

Does Mass Balancing need a dedicated certification system?

Greenfact (26/05/2021)

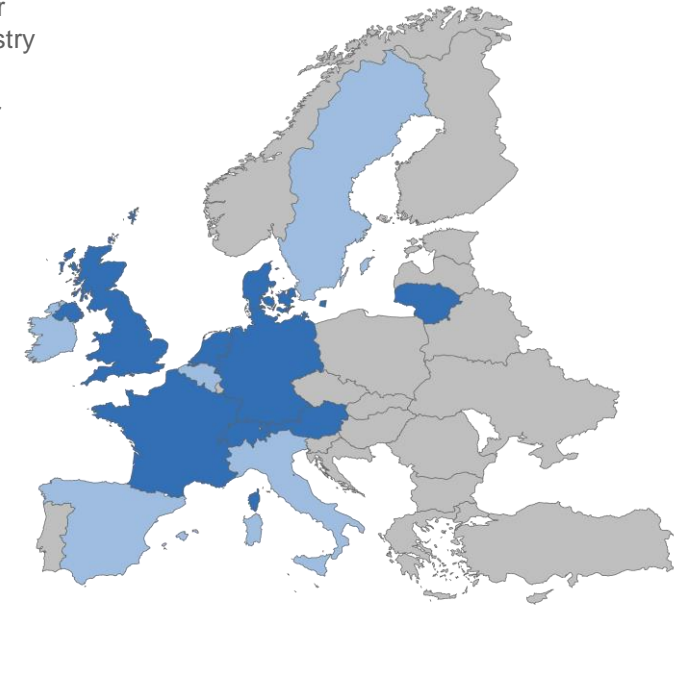
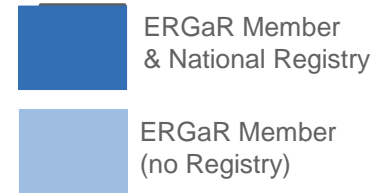
EU systems for tracking green gas

Stefanie Königsberger
ERGaR Executive Board Member
AGCS Gas Clearing and Settlement AG
BIOMETHAN
AGCS BIOMETHAN REGISTER AUSTRIA



Association: European Renewable Gas Registry

- International non-profit, non-governmental organisation (BE law) established in September 2016.
- **Founded by established biomethane registries**
- ERGaR provides a **forum for the collaboration of renewable gas registries and market participants in Europe**



28 ERGaR members in 15 European Countries

- Established biomethane / renewable gas registries, appointed issuing bodies
- Gas DSOs & TSOs
- Biogas associations
- Traders
- Other major stakeholders of the European biomethane market

