Unlocking investments in SAF: Leveraging Financial Instruments to drive SAF bankability

October 2025

FORTES

EY Parthenon

SAF PROJECTS STILL STRUGGLE WITH BANKABILITY, PRICES REMAIN TOO HIGH, AND GOVERNMENT SUPPORT IS INSUFFICIENT. SO, WHAT EXACTLY NEEDS TO CHANGE TO MAKE THIS WORK?...

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KEY DRIVERS

Currently SAF OFFTAKE is primarily driven by POLICIES and REGULATIONS aligned with around 75 COUNTRIES COMMITTING TO NET ZERO GOALS

DEMAND vs SUPPLY

MAXIMUM PRODUCTION is expected to reach only 30.4 MT BY 2030, leaving a GAP OF 18.6 MT compared to expected demand

MARKET OUTLOOK

81 AIRLINES WORLDWIDE have signed SAF offtake agreements, totaling 157 deals as of June 2025, with nearly 40% having multiple agreements

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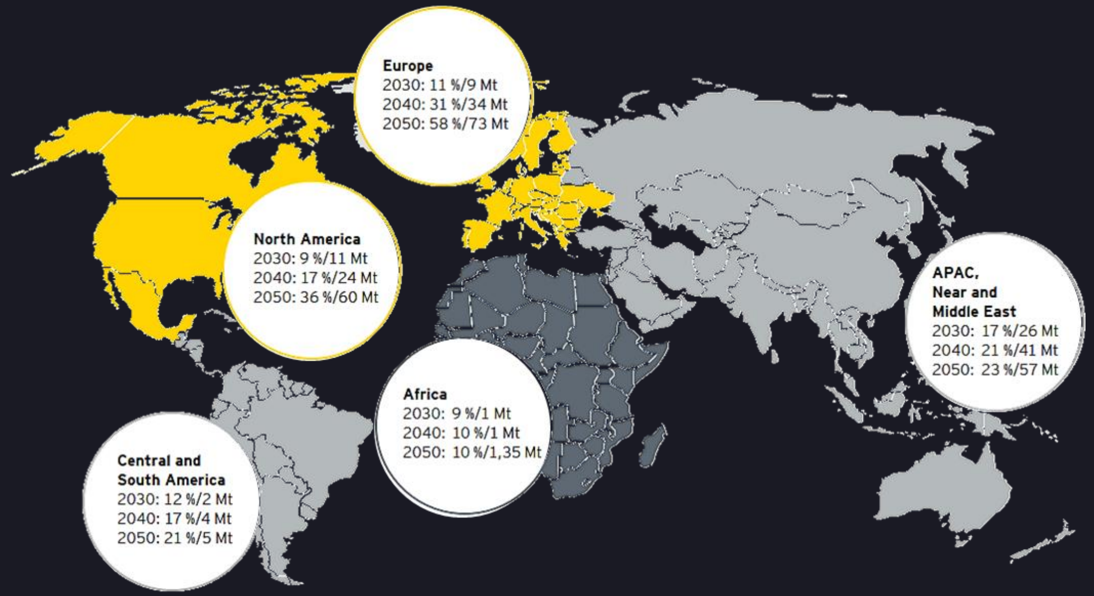
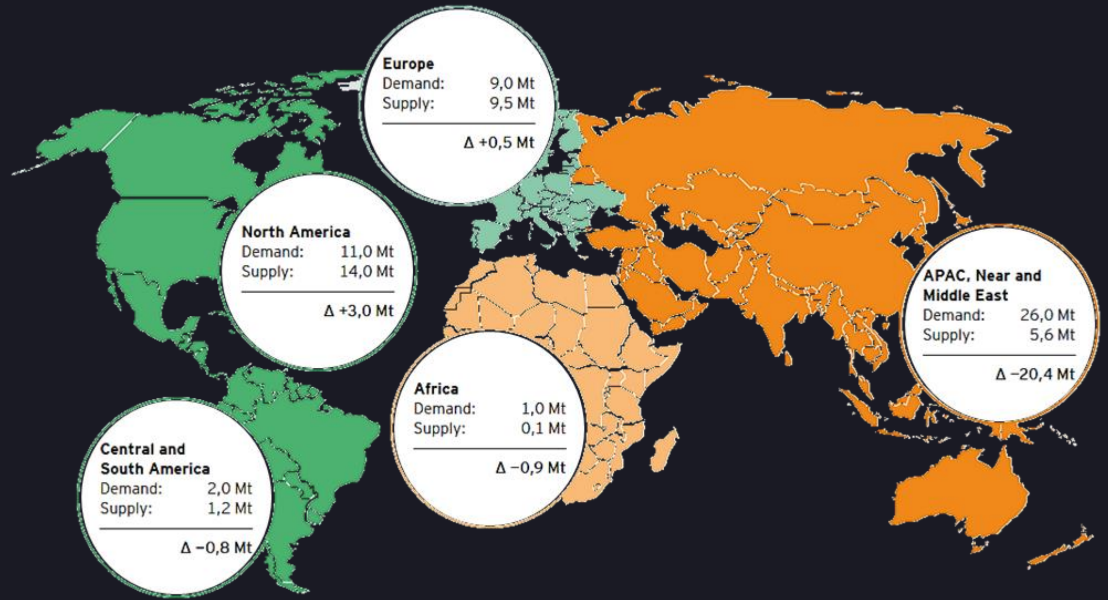
SAF is the only viable long-term solution to decarbonize aviation. Global demand can reach 49 Mt by 2030 and 196 Mt by 2050, with a supply gap of 18.6 Mt already in 2030

