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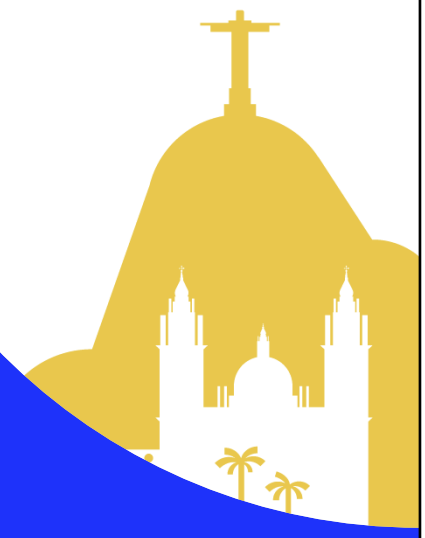
The Power of Flight



Media Briefing

SAF & Net Zero updates

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Hemant Mistry, Director, Energy Transition
Preeti Jain, Head, Net Zero Research and Programs

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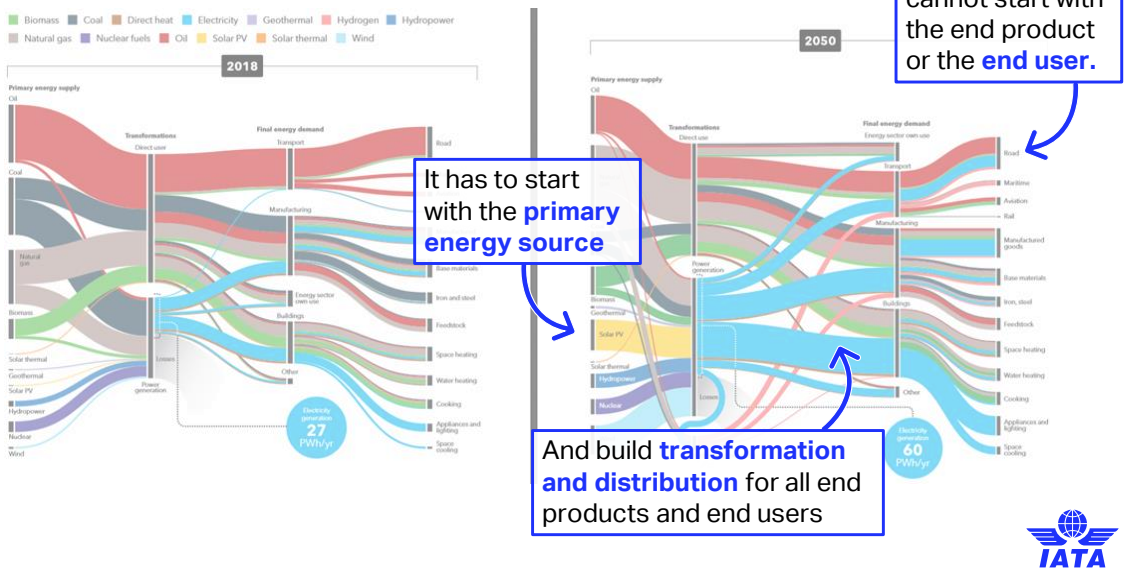
Energy is a system

Energy is a system



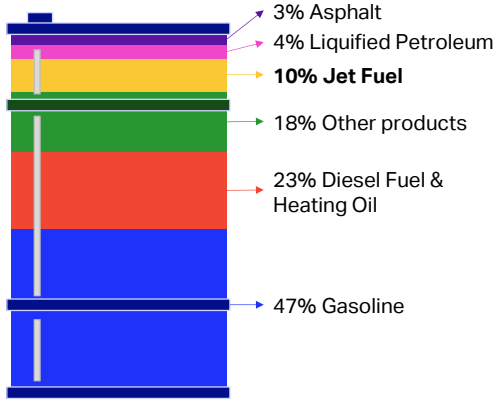
The energy system consists of:

1. Supply: The core of the system is a primary energy source, such as oil, coal, natural gas, nuclear, wind, and solar.
2. Conversion, storage, and distribution: Infrastructure such as refineries and power plants converts raw energy into useable forms (electricity, fuel). The useable energy must then be distributed via electrical grids, pipelines, etc.
3. Demand: The end-users are all the final energy consumers – for residential, industrial, transportation, and commercial purposes.

For more information, please refer to "The Energy Transition" report by IATA's Sustainability & Economics team:
https://www.iata.org/contentassets/0bf212bfcb0548f2b6ad4c1e229f7e94/the-energy-transition-system-transformation/

Jet fuel and SAF cannot be produced on their own

Typical products made from a barrel of crude oil



Jet fuel and SAF are one of many products in any refinery:

- Jet fuel is 10% of global refined output
- Refineries rely on diesel and gasoline for their economic viability
- Biorefineries too produce a range of products (RD, SAF & naphta)
- **An industry-by-industry approach will fail**

RD-Renewable diesel, SAF- Sustainable aviation fuel

- All refineries produce multiple products and no refinery, fossil or otherwise, can only produce one product.
- All products work together for the economic viability of the refinery – each can enable or disable another.
- Developing SAF has to start with more renewable energy for everybody, to more renewable fuel for those who use fuel, to SAF for airlines. It cannot be developed by starting from the end.

