

Berlin, 01. June 2017

DENA
European Biomethane Conference

European Biomethane Market
- The correct approach –
2017

- I. STX – Company Profile
- II. STX – Biomethane Activities
- III. Update Biomethane Markets in Europe
 - a. General Overview
 - b. Comparison Support Schemes
- IV. Biomethane Applications
 - a. Transport
 - b. Feed-in-Tariff
 - c. Voluntary Market
- V. Conclusion





STX Services – Company Profile

The STX logo consists of the letters "STX" in a white, bold, sans-serif font, centered within a solid blue square.

STX Services | I. Company Profile

- Founded in 2005
- 75 employees
- 18 nationalities
- 2,000 clients
- 120 products
- 2,500 transactions annually

... and growing







STX GROUP

Can be split up into Renewable Commodities and Fixed Income:

STX COMMODITIES

4 Major Product areas:

-  • Biofuels
-  • Renewable Energy
-  • Carbon Emissions
-  • Energy Efficiency

STX FIXED INCOME

3 Products in 2 Markets:

- Bonds (secondary)
- Money Market (primary)
- Loans (primary / secondary)



STX Services is more than a Brokerage firm by helping to build markets together with our clients

With our extensive network of clients, we:

- Provide market access
- Developing emerging markets
- Look for synergies and arbitrage opportunities
- Create liquidity
- Create transparency
- Remain an independent market player



STX – Biomethane



Traded Biomethane Products and Volumes

- Active in the German Biomethane market since 2011
- Serving Biomethane for all applications (FiT, Road fuel, Voluntary)
- Customers are: Producers, Utilities, Traders, Project Developers, etc.
- Transactions in 10 European countries
- Via STX traded Biomethane volumes:

| | | |
|---------|---|-----------|
| CY 2011 | - | 22 GWh |
| CY 2012 | - | 170 GWh |
| CY 2013 | - | 2.100 GWh |
| CY 2014 | - | 2.430 GWh |
| CY 2015 | - | 2.150 GWh |
| CY 2016 | - | 1.100 GWh |



Overall → Strong shift from physical to certificate trading

STX Services II. STX - Biomethane

STX has transacted 8 TWh of Biomethane in 10 European countries since 2011

| Country | Feed in Tariff | Transport | Voluntary |
|----------------|----------------|-----------|-----------|
| Germany | x | x | x |
| Switzerland | | x | x |
| Austria | (x) | | x |
| Netherlands | (x) | x | x |
| United Kingdom | (x) | | x |
| Denmark | (x) | | x |
| Sweden | x | (x) | |
| Hungary | | | x |
| Belgium | | | x |
| France | (x) | | x |



