

Brazil SAF Mapping — Executive Summary

A diagnostic of the Brazilian SAF innovation system for Dutch and EU decision-makers

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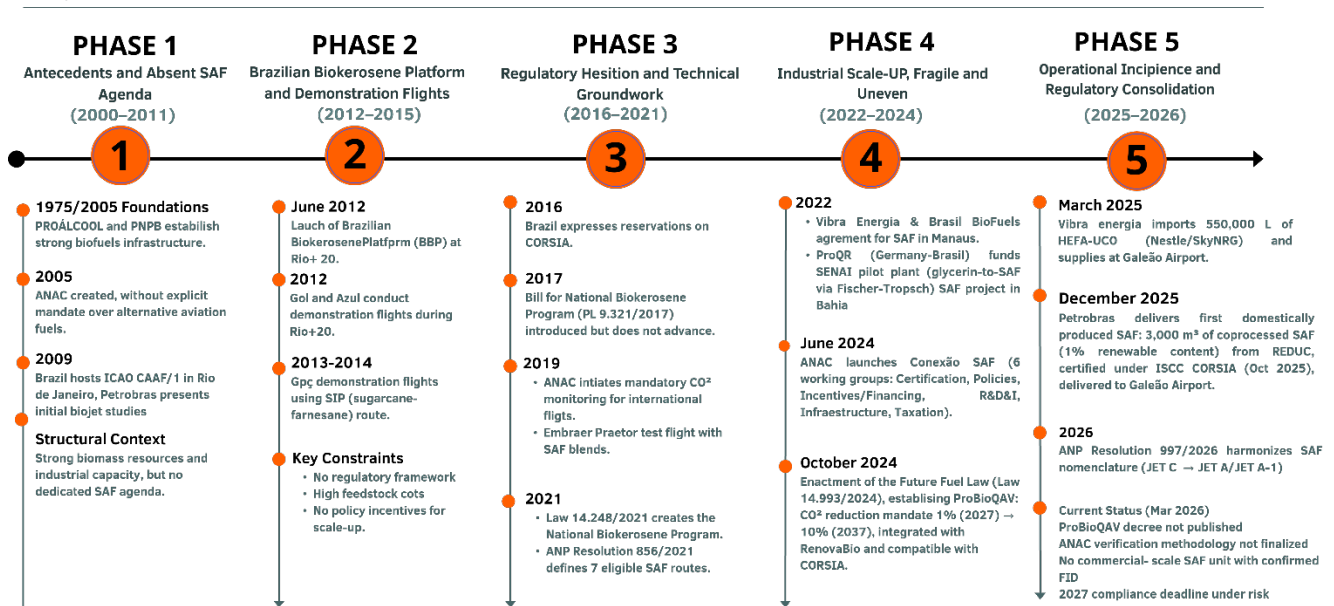
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WHERE BRAZIL STANDS

Brazil enters the global Sustainable Aviation Fuel transition with rare endowments: the world's largest sugarcane ethanol complex, a mature biofuels industry, a regulatory architecture anchored in Lei 14.993/2024 (ProBioQAV)^[1], and an active stakeholder community across the value chain. As of March 2026, no dedicated commercial SAF biorefinery in Brazil had a publicly confirmed Final Investment Decision, although several projects had been announced and financing proposals were still being evaluated. The first two such FIDs were in fact taken shortly after this analysis closed — Acelen (May 2026) and Petrobras RPBC (June 2026)^[18,19]. Brazil's first and only publicly reported domestically produced SAF delivered to a Brazilian airport was Petrobras's December 2025 REDUC batch of 3,000 m³ supplied to distributors serving Galeão, produced via refinery co-processing with up to 1.2% renewable content authorized by ANP^[2,3]. ProBioQAV begins compliance in 2027, and EPE's projections indicate that domestic supply is likely to cover only a fraction of projected demand in the early years^[4], depending on which announced projects actually start up and how quickly they ramp.



