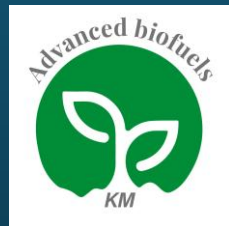




SAF Market Development

Kyriakos Maniatis & Esther Hegel



Global SAF capacity by technology

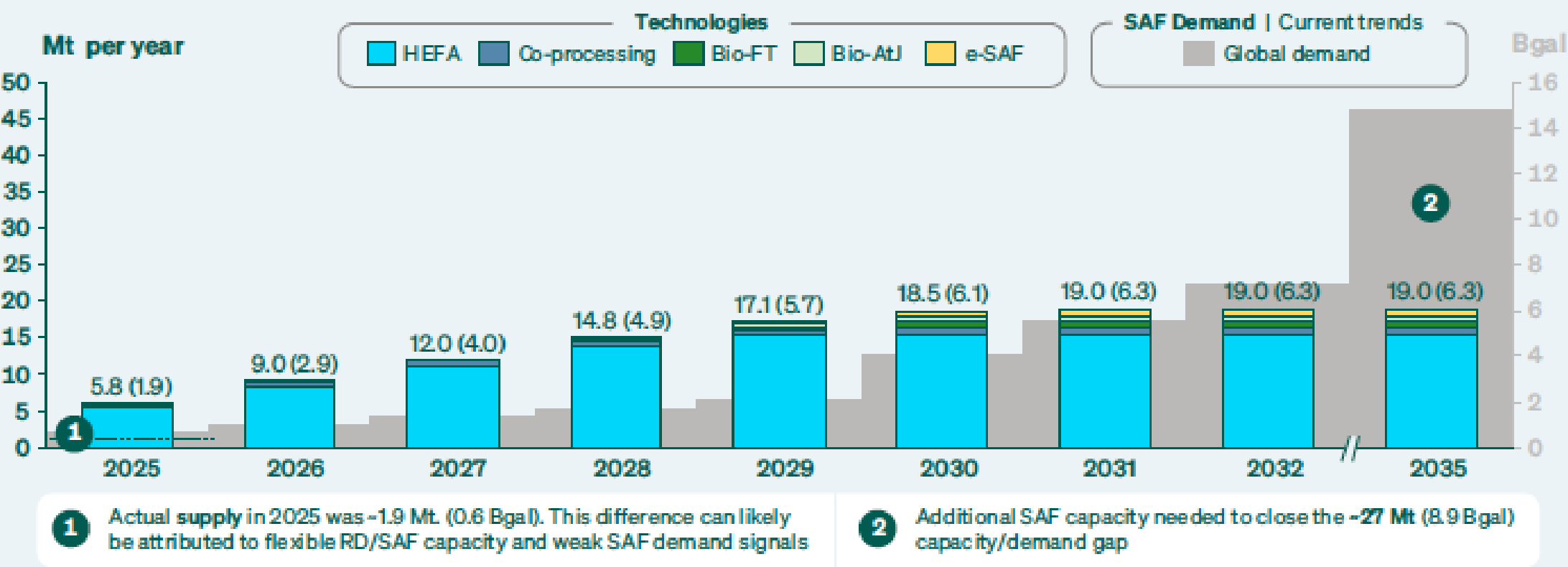
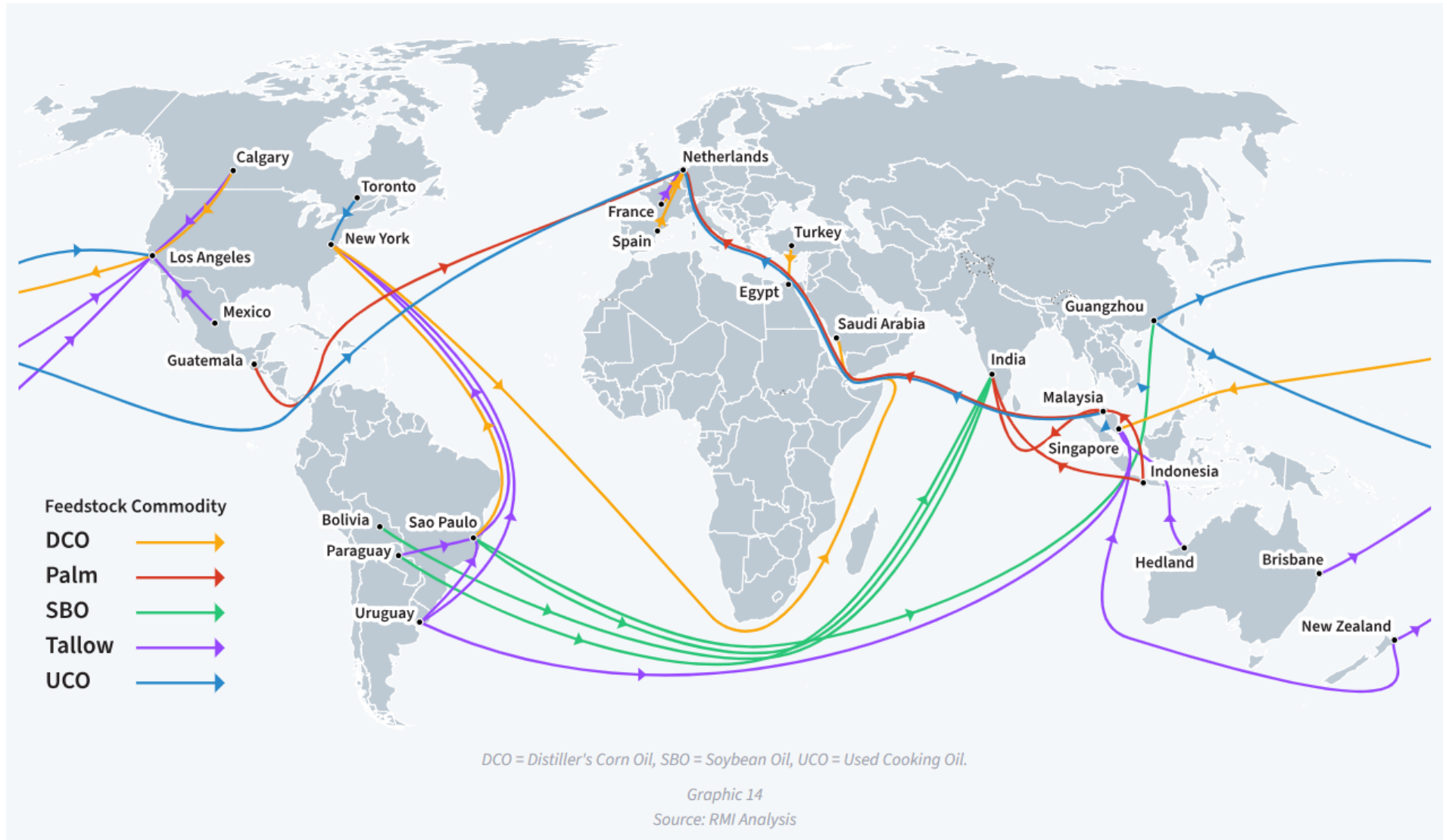