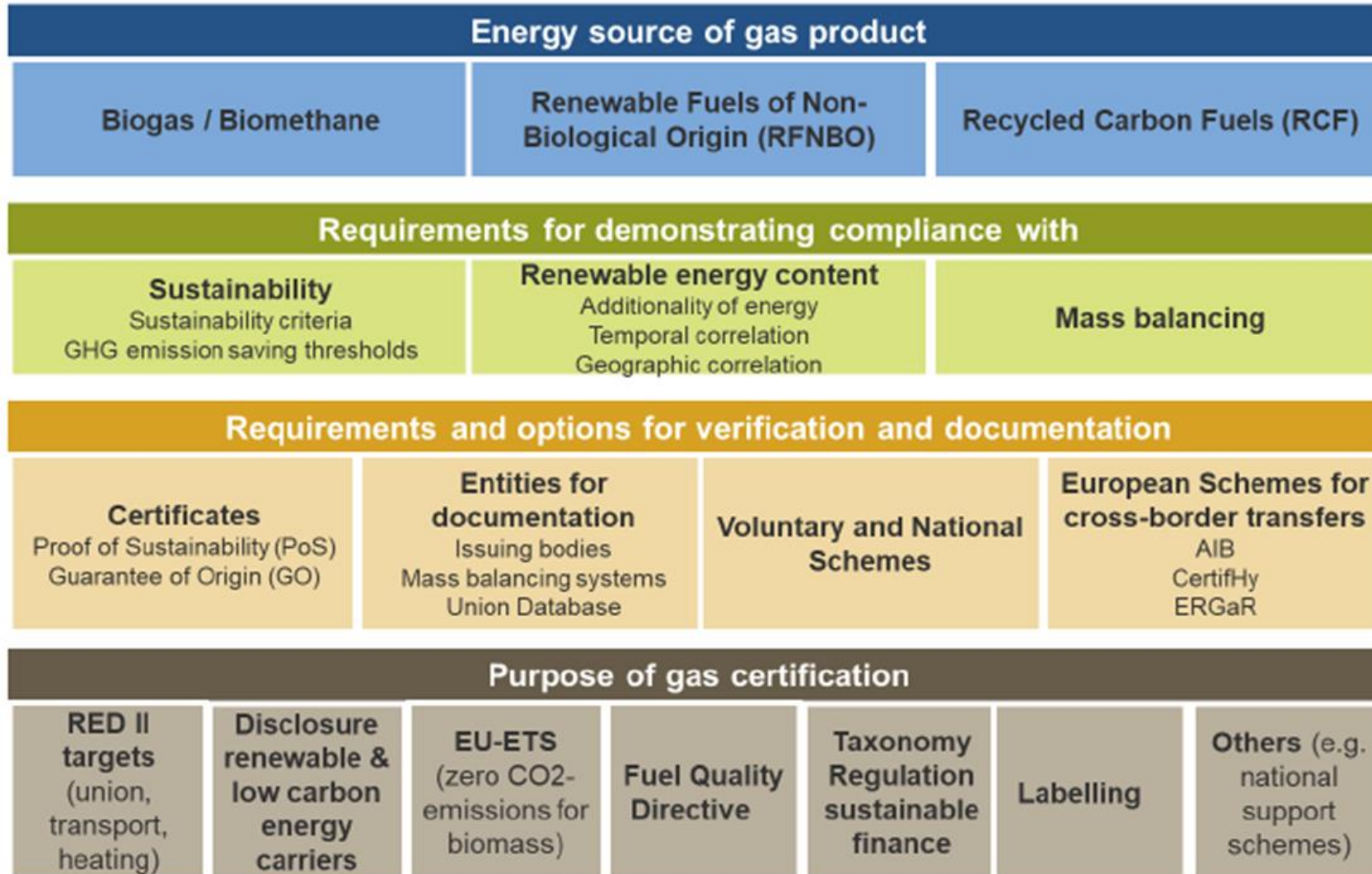
Full Members



Associated Members



The European framework for renewable gas certification



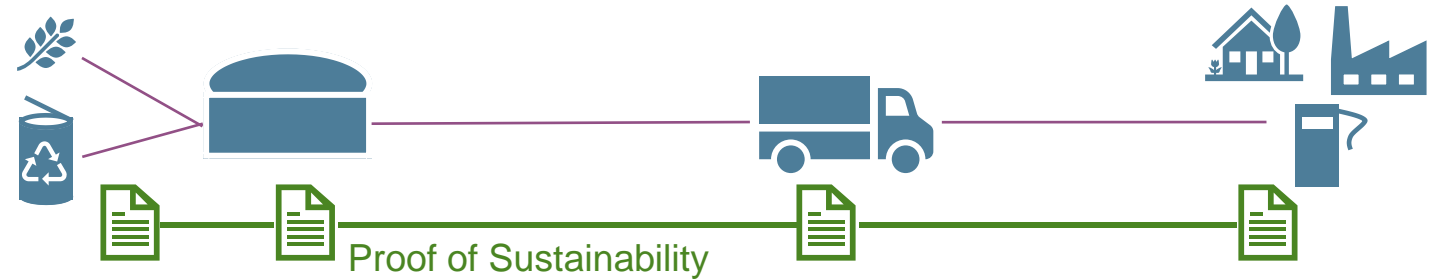
- Different types of **energy carriers** (1)
- Diverse **application purposes** defined in different **legislation pieces** (4)
- Different **requirements** to demonstrate compliance (2)
- Different **verification methods** and **competent organisations** (3)
- Each application purpose requires **transparent, secure and reliable certificate system**

Documentation of renewable gases along the chain of custody

1 Direct physical deliveries

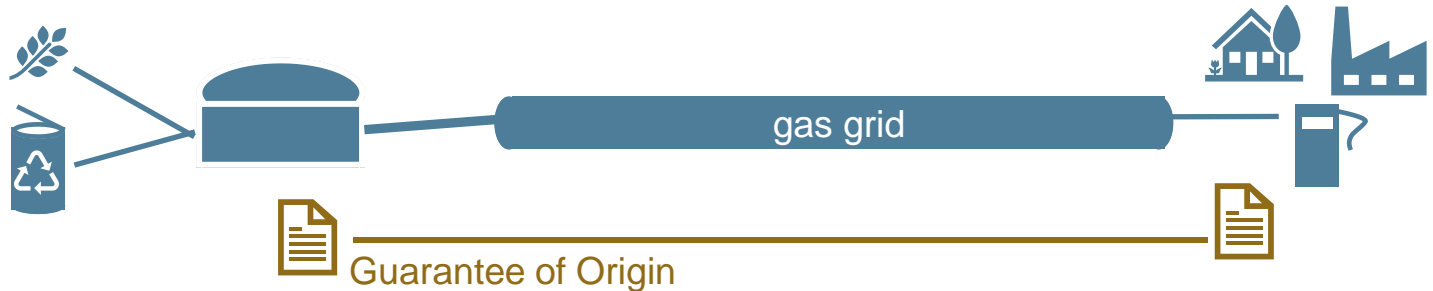
(road, rail, water)

- Renewable gas is usually physically segregated from fossil gas
- By means of certificates, the whole chain of custody is tracked.



