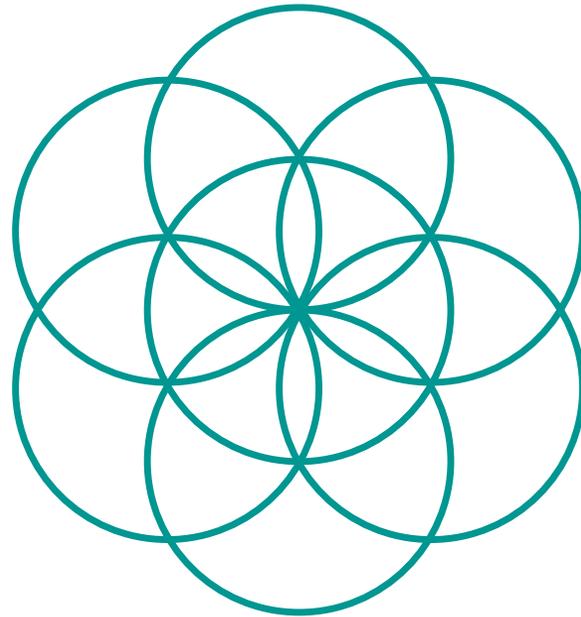


<https://doi.org/10.5281/zenodo.10371885>



RSB[®]

Roundtable on
Sustainable Biomaterials

www.rsb.org

Max Eichelbaum:

Sustainable Aviation Fuel (SAF) "Book & Claim" – Decoupling the Environmental Benefits from the Physical Product

Hamburg Aerospace Lecture Series, HAW Hamburg

November 23rd, 2023



Sustainable Aviation Fuel (SAF) "Book & Claim" – Decoupling the Environmental Benefits from the Physical Product



Max Eichelbaum

Digital Solutions Manager - RSB

Agenda

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About RSB

2

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RSB Book & Claim Manual requirements

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Question & Answers

About the RSB



The world we are trying to create

RSB is a collaborative network that works together to *ACCELERATE* the transformation to a sustainable circular and bio-based economy



where climate change has been mitigated ecosystems have been restored and livelihoods have been enhanced

What we do



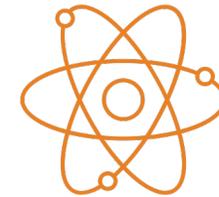
Certification

Certification to the RSB Standard covers feedstock production, entire supply chains, and novel technologies, including fuel, biomass and material products from bio-based and recycled carbon, including fossil waste.
Recognised under EU RED and ICAO CORSIA



Implementation

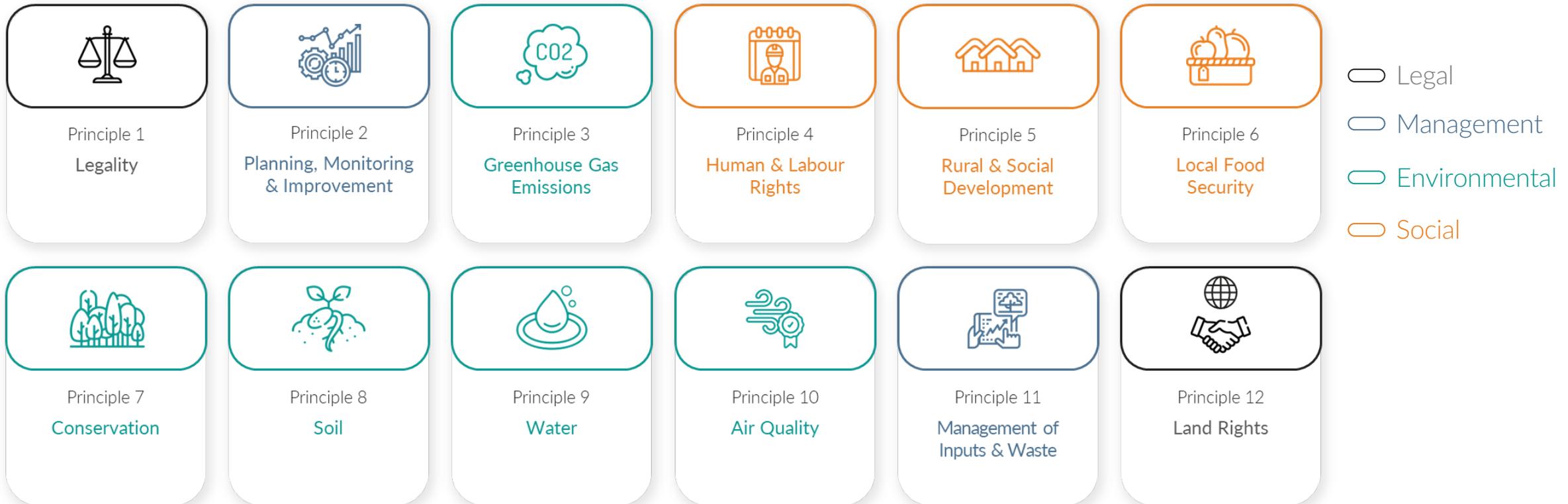
Technical and strategic advice, hands-on implementation, staff training and research services at a regional and global level.
We work on projects with individual partners. We also run large landscape-level projects to develop bioeconomy roadmaps with multiple partners.