Figure 1: Global SAF capacity and demand balance is expected to yield a supply gap from 2032



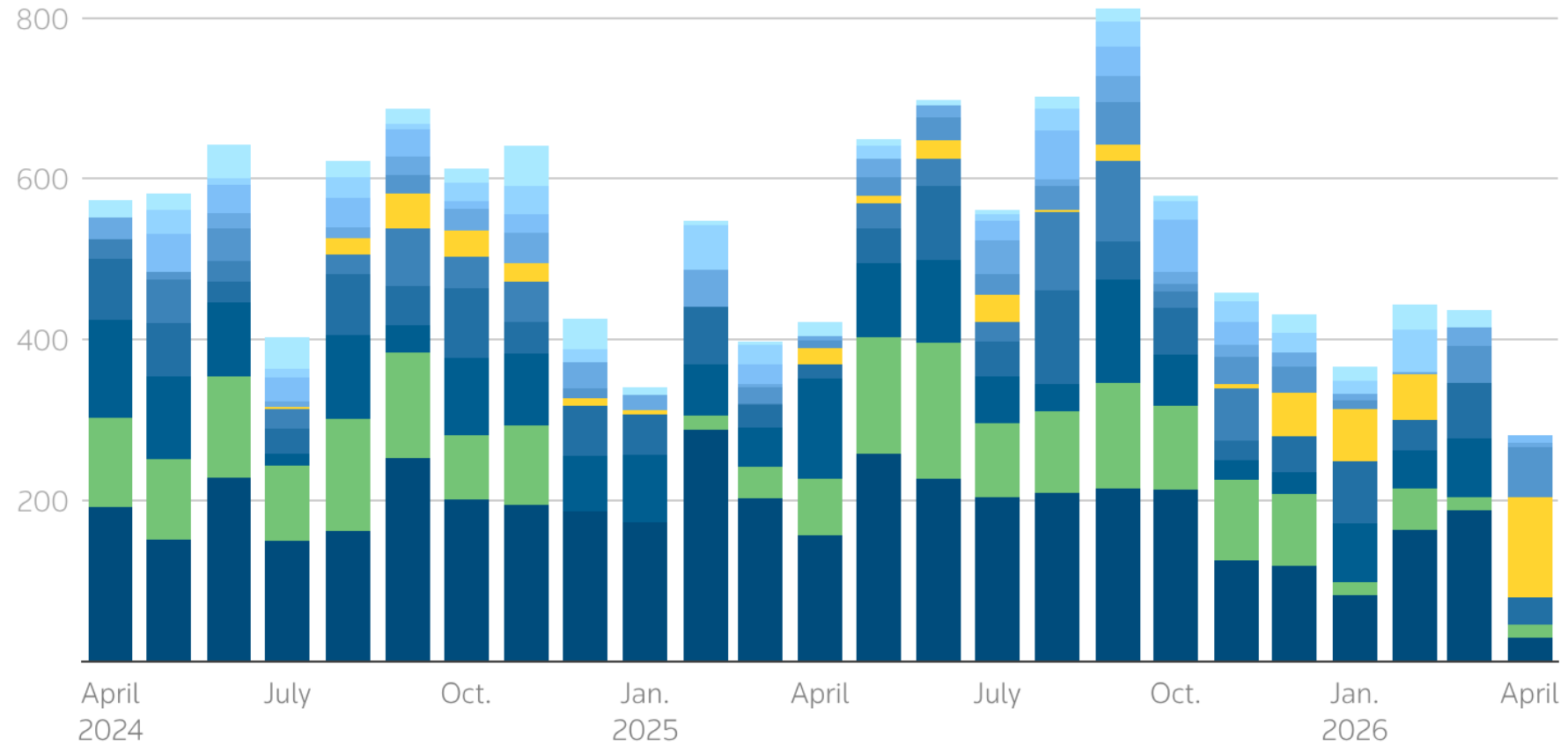
SAF Market Development (March 2025)