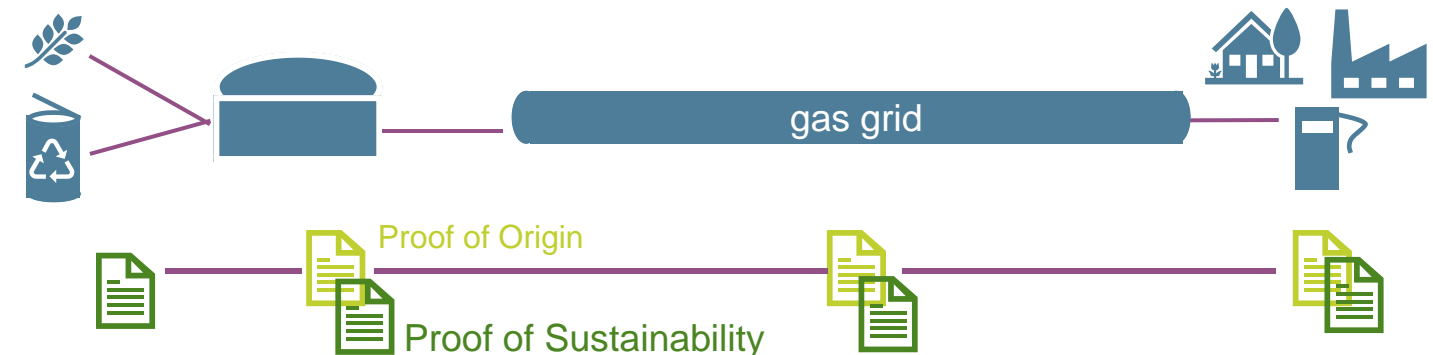
2 Documentation of renewable value via book & claim

- Not the whole chain of custody is reflected
- Renewable value can be separated from the delivery of gas



3 Documentation of renewable & sustainable values via mass balancing

- Mass balancing is applied throughout the whole chain of custody
- Renewable & sustainable characteristics remain always attached to the consignment
- Transport- and storage-related losses (e.g., within the gas grid) are considered
- REDII requires sustainability verification by means of mass balancing



Different Modes of Transfer: Requirements

REQUIREMENTS	MASS BALANCE	BOOK & CLAIM
Physical connection between production and consumption	Yes. Requirement to evidence transaction of physical product alongside transfer of Energy Attribute Certificates.	Not required: however, GO registries may impose specific requirements e.g. that producer and consumer are in Europe
Time correlation between production and consumption	Maximum of 3 months defined by VS: with positive balances able to be carried forward into following 3-month-period	No restrictions: GO registries have set range of expiry dates EN 16325 will require 18 month expiry
Accounting for transportation losses	Yes Must recognise leakage of gas from grid and any other form of transport	No. One GO issued per kWh/MWh, One GO used per kWh/MWh consumed.
Evidence of withdrawal	Yes must provide evidence of gas withdrawn (break-down on different levels possible)	No. Gas withdrawal is assumed but no evidence is required to cancel a GO.
Evidence that requirements have been met	Yes. Clear documentation that above criteria have been met. When mass balancing sustainable biomethane , a Proof of Sustainability (PoS) is used and parties involved are usually certified under a Voluntary Scheme , as recognised by the European Commission.	Cancellation of a GO with allocation to a supplier/consumer.