Convening

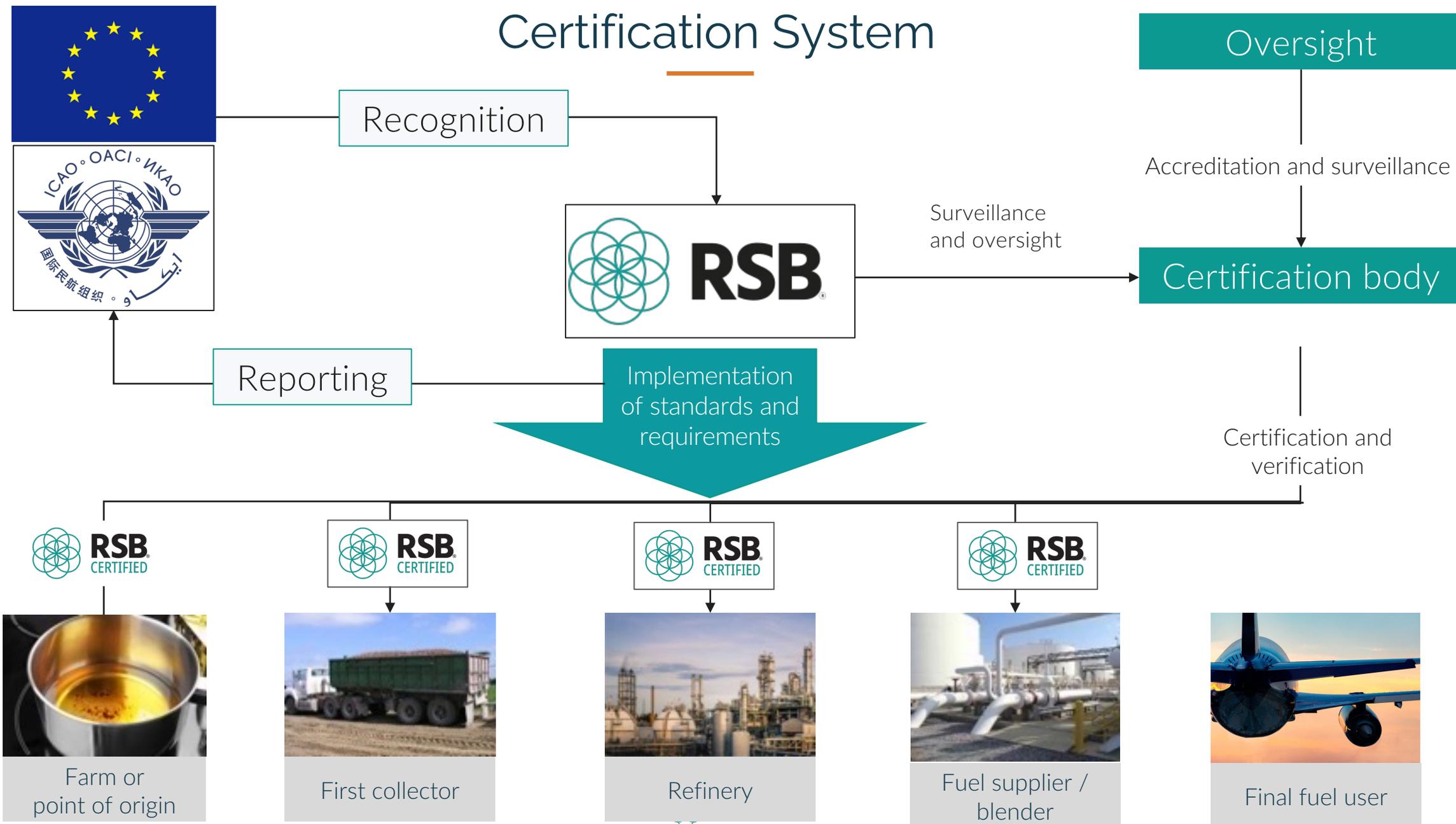
Convening stakeholder groups across private sector, industry, govts, NGOs & academia) through events, working groups, platforms to define sustainability standards and best practices, generate interest for action, and drive consensus.