Global SAF trade is sensitive to national and local policy changes



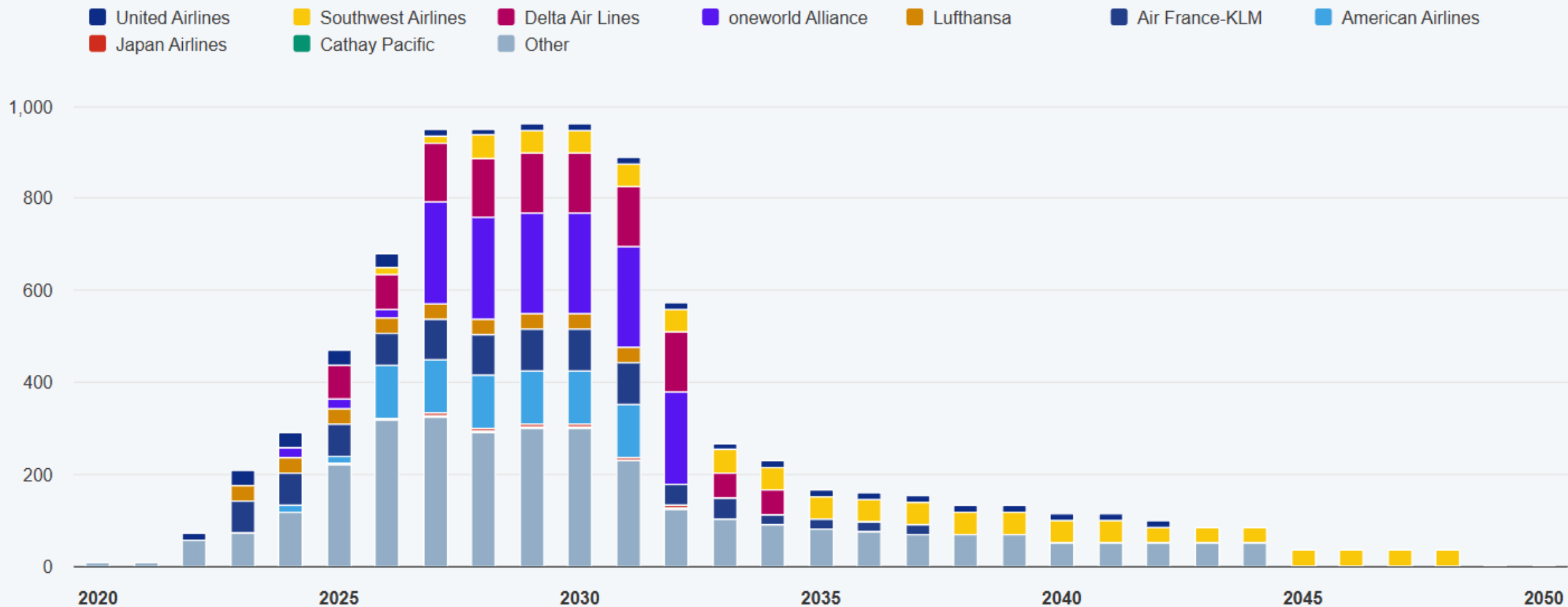
European jet fuel imports

● Kuwait ● India ● United Arab Emirates ● Saudi Arabia ● South Korea ● United States ● Nigeria
● Egypt ● China ● Oman ● Others