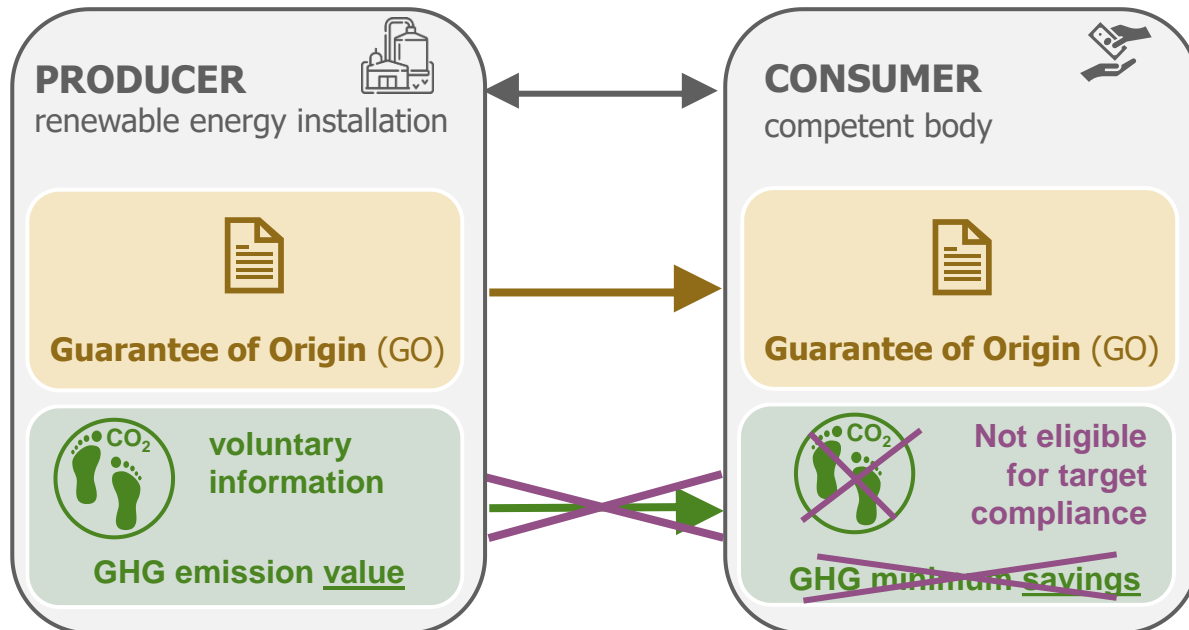
Different Modes of Transfer

Book & Claim <-> Mass Balance ∞ Sustainability

- So far for voluntary uses/applications
- In the future for Guarantees of Origin (GO) for consumer disclosure of energy supply (Art 19 RED II)

Recital 55: Guarantees of origin issued for the purposes of this Directive have the sole function of showing to a final customer that a given share or quantity of energy was produced from renewable sources. A guarantee of origin can be transferred, independently of the energy to which it relates, from one holder to another. However, with a view to ensuring that a unit of renewable energy is disclosed to a customer only once, double counting and double disclosure of guarantees of origin should be avoided. Energy from renewable sources in relation to which the accompanying guarantee of origin has been sold separately by the producer should not be disclosed or sold to the final customer as energy from renewable sources. **It is important to distinguish between green certificates used for support schemes and guarantees of origin.**

Art 19 (2): The guarantee of origin shall have **no function** in terms of a Member State's **compliance** with Article 3. Transfers of guarantees of origin, separately or together with the physical transfer of energy, shall have **no effect on the decision of Member States** to use statistical transfers, joint projects or joint support schemes for **compliance with Article 3** or on the **calculation of the gross final consumption of energy from renewable sources in accordance with Article 7.**



Levels

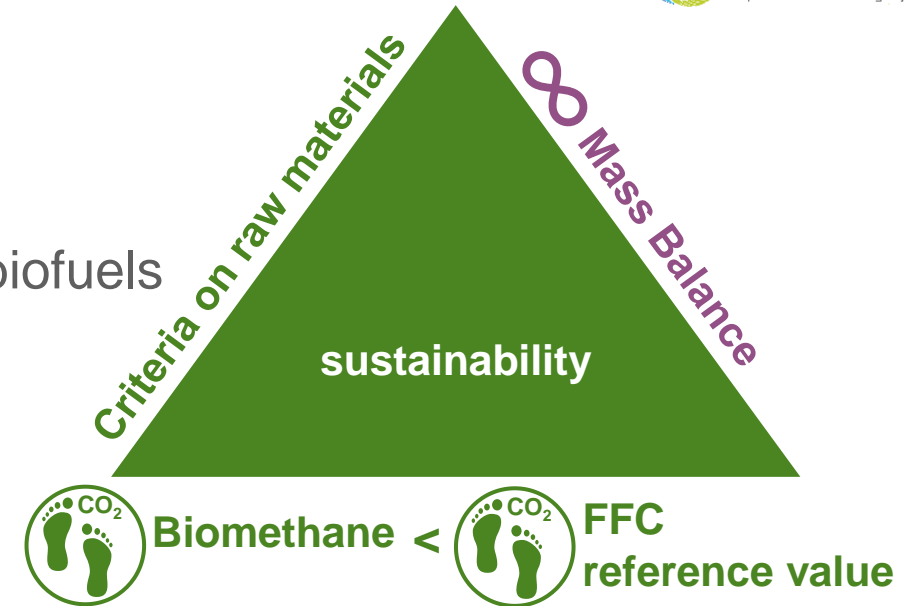
- 1. physical value**
 - Trade: producer and consumer in contract
- 2. renewable value**
 - Certificate decoupled from physical gas flow
- 3. sustainable value**
 - Excludes: transfer of GHG minimum savings