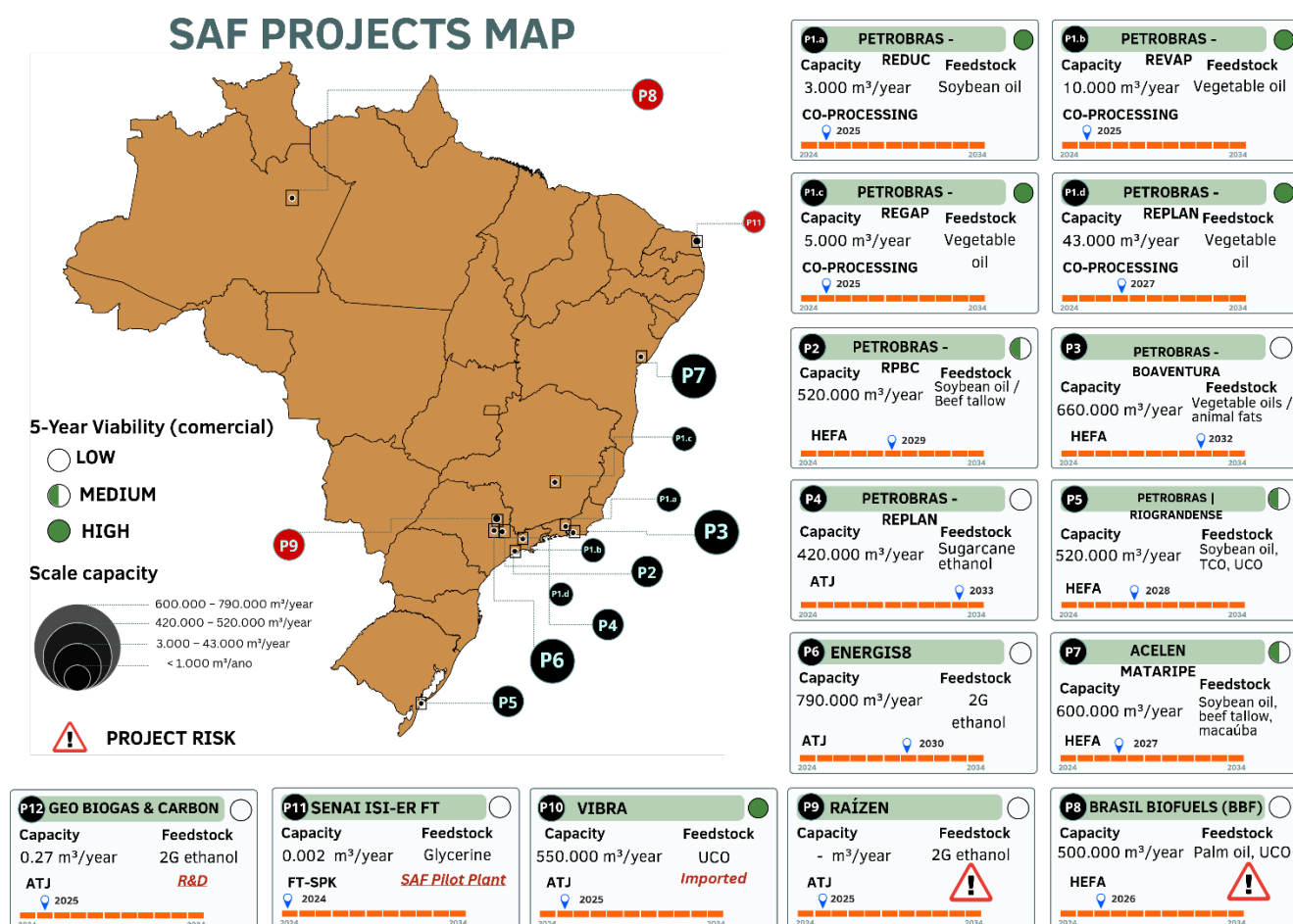
BRAZILIAN SAF TRAJECTORY (2000-2026)



Brazil has built the institutional foundations of a credible SAF innovation system. The gap between announced ambition and operational execution is now the defining problem, and it is concentrated in a small set of resolvable 2026 decisions, not in deep deficiencies. For Dutch and EU partners, this gap is also where the interface for cooperation lies. This summary synthesizes the empirical findings of the Brazil SAF Mapping: projects, stakeholders and investments mapping, into four diagnostic clusters and five decisions, whose 2026 resolution will set the system's trajectory through 2032.