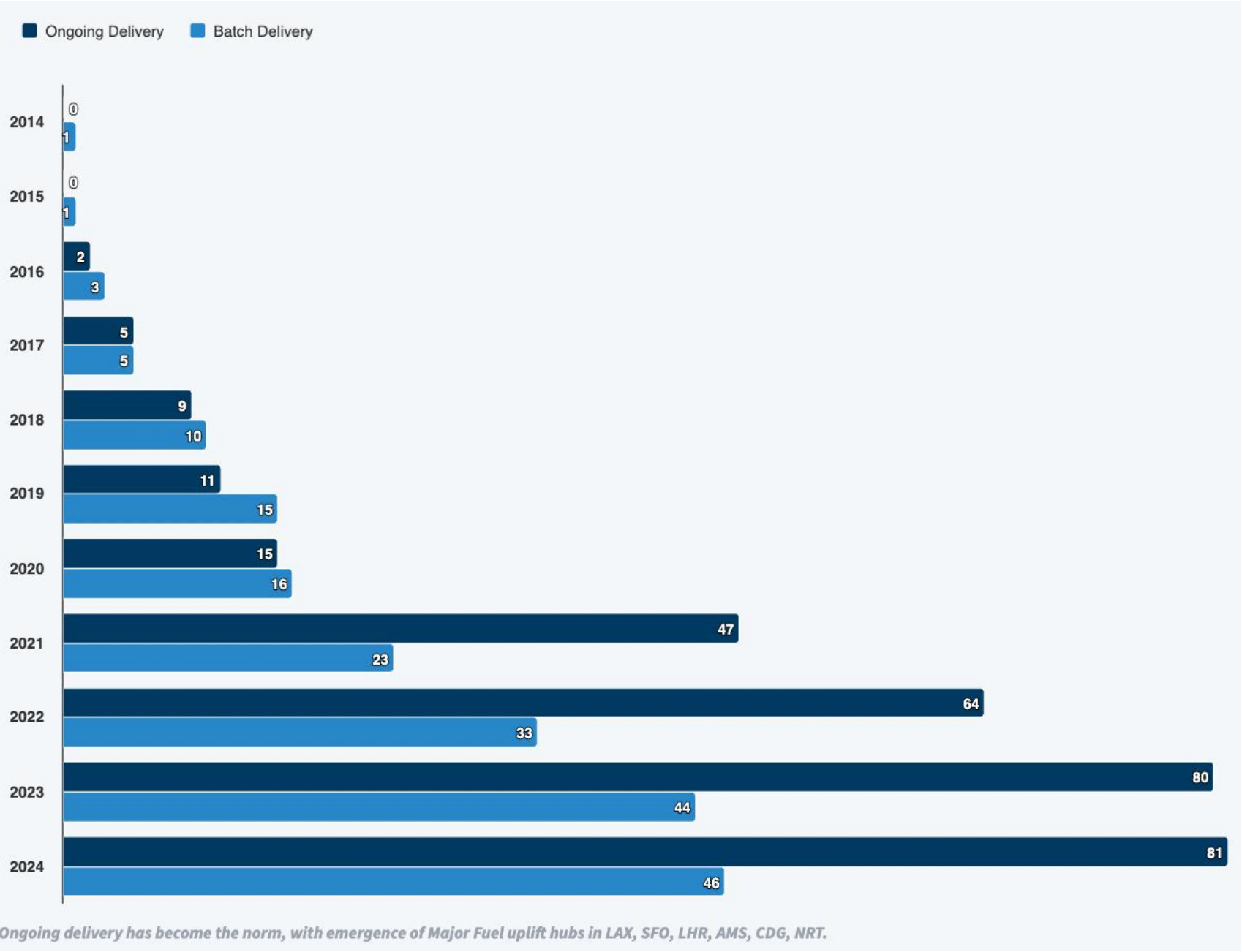


Note: Jet fuel imports into Europe in thousands of barrels per day

Source: Kpler | Ron Bousso

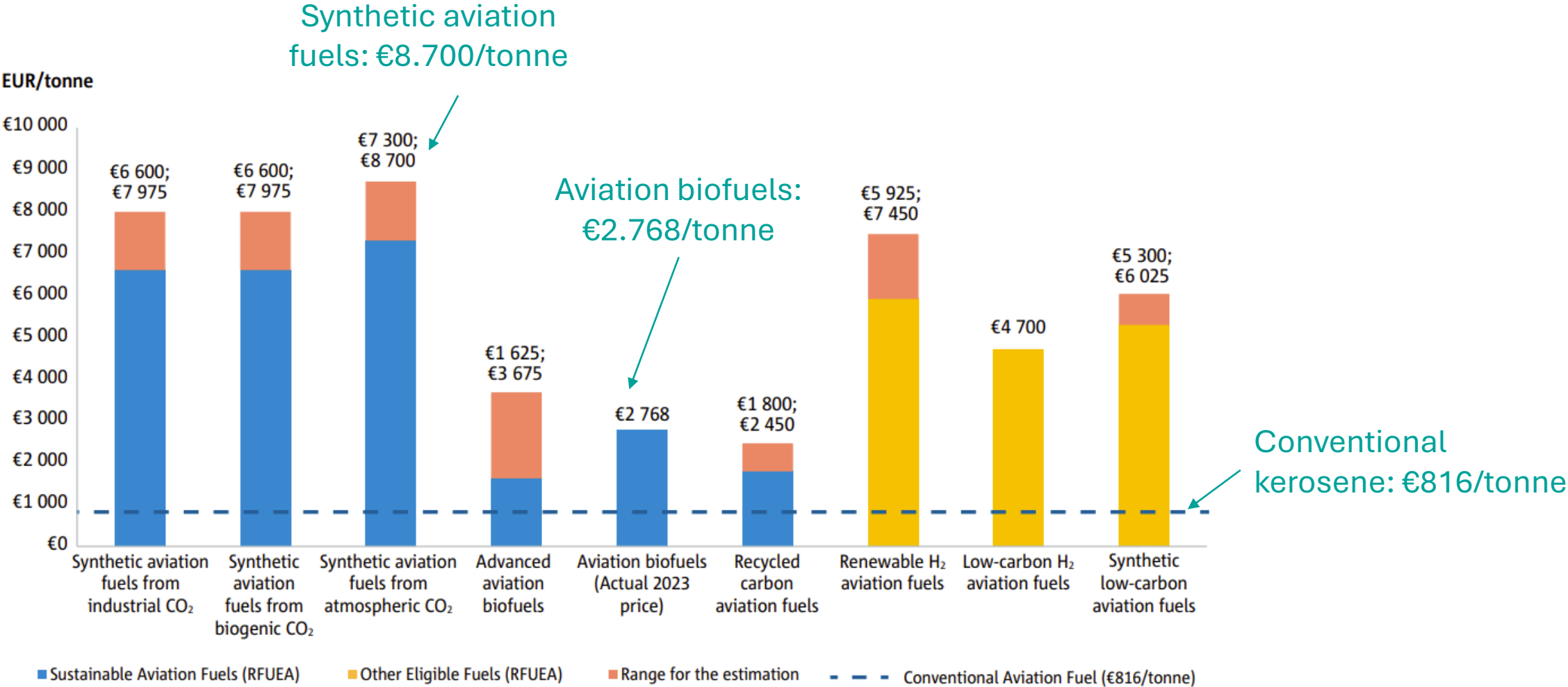


SAF offtake agreements by major airlines, MGal/yr



SAF supply at airports

SAF Pricing

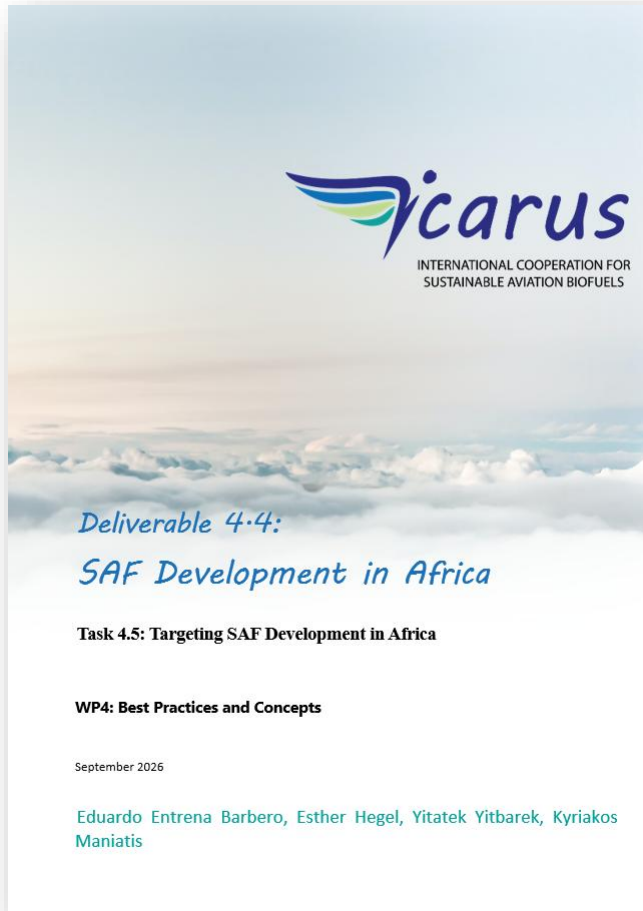


Average price estimates for 2024 by EASA following the SAF terminology established by the ReFuelEU Aviation

Key Messages

- In spite of the policy uncertainties the SAF market slowly develops.
- There are commercial corridors established for international trade in SAF.
- The war in Iran has created serious problems for the EU aviation industry and the EU is importing significant quantities of jet fuel; efforts are being done to diversify jet fuel supply.
- The cost of SAF and eSAF remain significantly higher than fossil kerosene.

