ERGAR: Tool for cross border transfer and mass balancing biomethane within the European natural gas network

Attila Kovacs, ERGAR Secretary General
Why do we need cross-border trade with biomethane?

- **The general function of trade** (securing supply-demand balances in time and space) is relevant to biomethane too.

- **Processing and utilising all organic waste** is in the common interest of the mankind – it should not be limited by short-sighted local politics.

- **New biomethane producing projects can be developed** with a higher chance of success if not limited to the domestic market.

- **Natural gas/biomethane blends** – having excellent GHG characteristics – must be made available to motorists all over Europe.

- **International companies with environmental awareness** want to have renewable fuel supplies everywhere.
Three pillars of the cross-border biomethane administration

1. **European natural gas network** (consisting of the transmission and distribution systems) **treated as single logistical facility** with regard to injected biomethane.

2. **Mass balancing of injected and withdrawn biomethane consignments** within the European natural gas network.

3. **Sustainability verification** (prior to grid injection) and cross-border transfer of sustainability claims.
What will be the benefits?

- Gaseous biofuel (biomethane) can be made available to motorists everywhere in Europe in blends with CNG and LNG.

- **New biomethane producing projects can be developed** with a higher chance of success if not limited to the domestic market.

- Organic waste utilisation becomes possible even in countries where otherwise the conditions are not suitable (governments not supportive, local market undeveloped, project finance difficult).

- **International companies with environmental awareness** will have renewable gaseous fuel supplies in every European country they operate.
The proposed solution

ERGaR (European Renewable Gas Registry)

✓ ERGaR aisbl (non-profit international organisation) established 28th September, 2016 in Belgium
✓ ERGaR RED - biomethane specific voluntary scheme established and operated by ERGaR aisbl
✓ Function: mass balancing of biomethane distributed along the European natural gas network with transfer of related sustainability certification
✓ Core documents: Biomethane Proofs of Origin issued by the national biomethane registries
✓ ERGaR RED seeks recognition by the European Commission under the RED as a voluntary scheme
Basic data

- European Renewable Gas Registry
- Established on 28th September 2016
- Aisbl – International no-profit organisation
- Contact Persons:
  - Attila Kovacs, Secretary General
  - Stefanie Königsberger, Assistant Secretary General
- Website www.ergar.org
- Address: Rue d’Arlon 63-65, 1040 Brussels
## ERGaR members

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<tr>
<th>Country</th>
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<td>AT</td>
<td>Austria</td>
<td>AGCS - Gas Clearing &amp; Settlement AG</td>
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<td>BE</td>
<td>Belgium</td>
<td>EBA - European Biogas Association</td>
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<td>VSG - Swiss Gas Industry Association</td>
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<td>dena - German Energy Agency</td>
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<td>Renewable Energy Assurance Ltd</td>
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ERGaR Executive Board

■ President – Mr Jeppe BJERG, Energinet.dk (DK)
■ Vice President – Mr Jan STAMBASKY, EBA (BE)
■ Treasurer & Board member – Mr Michael SCHMID, VSG (CH)
■ Board member, Ms Virginia GRAHAM, REA (UK)
■ Board member, Ms Kristina HAVERKAMP, dena (DE)
■ Board member, Mr Marco MIDDELKOOP, Vertogas (NL)
■ Board member, Mr Marco PEZZAGLIA, CIB (IT)
■ Board member, Mr Guillaume VIRMAUX, GRDF (FR)
■ Board member, Mr Andreas WOLF, AGCS (AT)
Function of mass balancing by ERGaR

RED Recital (76):

“According to the mass balance method of verifying compliance, there is a physical link between the production of biofuels (and bioliquids) meeting the sustainability criteria and the consumption of biofuels (and bioliquids) in the Community.”

The physical link between the production and consumption of biomethane is the natural gas network, the administration must ensure the balancing of every injected consignment with the corresponding withdrawn consignment.
Mass balancing consignment by consignment

European natural gas network

Consignment 101
Consignment 102
Consignment 103
Consignment 104
Consignment 105
Consignment 106
Consignment 107
Consignment 108
Mass balancing by ERGaR:

![Diagram showing mass balancing process](image.png)

- **NL** (Netherlands) to **European natural gas network**:
  - Renewable methane: $X$ MWh

- **European natural gas network** to **DK** (Denmark):
  - Natural gas/renewable methane blend: $Y$ MWh

- **Mass balance**: $X = Y$

- **PoO + PoS** (Point of Origin + Point of Supply) from NL to the network.

- **PoO + PoS** from the network to DK.

- **PoO + PoS** from DK back to the network.

- **PoO + PoS** from the network to NL.

- **ERGaR** (European Renewable Gas Registry) logo.

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Mass balancing ensures that the amount of renewable methane entering the network from NL matches the amount of natural gas/renewable methane blend exiting the network to DK, maintaining a balanced energy flow.
Condition for ERGaR PoO book-out: National Biomethane Registry B confirms to ERGaR that the physical transaction to the end-consumer has taken place.
ERGaR information flow

1. Customer
2. Country A
   - Registry A
3. ERGaR hub
4. Country B
   - Registry B
5. Customer

Information flow:
- From Customer to Country A: Information on injection
- From Country A to ERGaR hub: Mass balancing
- From ERGaR hub to Country B: ERGaR PoO
- From Country B to ERGaR hub: ERGaR PoO
- From ERGaR hub to Customer: Information on withdrawal

Data flow:
- From Customer to Country A: Standardized data set
- From Country A to ERGaR hub: Standardized data set
- From ERGaR hub to Country B: Information on withdrawal
- From Country B to ERGaR hub: Standardized data set
- From ERGaR hub to Customer: Information on withdrawal
Why do we need the transfer of sustainability characteristics?

The principal answer is in the RED which makes it mandatory:

“Biofuel production should be sustainable. Biofuels used for compliance with the targets laid down in this Directive, and those that benefit from national support schemes, should therefore be required to fulfil sustainability criteria.”

The business reasoning is also formulated in the RED:

“Sustainability criteria will be effective only if they lead to changes in the behaviour of market actors. Those changes will occur only if biofuels meeting those criteria command a price premium to those that do not.”
Cross Border Transfer of Sustainability Claims

The **sustainability verification** for biomethane injected into the European natural gas network for export purposes should consist of **two steps**:

1. The **first part of the chain of custody** – *from raw material supplies through production/upgrading to grid injection* – will be covered by one of the established sustainability verification procedures, exactly like in case of liquid biofuels.

2. The **second part of chain of custody** – *from the moment of grid injection to the withdrawal by the end-user* – will be covered by the new voluntary scheme applying the mass balancing methodology.
Chain of Custody for Biofuels

Liquid biofuels:

Biomethane:
THANK YOU

Attila Kovacs
Secretary General

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