Understanding Sustainability Criteria

Book & Claim <-> Mass Balance ∞ Sustainability

Legal definition of „sustainability criteria“

- Art 18 RED I: particularly addressing liquid, sustainable biofuels
- FQD: (EU) 2009/30 Fuel Quality Directive
- Art 25-31 RED II: extension towards renewable gases



Significance in theory and practice

- **Criteria on raw materials (land use, cultivation)** Art 29 (2-7) RED II
- **GHG minimum savings** Art 29 (10) RED II
 - Total GHG emissions along the whole supply chain
 - Undercutting the respective reference value of the Fossil Fuel Comparator (FFC)
 - Specific reference values per application purpose published by EC
 - Total GHG emissions biomethane < GHG emissions FFC reference value

Mass Balance Art 30 (1) RED II to document sustainability criteria

- Documentation of the entire supply chain
- From substrates via production plant to the end user

Different Modes of Transfer

Book & Claim <-> Mass Balance ∞ Sustainability

- Mass balancing builds link between renewable gas installation and application purpose
- Proof of Sustainability (PoS) for target compliance
- Documentation **within the respective system boundaries**
- National: easily traceable, e.g., via balance group model
- Europe-wide: within the European, interconnected gas grid (Voluntary Scheme pending)

Levels

1. physical value

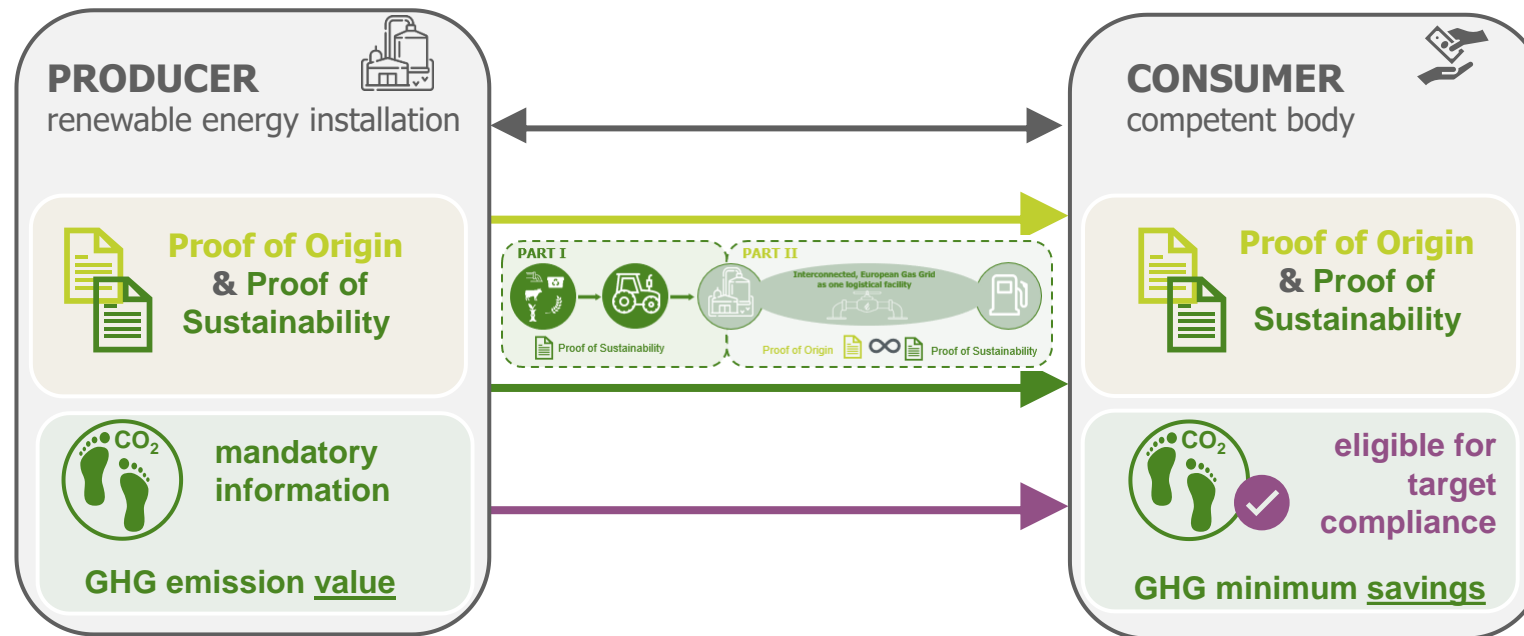
- Trade: producer and consumer in contract

