRAA in May and December 2025.
- Cascade Climate Impact Model supports national planning. Boeing led a workshop for the Rwandan CAA in 2026.

Policy & Financing Support:

- In 2022 Boeing partnered with RSB to undertake SAF roadmaps in South Africa and Ethiopia.
- Currently working with other African governments on similar national studies.
- Founding partner of ICAO's FinVest hub.



STEM & Youth Engagement:

- Boeing and Ethiopian Aviation University: a sustainability course for cadets.
- Boeing and Amideast: STEM for Sustainability educational programs for school students in Egypt and Morocco (2022-2025).
- Boeing and Junior Achievement: Sustainability program for youth in Senegal (2023-2024), online aviation sustainability course for university students in Algeria, Egypt and Morocco (2024 onwards).