Deliverable: SAF Development in Africa



The journey

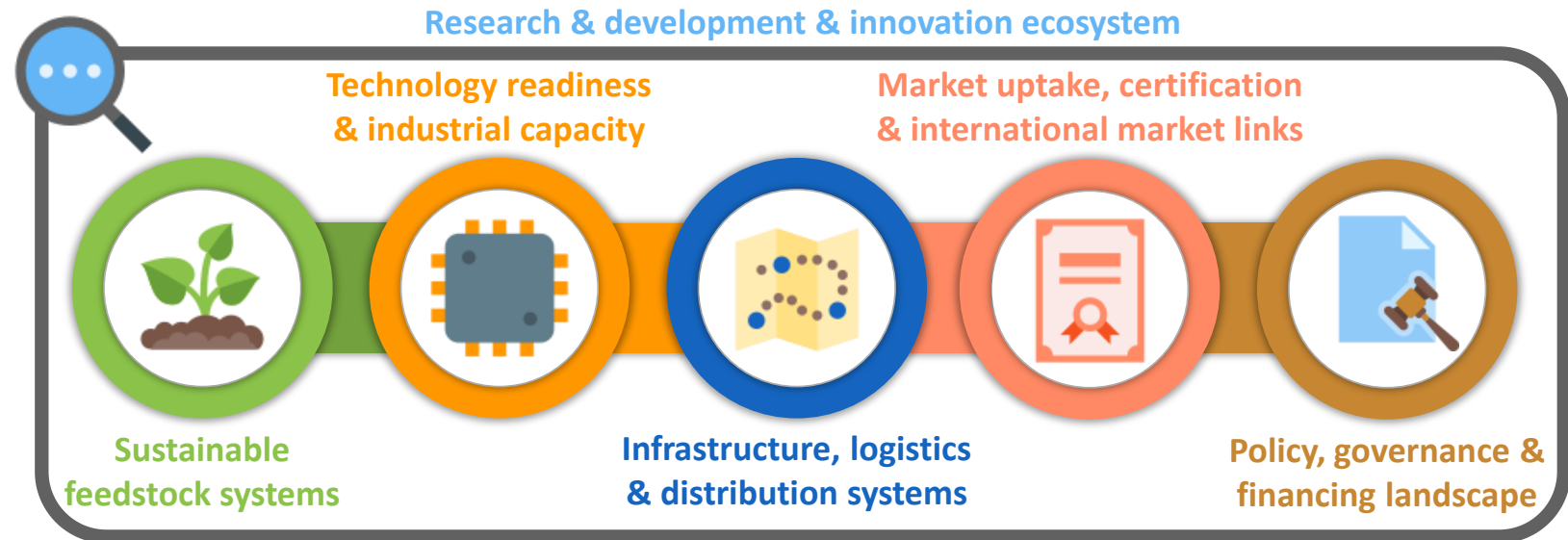
- **Drafted by the ICARUS Project Team**
- **Initial Webinar and Expert Presentations** on 09.09.2025, including Yitatek Yitbarek (RSB), Francis Mwangi (ICA), Robert Malina (Hasselt Univ.) and Farai Chirese (ICA)
- **Bilateral engagements** with RSB members & external stakeholders
- **Presentation and discussion** in May 2026 at the EUBCE 2026, The Hague
- **Expert reviews & discussion** of updated report in August 2026
- **Public Webinar with key findings** next week, 23 September, 2 pm CEST
- **ICARUS Webinar - Accelerating SAF Development in Africa - 23 September 2026, 2:00 PM (Registration Link) - ICARUS BIOJET**
- **Finalisation and submission** by 30 September 2026

Building blocks of the SAF value chain

The deployment of SAF relies on an integrated, multi-actor system that spans technological, economic, infrastructural, and regulatory dimensions.

The value chain of sustainable fuels for aviation can be organised into **six strategic building blocks**:

- The first five represent the core system components required for large-scale deployment
- The sixth (R&D&I ecosystem) is highlighted as a cross-cutting enabler that supports progress across all stages of the value chain.



SAF readiness assessment per country

1. Structural Opportunity

Countries with strong feedstock potential or infrastructure assets but limited SAF-specific policy action, industrial capacity, or investment to date. Readiness depends on future regulatory clarity, investment mobilisation and integration into global SAF value chains.

Examples: Nigeria, Zambia, Ivory Coast, Madagascar.

Typical features:

- Abundant residues or oilseed potential;
- early policy discussions, no binding instruments;
- limited certification or LCA capacity; and
- minimal industrial infrastructure for SAF.

2. Export-Oriented Development

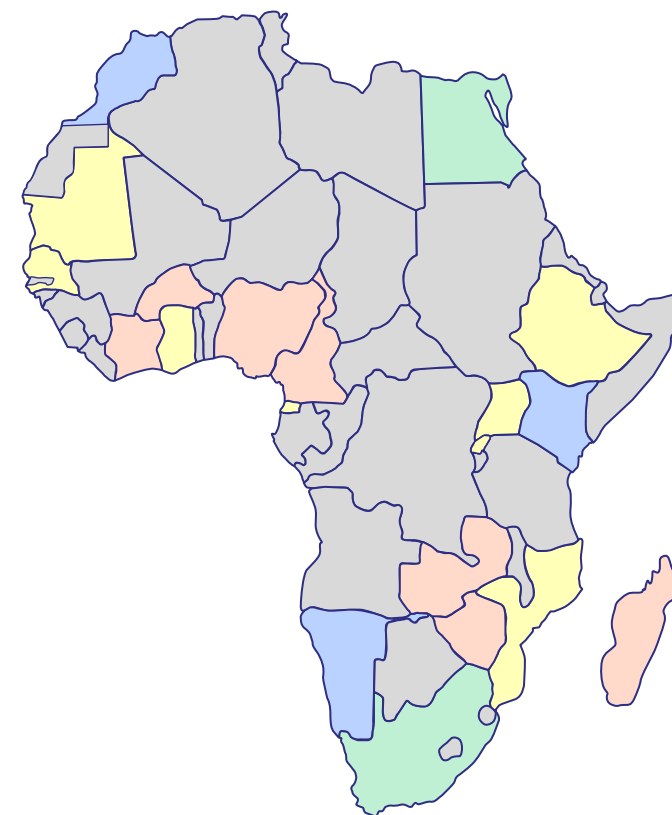
Countries where SAF engagement is driven largely by international demand, donor-supported feasibility studies and external partnerships, rather than domestic mandates or industrial planning.