Policy mix: Things to do before mandates

1. **Pick the low-hanging fruit**
   - Co-processing and LCAF
   - Public procurement for public consumption
   - Open access to airport infrastructure
2. **Level the playing field**
   - Remove direct oil and gas subsidies
   - Develop, harmonize, and simplify
   - Capital support: new technologies and feedstock
3. **Build the global market**
   - Book-and-claim system
   - Stabilize revenue and transfer risk
   - Invest in infrastructure

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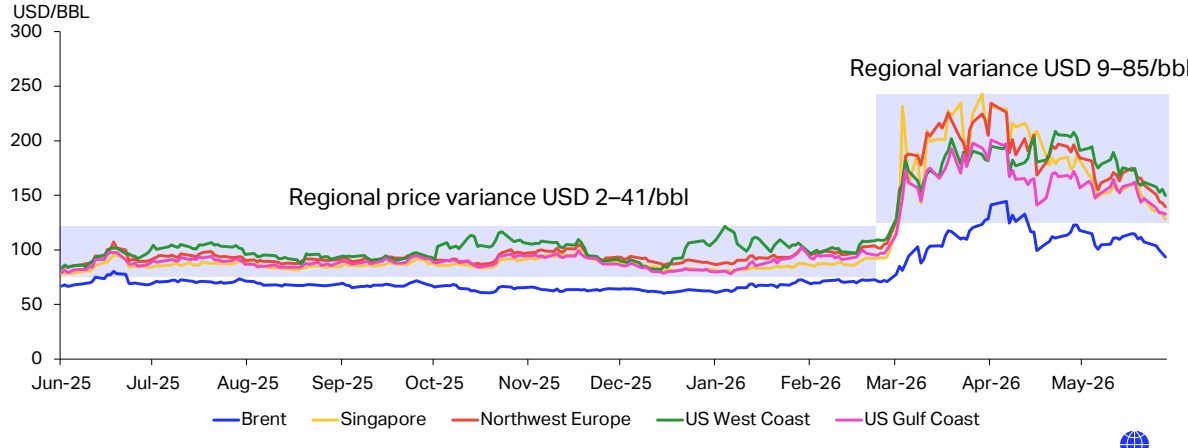
- The order in which to do things is as important as the things to do.
- Clearly, we would begin with the easiest and less costly solutions, the low-hanging fruit, and it is astonishing that these are currently being ignored.
- Next come more difficult but essential policies to develop technologies as well as standards that foster a global market.
- Finally, infrastructure must also be developed, along with the scaling of supply, before mandates should be contemplated.

Jet Fuel

Impact of the oil crisis on the jet fuel market
Volatility and regional variance

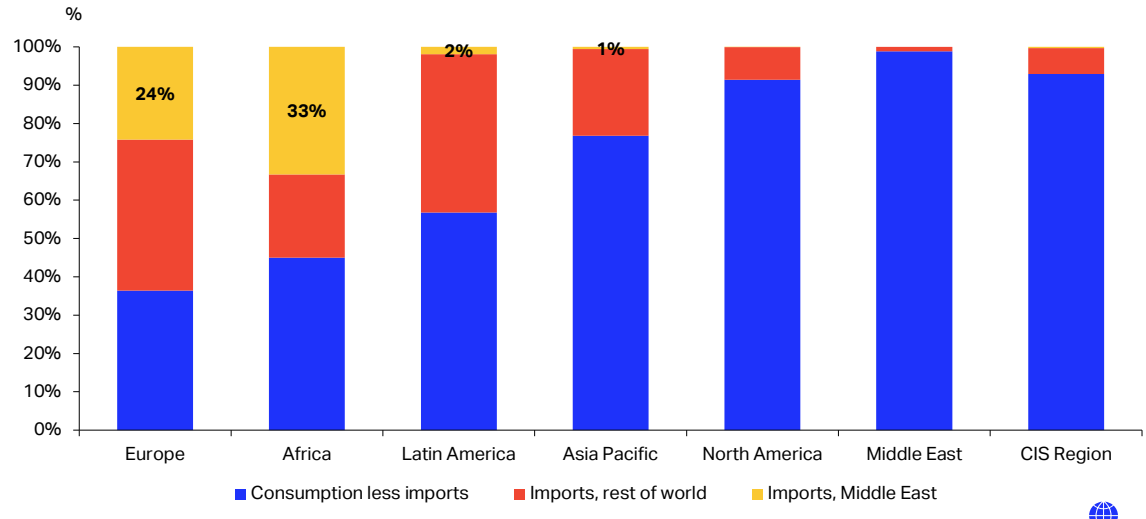
Jet fuel prices, USD/BBL



Source: S&P Global Energy, IATA Sustainability and Economics

- Since the start of the Iran conflict in late February 2026, oil prices rose sharply, briefly exceeding 120–125 USD/BBL amid the effective closure of the Strait of Hormuz, before stabilizing in a still elevated and highly volatile 95–115 USD/BBL range.
- Jet fuel price increases have been at another level. In November 2025, the average global jet fuel price was around 96 USD/BBL. In April 2026, the global average jet fuel price had doubled to 188 USD/BBL and averaged at the elevated level of 158 USD/BBL during May.
- Jet fuel, which typically accounts for around 3 million b/d of global seaborne trade, has been disproportionately affected compared with diesel and gasoline. Available supply is estimated to have declined by 20–30%, amplified by reduced refinery runs.
- This imbalance has driven a pronounced widening of the jet fuel crack relative to diesel. Jet fuel cracks (the difference between the price of oil and of jet fuel), which averaged around USD 20–30 USD/BBL in 2025, have surged to 40–70 USD/BBL, at times moving higher, signaling acute tightness driven by logistical bottlenecks and refinery constraints.
- The impact remains highly uneven across regions. The loss of export flows has pushed spot jet fuel prices significantly higher across regions, in many cases reaching USD 160–200 per barrel, well above crude benchmarks.

