

3rd Annual

European Biomass and Bioenergy Forum

Achieving an efficient and effective renewable energy portfolio and capitalising on the role of biomass in the creation of a successful low carbon energy mix

Stockholm, Sweden

13th – 15th September 2010

Including Biomass Plant Site Visit and Tour to Fortum Värme

Attending this **marcus evans** Forum Will Enable You to:

- **Understand** the latest updates in EU legislation and the necessary policy and financial framework conditions
- **Discover** the latest trends in supply and demand of biomass
- **Learn** about updates in technology and improving plant efficiency
- **Capitalise** on sustainable biomass production and infrastructure investments
- **Ensure** the most efficient use of biomass in bioenergy projects

Learn from Key Practical Case Studies:

- **E.ON Bioerdgas** using biomethane as a versatile energy carrier
- **GDF-Suez** developing a sustainable approach of solid biomass for power plants
- **RWE npower** renewables maximising resources and energy efficiency in a large scale biomass CHP plant
- **Dong Energy** driving growth in CHP plants and district heating in Denmark
- **Eneco Energie** strengthening its energy position in the UK through biomass
- **National Grid** reviewing the opportunities of biomethane-to-grid
- **Essent** creating innovative technologies for biomass and heat

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Understand **updates** in EU legislation,
Optimise **plant performance** and
Gain essential insight into
technological advancements

In the Chair:

Richard Bonsall
Head of Commercial UK Biomass
RWE npower renewables

Peter Lohmander
Professor of Economics
**Swedish University of
Agricultural Sciences**



marcus evans Expert Speaker Panel:

Thomas Dalsgaard
Vice President
Dong Energy

Martin Orrill
Head of Energy Technology
Innovation
British Gas

Richard Bonsall
Head of Commercial UK Biomass
RWE npower renewables

Per Ottosen
Senior Consultant
Dong Energy

Yves Ryckmans
Chief Technology Officer, Biomass
GDF SUEZ

Christer Segerstéen
Chairman
Södra Timber

Dr. Harald Von Canstein
Head of Biotechnology
E.ON Bioerdgas

Josche Muth
Policy Advisor
**European Renewable Energy
Council**

Göran Lundgren
Head of Business Development
Vattenfall

Marie Donnelly
Director, Energy Efficiency, New
and Renewable Energy
European Commission

Henrik Forsgren
Director, Public Affairs
Göteborg Energi AB

László Máthé
Bioenergy Coordinator
WWF International

John Sinclair
Principle Biomass Developer
Eneco Energie

Jaap Kiel
Programme Manager Biomass and
Coal
ECN

Steven Vallender
Sustainable Networks
National Grid

Jan de Jong
Innovation Manager
Essent

Peter Lohmander
Professor of Forest Economics
**Swedish University of
Agricultural Sciences**

13th September 2010

08:30 Registration and Coffee

09:00 Chairperson's Opening Remarks
Richard Bonsall
 Head of Commercial UK Biomass
RWE npower renewables

REGULATIONS, POLICY FRAMEWORK AND PROJECT FINANCE UPDATE

09:10 **Opening Address**

Defining the Future – Acting Today: Bioenergy 2020 and Beyond

- The importance of bioenergy for the development of the EU's renewable energy sector
- Outlook of the EU's energy pathway to 2030 and 2050
- Examining the role of bioenergy
- Outlining necessary policy and financial framework conditions

Josche Muth
 Policy Advisor
European Renewable Energy Council

09:50 **Understanding and Reviewing the Latest Developments in EU Biomass Legislation**

- Overview of member state national renewable action plans
- Reviewing the expectations and the use of biomass in achieving 2020 targets
- Case examples from member states

Marie Donnelly
 Director, Energy Efficiency, New and Renewable Energy
European Commission

10:30 Morning Coffee and Networking Break

ENSURING THE MOST EFFICIENT USE OF BIOMASS IN BIOENERGY CHP PROJECTS

11:00 **Case Study**

Maximising Resources and Energy Efficiency in a Large Scale Biomass CHP Plant

- Ensuring the efficient use of biomass for power and heat
- Biomass for on-site power - the benefits of energy derived from biomass
- The development of a 45MW biomass CHP plant in Scotland

Richard Bonsall
 Head of Commercial UK Biomass
RWE npower renewables

11:40 **Case Study**

Biomass and CHP - The Green Revolution in Denmark's District Heating

- The key role of biomass in the transition to low carbon societies - both in transportation and production of heat and power
- Large efficiency gains if combined with CHP and district heating
- Denmark as a case study
- Challenges: sourcing, sustainability, financial incentives

Thomas Dalsgaard
 Vice President
Dong Energy

12:20 **Case Study**

Biomass in the UK, Opportunity Knocks?

- Latest biomass projects and developments in the UK
- Issues and challenges
- Latest trends for the supply and demand of biomass
- Examining the trade barriers for international bioenergy trade

John Sinclair
 Principle Biomass Developer
Eneco Energie

13:00 Luncheon

14:00 Coffee and Networking Break

14:30 **Case Study**

The Use of Biomass within Vattenfall – Today and in the Future

- Review of Vattenfall's group-wide biomass programme
- Overview of project with woodchips burnt in power plants that are sourced from old Liberian rubber trees
- Large-scale biomass utilisation over the long-term

Göran Lundgren
 Head of Business Development
Vattenfall

15:10 **Case Study**

Biomass Power and Heat Generation at Essent - The Next Steps

- Introduction to RWE/Essent
- Overview of biomass activities
- Future outlook for investments in renewable power from biomass
- Special focus on torrefaction and pyrolysis as pretreatment options