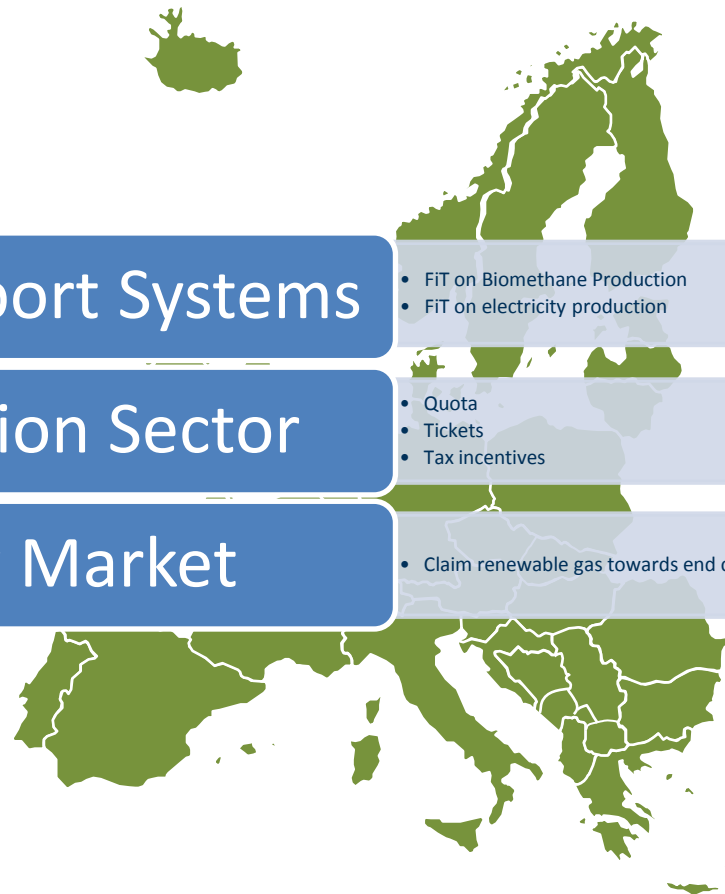
Biomethane Markets Europe

6/2/2017

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From the commercial perspective the European Biomethane market can be split into three major applications



National Support Systems

- FIT on Biomethane Production
- FIT on electricity production

Transportation Sector

- Quota
- Tickets
- Tax incentives

Voluntary Market

- Claim renewable gas towards end customers

STX Services III. Biomethane Markets Europe

In total there are 459 Biomethane plants and 17,367 Biogas plants in Europe.*
It becomes evident that Germany is by far the biggest market in Europe.

| No. of Biomethane Plants* | |
|---------------------------|--------------|
| Germany | 185 (40.3 %) |
| UK | 80 (17.4 %) |
| Sweden | 61 (13.2 %) |
| Switzerland | 35 (7.6 %) |
| Netherlands | 21 (4.6 %) |
| France | 20 (4.3 %) |
| Others | 57 (12.9 %) |



| No. of Biogas Plants* | |
|-----------------------|-----------------|
| Germany | 10,846 (62.5 %) |
| Italy | 1,555 (8.9 %) |
| France | 717 (4.1 %) |
| Switzerland | 638 (3.7 %) |
| Czech Republic | 554 (3.2 %) |
| UK | 523 (3.0 %) |
| Austria | 444 (2.6 %) |
| Sweden | 282 (1.6 %) |
| The Netherlands | 268 (1.5 %) |
| Others | 1,549 (8.9 %) |



STX Services III. Biomethane Support Schemes

Different European Markets with different Support Schemes

| | Feed-in-Tariff | Transportation (Quota / Ticket/other) | Voluntary Market / Labels () = small |
|-----------------|---------------------------|--|--|
| Germany | Feed-in-Tariff | Yes (GHG-Savings) | Yes |
| Austria | Feed-in-Tariff | Yes (tax-benefit) | Yes |
| Switzerland | Feed-in-Tariff | Yes (tax-benefit) | Yes |
| Sweden | No | Yes (tax-benefit) | (yes) |
| Denmark | Production support on gas | No | (yes) |
| UK | Production support on gas | Yes (Energetic Value) | (Yes) |
| Italy | No (FiT on biogas only) | No | No |
| The Netherlands | Production support on gas | Yes (Energetic Value) | Yes |
| France | Production support on gas | No | (yes) |



Different countries, many different Systems

Feed-in-Tariffs

- National subsidy systems are the backbone of the Biomethane industry and the only chance to sustain / grow as industry.
- Create boundaries for cross-border trades.

Transportation

- The Quotas & Ticket market is a spot market, which does not offer any planning security for any Biomethane producer to make necessary investments and hence can only be used as periodical outlet.

Voluntary Markets

- Create necessary awareness for Biomethane and help to create a European standard at first, which can be the basis of a regulated European Biomethane market.
- Only sector in European Biomethane Market that is partially adapted by most of the market participants.

