Bridging the Sustainable Aviation Fuel (SAF) Premium

Navigating Registries, Incentive Stacking, and Scope 1 & 3 Sales

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Introduction

Sustainable Aviation Fuel (SAF) is aviation's strongest near-term lever for cutting greenhouse-gas (GHG) emissions, yet it still supplies well under one per cent of global jet-fuel demand. Cost is the binding constraint: commercially available SAF is priced at two to five times the price conventional Jet A-1, which is saddling airlines with a premium of roughly 800 to 2400$ per metric tonne. Because sector profit margins seldom exceed 10 per cent, few carriers can absorb or pass through that spread.

In the near term, the gap is less about technology than about market architecture: fragmented policy, uneven certification rules, and immature attribute markets keep capital sidelined and scale elusive. Bridging it demands (i) airtight registries, (ii) durable incentives, (iii) transparent Scope 1 and Scope 3 markets, and (iv) trusted intermediaries capable of turning a thicket of regional rules into bankable, cross-border contracts. The sections below map each of these threads and outline practical priorities for regulators, producers, airlines, investors, and large corporate flyers.

Integrity First: Registries and Certification

Market confidence starts with irrefutable tracking. Credible carbon accounting is the hinge on which the SAF market turns. Every SAF tonne must carry a verifiable, single-use claim so that the environmental benefit cannot be double-counted or overstated. To date, ISCC, the Roundtable on Sustainable Biomaterials (RSB) and ClassNK have anchored eligibility under ICAO's CORSIA framework, tracing feedstocks from origin to wing and assigning each batch a lifecycle-carbon-intensity (CI) score that becomes its passport to incentives and emissions reporting. On related initiatives, IATA's Digital SAF Registry, now in pilot phase, will knit airline purchasing systems directly into this chain of custody, while the emerging Assure™ registry aims to offer a neutral, blockchain-backed ledger capable of reconciling transactions across multiple certification schemes.

The rules inside these systems are not interchangeable. ISCC prohibits any resale of Scope 3 attributes once a State incentive—such as a mandate—has been claimed; RSB allows limited resale only when strict additionality tests are met; IATA and Assure have provisions that could permit capped transfers provided both seller and buyer disclose them in public retirement logs. Even seemingly small differences—how a pathway's CI is calculated, whether co-processing is allowed, which auditor must sign off—can determine whether a batch is eligible for a tax credit, a CORSIA Scope 1 claim, or a corporate Scope 3 reduction.

For airlines, producers, and corporate buyers, a deep working knowledge of these registries and regulations is therefore indispensable. Without it, an ostensibly attractive transaction can collapse at audit time, leaving revenue on the table or, worse, exposing parties to compliance breach. Mastery of registry nuance—understanding exactly when and how Scope 1 and Scope 3 claims can be registered, retired, or transferred—is what turns a promising SAF supply agreement into a bankable, reputation-proof deal.

The Global Incentive Patchwork

Public support for SAF varies sharply by region, creating a mosaic of mandates and fiscal levers that developers must navigate.

- ICAO's CORSIA scheme, moving into its mandatory 2nd Phase in 2027, lets airlines meet offset obligations by substituting certified SAF, but the list of eligible fuels and methodologies is being updated every year to encompass new technologies and feedstocks, adding planning complexity.
- In Europe, the ReFuelEU regulation provides demand certainty through a steadily rising blending mandate—2 percent in 2025, 6 percent by 2030—yet offers no direct subsidy, forcing carriers and suppliers to finance the premium while racing to expand airport infrastructure.
- The United States couples renewable-fuel identification numbers (RINs) with a dedicated SAF tax credit. Although generous, the dollar value of these incentives can swing with federal politics, raising the cost of capital for producers.
- Across Asia, countries such as Japan, Singapore and South Korea are locking in mandates and capital-expenditure grants between 2025 and 2027, but domestic supply chains and certification capacity are still coalescing. This patchwork means that a project's viability often hinges less on technology than on its ability to layer incentives from multiple jurisdictions while hedging against policy drift.

Incentive Stacking and Environmental-Attribute Markets

Because no single instrument erases the premium, successful projects layer multiple revenue streams. Production credits or grants move the supply curve; airlines keep the Scope 1 compliance value; and, where certification rules allow, corporate flyers finance Scope 3 certificates. Fuel chemistry complicates the picture: HEFA, alcohol-to-jet, and Fischer–Tropsch pathways each sit at different CI baselines and thus capture different incentive levels. Developers must therefore synchronise feedstock, refinery technology, and policy stacks from the start—no trivial task when CI scoring diverges from California to Singapore.

Book-and-Claim: A Global Demand Engine

SAF blending remains concentrated at a handful of hubs, leaving many routes physically out of reach. Regional carries servicing isolated regions or island states already facing high costs could be pushed out by SAF mandates and penalties. Book-and-Claim (B&C) resolves the mismatch by separating environmental attributes from molecules. A tonne of certified SAF is produced and uplifted where infrastructure exists; the physical fuel is separated from a digital certificate for its verified GHG reduction; an airline and/or corporate customer anywhere retires that certificate against its own inventory. Producers see wider demand, airlines avoid transport-emission penalties, and corporate budgets can contribute to financing SAF for their corporate travel.

Three safeguards will be needed for B&C to succeed. First, common data fields across registries (ISCC, RSB, IATA, Assure and others). Second, public retirement logs that prevent double claiming. And lastly, updated GHG-Protocol guidance so corporates can book Scope 3 reductions with confidence. With these in place, corporate-travel budgets—often larger than airline net profits—can shoulder a meaningful share of the premium.

The Role of Ecosystem Facilitators and Brokers

Every SAF deal is bespoke. Airlines differ in fleet mix, route geography, and reporting obligations; corporates vary in accounting rules and reputational aims; producers juggle feedstock logistics, certification timelines, and capital constraints. An independent, neutral intermediary translates this complexity into executable contracts.

A skilled facilitator aggregates demand across carriers, matches it with output from multiple refineries, and structures offtake agreements that respect varying CI scores, delivery points, and registry requirements. Take a European carrier seeking alcohol-to-jet under RSB when an Asian refinery offers HEFA under ISCC: the broker reconciles documentation, so the environmental claims hold. Facilitators also track shifting tax-credit guidance, confirm ongoing Scope 3 eligibility, and manage delivery-point CI

adjustments that change payout schedules. By turning a labyrinth of rules into clear risk-adjusted pathways, they accelerate growth without compromising rigour.

Conclusion

SAF's evolution from niche to mainstream rests on more than advanced chemistry. It requires a durable framework that safeguards integrity, aligns incentives, and disperses cost across the entire travel ecosystem. Trusted registries—now strengthened by increased use of ISCC, RSB and IATA's incoming ledger—anchor credibility. Well-designed incentive stacks provide the economic bridge, and Book-and-Claim unlocks access to Scope 1 in underserviced regions and global Scope 3 demand. Yet few airlines or fuel producer scan navigate, unaided, the swirling mix of regional mandates, fiscal incentives, registry rules, and pathway-specific CI calculations. Independent facilitators step into that breach, converting complexity into coherent, cross-border contracts. When these elements fit together, the daunting premium that keeps SAF out of most wings begins to shrink—a transformation that can turn today's costly ambition into an attainable reality within this decisive decade.