Holistic approach supporting our ambition to create positive impact



- ✓ RSB Principles and Criteria shall apply to any primary biomass producer (e.g. oil crop farm) and industrial operator (e.g. SAF producer) along the supply chain.
- ✓ P&C are applicable when the operator's option is the certification of "RSB compliant CORSIA eligible SAF".

Certification System





**Our global membership is highly diverse
A wide range of organisations across supply chains, regions and industries**



Introduction to book and claim and the RSB Book & Claim System



Book and claim as Chain of custody model

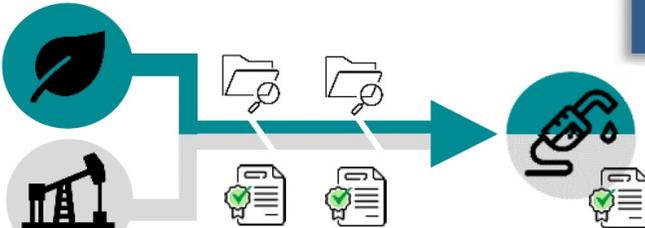
Identity preservation



PoS

Delivers consignments physically containing **100% certified products** from a **uniquely identifiable source**

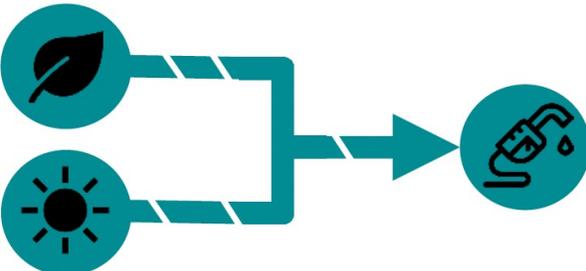
Mass balancing



PoS

Physical product and **sustainability information** are **coupled** when they are traded between parties. Products with different sustainability characteristics **can be physically mixed**, but are kept **administratively segregated**.

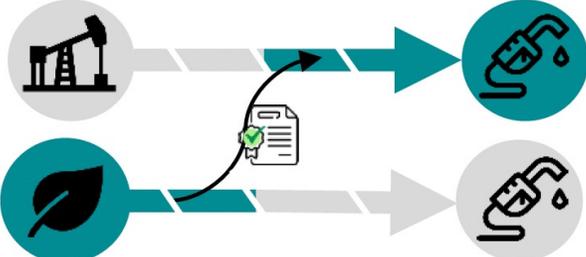
Segregation



PoS

Delivers consignments physically **containing 100% certified products**; but the **exact origins** of the material in the consignment **can not be traced**.