Potential global SAF demand 2030- 2050 (in % and Mt)[1]



- By 2030, the global SAF supply will reach 49 Mt, growing to 196 Mt by 2050
- APAC & Middle East might be one of the biggest SAF offtaker in 2030 - 26 Mt
- The second one can be the North America – 11 Mt, 2030
- However, in 2050 Europe can become a leading offtake market with 73 Mt
- The 2nd one could be the North America with a potential demand of 60 Mt in 2050

Potential global SAF supply gap in 2030 (Mt)[2]



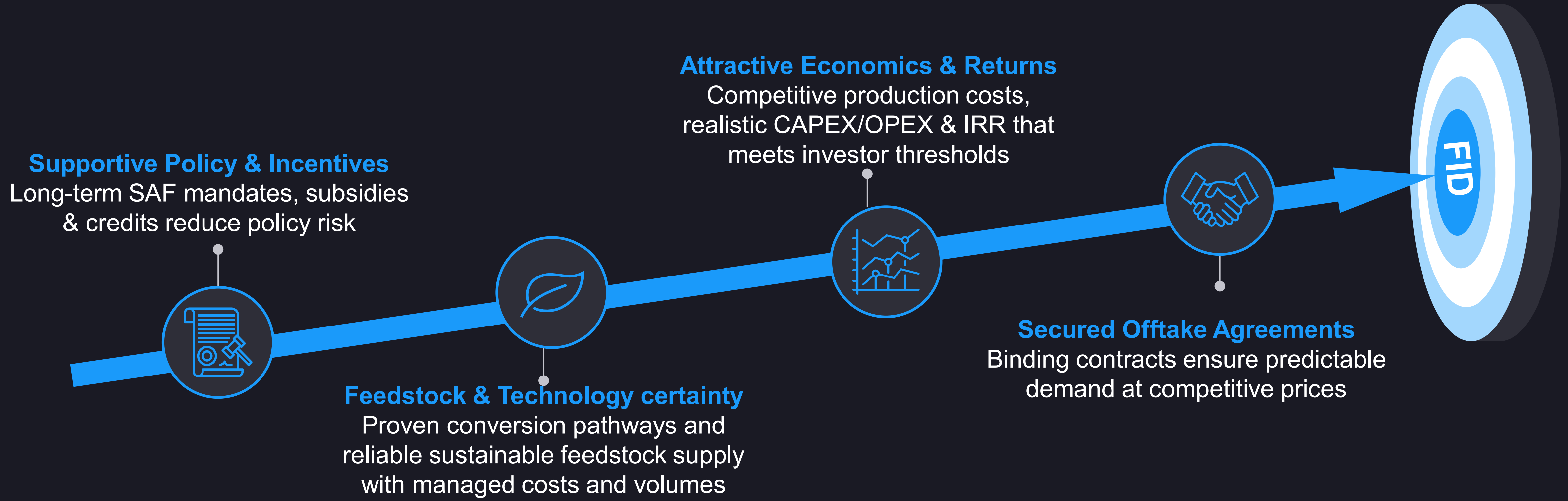
- Current capacity growth may fall short of meeting 2050's 196 Mt demand, with post-2030 SAF project development uncertain
- Starting from 2030 APAC/ Near and Middle East will have a gap of 20,4 Mt
- Europe & Noth America should not have issues with SAF supply. However, Europe might not meet the goal since most of projects are not at FID
- Africa & Central/South America will have approximately the same gap of 0,9 Mt

