



Aviation Initiative for
Renewable Energy in Germany e.V.



A Book and Claim Approach for SAF

aireg's perspective on basic design principles

The widespread use of sustainable aviation fuels (SAF) is seen as a key lever for aviation to become CO₂-neutral by mid-century. With the aviation sector under growing pressure to reduce emissions effectively, a rapid scale-up of SAF production and use is urgently needed. In this context, it is crucial to design SAF accounting models in a way that best help facilitate scale-up of production, access additional demand, as well as provide for high environmental integrity of SAF claims.

Book and claim is a chain-of-custody model in which the sustainability information is de-coupled from the physical product (i.e. SAF). This allows for the SAF's associated sustainability information or attributes (such as the GHG emissions reduction) to be transferred from the seller to the buyer without them necessarily being connected through a physical SAF supply chain.

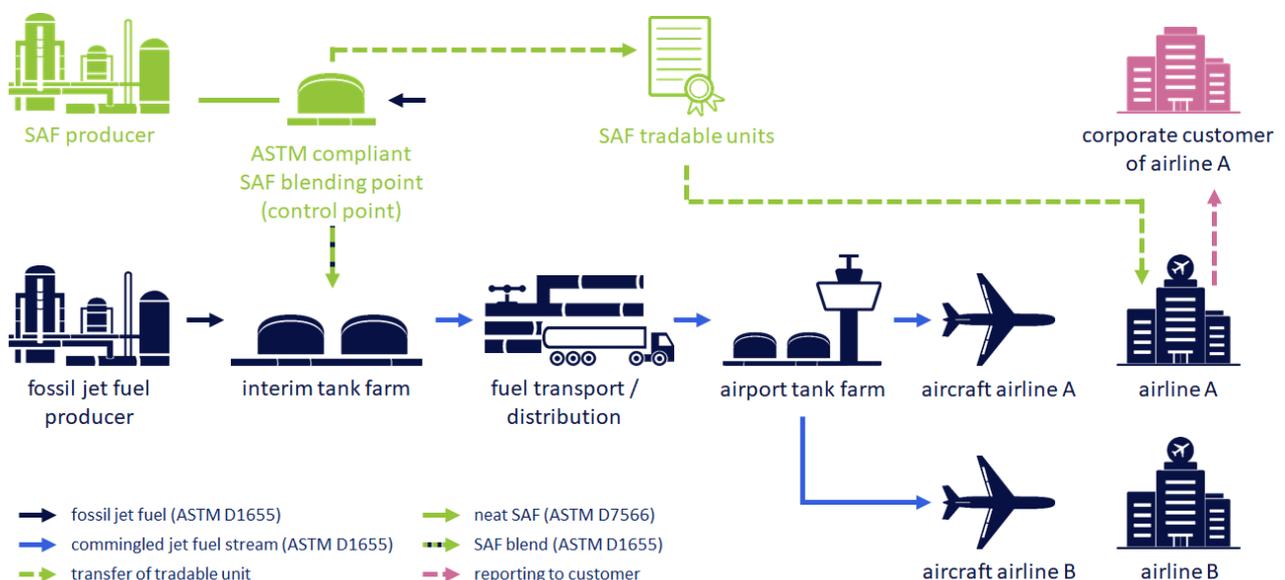


Figure 1: schematic overview of the described book-and-claim system

There are two main arguments for introducing a book and claim system as a key feature of an effective SAF reporting and accounting model:

- Firstly, at a time where the overall SAF market is still nascent, physical distribution of SAF to all airports is complex and reduces overall system efficiency. This results in higher logistical complexity, fuel distribution costs and systemic GHG emissions of aviation. In turn, system efficiency can best be increased through the implementation of a book and claim system compared to other options.
- Secondly, a book and claim system enables satisfying and even raising additional demand for SAF by allowing users (e.g. airlines) to easily and transparently pass on emission reductions to their customers (e.g. business travel customers, freight shippers or private individuals) in alignment with the scopes set out in the Greenhouse Gas Protocol.

