



# Green Gas Grids Project

## Biomethane Roadmap for Europe

[www.greengasgrids.eu](http://www.greengasgrids.eu)

*Biomethane workshop 11/Mar/2014*



# Elements of Biomethane Roadmap



# Vision



**By 2030 the European biogas industry will produce as much “green gas” (biomethane produced by upgrading of biogas and SYNGAS) as “green electricity” and by using the European natural gas distribution network it will be available for consumers all over Europe for generating electricity, heating/cooling and motor fuel applications.**

# Mission

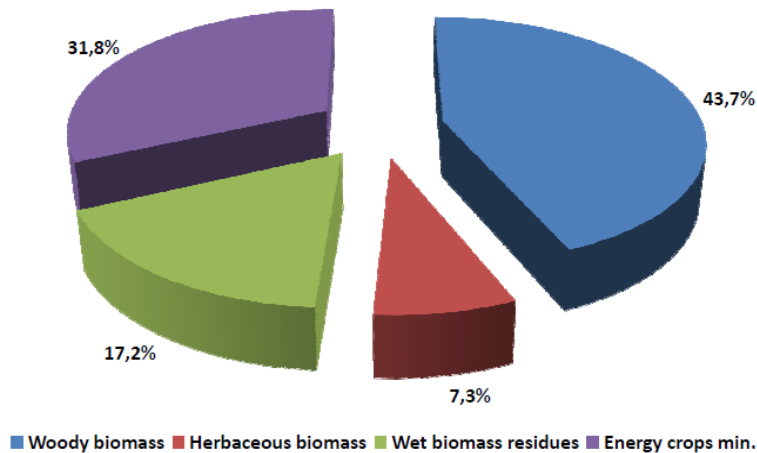


- In 2030 **18-20 billion m<sup>3</sup> of biomethane** should be produced in Europe, what will correspond to about 3% of the present natural gas consumption of the European Union.
- The biomethane production will achieve different levels in the European countries (due to different local conditions) but **the consumption could be evenly spread all over Europe, especially in the transportation sector.**
- **Biomethane trade should be developed** to enable harmonising production and consumption on European level.