Regional jet fuel imports dependence

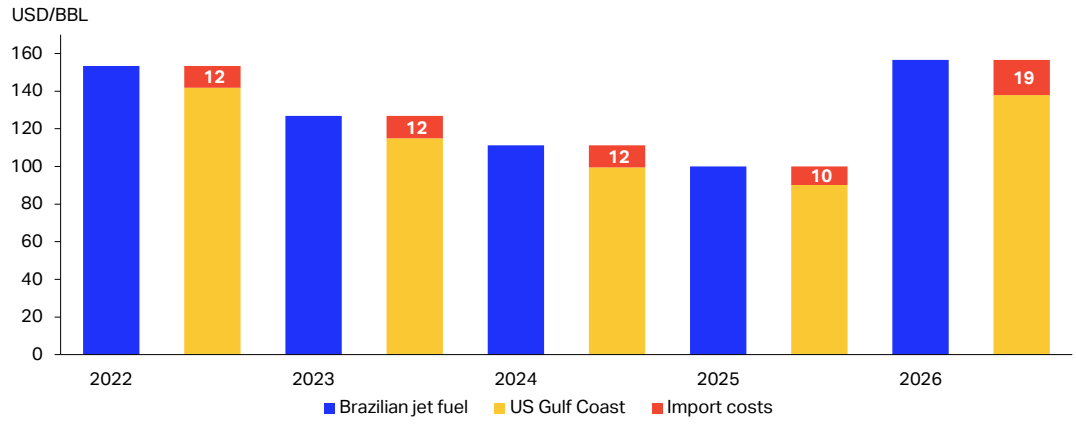


Source: S&P Global Energy, IATA Sustainability and Economics

- Part of reason for the differences in price elevation seen for jet fuel across regions is reliance on imports.
- Europe, Africa and Latin America have the greatest reliance on imports of jet fuel but it is Europe and Africa that are particularly exposed to the closure of the Strait of Hormuz.
- 24% of Europe jet fuel and 33% of Africa's jet fuel came from the Persian Gulf before the closure of SoH.
- The high need for imports in Europe is also due to the reduction in jet fuel production capacity: jet fuel production in Europe (including UK) declined by 13% in 2025 compared to 2019. For UK specifically, the reduction was 42%.
- The closure of the SoH has meant the lost barrels have to be compensated for by other means, leading to supply tightness and elevated prices.
- We have seen increased jet output from refineries, increased exports from the US and West Africa, use of national and commercial strategic reserves.
- This is a valiant effort from across the supply chain but there is still an impact of demand destruction that has to contribute to address the loss of barrels from the SoH.

Jet fuel pricing in Brazil based on US Gulf Coast import but > 80% is locally produced

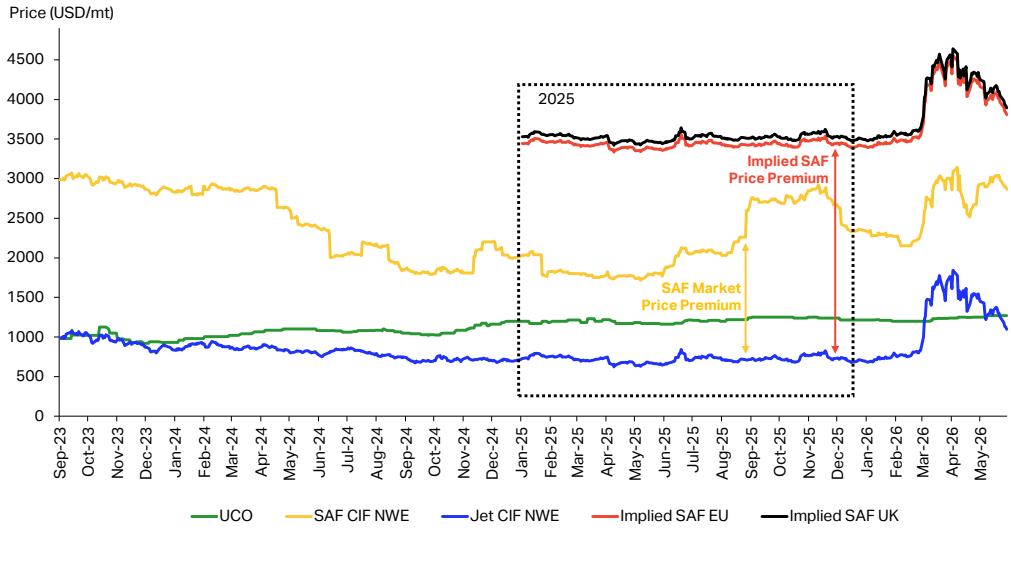
Brazilian jet fuel prices compared with US Gulf Coast, USD/BBL



Source: S&P Global Energy, ANP, IATA Sustainability and Economics

- Here in Brazil the jet fuel situation is different. Brazil uses Import Parity Prices which means prices are set as if all of the jet fuel is imported from the US Gulf Coast. However, only 16% of the jet used is imported and the rest is produced locally.
- This means airlines pay for 'phantom' import costs on 84% of fuel without justification.
- While it does mean Brazil is less exposed to the energy shock in terms of supply, the airline industry has been paying a USD 220 million premium on top of the elevated jet fuel prices.
- In fact, this premium has increased further during the current crisis from 10 to 19 USD/BBL adding a further cost USD 105 million cost to airlines.
- Such costs are unacceptable and particularly so when the airline industry is struggling with the price shock from the closure of the SoH.