WHAT WE MAPPED

The mapping identified 12 SAF-related initiatives, including co-processing, dedicated HEFA projects, ATJ strategies, FT pilot/demonstration units, and SAF import/distribution activity, as well as 53 organizations across the value chain. The associated investment ambition exceeds R\$150 billion, while approximately R\$6 billion has been made available through the BNDES–FINEP joint call. The call received 76 proposals totaling R\$167 billion; 43 selected projects represented approximately R\$134 billion in declared/requested value, more than 22 times the available envelope^[5,6]. Technologically, 68.8% of announced capacity is HEFA-based, leaving Alcohol-to-Jet (ATJ) undeveloped at the conversion stage despite being expected to be Brazil's most distinctive long-term advantage, given its sugarcane ethanol complex. Geographically, production clusters in the Southeast (Petrobras's REDUC, REPLAN, REVAP, RPBC), while the country's richest medium-term feedstocks, sugarcane ethanol, macaúba, and sugarcane biogas, are located far from both producers and aviation demand centers. The Book-and-Claim instrument (CS-SAF) that would bridge this spatial mismatch remains unpublished as of March 2026^[7], and no Brazilian airport has confirmed dedicated SAF storage and blending infrastructure. Petrobras, the only certified commercial SAF producer in Brazil^[3], is therefore irreplaceable for 2027–2029 compliance. This may pose a systemic risk on a single corporate decision-maker. For instance, the biorefining category in which SAF is located represents approximately 1.4% of Petrobras's 2026–2030 CAPEX.^[8]



CLUSTER 1 — REGULATORY COMPLETION

Regulatory completion is the cluster with the highest reform leverage. Lei 14.993/2024 (ProBioQAV) established the SAF mandate framework in October 2024^[1]; sixteen months later, its implementing decree remains unpublished. The CS-SAF Book-and-Claim instrument, proposed through MME Public Consultation 204/2025 and still lacking operational regulation, is the main market-design instrument that could decouple SAF sustainability claims from physical fuel delivery in a continental-scale market. ANP Resolution 997/2026 is a separate enabling step: it harmonizes aviation-fuel nomenclature and specifications, reducing barriers to pre-blended SAF imports and use. The GHG accounting methodology indexed to a fossil baseline, the escalating targets that rise from 1% in 2027 toward 10% in 2037^[1], the certification will need to rely on CORSIA-compatible chain-of-custody systems such as ISCC CORSIA and RSB^[10], and the cross-agency coordination among ANP, ANAC, MME, EPE, MMA, and MAPA are designed but not yet operationally complete. None of these gaps reflect legal contention or technical dispute or a policy failure, as a public consultation on ProBioQAV closed in 2025^[7]. They reflect unresolved executive, regulatory, and market design decisions.

CLUSTER 2 — FINANCING GAP

Brazil's financing architecture is incomplete. The BNDES–FINEP R\$6 billion joint call signaled the depth of demand (22-fold oversubscription)^[5,6] but cannot close the cost gap that defines SAF economics: Brazilian HEFA production costs are estimated at USD 1,500–3,100 per ton against USD 800 per ton for conventional jet fuel, a 2–4× premium, with ATJ and FT routes higher still^[4]. Brazil lacks a production-linked incentive equivalent to the US IRA's SAF credit (up to USD 1.75/gallon) or a Carbon Contract for Difference comparable to the European Innovation Fund's instruments. The existing low-carbon framework (RenovaBio and CBIOS)^[11] delivers credit-based revenue, but at levels insufficient to close the SAF operating gap. Without a production-linked instrument, the joint call provides necessary capital relief but not the operating bridge that converts demonstration plants into bankable industrial assets. The gap with EU and US financial architecture is widest here, and Brazil's own innovation policy instruments have not yet been adapted to the SAF-specific cost structure.

CLUSTER 3 — ATJ KNOWLEDGE VACUUM & HEFA LOCK-IN

Alcohol-to-Jet is Brazil's most distinctive long-term competitive advantage, given the world's largest sugarcane ethanol complex. 68.8% of announced SAF capacity is HEFA-based.