# Biogas potential

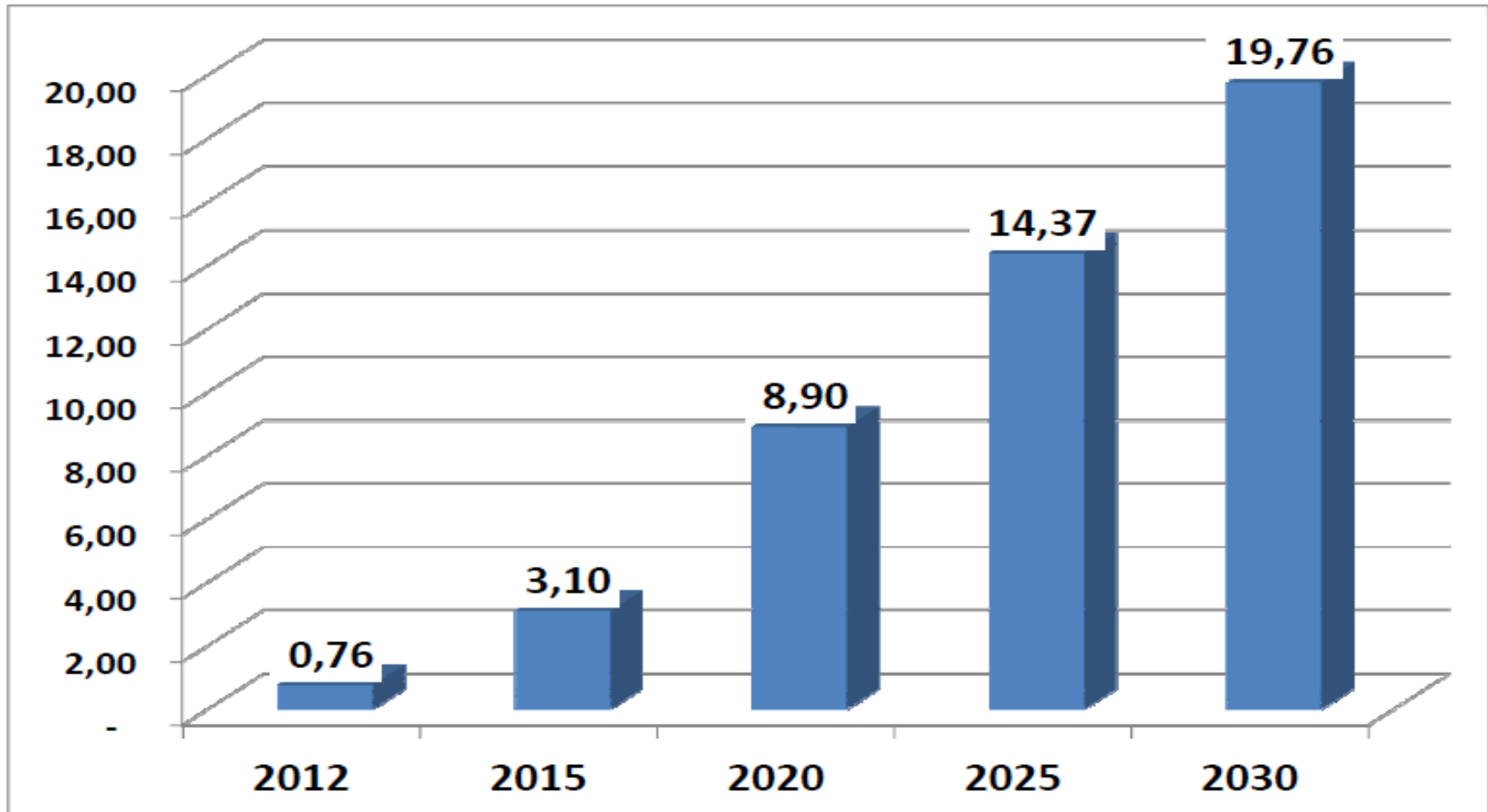
Source: Daniela Thrän - GGG Workshop  
21. February 2012 in Brussels

Graph 1. Biogas/biomethane technical potential - sources



| Source               | Billion Nm <sup>3</sup> | %           |
|----------------------|-------------------------|-------------|
| Woody biomass        | 66                      | 43,7 - 26,8 |
| Herbaceous biomass   | 11                      | 7,3 - 4,5   |
| Wet biomass residues | 26                      | 17,2 - 10,6 |
| Energy crops         | 48 - 143                | 31,8 - 58,1 |
| Total                | 151 - 246               | 100,0       |

# Biomethane supply forecast in $10^9 \text{ Nm}^3/\text{year}$



## Suggested Action Plan Items

1. National biomethane registries
2. Cooperation/coordination among the registries
3. Coordination with all major stakeholders
4. European NG network as single mass-balance system
5. European electronic biomethane platform
6. CNG/LNG infrastructure
7. Sustainability/Life Cycle Assessment
8. Reducing GHG emissions at biomethane production
9. Research and development of technologies
10. Technical standards for biomethane
11. Public awareness/acceptance

# Milestones in the Roadmap

2015

- NG network - single mass-balance circle
- CEN biomethane standards
- Biomethane Registry Club operational

2020

- Biomass gasification - industrial scale
- Joint server of biomethane registries
- EECS expanded for biomethane

2025

- Biological methanisation - industrial scale
- Biomethane integrated in ETS
- 2,0 billion m<sup>3</sup> biomethane used in transportation



# Challenges of biomethane trade

- Value of biomethane:
  - **physical** (in use) value + **intrinsic** („bio“) value
- *Intrinsic value: „green“, renewable, sustainable*
- The physical flow does not carry the intrinsic value
- Condition for sustainable biomethane production:
  - intrinsic value must be realised on the market at level needed to secure cost recovery
- Conditions for biomethane export/import:
  - The „bio“ quality must be certified in the producing country
  - The „bio“ qualification from the producing country must be acknowledged in the consuming country
  - The mass-balancing requirement must be met
  - Double-counting must be excluded

