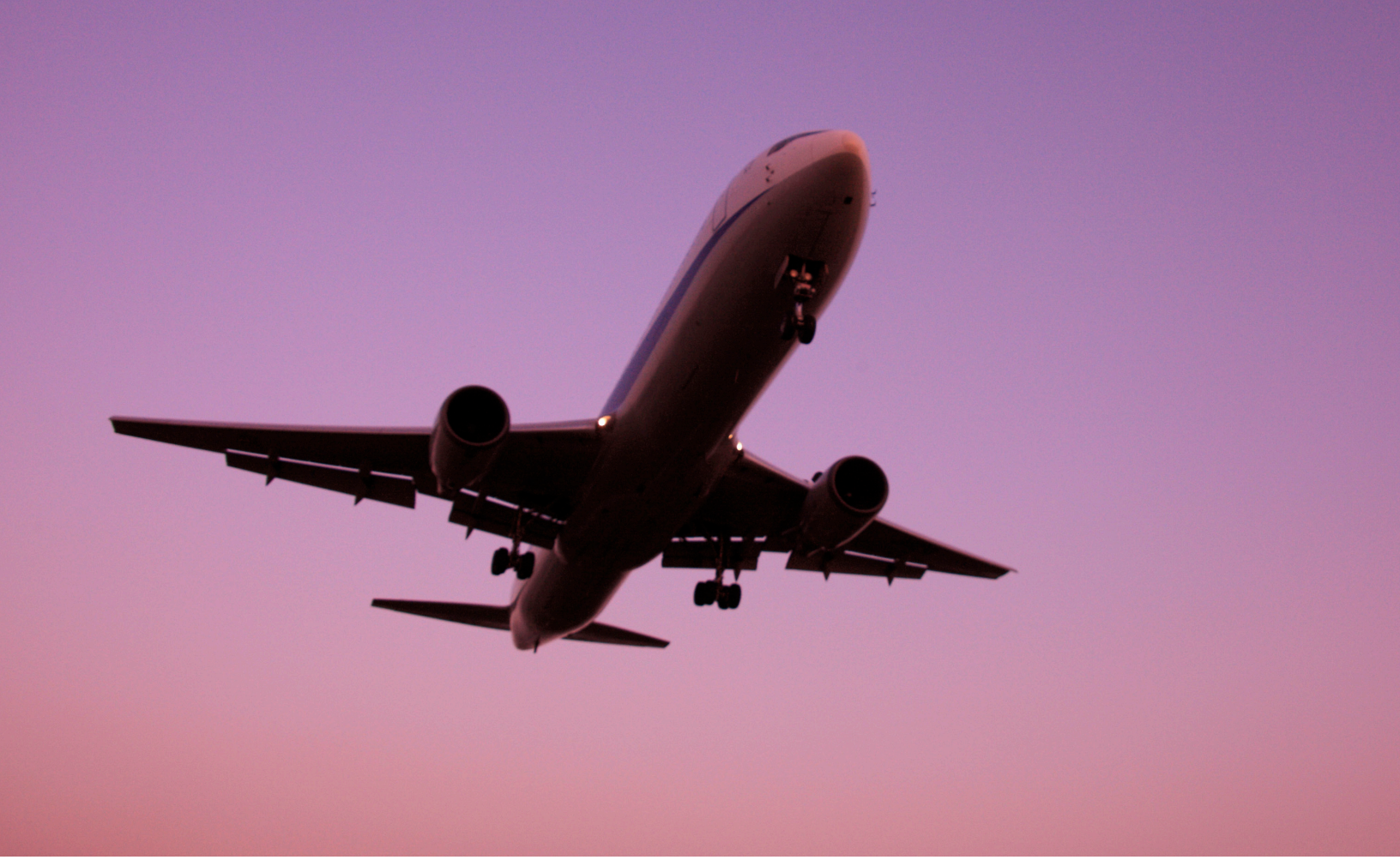
SABA

SUSTAINABLE AVIATION BUYERS ALLIANCE

Sustainability Framework for Sustainable Aviation Fuel (SAF)

