BIOFUELS BEYOND NATIONAL QUOTAS

Challenges and opportunities of business decarbonization

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Chief Renewable Fuel & Biomaterials Specialist

Auditor: ISCC, REDcert, KZR INiG, SURE

29th OCTOBER 2025, GOTHENBURG, SWEDEN

MY STORY

TOTAL GHG EMISSIONS OF MY TRIP

Taxi 8 kg CO_2 eq

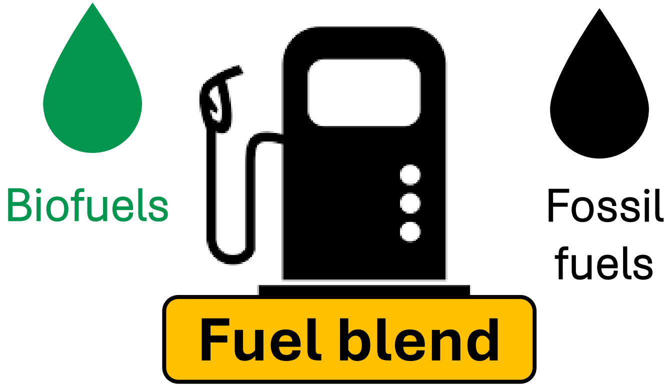
+

Bus 1 kg CO_2 eq

+

Plane 440 kg CO_2 eq

approx. 449 kg CO_2 eq



Who cares about my story?

Polish and Swedish governments:

Setting targets that align with national goals, ensuring consistency with EU regulatory and policy framework:

- **RED targets: two options possible**

Blending obligation: ensuring a share of at least 29 % of renewables in final energy consumption by 2030

Emission reduction mandates: reducing greenhouse gas (GHG) intensity by 14.5 % up to 2030

BIOFUEL QUOTA	
POLAND	SWEDEN
BLENDING TARGET for 2025	GHG REDUCTION TARGET for 2025
9,2% cal LIQUID BIOFUELS (overall gasoline and diesel)	6% IN TRANSPORT FUELS (separately gasoline and diesel)

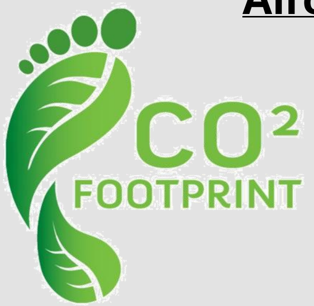
Who cares about my story?

Aviation fuel suppliers:

Setting targets that align with national goals, ensuring consistency with EU regulatory and policy framework:

- **ReFuelEU Aviation Regulation (2023/2405) target on SAF (Sustainable Aviation Fuels):** the Regulation requires aviation fuel suppliers to ensure all aviation fuel made available to aircraft operators at each EU airport contains a progressively increasing minimum share of SAF

Date of application	Minimum share of SAF	Minimum share of synthetic fuels
January 1, 2025	2%	N/A