[1]Absolute SAF Volumes, considering SAF mandates and net zero
Source: EY Forecast, as of January 2025

[2] The supply represents the maximum possible production capacity
Source: EY, ICAO as of January 2025

To bridge the global shortfall of 18.6 Mt, it is essential to support SAF projects in reaching FID stages, secure product offtake at competitive prices, and ensure projects are bankable

Project are bankable when these key steps are covered …



Airlines already entered SAF offtake, driven by a range of motivation. But growing SAF prices & the high variation costs of the feedstock pose a significant challenge for long-term

SAF offtaking is growing due to defossilisation needs…

64
Fuels Producers

24
Fuels Supplier

157
Offtaking Agreements

By 2030 airlines covering 34% of global passengers and 40% of global RPKs* committed to 10% of SAF offtake

30% commitment

Airlines have various motivations to offtake SAF…

Value creation from SAF
- Implement defossilisation goals and improve ESG
- Establish SAF related business offers creating value to corporates and passengers

Manage financial risks and balance revenue
- Find the best SAF price and offtaking conditions
  Identify early potentials to balance losses e.g. though hedging tools

Securing pricing though investments
- Collaborate with SAF producer for offtake a low-priced SAF for long-term
- Gaither benefits for first-movers and secure brand

Gather policy and regulatory benefits
- Very much EU oriented – gather EU ETS free allowances
  Further certification trading

* As per 2024 – minimum 10%, Revenue Passenger Kilometres. This list is not full and only the example of key offtakers

The primary reason for the offtake was that airlines were encouraged to purchase SAF because of low volumes & short timeline, while simultaneously hedging kerosine risks

NON-EXHAUSTIVE

Overview of critical input data for offtaking agreements

Kerosine Offtaking Agreement

Price mechanism* (approx. 8 Options)

- ✓ **Option 1:** The fuel price is based directly on the Jet A1 benchmark plus a differential to cover logistics and supplier margin**
- ✓ **Option 2:** The fuel price is linked to Brent crude oil, multiplied by a factor (α) to reflect conversion into jet fuel, plus a margin/differential
- ✓ **Option 3: Diesel/Gasoil-linked Pricing**. The price is tied to ultra-low-sulphur diesel or gasoil benchmarks, plus a differential

Duration

- From 1 month and more

Risks Producers

- Crack spread risk
- Offtake under-lift
- Carbon pricing

Risks Airlines

- Volatile crude oil prices
- Minimum off taking volume
- Currency change

SAF Offtaking Agreement

Price mechanism (some of the most discussed examples)