SAF pricing needs to better support energy security



Disclaimers

1. The SAF compliance add-on reflects the aggregated levels across several UK airports.
2. The data is obtained from a sample of airlines operating at these UK airports.
3. Airlines may have different fuel supply models, so not every airline will have the same fuel cost structure or exposure to the SAF compliance fees

- The recent events only place more urgency on the need for energy complementarity and energy security.
- SAF is the main lever for aviation's decarbonization, and its role now as part of the renewable fuel mix of outputs is critical for government planning towards stronger energy resilience.
- But to support this, the pricing must be competitive. Pricing for SAF under the Mandates in the UK and Europe has resulted in a doubling of SAF costs to airlines, compared to market prices. The mandate planned for Brazil must not follow these bad examples.
- Furthermore, when the prices for jet fuel rocketed due to the closure of the SoH , SAF prices increased at the same rate even though the costs of production is decoupled.
- It is time to recalibrate to avoid this happening again and to instead make the best of the opportunity for SAF when we start to come out of this current jet fuel crisis.

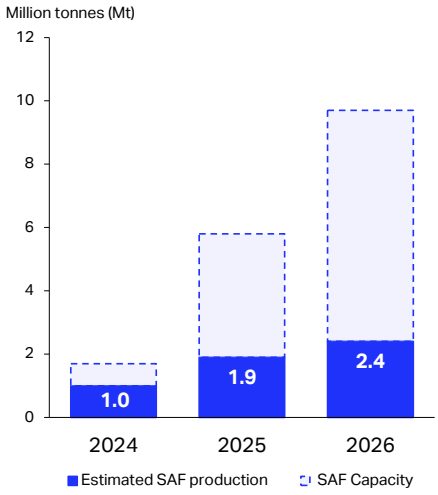
- Note “CIF” assessments for ARA -> a hub for imports
- Roughly 1Mt of SAF was expected to be supplied to comply with mandates (EU: 800kt, UK: 200kt)

2025 Averages (USD/tonne):

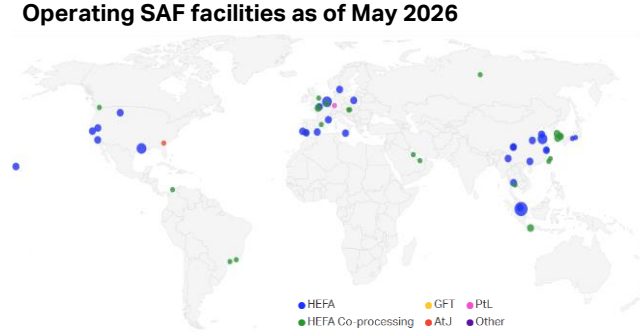
- CAF: 721
- SAF: 2,180
- Implied SAF price: 3,433 – 3,519
- “Fair” or expected compliance fee: 29 (instead of 50+)

SAF update

SAF production and capacity



Operating SAF facilities as of May 2026



- Flexible **SAF capacity is underutilized** due to the cost gap
- Existing capacity is **spread unevenly**, and various regions lack supply
- 2026 SAF production represents only **0.8%** of global jet fuel use

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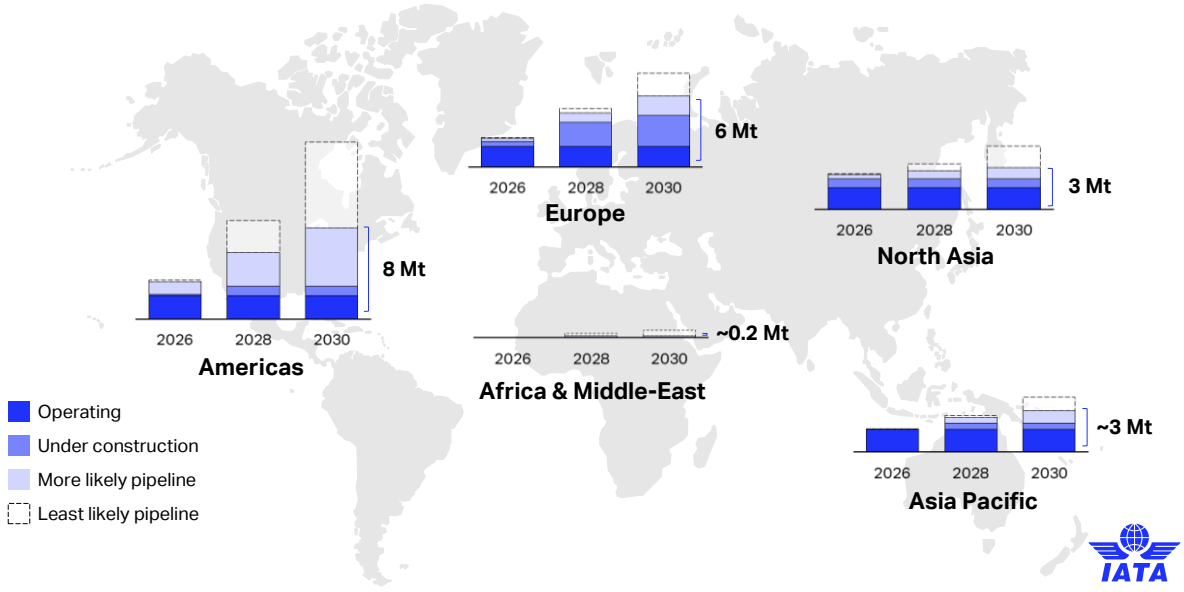
- An estimated 2.4 Mt of SAF will be produced in 2026, representing just 0.8% of global jet fuel demand and indicating a slowdown in growth. In contrast, global SAF production capacity is expected to exceed 9 Mt, highlighting significant underutilization of full SAF production potential.
- Inadequate policies are a key element in the low utilization rate. Renewable fuel producers tend to favor more profitable products, such as RD, rather than SAF.
- Capacity is also unevenly distributed across and within regions. Most production is concentrated in North America, Europe, and APAC, while feedstock-rich regions such as South America and Africa are progressing more slowly, reflecting the need for further policy support and investment to scale up SAF production.