Version 1, adopted by Customer Advisory Board in November 2022



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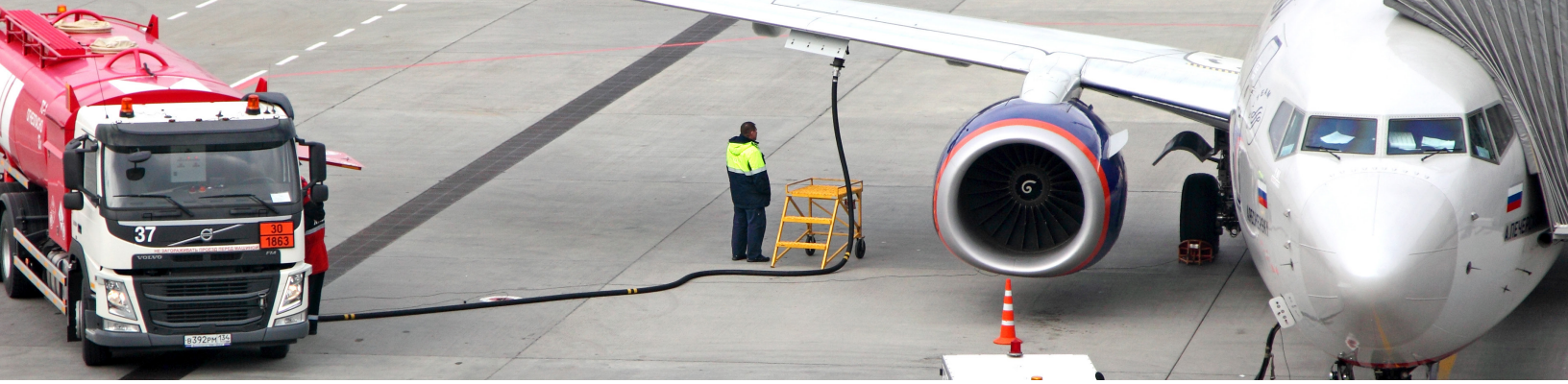

1: Recitals and Context

The purpose of the SABA Sustainability Framework for SAF (the "Framework") is to determine the types of SAF that advance SABA's objective of driving production and use of SAF with high environmental integrity. SABA's Sustainability Framework is intended to guide SAF procurement decisions and SAF emissions reduction claims, particularly those made by aviation customers who are not expected to be experts in SAF.

The Framework is based on the International Civil Aviation Organization (ICAO) framework for SAF developed for the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).[i] In addition to the CORSIA framework, it integrates additional provisions intended to reflect the decarbonization ambitions of SABA's aviation customer members and align with other carbon reduction programs, such as the Science Based Targets initiative (SBTi).

The additional provisions are described below, grouped into the following categories: (1) Emissions Reduction Threshold; (2) Life-Cycle Assessment Approach; (3) Sustainability Certifications; (4) Ensuring Emissions Reduction Impact; and (5) Preventing Double Counting.

The SAF market is new and rapidly evolving. Fuel volumes are low today but projected to rise quickly in the coming years. New SAF technologies are also expected to mature soon, which may offer environmental and economic advantages relative to fuels currently on the market.

Recognizing the dynamic nature of the SAF market, the SABA Framework takes a flexible but rigorous approach to defining high-integrity SAF. It establishes a set of "SABA Eligible" requirements to ensure that any SAF meeting these requirements represents real and significant environmental benefits relative to fossil-based jet fuel, with carbon reductions that can count toward members' Science Based Targets. At the same time, where appropriate, the Framework describes additional provisions that qualify a fuel as "SABA Preferred," which means the fuel provider has taken additional steps to mitigate risks of indirect land use change (ILUC) and displacement effects. All provisions contained in this document should be considered "SABA Eligible" requirements except those clearly marked under the heading "SABA Preferred."

We anticipate operationalizing this distinction between SABA Eligible and SABA Preferred in future SABA collective procurement processes by requiring that all fuel considered for purchase meet the SABA Eligible requirements. Remaining fuels would be evaluated and scored, at least in part, on the basis of whether they satisfy any of the SABA Preferred provisions.

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i For reference, the methodologies developed by ICAO's technical bodies and adopted by ICAO's Council are contained in Annex 16, Volume IV, of the Chicago Convention on International Civil Aviation (the SARPs and supporting documents). These are the first and only set of multilaterally agreed upon methodologies for SAF.