- ✓ **Option 1:** SAF price follows the normal jet fuel price (Jet A1 monthly average), and a fixed premium to cover SAF production costs, minus the value of policy credits
- ✓ **Option 2:** Same as # 1, but the premium increases every year in line with inflation. This protects the producer's margin over a long contract, while still linking the main price to jet fuel
- ✗ **Option 3:** SAF price follows the jet fuel market plus a component linked to the cost of UCO, with a fixed conversion cost added, minus policy credits

Duration

- From 1 to 12 months

Risks Producers

- Volatile feedstock and energy costs
- Policy changes

Risks Airlines

- Airlines can't hedge feedstock/power risks
- Certification as per RED II/CORSIA

Risk mitigation over

- Take-or-pay clauses for min. volumes
- Credit insurance or guarantees
- FX forwards/swaps to lock exchange rates
- Blend flexibility in refinery

Risk mitigation over

- Swaps (Fix Jet Index) – price at 80% of the ref. price
- Options (Caps/Collars)
- Cross-hedge *Brent/Diesel
- FX Forwards (USD risks)

Risk mitigation over

- Feedstock offtakers – long term
- Covering risks over other fixed costs – OPEX, CAPEX
- PPAs

Risk mitigation over

- Obtaining ETS allowances (EU relevant)

* Selected options offer hedgeability for airlines
** Margin, airport fees, logistics

✓ Existing mechanism ✗ Not yet, but discussions are already underway. In case UCO experiences high demand globally, the establishment of an official global index is a possibility

Therefore, till now the offtake was limited to very short-term with low volumes, which are insufficient for FID, and current policy support does not provide a fully favorable framework

Policy & Regulatory Frameworks

DIRECT SUPPORT

ReFuelEU Aviation

- Creates guaranteed SAF demand via binding blending targets and enables long-term offtake security

Offers a flexibility mechanism that can support market adaptation from a supplier side

Secures up to 90% of physical offtaker at the EU airports as per Refueling obligation

INDIRECT SUPPORT

EU ETS

Zero emission factor / SAF exempt that lower compliance costs

100% SAF coverage at outermost regions, that strong uplift incentive

20m EUA reserve (2024 – 2030) to reduce SAF premium

RED III

Only compliant SAF counts, ensuring demand for certified fuels

Financial Support Instruments

Innovation Fund

- Assigns CAPEX/OPEX grants for SAF projects
- Lowers upfront investment risk and operating costs that improves projects bankability

InvestEU

- De-risks private investment in SAF infrastructure projects aligned with climate and transport decarbonization goals
- Accelerates SAF infrastructure build-out and enables more stable offtake conditions for airlines

Horizon Europe

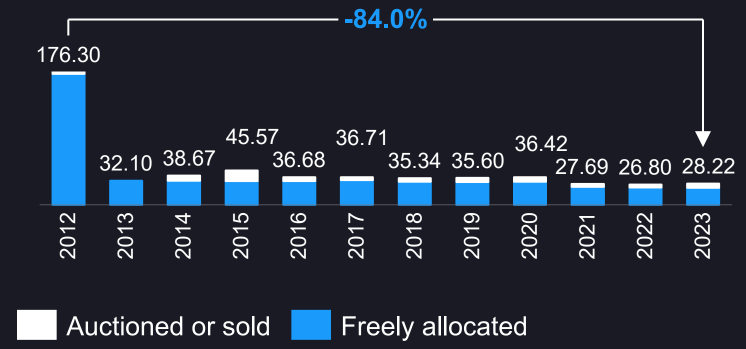
- Supports SAF technologies for accelerating innovation and reduces technological risk. That can support future bankable offtake by bringing advanced SAF closer to market

CEF Transport Alternative Fuels Infrastructure Facility (AFIF)

- Provides a cross-border fundings for transport and energy infrastructure impacting on lowers costs making airline offtake more feasible

For instance, ETS can serve as a powerful incentive to increase SAF offtake and influence bankability; however, it will only act as a driving force when CO_2 prices reach 429 EUR/t