STX Services III. Biomethane Support Schemes

ERGaR – An overview of the current European members

Members:

AT – ADCS Gas Clearing & Settlement AG

BE – European Biogas Association

DE – German Energy Agency (dena)

DK – Energinet.dk
NGF Nature Energy

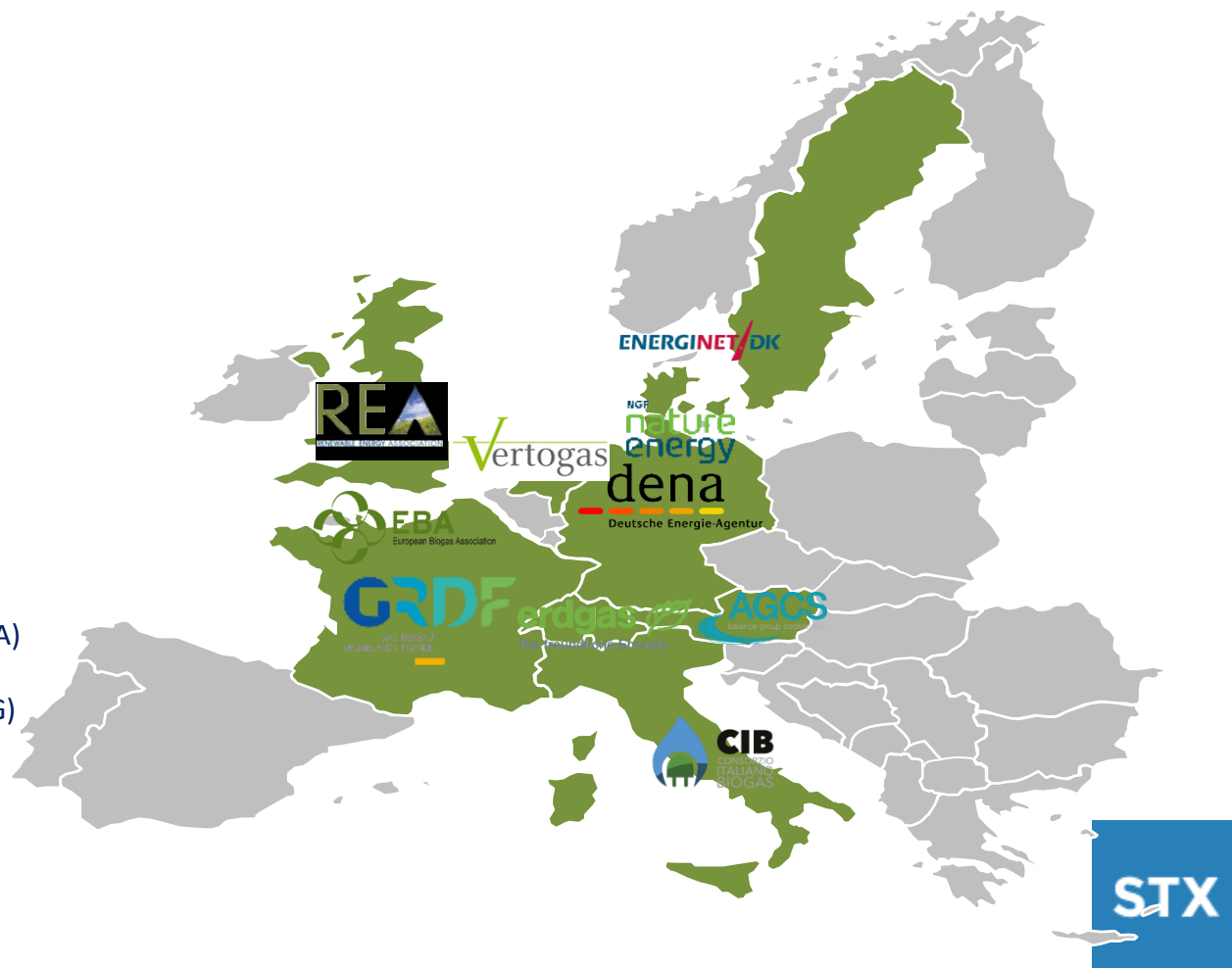
FR – Gas Réseau Distribution France (GrDF)

IT – Consorzio Italiano Biogas (CIB)

NL – Vertogas

UK – Renewable Energy Assurance Ltd. (REA)

CH – Swiss Association of Gas Industry (VSG)