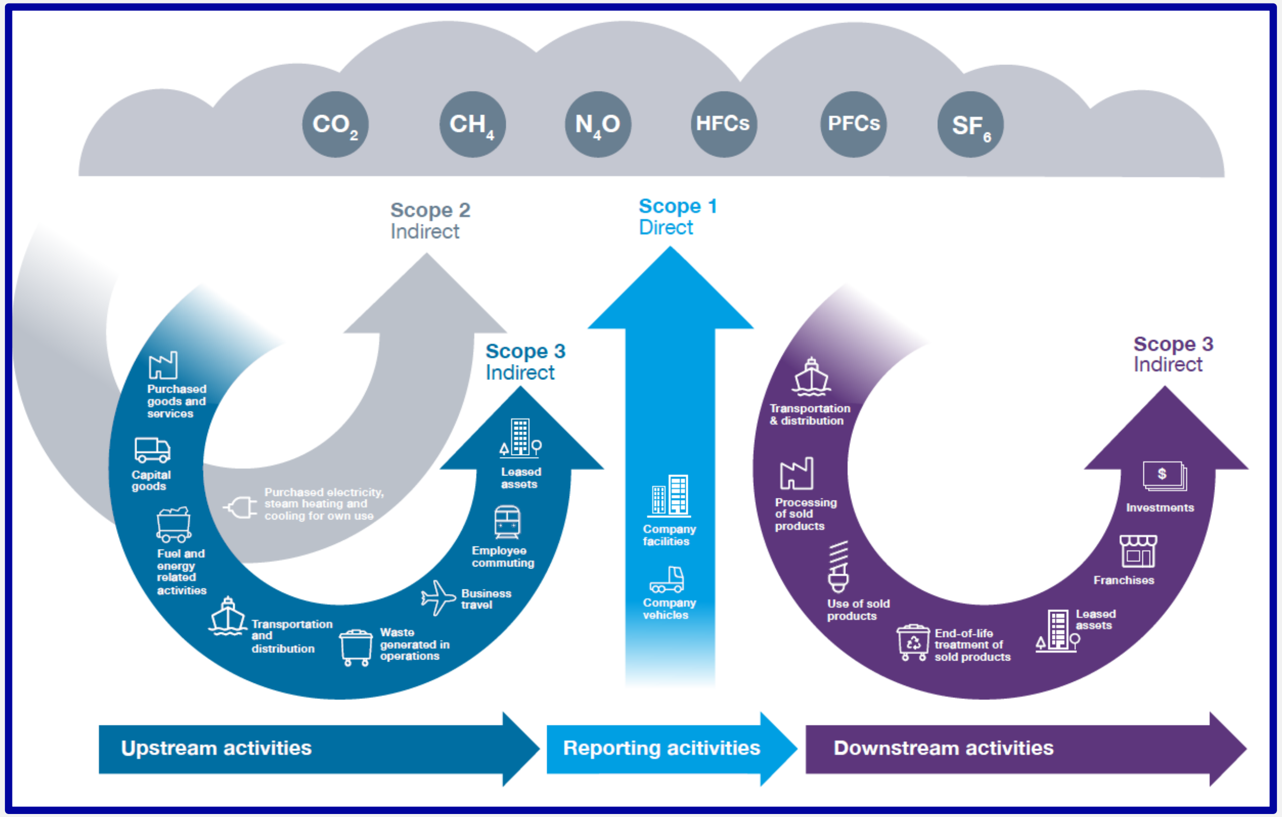
Aircraft operators: **ReFuelEU/EU ETS: a zero emissions rating of RED-compliant SAF used under the EU Emissions Trading System (ETS).** SAF that is certified as compliant with the sustainability criteria of the RED will be counted as zero emission under the EU ETS scheme, reducing the operators' reported emissions and compliance cost to purchase emission allowances.

Who cares about my story?

My employee:

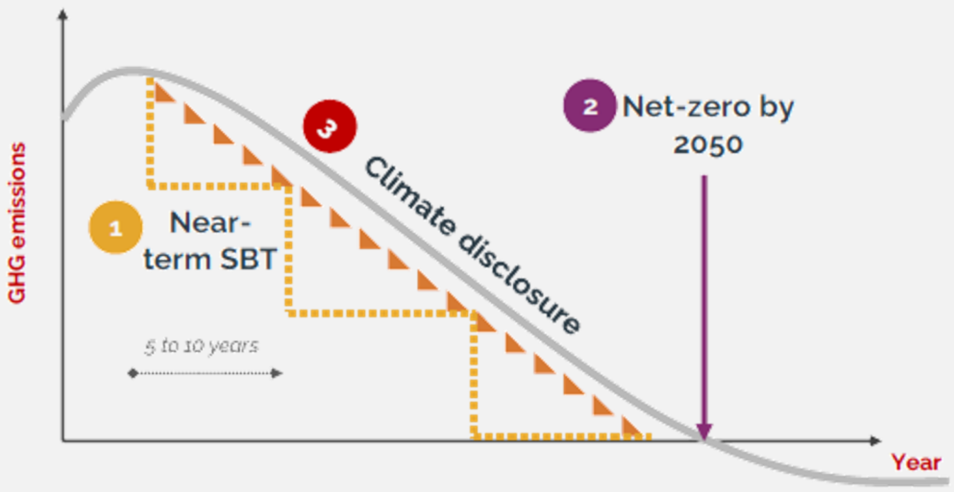
Setting targets that align with national goals, ensuring consistency with EU regulatory and policy framework:

ESG Reporting: within Scope 3 | Category 6 - Business Travel



Scope 1, 2, and 3 emissions according to the GHG protocol

Science-based Targets initiative (**SBTi**) aims to reduce greenhouse gas (GHG) emissions to prevent the worst effects of climate change.



How the biofuel emission system works in EU

$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr}$$

Registration number: DD-710-3/14
Services: **KZR INiG**

Registration number: PL214
Services: **ISCC EU**, ISCC PLUS, ISCC CORSIA, CORSIA PLUS

Registration number: PL-BIO-JC-002-2014
Services: **REDcert EU**, REDcert^2

e-mail: Bio-CircularEconomy@bureauveritas.com

where:

e_{ec} = *emissions from the extraction or cultivation of raw materials*
e_l = *emissions from carbon stock changes caused by land use change*
e_p = *emissions from processing*
etd = *emissions from transport and distribution*
e_u = *emissions from combusting the fuel*
e_{sca} = *emission saving from soil carbon accumulation via improved agricultural management*
e_{ccs} = *emissions savings from carbon capture and geological storage*
e_{ccr} = *emission savings from CO_2 capture and replacement*

E = *total emissions from the use of the fuel in g CO_2eq/MJ*

E = Biofuel
47 g CO_2 eq / MJ

E_F = Fossil fuel
94 g CO_2 eq / MJ

$$Savings = \frac{(E_F - E)}{E_F}$$

Min. 50%*

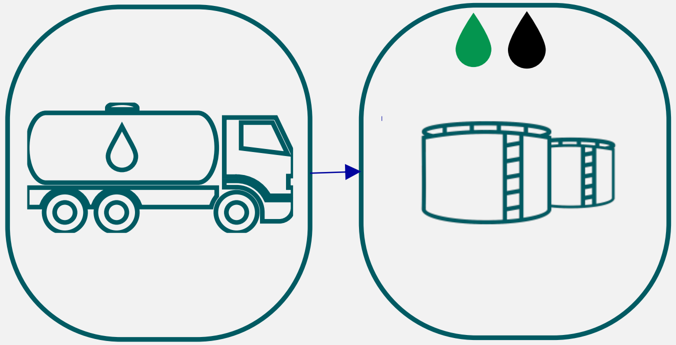
For biofuel production plants which started operation before October 2015

How the biofuel emission system works in EU

$$E = e_{ec} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr}$$

Biofuel
47 g CO_2 eq / MJ

Fossil fuel
94 g CO_2 eq / MJ



Biofuel Supplier

Biofuel recipient & blending point

where:

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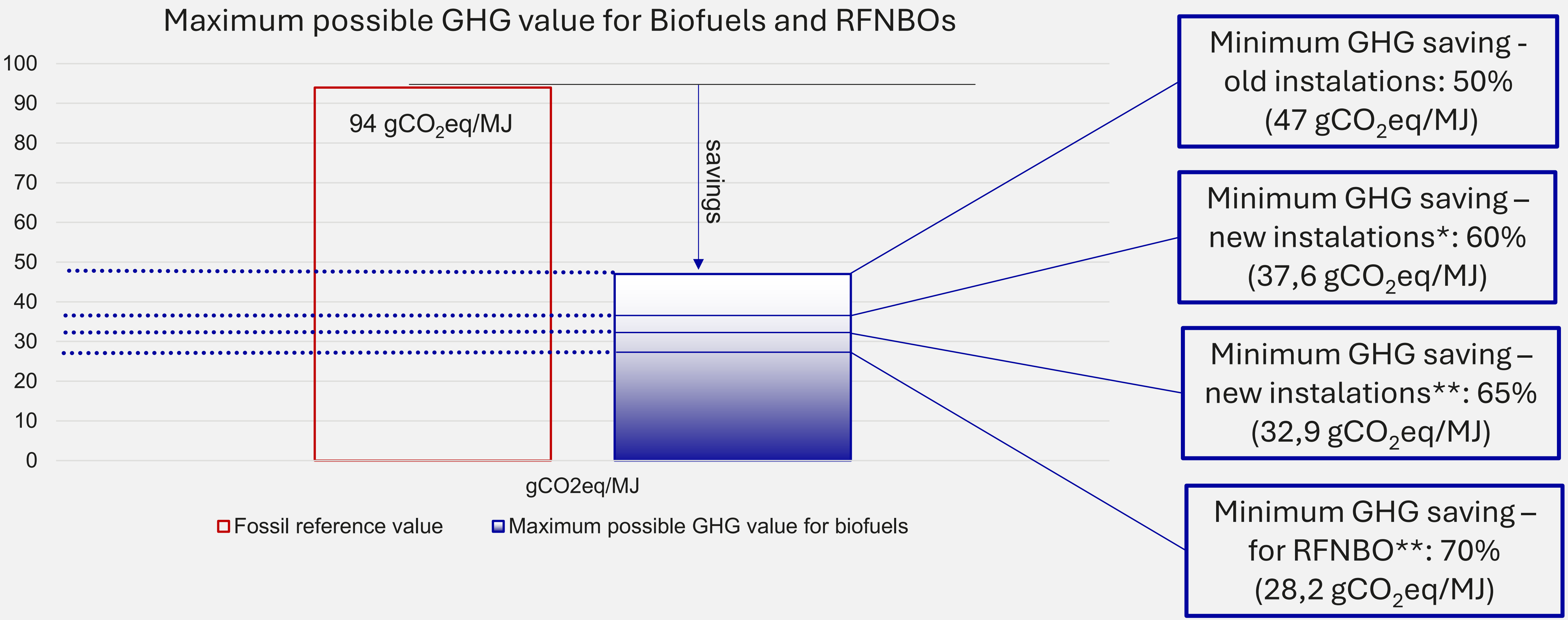
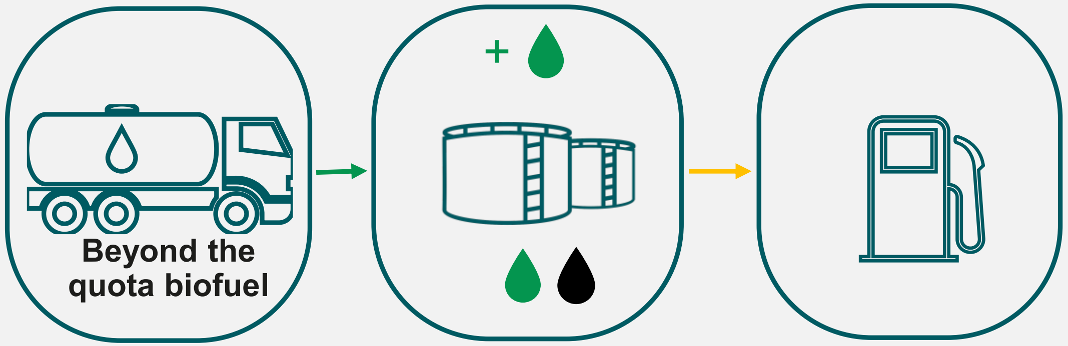
How the biofuel emission system works in EU



