Renowned speakers will present their results on the following topics:

- EU Legislation, cross border trading and economic aspects in Europe
- Booming markets and developments in existing ones
- New concepts for flexible plant operation and grid-injection
- Biomethane as a vehicle fuel
- Technological developments: Power-to-Gas and Gasification

**Date and venue:**
March, 18–19, 2014
Frankfurt, Germany

**Conference Chair:**
Dr. Mattias Svensson
Program Manager Gaseous Fuels, Swedish Gas Technology Centre, Malmö, Sweden
10:00 Registration & welcome coffee

10:30 Chair’s welcome and opening address

I. EUROPEAN LEGISLATION, BIOMETHANE REGISTRIES & STANDARTISATION

10:45 Greenhouse gas (GHG) savings calculations in the renewable directive and examples for biogas and biomethane process pathways
   • The EU approach to greenhouse gas (GHG) savings calculations in the renewable directive
   • Biomethane production: Emissions savings calculations
   • Biogas and biomethane process pathways for missions calculations
Dr. David Baxter, Senior Scientist, JRC – Institute for Energy and Transport, European Commission, LE Petten, The Netherlands

11:30 The national biomethane registries and the importance of their cooperation for cross-border trade
   • The role and function of national biomethane registries
   • Operating biomethane registries in Europe
   • GreenGasGrids project – Supporting the international cooperation among registries
   • Key issues of international cooperation among the national registries
   • Main challenges for cross-border biomethane trade
Dr. Attila Kovacs, Board Member, European Biogas Association, Brussels, Belgium

12:15 Biomethane standards for grid injection and vehicle fuel
   • Definition of maximum and minimum values
   • Work within the CEN TV 408 and the GreenGasGrids project
   • Common target values for the gas, vehicle and biogas industry
Dr. Arthur Wellinger, Managing Director / President European Biogas Association, Triple E&M, Aadorf, Switzerland

13:00 Lunch

II. EUROPEAN MARKETS, DRIVERS & NEW GROWING BIOMETHANE MARKETS

14:15 Lifecycle emissions from biogas and biomethane plants
   • Understanding the lifecycle of biogas production
   • Emissions produced within the lifecycle of biogas production
   • Best practice recommendations on reducing emissions from biogas and biomethane plants
   • An outlook to the future in terms of reducing emissions
William Mezzullo, PhD / MEng, Associate Director / Project Development, Renewable Energy Association (REA), Guildford, United Kingdom

15:00 Biomethane support schemes in European countries
   • Status of biogas and biomethane markets
   • Overview on different support schemes for biogas and biomethane in Europe
   • Last developments and trends
Dipl.-Ing. Sabine Strauch, Research Group Biogas Technology, co-author: Dipl.-Ing. Joachim Krassowski, Chemical Energy Storage, Fraunhofer UMSICHT, Oberhausen, Germany
15:45 Drivers and constraints for biomethane in Brazil

- Potentials – Brazil a booming market?
- Incentives and regulations
- Pilot initiatives

Dipl.-Ing. Wolfgang Roller, Project Manager, Renewable Energies DKTI Biogas, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Brasilia-DF, Brazil

16:30 Networking & coffee break

III. UPGRAADING, FLEXIBLE PLANT OPERATION & GRID INJECTION

17:00 State of the art of biogas upgrading

- The main gas upgrading technologies
- Technical characteristics: Product gas purity, methane losses, energy and media consumption, scalability
- Economic data – Capital costs and operational costs
- Market share, recent and future development

Dipl.-Ing. Daniel Tamm, M.Sc., Project Engineer, Department Göteborg, BioMil AB, Lund, Sweden

17:45 Economics of Biomethane – Findings from Project Mona

- Cost of biogas upgrading
- Biomethane production costs

Economic assessment of biomethane utilization in Germany

Dipl. Marcus Trommler, M.Sc., Speaker Competence Center Biomethane, DBFZ, Leipzig, Germany

18:30 Flexible CHP-Operation on biogas – Requirements, options and limits

- Requirements for more flexibility
- Intelligent control technology
- Results of plants under operation
- Where are the limits?

Dipl.-Ing. / Dipl.-Wirt-Ing. Alfred Gayer, CEO, EnviTec Energy, Lohne, Germany

19:15 End of conference day one

Get together

At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for deepening talks with other participants and speakers.
09:00 Operational flexibility and power generation based on need – What role can biomethane play here?
- Grid stability
- Storage of renewable energy
- Virtual transport and mass balance system
- Physical transport

Dr. Anton Daubner, CEO, agri.capital Luxembourg S.à.r.l., Luxembourg

09:45 Production and biomethane grid injection, an overview of the Nordic situation
- Quality specifications and its effect on installation works
- Responsibilities to third parties
- Cost aspects of quality and works
- New injection standard - How will that effect new and previous installations?