SABA intends to update the Sustainability Framework at least every two years as the market changes, new information about the environmental impact of fuels emerges, and experience with different certification systems and methodologies grows. The SABA Preferred provisions in this version of the Framework may become SABA Eligible requirements in future versions.

SAF is the most promising near-term option for decarbonizing the aviation sector. But, similar to all energy technologies, SAF presents trade-offs that need to be understood and managed. The SABA Framework represents a pragmatic but ambitious approach to identifying the highest-integrity SAF available today, while driving the market to continue to innovate toward even higher-quality SAF in the future.

2: Emissions Reduction Threshold

Approach: The life-cycle value for SAF should be at least 60% lower than the life-cycle emissions of fossil jet fuel as estimated under CORSIA (89 gCO_2e/MJ).

Rationale: While ICAO requires a 10% minimum emissions reduction for SAF, this is intended as a safeguard to ensure that any emissions reduction claim in CORSIA is backed up with real emissions reductions that go beyond the uncertainties associated with the life-cycle assessment (LCA) methodology. SABA's goal is **to accelerate the transition to net-zero aviation, so a higher threshold is appropriate.** The 60% target is technically achievable and directionally aligned with other emissions reduction thresholds, such as those specified in SBTi's target-setting guidance for the aviation sector and the US government's SAF Grand Challenge.

3: Life-Cycle Assessment Approach

Approach: SABA will apply ICAO's LCA approach, with additional safeguards to limit the use of avoided emissions toward meeting the 60% reduction threshold, as explained below.

Rationale: A robust LCA approach ensures that all greenhouse gas (GHG) emissions along the SAF supply chain are accounted for from production to final use, including direct emissions (e.g., emissions from operating the refinery where the fuel is produced) and indirect emissions (e.g., emissions from deforestation that occur because feedstock cultivation for energy displaces food and feed crops, resulting in new lands being converted to produce food). ILUC emissions from SAF production are incorporated within ICAO's life-cycle emissions calculation, meaning these emissions effectively act as deficits within the overall carbon intensity value for the fuel. Fuels that clear ICAO's 10% emissions reduction threshold must do so net of any ILUC emissions; for SABA, the threshold is 60%, which provides additional protection against ILUC.

3.1 *SABA Preferred:* Indirect Land Use Change (ILUC) – Land Use–Based Feedstocks

Preferred Approach: This optional section applies to land use–based feedstocks. To provide additional protections against ILUC risk, fuel providers should demonstrate via a certification achieved through a CORSIA-eligible Sustainability Certification Scheme (SCS) that SAF produced from land use–based feedstocks is in compliance with ICAO's "Low Land Use Change (LUC) Risk Practices" methodology under the ICAO document "CORSIA Methodology for Calculating Actual Life Cycle Emissions Values."

Rationale: While the Framework's 60% GHG reduction threshold provides strong protection against ILUC risk, it does not completely eliminate the risk. ILUC can cause significant negative impacts beyond GHG emissions, such as deforestation, habitat destruction, hunger, malnutrition, and food insecurity.

3.2 *SABA Preferred:* Displacement Effects – Wastes, Residues, and By-Products

Preferred Approach: This optional section applies to the feedstocks designated as wastes, residues, and by-products under ICAO CORSIA. Fuel providers should demonstrate compliance with ICAO's zero ILUC designations, and quantify displacement emissions other than those caused by ILUC, by:

a. When displacement may pose an ILUC risk, achieving certification to the RSB Low ILUC Risk Biomass Criteria and Compliance Indicators (RSB-STD-04-001),[ii] or an equivalent standard from another CORSIA-eligible SCS, when available; or

b. For wastes, residues, and by-products with displacement emissions other than ILUC, achieving certification to the methodology for displacement emissions under RSB's Standard for Advanced emissions.[iii] Resulting displacement emissions should be added to the life-cycle value of the SAF.

Rationale: Displacement effects occur when SAF production draws feedstocks away from some preexisting application, which can trigger the production or use of substitute materials with negative carbon and/or other environmental and social impacts. For example, increased demand for edible tallow for SAF may divert it from other uses, such as cooking oil or animal feed. In these cases, the resulting gap may then be filled with virgin vegetable oil, resulting, inter alia, in ILUC emissions. Another example could involve the use of forest residue for SAF that was previously used to power an electric generating unit (EGU). If natural gas is used as a substitute fuel in the EGU, this could result in an increase in GHG emissions, i.e., displacement emissions. Under ICAO CORSIA, wastes, residues, and by-products are designated with a zero ILUC value, and displacement emissions other than ILUC are not considered. Since displacement effects can have a significant impact on the emissions reduction claims, fuel providers should minimize ILUC risk and quantify displacement emissions other than those caused by ILUC through the approaches outlined above.