The most operationally meaningful upstream asset for a future Brazilian ATJ pathway is Raízen's E2G ethanol platform^[12]. However, Brazil still lacks an ATJ conversion demonstration plant, meaning the country has not yet converted its ethanol advantage into ATJ engineering and operational capability. Under ReFuelEU Aviation, 1G ethanol is excluded as a food/feed crop; only second-generation ethanol from residues qualifies^[13]. Brazilian 1G ethanol exported to overseas ATJ converters (such as the Raízen–LanzaJet channel to Soperton, Georgia) carries reduced strategic value-add and does not support domestic ATJ infrastructure^[14]. Methanol-to-Jet and Fischer–Tropsch from residues are also ReFuelEU-eligible; neither has a Brazilian commercial demonstration. Every year of inaction extends the knowledge gap by an estimated 3 to 5 years and risks consolidating Brazil's position as an exporter of intermediate feedstocks rather than as a producer of converted SAF.

CLUSTER 4 — FEEDSTOCK GEOPOLITICS & THE EU INTERFACE

Three forces now pull on Brazilian biomass differentially. The US Inflation Reduction Act subsidizes American converters and attracts Brazilian feedstock toward US-sited SAF. The EU's RED III classification excludes Brazilian soy-based SAF on indirect-land-use grounds while accepting tallow, used cooking oil, second-generation ethanol, methanol from residues, and Fischer–Tropsch from residues^[10]. Brazil's own ProBioQAV mandate begins drawing domestic feedstock from 2027. The route-level mismatch is sharp: Brazil's HEFA-dominant pipeline is exposed to EU market-access risk where it relies on soy or palm, while the residue-based routes the EU favors, aligned with Brazilian comparative advantage in sugarcane bagasse, agricultural residues, and forestry biomass, remain commercially undemonstrated. Without market-access certainty and a sustainability governance architecture credible to European regulators (ISCC, RSB, Bonsucro), Brazil risks consolidating its

position as a net feedstock exporter rather than an industrial SAF producer, at a time when Brazil's climate-diplomacy position would benefit most from demonstrating the opposite.

THE 2026 DECISIONS AGENDA AND DUTCH–EU COOPERATION INTERFACE

Decision	Owner	2026 window	Consequences for BSAFIS if unresolved
ProBioQAV implementing decree	MME / Casa Civil	Q1–Q2 2026	Without it: the 2027 compliance is ungrounded; certification governance is unclear
CS-SAF Book-and-Claim regulation	MME/CNPE/ANAC/ANP	Q2–Q3 2026	Without it: continental feedstock–airport mismatch persists; regional ATJ value capture blocked
Production-linked incentive (CfD or PTC)	MME / MF / BNDES	Q2–Q4 2026	Without it: HEFA projects remain pre-FID; ATJ unbankable
ATJ demonstration commitment	BNDES / FINEP / sector	Q3–Q4 2026	Without it: 3–5-year knowledge gap consolidates; EU-strategic route ceded
Dedicated SAF FIDs (Acelen, Petrobras RPBC, Riograndense)	Acelen, Petrobras, Riograndense, financiers	Q2–Q4 2026	Acelen (May 2026) and Petrobras RPBC (June 2026) FIDs now confirmed; Riograndense pending. Residual risk shifts from sanction to execution [18,19].

Full methodology, project portfolio, TIS analysis, and references are available in the BSAFIS Final Report (April 2026, CEHTES/UFG–FUNAPE).

Five resolvable decisions concentrated in the 2026 calendar will determine the Brazilian SAF Innovation System trajectory through 2032: the ProBioQAV implementing decree^[1], the CS-SAF operational regulation^[7], a production-linked incentive design^[4], an ATJ demonstration commitment^[12,15], and the Acelen Mataripe^[16] and Riograndense^[17] Final Investment Decisions or their alternative anchors. The first two of these FIDs — Acelen and Petrobras RPBC — were confirmed in May and June 2026, just after this analysis closed^[18,19], while Riograndense remained pending. Each decision presents a potential entry point for Dutch and EU cooperation, especially in areas consistent with the full report's findings: HEFA scaling, SAF logistics and blending design, FT and residue-based route expertise, sustainability certification, and project-finance structuring. The already established relationship is an emerging bilateral channel, but additional claims about specific bilateral mechanisms should be supported by separate references. The cooperation interface is institutionally prepared. Its operationalization depends on the same 2026 decisions that determine the viability of domestic Brazilian SAF.

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