IV

Biomethane Applications

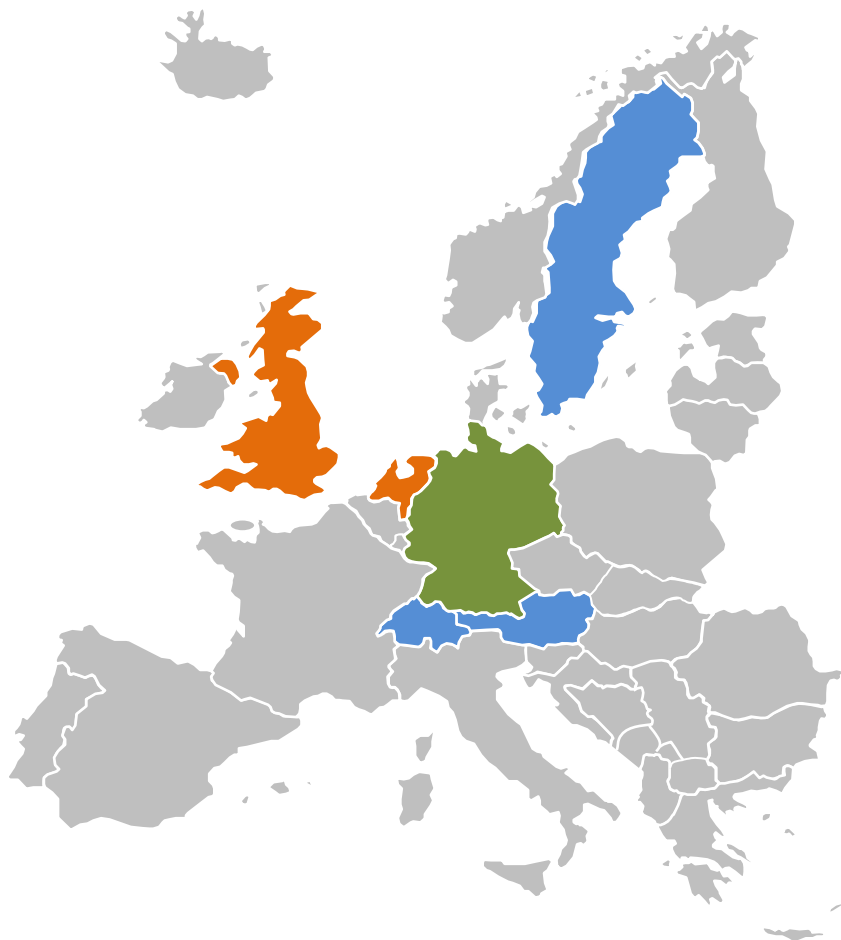
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STX Services III. Biomethane Europe – Transportation Sector

Not enough security due to legislation and price volatility in the Quota Market – longterm potential through RED II –



- Germany is the only country, which has an implemented GHG-Saving Quota system
- UK & the Netherlands work on known Quota based on an Energetic Value
- Switzerland, Austria & Sweden grant a tax exemption over natural gas with usage of Biomethane
- Italy is awaiting a decree / law published in July 2017 on new Quota System – disposal of tickets by government (GSE) only
- Other countries (e.g. Sweden & Italy) show a great potential but cannot utilize this because of legislative restrictions

Quota
GHG-Savings

Tax exemption
(CO2 Tax, Petrol Tax)