3.3 Avoided Emissions and Removals – Municipal Solid Waste, Land Use–Based Feedstocks Leading to Carbon Sequestration, and Carbon Capture and Sequestration

Approach: This section applies to municipal solid waste (MSW) feedstocks, feedstocks with land management practices leading to carbon sequestration credits, and pathways with carbon capture and sequestration. Out-of-sector avoided emissions and removal credits will not count toward the LCA value for SABA Eligible SAF.

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ii See https://rsb.org/wp-content/uploads/2020/06/RSB-STD-04-001-ver-0.3-RSB-Low-iLUC-Criteria-Indicators.pdf for the criteria and compliance indicators.

iii Not all displacements result in displacement emissions, e.g., when the displacement occurs in a sector that is covered under a cap-and-trade system.

Rationale: Under ICAO CORSIA, LCA values may include avoided emissions and removals from activities associated with SAF production (examples below) even if they are not part of the SAF. This approach is accepted under ICAO because aircraft operators can comply using either offsets (avoided emissions are offset project types) or emissions reductions from SAF. SABA's mission, however, is to drive in-sector decarbonization of aviation, so it is important that SABA's approach drives uptake of SAF based on the emissions reductions embodied in the fuel itself. This general approach is aligned with SBTi.

Example scenarios:

a. Avoided emissions: When MSW is used for SAF production, aluminum cans are diverted from landfill in the process. They can then be recycled and used in other industries instead of new aluminum, leading to avoided emissions. Under ICAO CORSIA, this process would generate a "Recycling Emissions Credit," and fuel producers could subtract the corresponding emissions reductions from the life-cycle value of the SAF. The fact that another industry can use the recycled aluminum is an associated benefit of SAF production, but that process is not part of the SAF supply chain. This means those avoided emissions do not represent a direct reduction in aviation emissions and would not count toward a Science Based Target, for example.

b. Removals: There is debate over whether soil carbon sequestration occurs within or outside the SAF value chain. SABA has decided against counting these removals toward SAF carbon intensity values in the calculation of actual LCA emissions given this debate as well as significant additional concerns regarding permanence, leakage, and inconsistent methodologies for crediting soil carbon sequestration.

4: Sustainability Certifications

Approach: For SAF to be SABA Eligible, it must have a certification from a CORSIA-approved SCS that attests to compliance with requirements consistent with the full set of sustainability criteria approved by the ICAO Council,[iv] which includes appropriate certifications across all economic operators. RSB and ISCC were deemed CORSIA-eligible SCSs. Certifications offered by these entities that would qualify SAF as SABA Eligible include RSB CORSIA and ISCC CORSIA. SAF made from feedstocks that are not land use–based may also use RSB Global, RSB EU, ISCC Plus, and ISCC EU.

Rationale: The sustainability criteria approved by the ICAO Council include provisions for greenhouse gases, carbon stock, water, soil, air, conservation, waste and chemicals, human and labor rights, land use rights and land use, water use rights, local and social development, and food security. SABA believes it is important and practical for SAF to meet these criteria.

iv See https://www.icao.int/Newsroom/Pages/ICAO-Council-approves-CORSIA-Sustainability-Criteria-for-sustainable-aviation-fuels.aspx for the criteria and https://www.icao.int/about-icao/Council/Pages/council.aspx for more on the ICAO Council.

5: Ensuring Emissions Reduction Impact: The Atmospheric Benefit Principle

Approach: Emissions reductions from SAF being claimed for use toward voluntary climate targets will need to generate emissions reductions beyond those already incentivized by compliance obligations, creating an atmospheric benefit. Due in part to the rapidly evolving regulatory landscape, it is beyond the scope of this document to provide a comprehensive inventory of all SAF compliance obligations and their interplay with SABA's Atmospheric Benefit Principle. Instead, we offer a few representative examples below.