Hence, a book and claim system has the potential to substantially support SAF uptake in its early stages of market penetration. While taking advantage of the flexibility a book and claim system offers, it is of utmost

importance to ensure full credibility and environmental integrity of such a system, and to avoid malpractice such as double counting or incentivization and use of low-quality SAF. We therefore advocate for a book and claim system to have the following features:

- **The use of a mass balance chain-of-custody model (i.e. with the sustainability information coupled to the physical SAF flow) should be mandated until a defined control point.** Following the physical SAF flow until a defined control point ensures that the fuel for which SAF tradable units are issued is physically consumed in the aviation sector and thus truly contributes to reducing the sector's GHG emissions (and is not repurposed for use in other industries, e.g. for heating or other transport modes). As long as this is ensured, claims made based on SAF tradable units may be treated the same way as claims based on actual physical use of that fuel. The defined control point could be the blending and certification point of SAF (making best use of the SAF's drop-in qualities) or a similarly adequate control point. The book and claim system should then start at the defined control point, allowing for the de-coupling of sustainability information from the physical SAF flow.
- **To ensure a book and claim system generates real and credible GHG emission reductions, it should be governed by clear and robust rules as well as be subject to credible verification.** This would best be achieved by making use of a centralized registry, within which the issuance, transferring and claiming of SAF tradable units is handled. A registry increases transparency and credibility for SAF claims (both under book and claim and other tracking systems): A registry would allow for the tracking, monitoring and verification of SAF tradable units and related claims, including by verification bodies and regulators. This way, it would be ensured that no multiple counting of SAF tradable units and the related sustainability attributes occur. Additionally, a centralized registry would allow to monitor which types of SAF are fed into the aviation system, which entities are participating in unit trading, and how system wide GHG emission reductions develop over time.
- **SAF tradable units must include a clearly defined and comprehensive set of information.** This allows for the integrity and applicability of the book and claim system (e.g. for regulatory purposes) as well as for the comparability of tradable units. The tradable unit should represent a metric ton of SAF and include, at a minimum, the SAF's associated sustainability information as shown in the *text box* below. The sustainability information related to the SAF tradable unit should only be able to be transferred and claimed together. This is in line with best practice for renewable electricity claims.

A SAF tradable unit should contain, at a minimum, the following information:

- Unique identifier of tradable unit
- Date and country of issuance of tradable unit
- Unique identifier of underlying proof of sustainability
- SAF production pathway
- Feedstock type
- Producer, production date and production site of SAF
- Date and site of blending/certification point of SAF
- Life-Cycle GHG Value of SAF
- Additional information as required by regulation

- **SAF should fulfill stringent sustainability criteria, including those SAF options that are registered as SAF tradable units within a book and claim system.** Several regulatory frameworks have established internationally accepted sustainability criteria for SAF. The environmental integrity of the SAF within a book and claim system could therefore be ensured by only allowing SAF compliant with widely accepted frameworks, such as EU RED II, US LCFS systems', or CORSIA requirements to be registered as tradable units. Ideally, tradable units could be allowed to comply with more than one regulatory framework, giving more flexibility to the system (provided the SAF meets the sustainability criteria required under each framework). At the same time, the system should allow for positive market dynamics through healthy competition between feedstocks, production pathways and producers within the system.
- **To ease applicability and ensure credibility of claims, the scope of a book and claim system should be subject to certain limitations.** Clear rules should govern the geographical relationship between the defined control point and the SAF claim.
- **A book and claim system should be in line with industry-accepted GHG accounting standards.** Where possible, the system should be designed in alignment with the scopes set out in Greenhouse Gas Protocol (GHGP), a widely accepted and broadly used GHG accounting standard. This would involve allowing SAF users (e.g. airlines) to pass on emissions reductions on to their customers (e.g. business travel customers, freight shippers or private individuals), thereby unlocking additional demand for SAF and incentivizing additional SAF production to come online. Tradable units should generally be traded downstream (e.g. SAF suppliers to airlines), whereas horizontal trading may be allowed in certain cases (e.g. where it does not infringe on other key design principles and credibility of the system as such). Trading between end-users (i.e. outside of the transport industry) should be prohibited to avoid artificial shortages and speculation of tradable units. At the same time, tradable units should have a certain expiry date to ensure they are not accumulated, and production and use occur within a given timeframe. For instance, the expiry date could be set at 12 to 24 months after SAF blending and certification.

Given its effectiveness if robustly implemented, we propose that regulators consider book and claim approaches in current and upcoming policymaking (e.g. by allowing SAF accounting via book and claim to be recognized under regulations such as the EU-ETS). A book and claim system, designed with the above features in mind, can substantially support the early market uptake of SAF.

By promoting a virtuous cycle of unlocking additional demand and thereby incentivizing additional production, the benefits of SAF use can be brought to an increasingly larger share of SAF users and customers of air transportation services, while helping to leverage economies of scale and bridging the significant price premium of SAF.