2012 – 2023



The EU ETS remains limited in scope and impact:

- It covers only intra-EU-flights and limited relevance for global networks
- Current EUA prices too low to close SAF cost gap and it does not impact SAF offtake
- SAF is required to be physically tanked within the EU, which clearly limits the flexibility in SAF procurement

2024 – 2025

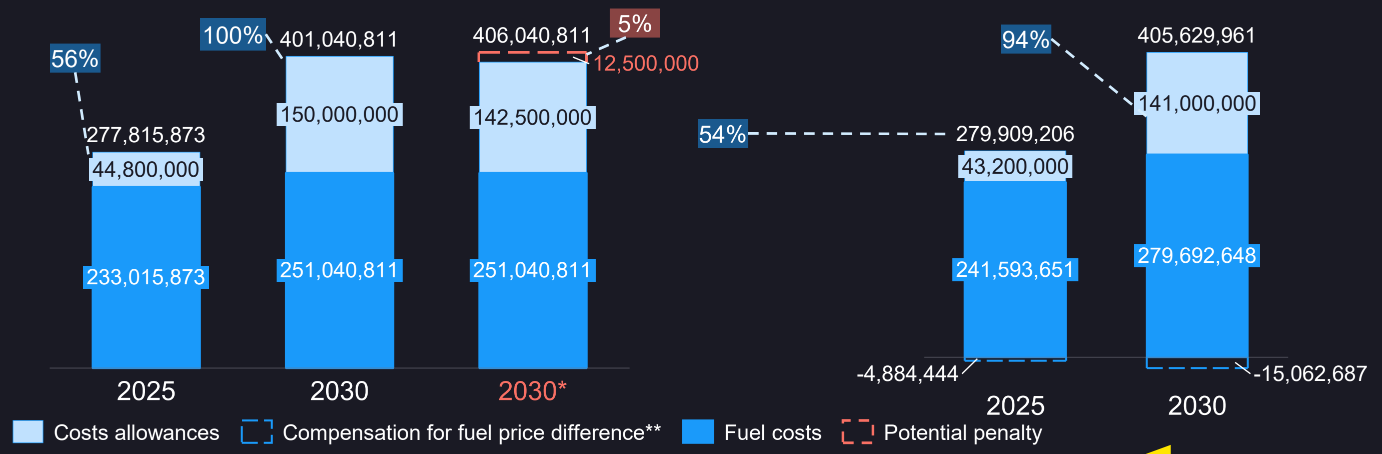
- 2024 cap with 28.9m allowances, of which 18.4m free (25% cut vs original plan of 24.5m)
- 2025 cap with free allocation cut further to 50% of original baseline

2026 – 2030

- No free allowances and full auctioning of aviation
- Annual aviation cap shrinks by 4.3% (rising to 4.4% from 2028)
- Airlines exposed to full EUA price signal