Håkan Eriksson, M.Sc., Senior Project Manager, EON Gas Sweden AB, Malmö, Sweden

10:30 Networking & coffee break

IV. BIOMETHANE AS A VEHICLE FUEL

11:00 Biomethane potential and commercialization in Finland
- What is the biomethane potential in Finland?
- Current and future biomethane production projects in Finland
- Production and commercialization of biomethane into different segments

Tuomas Niskanen, M.Sc. (Tech.), Production Engineer, Biogas and Renewables, Gasum Oy, Espoo, Finland

11:45 Green Gas & LBG filling stations from an entrepreneurial perspective
- The right configuration for your CNG and LNG station
- Facilitation the green gas value chain form a retailers perspective
- OrangeGas Port of Amsterdam – “The sustainable fuel station of the future”

Pelle Schlichting, Director, OrangeGas, Amsterdam, The Netherlands

12:30 The Audi e-gas project – Methane as a key element for green mobility and the energy turnaround
- The challenge to storage renewable energies
- Power to gas as a key element for the future energy market
- CNG mobility as complementary solution for battery electric cars

Reinhard Otten, Strategist Sustainable Product Development, Sustainable Product Development, Audi AG, Ingolstadt, Germany

13:15 Lunch

V. NEW DEVELOPMENTS: POWER-TO-GAS, GASIFICATION TECHNOLOGIES

14:30 Status of power-to-gas: Technology, economics, market
- The case for power-to-gas energy storage
- Status of the different technology concepts currently pursued by industry and academia
- Market conditions prohibiting, inhibiting, and supporting technology deployment
- Future path to commercialization

Dominic Hofstetter, MBA/M.Sc., Vice President of Business Development, Electrochae, LLC, Horsens, Denmark

15:15 The role and status of biomass gasification in Sweden – Industrial projects and plants
- Overview of the role and status of biomass gasification in Sweden today
- Products in focus: Bio-SNG, bio-alcohols and bio-DME
- On-going industrial projects and gasification plants and the technologies behind them

Dr. Anna-Karin Jannasch, Program Manager Gasification and Fuel Synthesis/Industry and Household, Swedish Gas Technology Centre AB, Malmö, Sweden

16:00 Conference chair’s closing remarks

16:15 End of conference
The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe. Throughout the years, the VDI has successfully expanded its activities nationally and internationally to foster and impart knowledge about technology-related issues. As a financially independent, politically unaffiliated and non-profit organization the VDI is recognized as the key representative of engineers both within the profession and in public.

This is what last year’s conference participants said:

“Complete coverage of the many aspects of the subject biomethane.”
Project Director, Burdock Italy SRL., Rome, Italy

“Large area of topics...”
Consultant, ENEA Consulting, Paris, France

“Very interesting and diverse presentations, good mixture of speakers from industry and research...”
National Sales Engineer, Schmack Carbotech GmbH, Essen, Germany

“I have enjoyed the open exchange of information among international participants.”
Board Member, EBA – European Biogas Association, Brussels, Belgium

OUR MEDIA PARTNERS
09:30 Registration & welcome coffee

09:50 Chair’s welcome and opening address

10:00 An overview of EU sustainability criteria and LCA for biogas and biomethane
- Life cycle assessment
- Sustainability criteria & European renewables directive (RED)
- CO₂ savings
- European legislation

Dr. David Baxter, Senior Scientist, JRC - Institute for Energy and Transport, co-authors: Dr. Alessandro Agostini; Dr. Jacopo Giuntoli, European Commission, LE Petten, The Netherlands

10:45 Methods and results of emission monitoring
- Comparison: Measurement devices
- Biogas plants – Current situation regarding emission measurement
- Results of measurements: Agricultural sector and biowaste treatment
- E.ON Helicopter based emission control

Dr.-Ing. Jan Liebetrau, Head of Division Biochemical Conversion, DBFZ Deutsches Biomasseforschungszentrum gGmbH, Leipzig, Germany

12:15 Emission of methane in Sweden during the production of vehicle gas
- Methane emissions in the Swedish CNG/CBG chain
- Methane emissions in the entire chain from biogas production to its end-use as automotive fuel
- Current situation and best available technology

Dr. Mattias Svensson, Program Manager Gaseous Fuels, co-author: Tobias Persson, Swedish Gas Technology Centre, Malmö, Sweden

14:00 Carbon implications of biomethane production and use
- Methods – Crucial aspects and factors in LCA for biomethane production facilities
- Results of GHG calculations and potential for improvements
- Necessary developments
- Comparison of the GHG mitigation potential from the use of biomethane in different applications

Dipl.-Ing. Stefan Majer, Team Leader Sustainability and Biomass Potentials, Bioenergy Systems, co-author: Dipl.-Ing. Katja Oehmichen, DBFZ – Deutsches Biomasseforschungszentrum gGmbH, Leipzig, Germany

15:00 Methane emissions within the upgrading process
- Technology overview
- Methane losses and exhaust post treatment within upgrading process
- Outline of the project Mona
- Results of measurements
- Conclusions and optimization potential

Dipl.-Ing. Michael Beil, Head of Gas Processing, Bioenergy Systemtechnik, Fraunhofer-Institut für Windenergie, Kassel, Germany

15:45 Residual gas potential of digestates
- Prediction of residual gas potential with kinetic models
- Economic and environmental aspect
- Digestate separation
- Gas potential and emissions from open storage

Dr.-Ing. Jürgen Kube, Head of Product Management, Agraferm Technologies AG, Pfaffenhofen an der Ilm, Germany

16:30 Conclusions of workshop chair

16:45 End of workshop day
DIRECTIONS TO THE HOTEL

By plane
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By car
The hotel can be reached via Highway A5. From North and South exit Highway A5 at “Langen Mörfelden”. From West and East merge from A3 (Frankfurter Kreuz) onto A5 and take the exit “Langen, Mörfelden” as well. Please use the street name “Hessenring 9” for your navigation system.

By public transport
If you arrive by train, we recommend traveling to the ICE railway station at Frankfurt International Airport. From there, you can utilize a shuttle service to the hotel (please follow the above instructions).

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BIOMETHANE
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