** for installations starting operation after 5 October 2015*

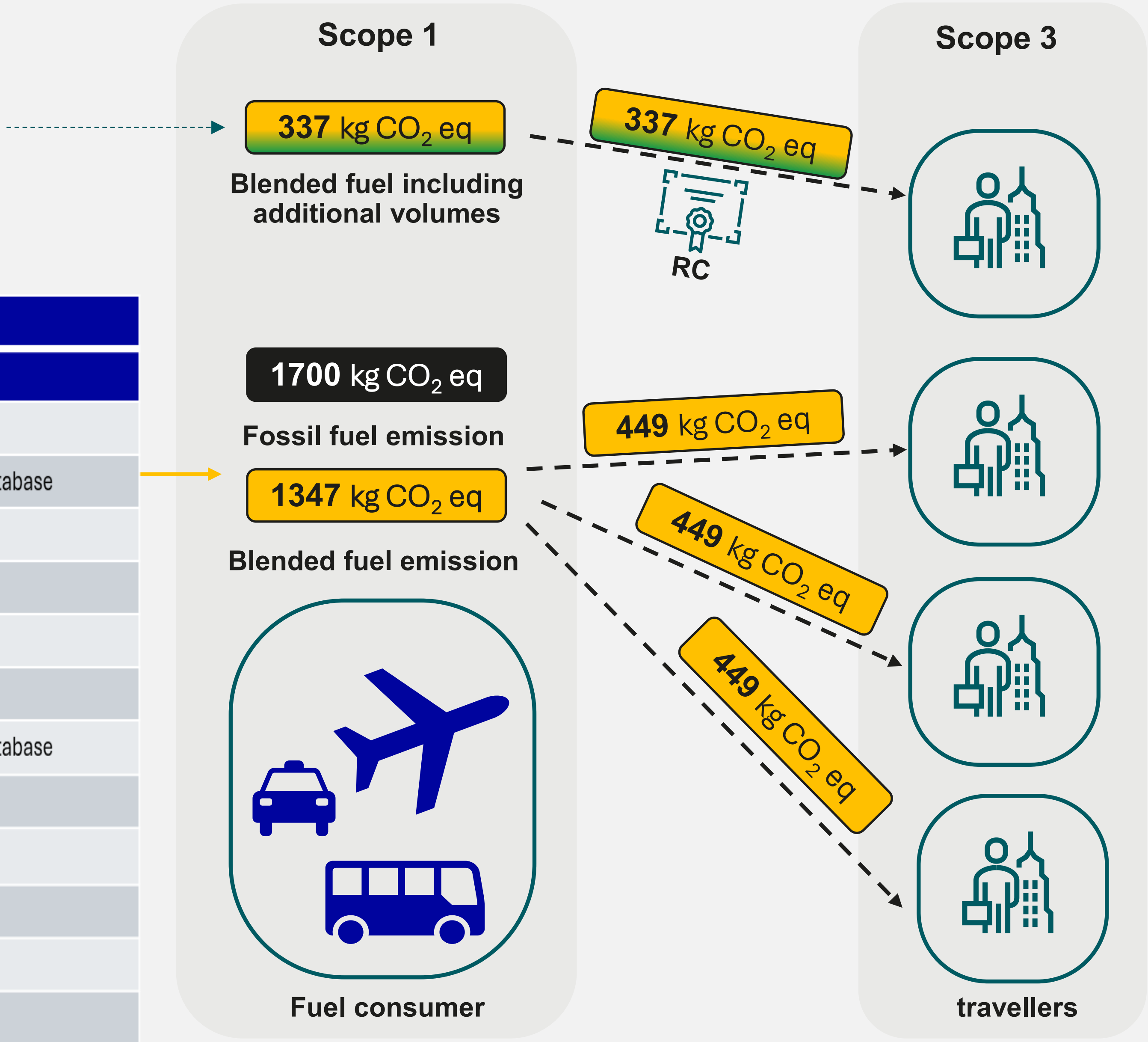
*** for installations starting operation from January 2021*