## Biomethane registries

AT: Biomethan Register Austria

CH: VSG (Federation of Swiss Gas Industry)

DE: Biogasregister

DK: Energinet

FR: Gaz Réseau Distribution

NL: Vertogas

UK: Green Gas Certification Scheme

Biomethane Certification Scheme

- „Naturemade biomethane” – label in CH
- „SWAN” label in Scandinavia

## International coordination

- **Letter of Intent** is signed which confirms the readiness of national registries for harmonisation and cooperation;
- *The cooperation is aimed at **creating compatibility** among the individual registries with regard to cross-border transactions;*
- A transparent, reliable and efficient **system of information transfer** across the national borders will be established;
- **Common criteria/attributes** accepted and applied by all participating registries will be worked out for mutual acceptance of GoO's;
- The **"European Biomethane Guarantee of Origin"** will contain all information needed for qualifying the imported biomethane as „green“ – but will not be traded independently from the physical product;
- *The collaboration will be based on mutually acceptance of the principal requirements both for **mass balancing** and **exclusion of double counting**.*

## The way forward

1. **National registries** to be established in every biomethane producing country
2. Connection/cooperation/harmonisation among national registries - **compatibility of individual registries** to be addressed at early stage
3. **Common criteria/attributes** applied by all participating registries for mutual acceptance of Guarantees of Origin
4. Proposal directed at the EU Commission for declaring the interlinked EEA natural gas network as a **single, closed mass balance system (circle)**
5. **Unified principles** of counting exported/imported biomethane towards national targets



# **Biogas Production – Gasification – Biomethane**

**plenary sessions - parallel sessions - poster session –  
exhibition - study tours**

**Co-hosts: Netherlands Enterprise Agency , Energy Valley**

**Conference of European  
Biogas Association**



**EBA**  
European Biogas Association

**30 September - 2 October 2014  
Alkmaar region, Netherlands**

**[www.BiogasConference.eu](http://www.BiogasConference.eu)**

# Thank You for your attention!

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***Biomethane workshop  
11/Mar/2014***



# Back-up files

Biomethane Roadmap



***Biomethane workshop Brussels***

# Biomethane supply forecast in 10<sup>9</sup> Nm<sup>3</sup>

| Country        | 2012        | 2015        | 2020        | 2025         | 2030         |
|----------------|-------------|-------------|-------------|--------------|--------------|
| Austria        | 0,01        | 0,02        | 0,09        | 0,16         | 0,22         |
| Croatia        | -           | 0,02        | 0,07        | 0,12         | 0,16         |
| Germany        | 0,60        | 1,20        | 2,01        | 2,51         | 3,01         |
| Italy          | -           | 0,25        | 0,95        | 1,65         | 2,28         |
| Hungary        | -           | 0,00        | 0,10        | 0,31         | 0,72         |
| Sweden         | 0,08        | 0,09        | 0,10        | 0,18         | 0,24         |
| Netherlands    | 0,04        | 0,30        | 0,67        | 0,78         | 0,85         |
| Slovakia       | -           | 0,02        | 0,09        | 0,15         | 0,21         |
| Spain          | -           | 0,03        | 0,26        | 0,51         | 0,77         |
| Poland         | -           | 0,16        | 0,61        | 1,06         | 1,47         |
| UK             | -           | 0,35        | 1,35        | 2,36         | 3,26         |
| France         | -           | 0,10        | 1,00        | 2,01         | 3,01         |
| Rest of Europe | 0,03        | 0,56        | 1,60        | 2,59         | 3,56         |
| <b>Total</b>   | <b>0,76</b> | <b>3,10</b> | <b>8,90</b> | <b>14,37</b> | <b>19,76</b> |



## Challenges and Objectives

- The policies of EU institutions and governments related to biomethane
- Support schemes
- National biomethane registries
- Cross-border cooperation mechanisms
- Sustainability requirements and certification
- Meeting the mass-balancing requirement
- Exclusion of double counting