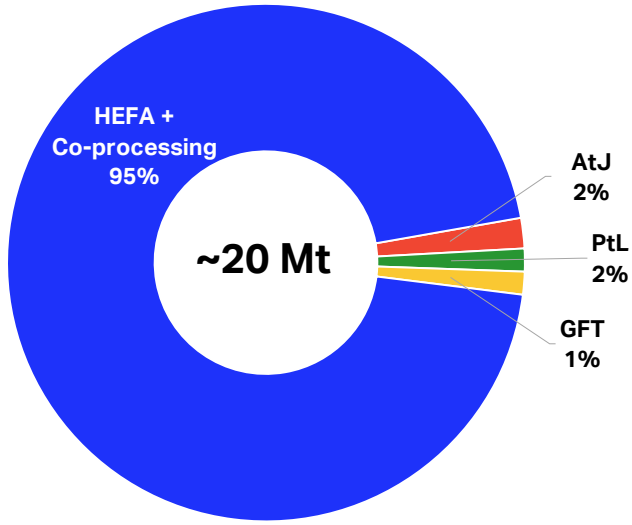
SAF production capacity by project status through 2030



- Announced SAF production capacity amounts to around 30 Mt by 2030. However, a portion of the announced projects is unlikely to begin operations within this timeframe. When considering only facilities that are operational, under construction, or in various stages of development with a higher likelihood of completion, approximately 20 Mt of SAF production capacity is expected to materialize by 2030.
- On a regional basis, the Americas are projected to lead in realized 2030 SAF capacity, at around 8 Mt, when the least likely pipeline of projects is excluded. Europe, North Asia, and the Asia-Pacific follow with notable volumes from the more likely pipeline of projects. SAF production volumes in Africa and the Middle East are expected to remain comparatively limited, with significantly lower capacity anticipated to come online by the end of the decade.

SAF capacity by technology in 2030

Share of the technology used by SAF projects in 2030



PtL = Power-to-Liquid (e-SAF)

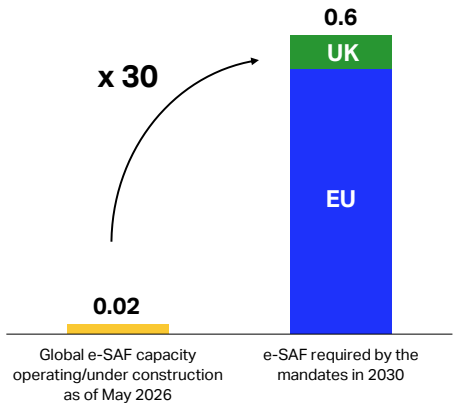
AtJ = Alcohol-to-Jet

GFT = Gasification Fischer-Tropsch

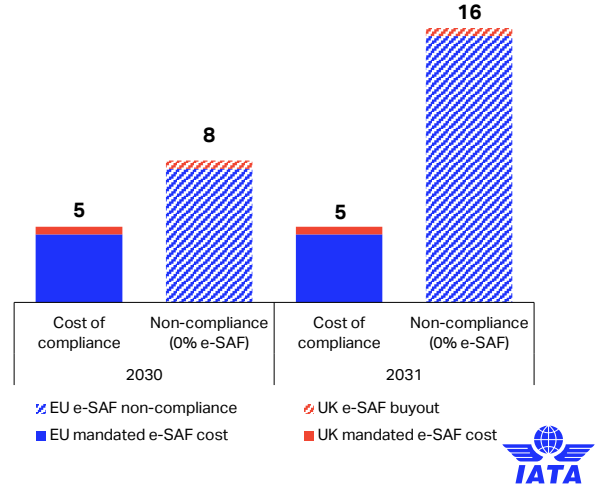
- By 2030, global SAF production capacity is projected to reach approximately 20 Mt, based on currently operational and under-construction facilities, as well as the most credible pipeline of announced projects.
- The HEFA pathway is expected to account for around 95% of this capacity, underscoring the limited progress in scaling novel technologies, which are projected to contribute only ~5% of global SAF output by 2030.
- Achieving net zero by 2050, which requires over 500 Mt of SAF, will necessitate an energy systems approach to accelerate technology diversification and unlock the full potential of sustainable feedstocks available for SAF production, as highlighted in the IATA - Global Feedstock Assessment for SAF Production

e-SAF supply shortfalls could result in significant cost

Firm capacity vs 2030 mandate demand (Mt)



Cost of mandates: Compliance vs non-compliance (USD billion)



- E-SAF capacity is missing globally and no new final investment decisions for e-SAF facilities have been taken over the past year. In the absence of e-SAF supply, the potential cost of non-compliance could be as high as 8 Bn EUR in 2030, up to 16 Bn EUR in 2031. This is an example of ignoring a system-wide approach and implementing demand-pull policies in the form of mandates, before the production technology and supply are ready.
- Furthermore, securing 0.6 Mt of e-SAF supply by 2030 would require around 20 refineries, and currently, there is only 1 commercial-scale project is under construction. Considering realistic project lead times and start-up related operational realities for new refineries, the window to secure 2030 supply has largely closed.
- Under ReFuelEU, failing to supply required eSAF volumes will incur a fine and a requirement to supply the shortfall the following year, resulting in exponentially rising compliance costs. There is no rollover of mandated eSAF in the UK due to the buyout mechanism.