How it is scenario – based on additionality approach



DEFAULT EMISSION FACTORS

EF	SOURCE
Gasoline – 99,0 g CO_2 eq / MJ	Ecoinvent
Gasoline – 69,3 g CO_2 eq / MJ	Polish KOBIZE database
Gasoline – 70,7 g CO_2 eq / MJ	DEFRA
Gasoline (average biofuel blend) – 64,56 g CO_2 eq / MJ	DEFRA
Gasoline (E10) – 70,08 g CO_2 eq / MJ	EPA
Diesel – 97,8 g CO_2 eq / MJ	Ecoinvent
Diesel – 74,10 g CO_2 eq / MJ	Polish KOBIZE database
Diesel - 74,46 g CO_2 eq / MJ	DEFRA
Diesel (average biofuel blend) – 70,56 g CO_2 eq / MJ	DEFRA
Diesel (B5) – 73,28 g CO_2 eq / MJ	EPA
Kerosene Jet A-1– 72 g CO_2 eq / MJ	IPCC
Ethanol (40%, 35%, 25%) – 48 g CO_2 eq / MJ	GLEC



Existing initiatieves

ISO/FDIS 13659

Chain of custody — Book and claim — Requirements and guidelines


RSB.
Roundtable on Sustainable Biomaterials
www.rsb.org

RSB – ROUNDTABLE ON SUSTAINABLE BIOMATERIALS

RSB Book & Claim Manual
(RSB Chain of Custody Procedure for book and claim)

Version 4.1

Publication Date: 24 March 2025

RSB Reference Code: RSB-PRO-20-001-001 (Version 4.1)

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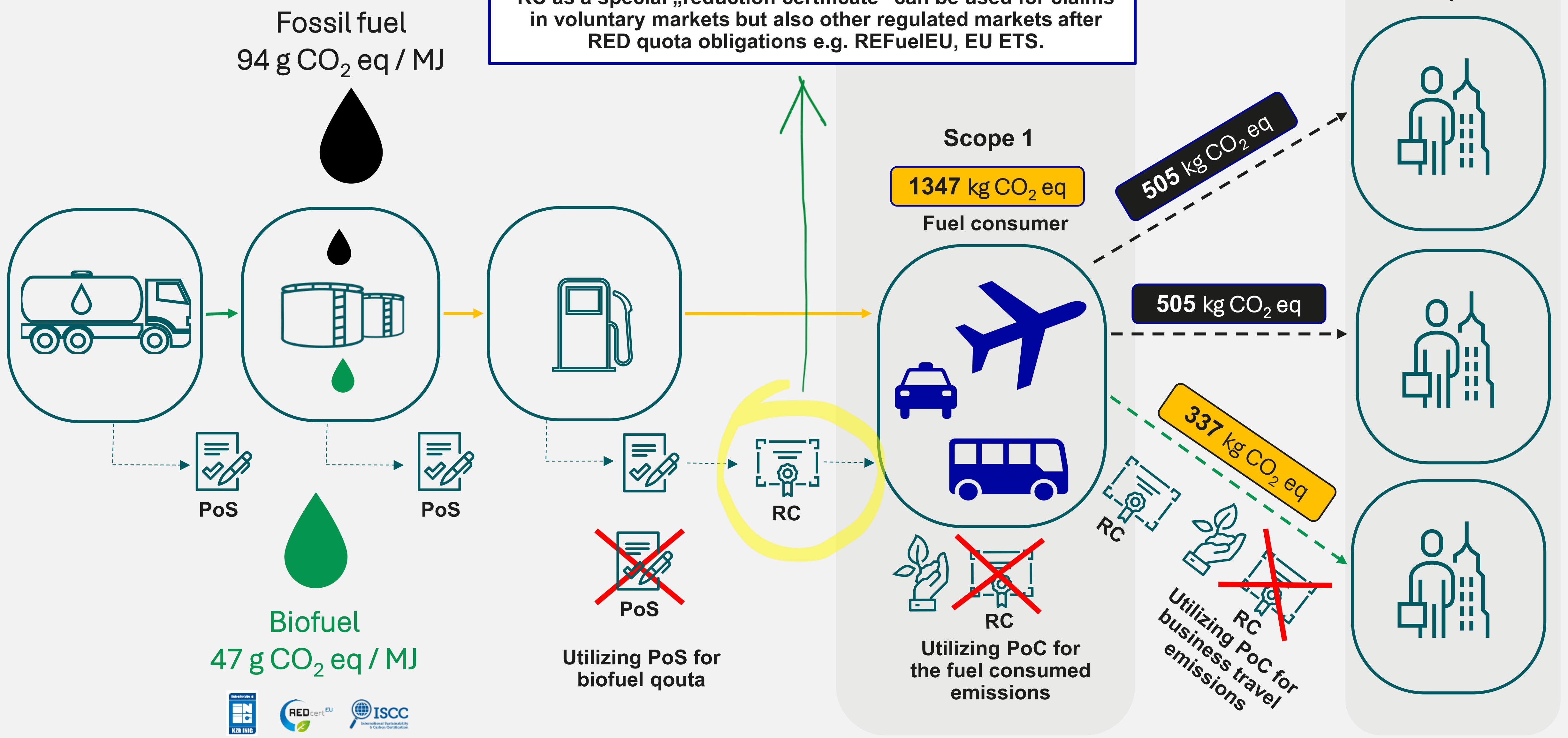
[RSB-PRO-20-001-001] - Version 4.1 – RSB Book & Claim Manual