2. renewable value

- Certificate **coupled with** physical gas flow

3. sustainable value

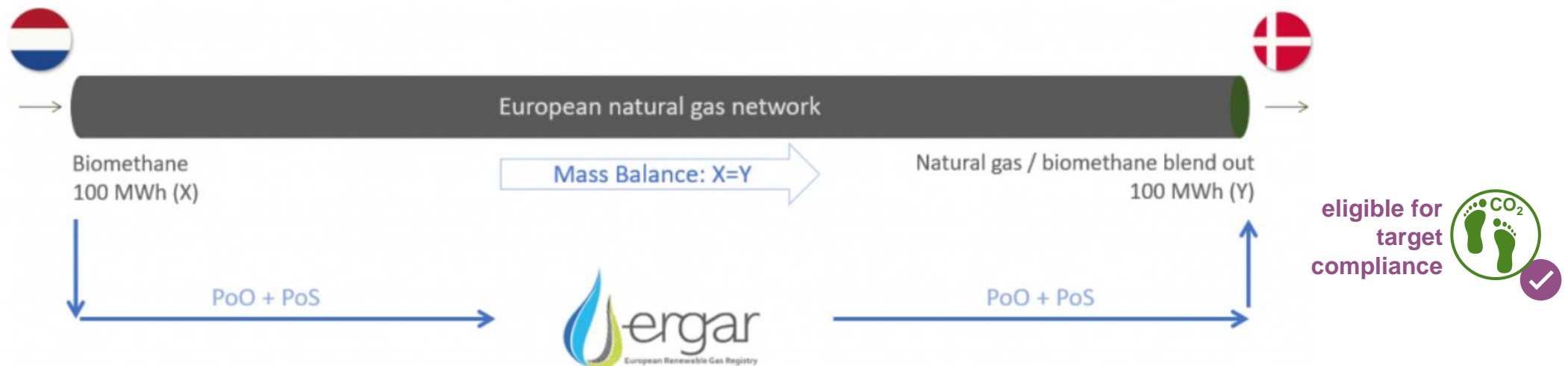
- **Includes:** transfer of GHG minimum savings



Mass Balancing cross-border gas transfers

The concepts for the **mass balancing of renewable gaseous energy carriers** (within specific system boundaries) **across the European gas grid** are very different:

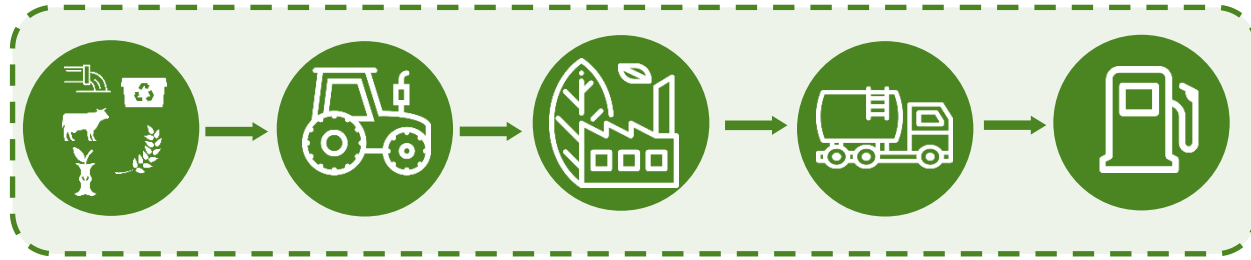
1. National **gas grids and/or market areas** are considered as **separate mass balancing units** that are connected via interconnection points. For each interconnection point between the point of injection and the point of withdrawal, capacities must be booked (and gas flows have to be nominated).
2. A **gas flow into the national gas grid and/or market area of the point of withdrawal** needs to be demonstrated via capacity booking at the interconnection point.
3. The **interconnected European natural gas network is considered as one single logistical facility (mass balancing unit)** and injection and withdrawal of renewable gases are balanced with each other.



