

THE SAF INDUSTRY ROADMAP FOR SOUTH AFRICA

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The Roundtable on Sustainable Biomaterials (RSB) and the World Wildlife Fund - South Africa (WWF-SA), in collaboration with local and international stakeholders, have researched opportunities for the development of Sustainable Aviation Fuels (SAF) in South Africa and the region for several years.

In April 2022, the RSB brought together key stakeholders to learn more about the status of SAF development in South Africa, and to advise on what a national SAF economy should look like, with the aim of co-creating a roadmap for SAF development in the country. The audience included decision-makers and experts from government, aviation, biomass producers, industry and civil society who have a vested interest in SAF, and whose agendas are aligned with the development of SAF in South Africa.

The roadmap aims to identify the most viable feedstock and technology mix that adheres to the sustainability requirements of the RSB, to inform policymakers of the necessary policy actions needed to incentivise SAF production and use, and to support the development of more proposals and plans aimed at unlocking further funding and investment into SAF research, development and pilot production.



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<https://rsb.org/2022/05/05/wwf-sa-launches-report-on-potential-of-saf-production-in-south-africa/>

The main findings of the roadmap are:

- The **SA aviation industry** is not onboard. It is willing to partner on SAF, but is financially challenged. A SAF Strategy needs consider off-takes, incentives for airlines, and how to provide market certainty.
- A policy is needed to facilitate partnerships with airlines, to align the producer to the end market.
- The **South African government** needs to consider ways to incentivise industries.
- Regarding green hydrogen, a powerful motivation is the product's green uptake, which gives the incentive at the end and not upfront without production. Incentives are revised depending on the uptake, allowing for a blended incentive model.
- There needs to be a mental shift in **airline and customer attitudes**, regarding costs. It is important to raise awareness and educate the market about the value of SAF in mitigating climate change.
- South Africa is unclear about **blending mandates**, and applying blending mandates to local airlines could skew the market.
- Authorities should rather look at **incentives**, and how airlines would qualify for them. Incentives must ensure that sufficient fuel remains in South Africa for local use.
- Feedstock** materials such as IAPs, and agricultural and industrial waste, have **multiple government overlaps in the supply chain**.
- Government needs to liaise across the sectors to enable agricultural residue or industrial waste to be seen as feedstock and to support feedstock development for a SAF or bioenergy market.
- There needs to be a **multi-department government task force** to support biofuel production.
- Having **projects on the ground** is critical. It is key for the South African government could apply global standards locally, and create a SAF allocation in a separate budget to enable a pilot project on the ground.

Sugarcane as feedstock:

- The viability of SAF production varies between irrigated, dryland and dryland green sugarcane as a feedstock, with the cultivation of irrigated cane having a higher carbon footprint.
- An enabling regulatory framework is needed
- Small-scale growers would need assistance with essential structures and equipment to ensure occupational health and safety, and internal farm level administrative support would need to be provided. The use of local labour, preferential labour laws and procurement processes would have to be implemented.
- Proper impact assessments would have to be carried out, and the national greenhouse gas reporting requirement would need to be improved.

Green Hydrogen as feedstock:

- Sasol is not stopping CTL and will continue to do both as it is one of the largest employers in the coal sector and must look for a suitable transition for the labour market.
- Green hydrogen production costs are significantly higher than coal or gas. The cost of electrolytes, green electricity and green infrastructure, govern the high GH prices. For Sasol to reach net-zero sustainably, it will have to convert to green hydrogen and green carbon sources through different pathways, starting with gas then investing in green hydrogen.
- The allocation of products to just SAF from Secunda is not permitted under the EU renewable energy directive. Sasol is liaising with RSB to look at how they can identify levers and policy enablers to help the transition. The SA government is aware of the challenge and is supportive. The DTIC and DMRE are working with Sasol to bring SAF to South Africa.

Invasive alien biomass as feedstock:

- SA has enough IAPs to serve as a feedstock for the next 20 years to ensure security of supply. The concern is if clearing can be ramped up fast enough.
- A viable commercial market, and off-take agreements are required.
- The integrity of the product must be guaranteed.
- The industry and technology must be close to facilities.
- SMME challenges in upscaling SAF production include training, biomass availability and transport costs.

Key prerequisites to be met

- Enabling policy & legislation
- Public private partnerships
- Incentives & subsidies
- Stakeholder support

Key issues to be resolved

- Stakeholders' ambition and capacity to support SAF development
- Who is responsible for leading a national saf roadmap process
- Top 3 priorities for SAF development in the next 1, 2, 5 years

Key objectives:

1
YEAR

- RAISE AWARENESS
- DEVELOP PARTNERSHIPS

2
YEARS

- CREATE DEMAND
- ENABLE SUPPLY CHAIN

5
YEARS

- SCALE UP ACTIVITIES

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THE SAF INDUSTRY

ROADMAP FOR SOUTH AFRICA



- 1 YEAR** ■ RAISE AWARENESS
■ DEVELOP PARTNERSHIPS
- 2 YEARS** ■ CREATE DEMAND
■ ENABLE SUPPLY CHAIN
- 5 YEARS** ■ SCALE UP ACTIVITIES



AIRLINE INDUSTRY:

- Change internal mindsets/ increase awareness of climate impacts of aviation
- Make sustainability plans
- Engage with one another
- Passenger / customer education
- Support public debate / understanding
- Explore incentive packages
- Work out an economic model to enable purchase of SAF
- Actively engage in international fora on aviation
- Provide market certainty by:
 - Concluding offtake agreements
 - Equity investment in SAF projects
- Increase offtake quantities
- Commit to regular SAF refuelling

GOVERNMENT:

- Create inter-departmental taskforce on SAF to avoid policy fragmentation
- Develop domestic flexibility mechanisms to facilitate uptake
- Leverage position on international bodies to increase flexibility of SAF accounting
- Evaluate possible incentives (carrots vs sticks); take broad view - they can be budget neutra
- Develop national flexible allocation system linked to flexibility mechanism to prioritise SAF from integrated production systems
- Implement the incentives
- Support availability of low cost green hydrogen
- Align existing government programmes (WfW/EPWP) with SAF supply chain
- Create regulatory framework for domestic use
- Transpose relevant international regulations
- Develop sectoral SAF masterplan
- Develop GCF proposals to drive sector transformation
- Policy shift to SAF instead of road transportation
- Include SAF in industrial policy
- Scale up incentives

PRIVATE SECTOR:

- Support government to liaise and correspond across different depts and sectors
- Look to DSIT for funding
- Develop proof of concept
- Form industry body to coordinate interaction with other stakeholders
- Commit to strong sustainability principles
- Long-term offtake agreements
- Unlock role of airports and other partners
- Share learnings from early projects
- Trial local SAF certification with flexibility of allocation to demonstrate / pilot concept
- Scale up production capacity
- Invest in R&D
- Ensure continued sustainability certification

CIVIL SOCIETY:

- Continue with climate awareness campaigns, focus on the flying public
- Get citizens on board to demand sustainable products
- Ensure integrity of supply through certification
- Ensure rehabilitation of landscapes
- Support acceptance of higher costs of flying
- Continued sustainability monitoring of different SAF supply chains.