SAF ONLY

FREIGHT TRANSPORTATION GHG EMISSION FOOTPRINTS

How it should be

RC as a special „reduction certificate" can be used for claims in voluntary markets but also other regulated markets after RED quota obligations e.g. REFuelEU, EU ETS.



SUSTAINABILITY TRANSITION SERVICES BY BV

IND Sustainability

- **A90 - Fugitive Emission Measurement (FEM) Leak Detection And Repair (LDAR)**
- **A90 - Carbon Footprint Calculation**
- **A90-LCA_EPD**
- **A90- Training**

B&I Sustainability

- **G40 - Energy Audit**
- **G40 - Green Labels (EDGE, BREEAM, HQE, LEED)**
- G40 - Environmental and Social Impact Assessment (ESIA) / ESG Due Diligence
- G40 - Climate Risk Assessment
- G40 - Carbon Footprint Calculation

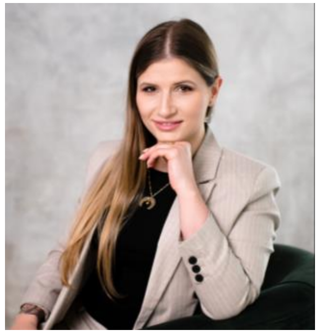
CER Sustainability - Climate & Carbon

- C49 – Biomaterials
- C45 – Carbon & GHG Verification
- **C50 – Energy Management**
- C57 – Wood Mgt Systems
- C58 – Environmental, Water, Waste & Recycling Audits
- **C95 – Organizational Carbon Footprint Calculation**
- C90- BV- AI Track

CER Sustainability - Social, Governance & Others

- **C97 – Supply chain Audit (previously Clarity)**
- **C98 – Sustainability Advisory Services (previously V-Trace)**
- C93 – Social Audits
- **C46 – Assurance of Sustainability Reporting**
- C92 - Governance & Corporate Sustainability Audits
- C81 - Food Product Certification / Labels
- C82 - Certification of Organic Products
- C83 – Sustainable Food – unaccredited
- **C71 – Other Sustainability Services**

FOR ANY INQUIRIES, CONTACT US



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