Mass Balancing: tracking the Chain of Custody

Chain of Custody: Liquid Biofuels in the transport sector

Mass balance from substrate to fuelling station according to recognised voluntary scheme (e.g.: ISCC, REDcert, NTA8080)



 Proof of Sustainability



Accountable for target compliance:
FQD, Art 3 & Art 25-30 RED II

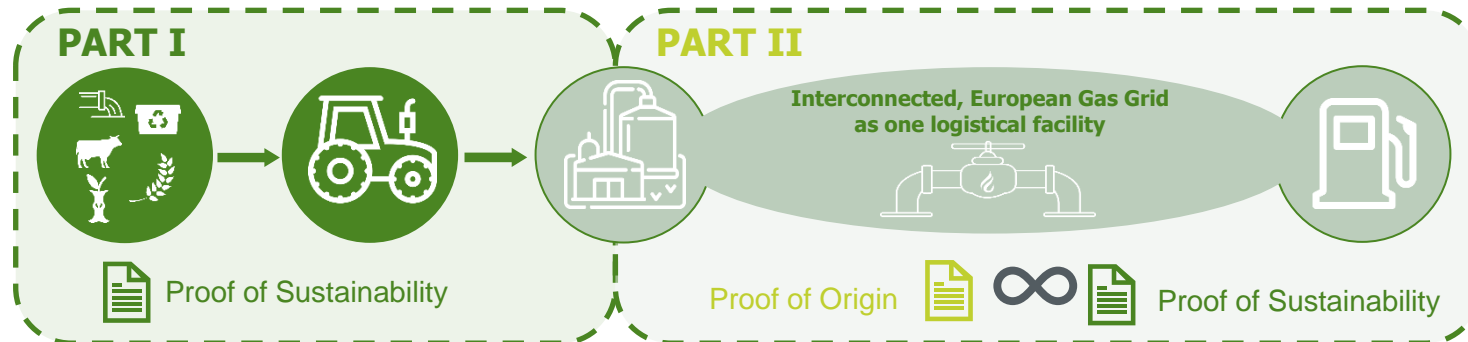
Chain of Custody: Biomethane via gas grid for target compliance, e.g. in the transport sector



Mass balancing in two parts:

PART I: from of raw materials from point of origin of biorefinery plant according to recognised voluntary scheme (e.g.: ISCC, REDcert, NTA8080)

PART II: of the renewable gas from biorefinery to fuelling station along the gas grid

- National grid: domestic registry
- European grid: according to recognised voluntary scheme; ERGaR RED MB scheme undergoing recognition process