Example

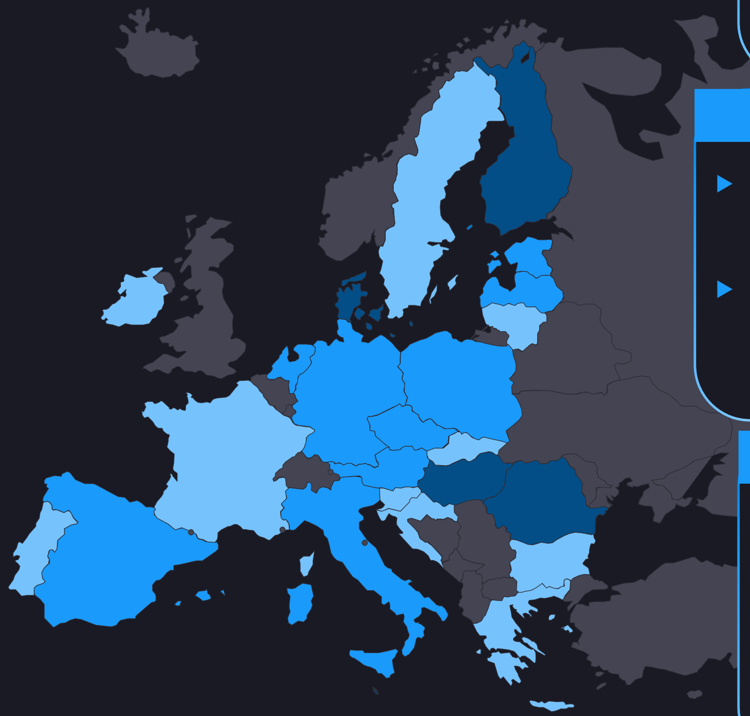
Year	Strategy	Free EUAs	Bought EUAs	SAF EUAs savings	Jet A-1 (t)	Bio-SAF (t)	e-SAF (t)
2025	1	440,000	560,000	0	317,460	0	0
	2	440,000	540,000	20,000	311,111	6,349	0
2030	1	0	1,000,000	0	317,460	0	0
	2	0	940,000	60,000	298,413	15,238	3,810



Finally, there are six major barriers stand in the way of a viable SAF market in Europe – from supply constraints to regulatory gaps

Despite regulatory ambition, structural and market challenges continue to hinder the effective scale-up of SAF across the EU…

Policy Adoption



Full/ Partial — In Progress

Regulation & Penalties

- Reporting and monitoring rules remain fragmented across Member States
- Some national authorities still lack clear enforcement processes

SAF supply

- HEFA accounts for nearly all available SAF, while e-SAF and AtJ are not yet commercially relevant
- Limited European production capacity forces reliance on imports, exposing supply chains to volatility

Competitive Pressure

- EU airlines face higher costs from SAF mandates and EU ETS
- Risk of traffic leakage as long-haul passengers shift to non-EU hubs to avoid higher ticket prices

Market reality

- e-SAF is mostly at early-stage projects and pilots; market-ready volumes remain hypothetical
- more a policy vision than market reality