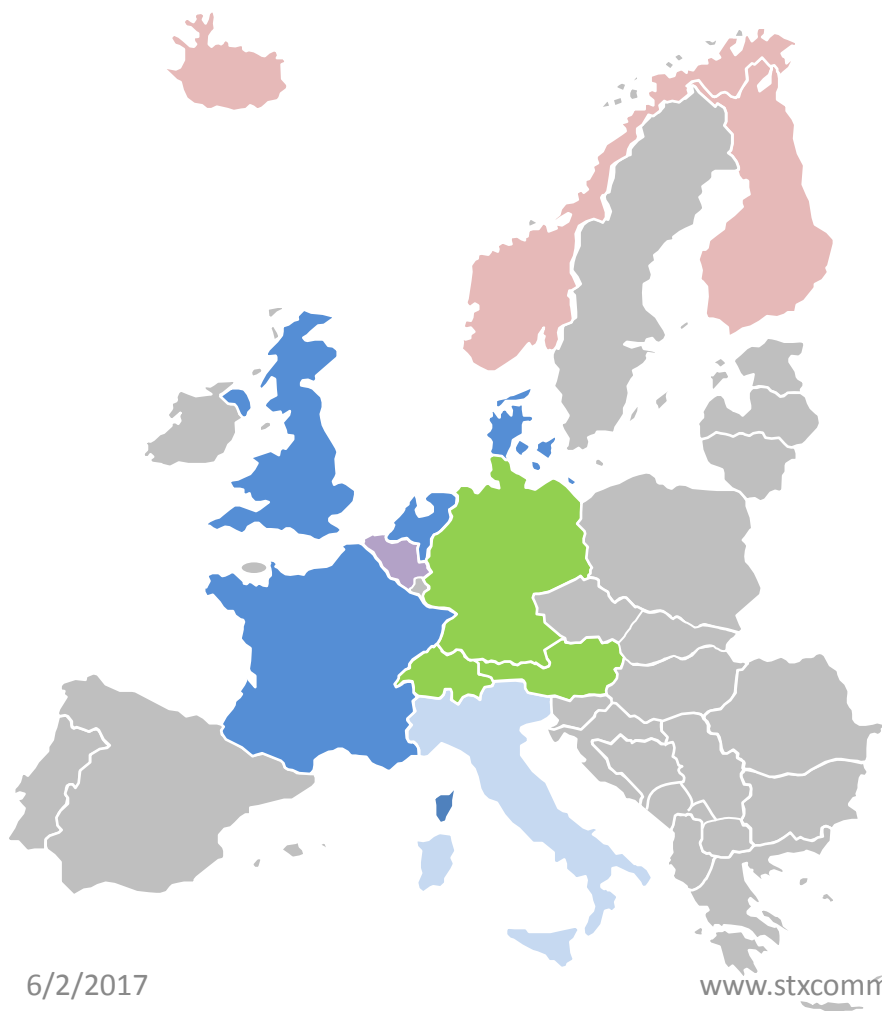
Quota
Energetic Value

Unknown,
low relevance

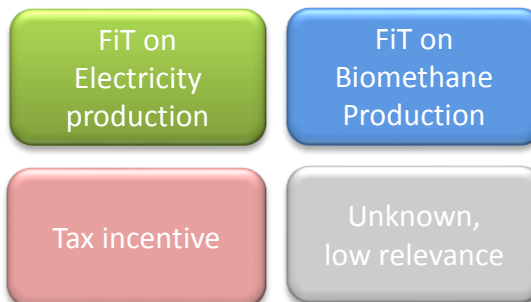


STX Services III. Biomethane Europe – Feed-in-Tariff

National Feed-in-Tariff Support Systems – The original growth generating Support Scheme of the European Biomethane Market



- 18 countries in Europe offer FiT-Systems
- Every country has own national support system
- In biggest Biomethane Market (GER) – uncapped EEG (until EEG 2012) increased the market volume drastically in recent years
- Different support systems – different remunerations: FiT on Biomethane / Feed-in-Premium (Bonus paid over market price) / Quota System



STX Services III. Biomethane Europe – Voluntary Market

Voluntary Biomethane Certificates on the Rise in Europe



- Since CY 2016 steady increase in traded volumes of Biomethane certificates throughout Europe
- Most significant volumes traded in voluntary market via dena-Registry (GER / CH / DEN / SWE / HUN)
- Vertogas trades between NL and Nordic countries
- Positive developments on traded volumes → BUT: new boundaries through difficult certification of foreign production

Voluntary
market in place

Unknown,
No voluntary
market

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Conclusion

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Create a consolidated European Biomethane Market – Use one standardized System!

Harmonizing Biomethane Markets & creating a consolidated pan-European Biomethane Market!

To get there we need:

**No
Double-Counting**

- Has to be excluded, even by means of arbitrage opportunities between two countries.

Harmonization

- Same unified standards
- Create liquidity and transparency within the Markets

ERGaR

- 1 European renewable gas registry
- no private commercial registries



**Start Voluntary Markets first &
Use synergies of certificate trades!**

Thank you for listening!

Questions?

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