Rationale: SABA's mission is to accelerate the path to net-zero air transport by driving investment in high-integrity SAF. Some jurisdictions already have regulations in place to reduce emissions and/or incentivize alternative fuel use. To credibly count toward their voluntary targets, corporations need to ensure their SAF investments lead to emission reductions that are not already required by law. This ensures they create an atmospheric benefit, meaning they generate an emissions reduction that would not have otherwise occurred.

Examples:

a. Emissions reductions from SAF may not be used by an air transport provider to meet a regulatory emissions reduction obligation when a particular air transport customer is already claiming reductions toward a voluntary climate target. Example below:

   Air transport providers face emissions reduction obligations under CORSIA, which can be met through either the use of SAF or purchase of offsets.

   If an air transport customer were to purchase SAF certificates derived from SAF also used to meet an air transport provider's CORSIA obligation, the customer would effectively be buying carbon reductions that were already required by CORSIA. This would not result in net carbon reductions.

b. Emissions reductions from SAF will only be used to meet a low carbon fuel standard (or similar) with an opt-in for aviation in a jurisdiction that has a regulatory GHG emissions reduction obligation. Example below:

   California's Low Carbon Fuel Standard (LCFS) policy features a declining cap on statewide transportation fuels with tradable credits used as compliance mechanisms. The LCFS exists alongside a statewide cap on emissions that includes the transportation sector. SAF can "opt in" to the LCFS system, meaning the fuel can generate LCFS credits but does not face compliance obligations.

   The sale of these SAF-derived credits into the system creates headroom within the LCFS cap that other fuels producers could, in principle, legally fill with increased emissions. The statewide emissions cap, however, creates a separate backstop that the transport sector must then meet through additional emissions reductions.

   Importantly, in California, LCFS credits cannot be sold into the cap-and-trade system. As a result, the SAF purchase results in net emissions reductions even when LCFS credits are claimed for the same fuel.

c. Emissions reductions from SAF that has been or will be used to meet an SAF use mandate will not also be sold to an aviation customer for voluntary emissions reduction claims. Example below:

> The ReFuelEU Aviation initiative, once adopted, will establish EU-wide SAF blending mandates. Any emissions reductions associated with SAF used to comply with ReFuelEU could not be sold to air transport customers for use in their voluntary GHG claims because the SAF production and its associated emissions reductions are already required by law.

6: Preventing Double Counting

Approach: Both air transport providers as well as their relevant customers are able to claim emissions reductions for SAF toward their respective climate goals. In order to prevent double claiming by customers, however, when reporting publicly or bilaterally, the providers should distinguish between:

a. SAF and associated emissions reductions that have been supported by and will be claimed by a particular customer or group of customers

b. SAF and associated emissions reductions that can be claimed by all customers

Rationale: Accounting rules help ensure the integrity of emissions reduction claims. This includes the avoidance of double counting and, within it, double claiming. Double claiming occurs when the same emissions reductions from the use of SAF are claimed twice toward the same emissions category under GHG Protocol guidance.

7: Adopting and Updating the Sustainability Framework

The Framework has been adopted according to the following process:

a. A draft of this Framework was published for consultation by SABA Members and external stakeholders for 30 calendar days. Participants in the consultation submitted observations or recommendations in writing to the SABA Secretariat.

b. After considering the relevance and appropriateness of the observations and recommendations, the SABA Management Team submitted the revised Sustainability Framework to the SABA Customers Advisory Board for adoption.

c. The SABA Customers Advisory Board adopted the Framework by consensus, by a ¾ majority vote, on November 4.

The SABA Management Team will continuously monitor developments concerning SAF and will propose updates to the Framework as needed.

Crosswalk of Sustainability Framework Sections and Requirements

	CORSIA	SBTi	SABA Eligible	SABA Preferred
LCA Methodology	ICAO's LCA approach			
GHG Reduction Threshold	10% on an LCA basis		60% on an LCA basis	
ILUC for Crop-Based Feedstocks	Addressed through 10% GHG reduction threshold		Addressed through 60% GHG reduction threshold	ICAO Low LUC Risk Practices
Displacement for Waste-Based Feedstockss				Must demonstrate low or no displacement
Atmospheric Benefit			SAF purchases must drive additional CO_2 reductions beyond regulatory mandates	
Avoided Emissions & Removals		No out-of-sector avoided emissions or removals counted	Soil carbon sequestration not counted	