Price premium

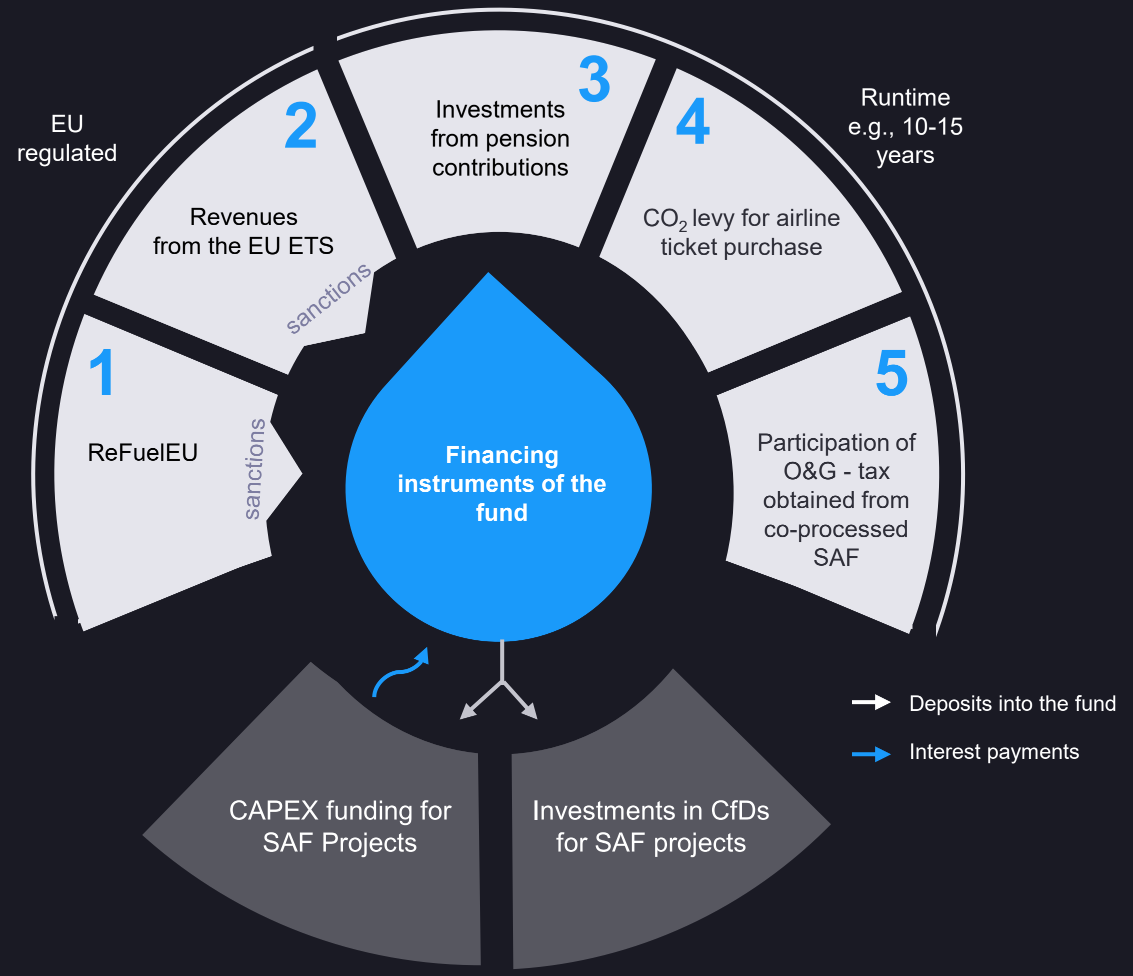
- SAF price gap vs. kerosene remains
- 20 M EUA reserve only a short-term cushion – likely exhausted within a few years

No book-and-claim

- Airlines must secure complex physical supply contracts to get SAF credited
- No book-and-claim option → limits flexibility and drives up transaction costs

To improve financing for EU SAF, a specific fund could be created within, for example, the EHB, consolidating revenues from penalties and other financial sources