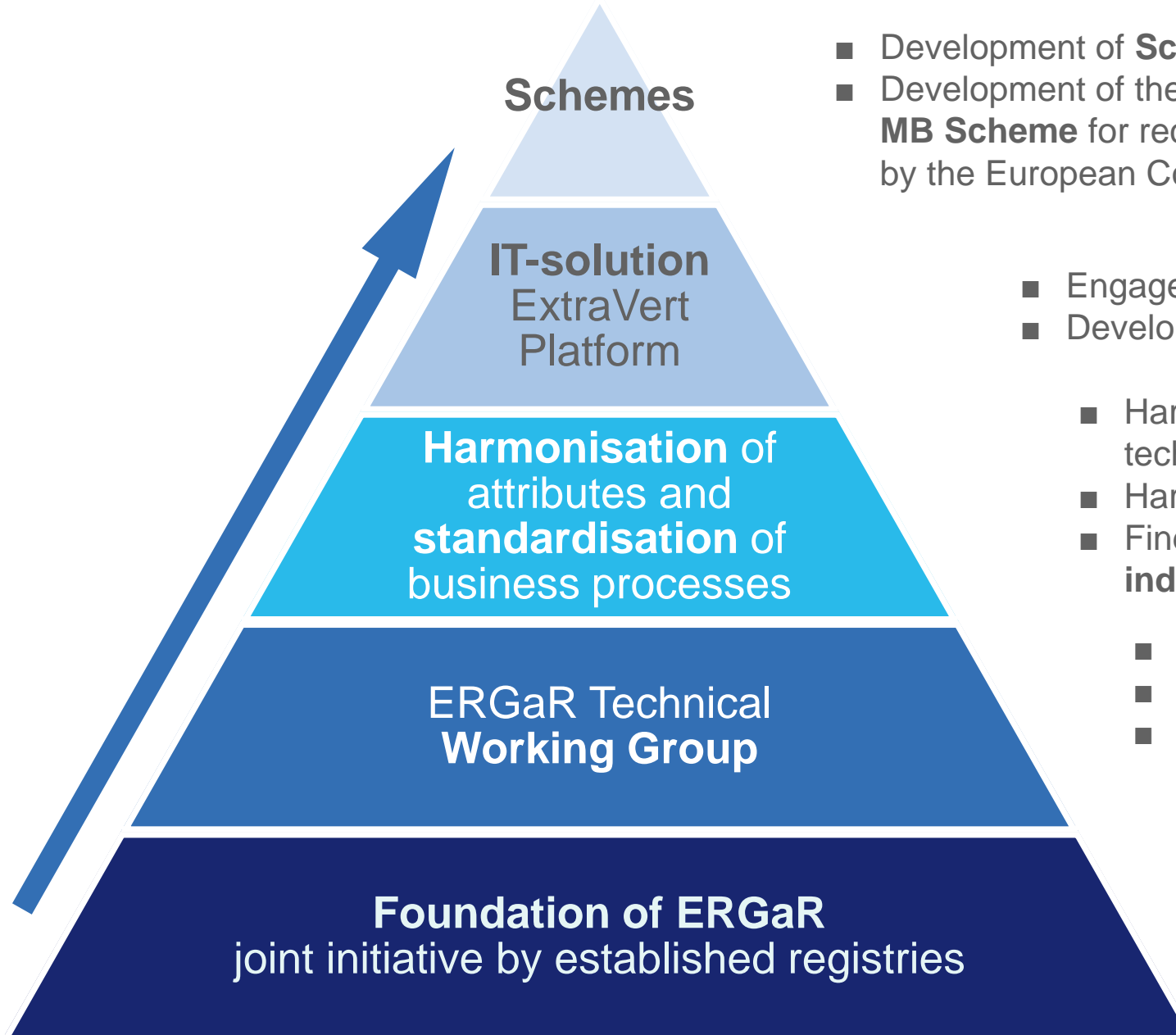


 Proof of Origin
 Proof of Sustainability



Accountable for target compliance:
FQD, Art 3 & Art 25-30 RED II

ERGaR: team work and bottom-up approach



- Development of **Scheme Rules** for the **ERGaR CoO Scheme**
- Development of the Documentation Package for the **ERGaR RED MB Scheme** for recognition process to become voluntary scheme by the European Commission











- Engagement of **Vertogas B.V.** as **IT-provider**
- Development of the **ExtraVert Platform** as IT-system

- Harmonisation of attributes (list, specification), technology codes, biomass codes
- Harmonisation of business processes
- Finding **common denominator** for countries, **independent of level of advancement**

- Collaboration Tech WG
- Leader: VP Jesse Scharf, GGCS (UK)
- **Understanding each other's systems**

- Building on knowledge, expertise and resources of **established registries**

ERGaR Schemes: Overview

	ERGaR CoO Scheme		ERGaR RED MB Scheme	
MODE OF TRANSFER	BOOK & CLAIM		MASS BALANCE	
APPLICATION PURPOSE	 Consumer disclosure	 Market Initiatives	 Target compliance transport sector	
BACKGROUND	Art 19 RED II	Market and Scheme Rules	Sustainability & Mass Balance Art 25-31 RED II	
COMPETENT AUTHORITY	Issuing Bodies by gov. mandate	Registries via ERGaR CoO Scheme	Voluntary Scheme recognised by EC	Registries via ERGaR RED MB Scheme
RULES AND STANDARDS	CEN-EN 16325 standard on GoO	ERGaR  CoO Scheme	E.g.: ISCC, REDcert, NTA 8080	ERGaR  RED MB Scheme
DOCUMENT TYPE	 GoO Guarantee of Origin	CoO  Certificate of Origin	PoS  	 PoO Proof of Origin
STATUS (May 2021)	preparation for launch		under recognition by the European Commission as voluntary scheme	

ERGaR's 4 core principles for mass balancing



Sustainability

No certificate can be issued without a valid **Proof of Sustainability for every biomethane consignment**

Single logistical facility

The **interconnected European natural gas network** is treated as one single logistical facility

Chain of custody

Mass Balance = coverage of the complete chain of custody for biomethane injected into the interconnected European natural gas grid

Export destination

ERGaR provides a solution for cross-border title transfers; no national solution; Exclusively **biomethane consignments destined for export**

ERGaR

We are the first organisation proposing an administrative solution for mass balancing biomethane within the interconnected, European natural gas network.

RED

Negotiation under RED I, re-submission under RED II
Renewable Energy Directive

MB

Mass Balancing as defined in Art 18 RED I
Art 25-31 RED II

Voluntary

Seeking recognition as VS by the European Commission

Scheme

Administration system as defined in Art 19 of RED I
Art 30 of RED II

THANK YOU !

CONTACT US!

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