Immediate opportunities for cost-effective decarbonization

Co-processing

- **20 refineries** have produced some volumes of SAF via co-processing, yet significant potential remains untapped.
- ASTM approval for **30% co-processing** could unlock faster SAF volumes in a cost-efficient manner.
- **Up to 2.6 Mt** of SAF co-processing potential estimated **by 2030** (IATA Net Zero Roadmaps).

Lower-carbon aviation fuel (LCAF)

- **No commercial** LCAF production exists today.
- **Certification is urgently required** to ensure a robust and transparent sustainability scheme aligned with industry protocols.
- ICAO LTAG estimates **~14 Mt of global LCAF potential by 2030** in the medium scenario.

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- To ensure the airline industry can meet the massive task of net-zero CO2 by 2050, each solution is crucial and must be brought to market.
- Co-processing is one of the transition opportunities that should be utilized to its full potential along with other options. This provides the advantage of producing SAF using existing refining infrastructure at relatively lower CAPEX and OPEX, with a shorter lead time.
- LCAF is identified as another decarbonization solution by ICAO; however, its production and deployment still lack effective policy support, which has delayed scale-up.
- Scaling up the LCAF needs the development of LCAF certification without any further delay, so that industry can use this decarbonization solution, meeting a stringent and transparent environmental criterion.

Book-and-Claim

and the CADO SAF Registry

Essential market infrastructure to scale SAF

SAF today

- Limited physical availability
- Available only locally
- Lack of competition
- Fragmented logistics
- Infrastructure constraints
- Prohibitive cost barrier

Book-and-Claim

- Removes the location constraint
- Airlines and corporates can participate globally
- Build plants where feedstock is cheapest
- No need to overbuild infrastructure
- No need for inefficient fuel transport
- Reduces system-wide costs

✓ **SAF remains a local, bespoke, infrastructure-heavy niche product, characterized by:**

- Geographic rigidity
- Market fragmentation
- Economic inefficiency

✓ **SAF becomes a global, tradable, standardized climate solution that delivers:**

- A global market
- Scale independently of infrastructure rollout
- Faster supply expansion
- Lower costs

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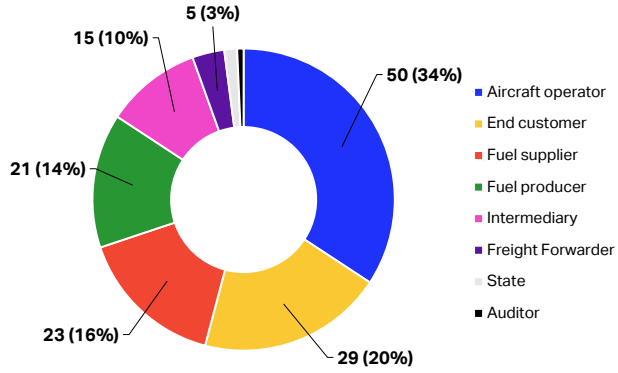
- It is important to realize that the SAF market today is not really a market – it is a collection of private deals with little volume, no price transparency, and entirely local and bespoke.
- Mandates at this stage seem to hope that supply chains will spontaneously self-assemble. This clearly is not happening. The way to overcome that obstacle is to use book-and-claim.
- Without a global SAF market that is transparent, liquid, and mature in its market infrastructure, air transport will not be able to decarbonize.

CADO SAF Registry to build a global market

146 participating Organizations



A comprehensive solution

- Collaboration with **State authorities** in three geographical regions to manage regulatory claims.
- Focus on **CORSIA-eligible fuel** claims and other claims under national regulations.
- Collaboration with 123 Carbon and 4Air Assure to provide **interoperability** and **prevent double-issuance.**

- CADO is a new international organization, a Canadian not-for-profit, created by IATA to house the SAF Registry.
- IATA built the SAF Registry and gave it to CADO.
- CADO is now the home in which the SAF Registry lives.
- Nearly 150 organizations participate in the SAF Registry and currently the system is entirely free of charge, to help foster a global SAF market and prevent the cost of using SAF from rising even further.