EY proposed funding model



Model structure

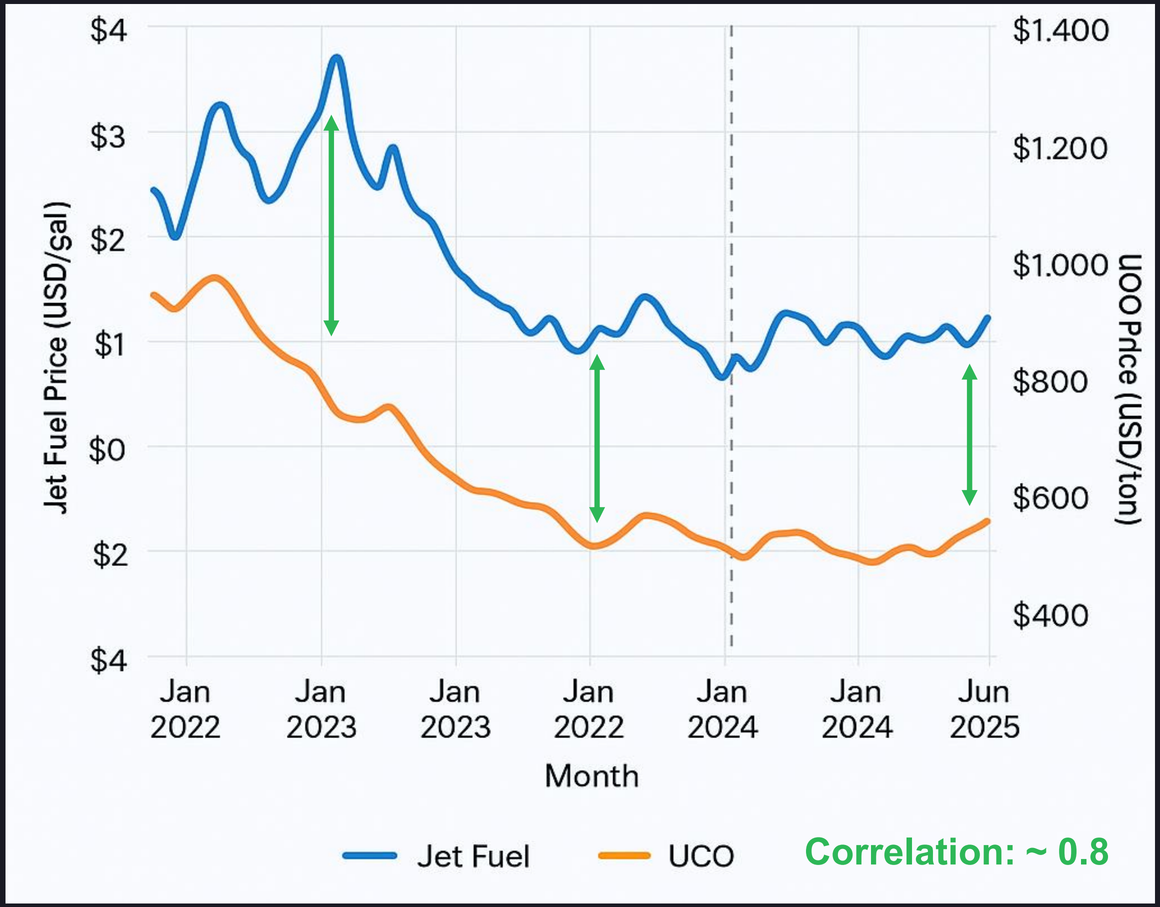
- Collect penalties from ReFuelEU and ETS for aviation sector: Each member state determines and collects penalty amounts, adhering to a minimum threshold. A central authority within each country could be responsible for collecting and allocating these funds to ensure effective reinvestment.

Integrate new financial sources like:

- Pension contributions (e.g. Germany's Generation Capital initiative for pension funds): Pension funds from EU countries investing in capital markets could serve as a new funding source for SAF projects
- CO2 levy on flight tickets (potential levy: €5 for EU flights, €10-15 for international flights): Similar to existing voluntary airline contributions, a fixed fee would minimize administrative burden.
- Tax on co-processing revenues (tax on SAF made alongside fossil fuels in refineries): depends on national tax laws and regulations. Companies must ensure correct tax calculation and compliance while exploring potential incentives for sustainable practices

When using the hedging tool for SAF producers, the emphasis should be on identifying a method to bridge the gap between Jet fuel and UCO as primary feedstocks for SAF.

“Jet fuel” price mechanism



Example of a hedging solution

Proxy cross-hedging via Gasoil/Diesel

Purpose

Set a strong correlation between UCO and biodiesel with gasoil/ULSD futures

Method

- Hedge Jet A1 exposure with Jet swaps
- Hedge UCO exposure indirectly with Gasoil/Diesel swaps (since biodiesel/UCO markets track diesel)

Structured cross-swaps (Jet vs UCO Band)

Purpose

Create and custom over-the-counter swaps (OTC) linking Jet A1 and UCO prices between banks or traders

Method

- Producer pays/receives depending on the spread between Jet A1 and UCO index

Index Basket Approach

Purpose

Bake hedgeability into the sales scheme

Method

- Price SAF as: 70% Jet Index and 30% UCO Index including premium

Long-Term supply contracts with indexed adjustment

Purpose

Stabilize UCO cost relative to Jet movements

Method

- Contract with UCO suppliers that pegs UCO price partially to Jet/Diesel index (e.g., UCO = Diesel + X €/t)

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For your further questions, please contact us

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Here you download our global SAF study

About EY-Parthenon

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