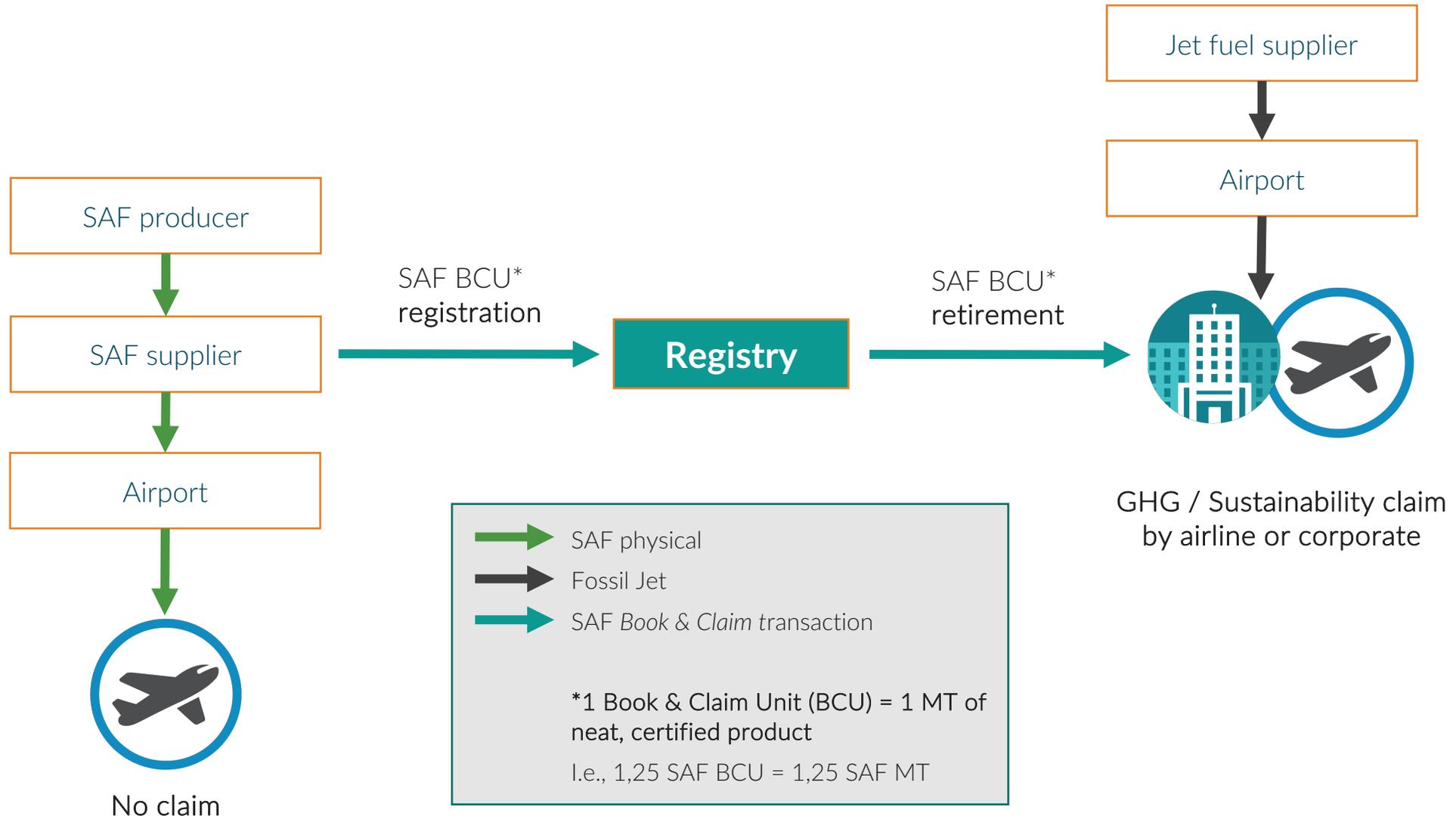
Book & Claim*



GO or GO/PoS

Trade of **physical products** is **completely decoupled** from the trade of **sustainability certificates**.

Simplified process



Objectives



Accelerate decarbonization of hard-to-abate sectors



Bridging limited supply locations vs increasing demand globally



Enable cost-sharing of Sustainable Fuels' price premiums

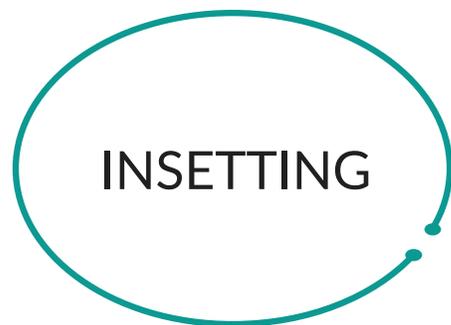


Meet growing demand from corporates for **in-sector solutions** to decarbonize their aviation and shipping emissions



Driving in-sector decarbonisation

It is vital for the RSB Book & Claim System to be structured as an **in-sector GHG reduction solution** as this is what is needed to meet the requirements of protocols like the Science Based Targets initiative, and, in the future, of regulators.



VS



Process of investing in emission reductions **within** an organisation's value chain. Insets address the source of emissions attributable to the organisation and its products or services more directly than offsets.

GHG reduction or removal outside an organisation's value chain

Integrative elements developed to foster the complex scaling of sustainable fuels



RSB B&C Recognition

Normative procedure for a registry ecosystem



RSB B&C Manual

Normative industry guidance for book and claim



RSB B&C Registry

Digital account and transaction data storage system

RSB Certification System

RSB Book & Claim Manual* requirements



*RSB Book & Claim Manual V3.0 ([link](#))

Book & Claim Unit Registration

**SAF must be certified by the RSB
or another EU RED or ICAO
CORSIA recognized scheme**



Crops



Transport



Refining



Blending



Wastes

RSB Book & Claim Registry Users



Supplier that
registers SAF
BCU

**RSB Trader
Certification**



Transport
Service Provider
(e.g., Airline)



Logistics
Provider
(e.g., Freight
Forwarder)



Corporate end-
user

Book & Claim Unit Retirement Statement

Retirement Statement (SAMPLE)

Number: **RSB-BCU-RS-23-02-006**
Date of Issue: **20/02/2023**



The RSB confirms that the following Book & Claim Units (BCU) have been retired from circulation in the RSB Book & Claim Registry:

Product Type	Amount of BCU ¹	Tonnes of CO ₂ eq ²
SAF	120.50	398.17
	BCU-ID RSB-BCU-22-09-012	3.30 tonnes CO ₂ eq/BCU
Scope 1	Scope 3	
Transport service provider	Corporate end-user	
Aeroflex	Mobicorp	

Sustainability information

Amount of product in megajoules (MJ)	5,302,000 (44,000 MJ / MT)
Amount of product in tonnes (MT)	120.50
Sustainability certification	RSB ICAO CORSIA
Fossil baseline of reference (gCO ₂ eq/MJ)	89.00
GHG LCA value	13.90
% GHG emission reduction compared to fossil baseline	84,38%
Feedstock	Used Cooking Oil (UCO)
Feedstock Country of Origin	France
Declaration of SAF incentives	n/a
Year of SAF production	2022
Country of SAF blending	United States
Airport where SAF is delivered (if known)	Los Angeles (LAX)
Country where SAF BCU will be claimed	Australia
Type of Reporting	Voluntary

NB: The entities listed on the retirement statement shall take their own independent advice on the legal, accounting and/or regulatory application of the claims set out in the retirement statement against voluntary GHG emission reduction schemes.

¹ 1 BCU is equivalent to 1 tonne of neat, certified product. 1 tonne = 1 metric ton (MT) = 1000kg
² The absolute GHG emission reduction expressed in tonnes of CO₂eq is calculated using certified GHG values submitted during BCU registration. Please refer to the RSB Book & Claim Manual (v3, March 2023, Section 4 "Requirements for BCU Retirement") for more information.



Companies mentioned in the retirement statement are entitled to claims.



Each BCU carries one Scope 1 claim and several Scope 3 claims, which shall be done according to the claiming, double counting and additionality requirements.



The retirement statement is automatically published in a public retirement statement table available on the RSB Registry website.



Option for the name of Scope 3 corporate end-client to be anonymised in the public table when contracts bound by confidentiality.

RSB's Double Counting Mitigation

Definition

Double issuance

More than 1 unit issued for the same emission reduction



BCU Registrations by SAF supplier verified by third-party audits

RSB Registry Audit

RSB Book & Claim Recognition Procedure (for independent Registries)

Ambition: interoperable Registry ecosystem

Risk mitigation

Double use

Same unit used more than once (i.e., sold to more than 1 buyer)



Public Retirement Statement table

RSB Registry Audit

Double claiming

Same unit used to meet both domestic and international GHG targets, or two or more companies claiming ownership for the same GHG emission reduction within the same scope.



Public Retirement Statement table (including information on tax credits and incentives)

Transparent GHG disclosure by value chain actors (RSB Book & Claim Manual Section 6)

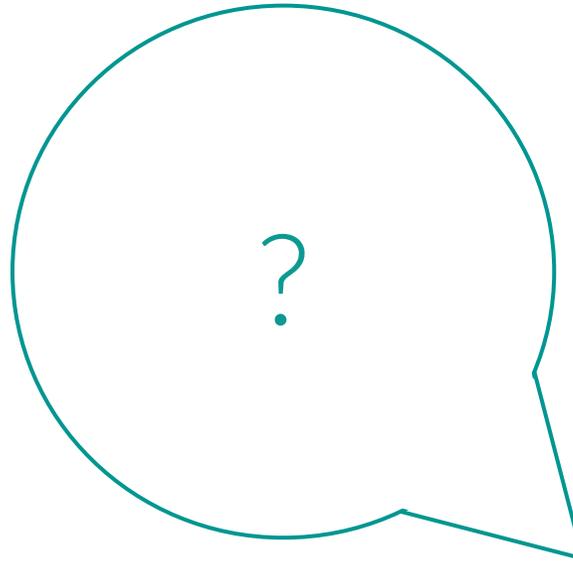
Additionality approach (RSB Book & Claim Manual Section 7)

Additionality

RSB aligns additionality to the concept of *atmospheric benefit*. This approach ensures that emission reductions from sustainable fuels that are claimed towards voluntary climate targets generate emissions reductions beyond those already mandated by compliance obligations, thus creating an atmospheric benefit.

Corporation (Scope 3)		Corporation (Scope 3)		Corporation (Scope 3)	
Airline (Scope 1)		Airline (Scope 1)	 Voluntary target	Airline (Scope 1)	 Voluntary target
Mandate (i.e., fuel blending mandate or emission reduction obligation)	*Unless prohibited by national regulator	Incentive not linked to a cap-and-trade system		n/a	

Thank you



For more information on the RSB B&C System visit
<https://rsb.org/programmes/book-and-claim/>