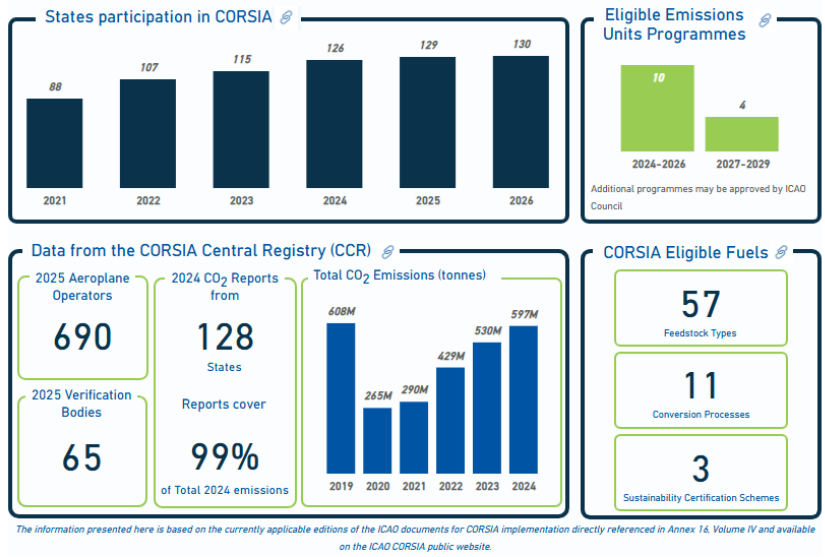
CORSIA

CORSIA: Carbon Offsetting and Reduction Scheme for International Aviation

- The only global market-based measure scheme for international aviation
- Airlines can meet CORSIA obligations through:
  - CORSIA Eligible Emissions Units (EEUs)
  - CORSIA Eligible Fuels (CEFs)
- Starting from 2024 (CORSIA First Phase), airlines offset emissions above the baseline of 85% of 2019 emissions
- **CORSIA EEUs:** Highly sought-after in the **global carbon market** thanks to high environmental integrity

- **CORSIA is not only a way to make airlines compensate for their CO2 emissions, it is also a way to generate significant amounts of climate finance for participating countries.**
- **All UN member states agreed to create CORSIA. Any departures or additions to CORSIA in terms of further financial obligations related to the same CO2 emissions are obviously duplicative.**
- **Uniquely multi-jurisdictional, air transport needs one system for all – and any fragmentation will impair the global network.**

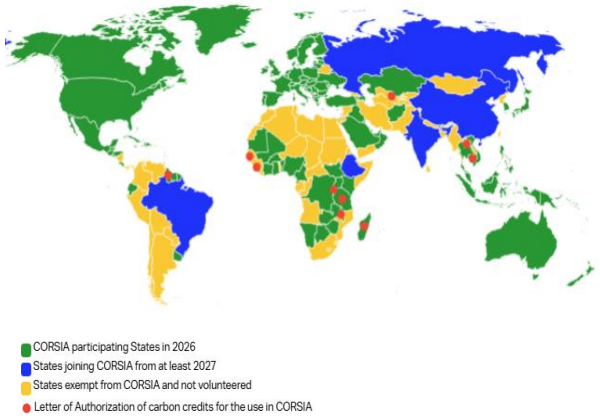
CORSIA Implementation Overview



- There are 130 States participating in CORSIA in 2026, and nearly 700 airlines.

CORSIA EEU supply

Ten countries supplied CORSIA EEUs via the issuance of CORSIA-compatible letters of authorizations as of June 2026



Note: This map simplifies borderlines for better data visibility, which does not imply IATA's endorsement of any territorial claims or borderlines.

Countries	Standard	Volume
Cambodia	Verra VCS	1,275,362
Gambia	Verra VCS	196,652
Guyana	ART TREES	24,963,214
Laos	Verra VCS	1,276,305
Madagascar	Verra VCS	2,595,222
Malawi	Gold Standard	1,376,880
Rwanda	Gold Standard	51,199
	Verra VCS	4,577,464
Sierra Leone	Verra VCS	2,078
Tanzania	Gold Standard	2,806
	Verra VCS	142,504
Uzbekistan	Verra VCS	1,568,083
	Total	**38,027,769**

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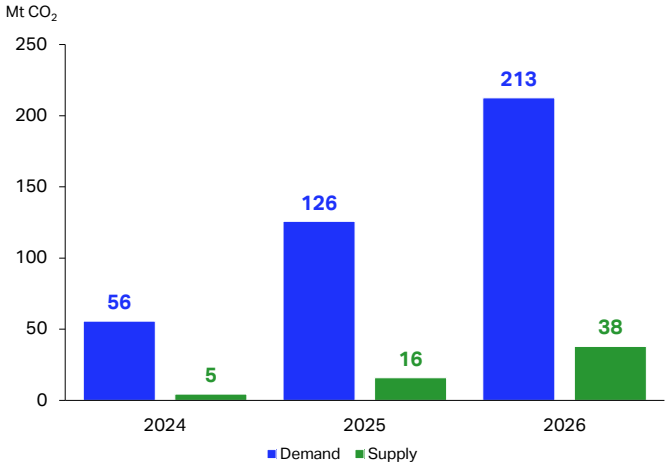
- There are 38 million Eligible Emissions Units available on the market today.
- Ten countries have enabled this supply.
- It requires an administrative manipulation related to the UNFCCC and the Paris Agreement, and countries' Nationally Determined Contributions.

CORSIA EEU demand versus supply

EEU demand and supply, cumulative

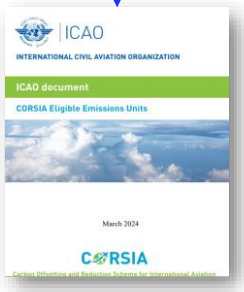


- In this first phase of CORSIA (2024-2026), our central scenario for the offsetting requirement is: **213 $MtCO_2$**
- The supply of CORSIA EEUs is currently: **38 $MtCO_2$**
- The shortfall is therefore around: **175 $MtCO_2$**

- **Supply still lags far behind demand, and the market is currently short around 175 million EEUs.**
- **There is an urgent need for all countries to play their part in making the obligation they imposed on airlines actually possible to comply with.**
- **There are only win-wins to be had from CORSIA's success.**

Working Together: ICAO, UNFCCC, Member States

Enable CORSIA EEUs



Ensure full implementation of CORSIA for all international flights, including flights within EEA routes

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- Some misunderstandings, some lack of awareness, and some unilateral subterfuge are together undermining CORSIA.
- This speaks against countries' commitment to actually reducing CO2 emissions, and highlights how perceived self-interest and me-first policies can derail a perfectly sensible idea and a phenomenal achievement that it was that 193 ICAO member states could agree on CORSIA as early as in 2016.
- CORSIA is thus celebrating its 10-year anniversary and all countries and market participants owe it to themselves and the world to make it a success.