Examples: Ethiopia, Rwanda, Senegal, Uganda.

Typical features:

- Feedstock mapping through ACT-SAF;
- alignment with CORSIA and international sustainability frameworks;
- interest from global airlines or development partners; and
- limited domestic market formation.

- No SAF-related studies to date
- Structural opportunity
- Export-oriented development
- Capital-enabled deployment
- Early industrial implementation



SAF readiness assessment per country

3. Capital-Enabled Deployment

Countries where SAF development is advancing due to international investors, concessional finance, or strategic partnerships. These countries may not yet have fully developed industrial ecosystems, but they benefit from targeted, externally enabled project pipelines.

Examples: Kenya, Morocco, Namibia.

Typical features:

- Early industrial or hydrogen-hub developments;
- large donor- or investor-backed SAF projects;
- emerging certification and regulatory readiness; and
- improving logistics or port infrastructure.

4. Early Industrial Implementation

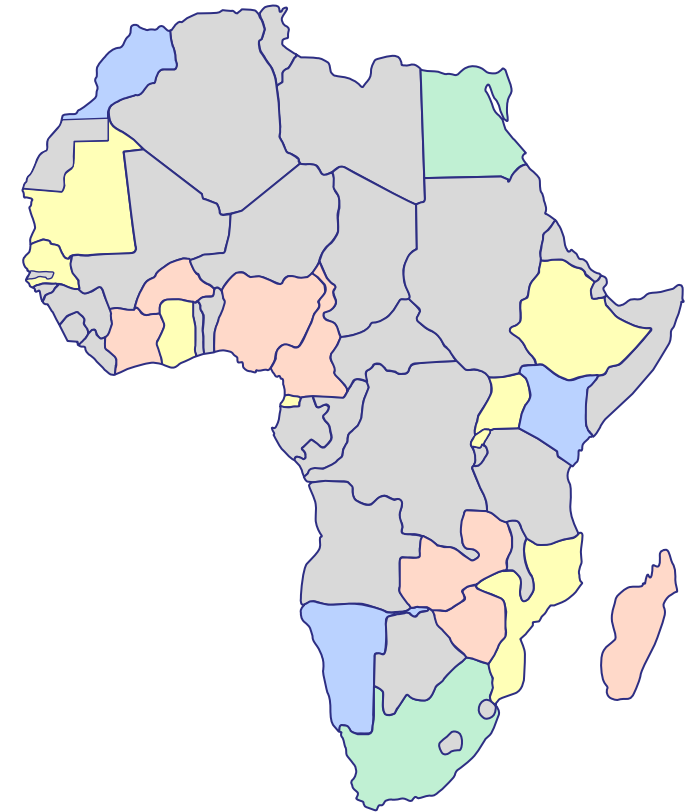
Countries with relatively advanced industrial ecosystems, including refining capacity, engineering expertise, renewable-energy infrastructure or synthetic-fuel experience, and multiple SAF-related initiatives already underway.

Examples: South Africa (primary), Egypt (partial).

Typical features:

- Established industrial clusters;
- FT, PtL or HEFA pilot/demonstration projects;
- growing hydrogen and carbon-capture ecosystems; and
- multi-stakeholder governance mechanisms.

- No SAF-related studies to date
- Structural opportunity
- Export-oriented development
- Capital-enabled deployment
- Early industrial implementation



Key Messages

- Africa holds high long-term SAF potential: abundant biomass, growing renewables and emerging industrial and hydrogen clusters.
- Readiness is uneven — most pathways sit at TRL 3–6, with HEFA nearest term, then AtJ, FT and PtL.
- Feedstock mobilisation, logistics and certification capacity are the main system-level bottlenecks.
- Demand is externally driven: no domestic mandates, with ReFuelEU and CORSIA shaping market access.
- Four readiness archetypes require differentiated priorities, backed by finance, de-risking and coherent policy.