Working Together: Implementation Assistance

Join IATA's Supporting Alliance to:

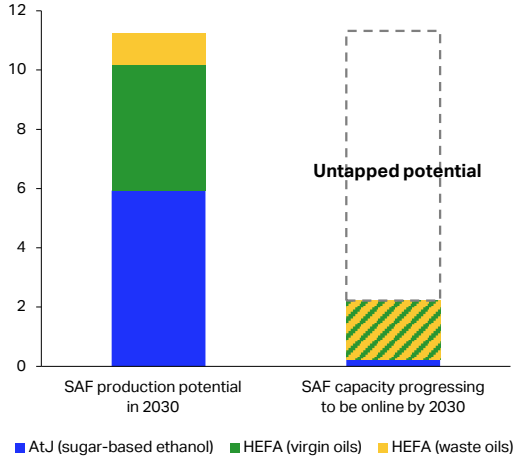
- Pool the resources of all participant organizations: states, airlines, project developers, carbon market participants, and more
- Provide implementation assistance to host countries

- **Seeing how urgently the supply of CORSIA EEUs must increase, IATA is convening a CORSIA Supporting Alliance, inviting states, airlines, project developers, carbon market participants, and many more, to join forces and work together to provide implementation assistance to host countries.**
- **Beyond capacity building, together we aim to deliver concrete and practical help to solve people's immediate hurdles and bring more EEUs to the market.**

Brazil's SAF Opportunity

Brazil's SAF potential

2030 SAF production: pipeline vs. potential (Mt)



- Brazil's **SAF biomass feedstock** potential exceeds **120 Mt by 2030** and **180 Mt by 2050,** including agri/forestry and municipal wastes.
- Leveraging more established pathways, **sustainable sugar-based ethanol, virgin and waste oils** could supply ~**18 Mt** of feedstocks, potentially generating **~12 Mt of SAF by 2030.**
- Around **15 SAF projects** across development stages show strong signals, yet substantial **feedstock potential remains untapped.**

6 June 2026

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- Brazil could supply over 120 Mt of biomass for SAF by 2030 and 180 Mt by 2050 through leveraging its feedstock resources, including ethanol, oils, agricultural and forestry residues, MSW, and emerging energy crops. As the world's second-largest ethanol producer, it is well-positioned to scale up SAF production using a diverse range of feedstocks.
- Just by utilizing its existing sustainable feedstock value chains and established technologies, the country can potentially produce 12 Mt of SAF by 2030; more than its own needs, providing a great economic opportunity for the country.
- However, looking at the state of SAF projects and their slow pace of development, we see a significant potential that may remain untapped in the lack of policies focusing on the supply side enablers.

Unlocking Brazil's SAF potential

Around 60 Mt of SAF could be produced by 2050

Energy transition leadership

- Brazil National Energy Transition Policy and the Energy Transition Acceleration Program are aimed at **sustainable economic development, employment opportunities**, and climate commitments.
- The RenovaBio program and the recent Fuel of the Future Law are intended to **accelerate the use of biofuels** in transport, including aviation.

Strategic opportunities

- **Sectoral harmonization** of feedstock and sustainability criteria that aligns with **CORSIA** could unlock investment and enhance flexibility.
- Policies thrust to boost **investments**, strengthen **energy security** and reduce dependence on foreign fossil fuels.
- In addition to serving domestic needs, Brazil has the potential to become a **key feedstock and SAF exporter.**

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- Brazil's current policies focus on a low-carbon economy by increasing the use of renewable energy sources, thereby fostering energy security and sustainability. To realize these ambitions, policymakers must pair financing and incentives with rigorous safeguards that keep sustainability at the core of every decision.
- Leveraging its diverse portfolio of feedstocks will require diligent adherence to globally recognized sustainability criteria aligned with CORSIA. With the right policy mix, Brazil can catalyze new investment, create rural and industrial jobs, and replicate the socioeconomic gains.
- IATA estimates that Brazil accounts for 10% of global biomass feedstocks, positioning the country to become a leading SAF player. The country has the potential to deliver another transformative win through SAF - one that benefits communities, industry, and the national economy - if policymakers act decisively and inclusively.

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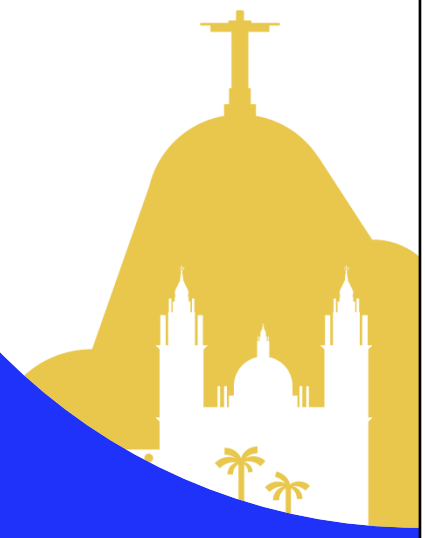
The Power of Flight



Thank you.

IATA