Jan de Jong
 Innovation Manager
Essent

15:50 Afternoon Tea and Networking Break

SUPPLY FUNDAMENTALS FOR A GLOBAL BIOMASS MARKET

16:20 **Optimum Combination of Biomass Production with Investments in Infrastructure**

- Reviewing existing stocks of global biomass
- Overcoming infrastructure investment challenges
- Managing sustainability criteria

Peter Lohmander
 Professor of Forest Economics
Swedish University of Agricultural Sciences

17:00 **Opportunities for the Forestry and Forestry Industry**

- How forestry companies are capitalising on integrating bio-energy production with existing operations
- How much fuel is available and examples of practice
- Examining controls on forest resource and sustainable forest management

Christer Segerstéen
 Chairman
Södra Timber

17:40 **Panel Discussion**

Security of Biomass Supply

- Discussing the opportunities and challenges
- Debating issues around the long term supply of biomass
- Examining the domestic potential in Europe and how much can be sourced from overseas
- Discussing issues around logistics

Panellist:

Richard Bonsall
 Head of Commercial UK Biomass
RWE npower renewables

Christer Segerstéen
 Chairman
Södra Timber

John Sinclair
 Principle Biomass Developer
Eneco Energie

Josche Muth
 Policy Advisor
European Renewable Energy Council

Peter Lohmander
 Professor of Economics
Swedish University of Agricultural Sciences

18:20 Chairperson's Closing Remarks and End of Day One

14th September 2010

08:30 Registration and Coffee

09:00 Chairperson's Opening Remarks

Peter Lohmander
Professor of Economics
Swedish University of Agriculture

OPPORTUNITIES FOR BIOMETHANE PRODUCTION

09:10 **Case Study**

Unlocking the Network - Biomethane to Grid

- Overview and opportunities (UK, Europe and US)
- Existing technologies
- Current constraints
- What is being done to resolve these?

Steven Vallender
Sustainable Networks
National Grid

09:50 **Case Study**

Biomethane to Grid in the UK – A Gas Supplier's Perspective

- Making it work in a competitive marketplace
- Industry "rule" changes required
- Incentivising the marketplace
- Engaging the customer

Martin Orrill
Head of Energy Technology Innovation
British Gas

10:30 Morning Coffee and Networking Break

11:00 **Case Study**

Biomethane - The Climate Friendly Substitute of Natural Gas

- Solid or wet: E.ON's production of energy from woody and wet biomass
- Organic waste and energy crops: substrates for biogas production
- The advantages of upgrading: biomethane as a versatile energy carrier
- A deeper shade of green: the greenhouse gas balances of different types of biogas and comparison with other biofuels
- For the climate and for the environment: on the sustainability of biomethane production

Dr. Harald von Canstein
Head of Biotechnology
E.ON Bioerdgas GmbH

11:40 **Case Study**

Strategic Development of Biogas in West Sweden

- Infrastructure development
- Injection of biogas into the natural gas grid
- GoBiGas; The unique biogas gasification plant

Henrik Forsgren
Director, Public Affairs
Göteborg Energi AB

CAPITALISING ON TECHNOLOGICAL ADVANCEMENTS

12:20 **Torrefaction for Biomass Upgrading**

- Torrefaction for upgrading biomass into commodity solid fuel
- Leading to superior fuel properties with respect to logistics and co-firing
- Applicable to a broad range of biomass feedstocks
- Interesting prospects for high-temperature gasification and small-scale combustion
- Process design strongly determines product quality, economics and environmental impact

Jaap Kiel
Programme Manager Biomass and Coal
ECN

13:00 Luncheon

14:00 Coffee and Networking Break

14:30 **Case Study**

Reviewing the Technical Challenges at Dong Energy

- DeNOx problems reduces the live time of the catalyst in SCR units
- How to feed the biomass into the boiler
- Combustion, ash with high content of carbon
- Using additives to reduce corrosion

Per Ottosen
Senior Consultant
Dong Energy

SUSTAINABILITY CRITERIA

15:10 **Sustainability Requirements for Using Solid and Gaseous Biomass for Energy Production**

- Importance of sustainable production of biomass
- Reviewing individual voluntary standards compared to EU-wide legally binding sustainability framework
- Intensifying pressure on forests in the EU and other countries
- Large scale sustainable production of biomass for energy

László Máthé
Bioenergy Coordinator
WWF International

15:50 Afternoon Tea and Networking Break

16:20 **Case Study**

Sustainable Approach of Solid Biomass for Power Plants within GDF-Suez

- Technologies for large scale biomass to power plant
- Fuel quality
- Policies in Belgium, the Netherlands and Poland for biomass
- Sustainability criteria
- Verification procedure

Yves Ryckmans
Chief Technology Officer, Biomass
GDF SUEZ

17:00 **Panel Discussion**

Applying Carbon Capture and Storage to Biomass Production

- Discussing the potential of integrating carbon capture and storage technologies in biomass plants
- Debating the implications for large scale developments
- Issues surrounding subsidies, funding and CCS commercial viability

Panellist:

Yves Ryckmans
Chief Technology Officer,
Biomass
GDF-SUEZ

Martin Orrill
Head of Energy Technology
Innovation
British Gas

Per Ottosen
Senior Consultant
Dong Energy

Jaap Kiel
Programme Manager Biomass
and Coal
ECN

17:40 Chairperson's Closing Remarks and End of Day Two

Business Sponsor

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Pöyry has 7000 experts operating in about 50 countries, locally and globally. Pöyry's net sales in 2009 were EUR 674 million and the company's shares are quoted on NASDAQ OMX Helsinki.

15th September 2010

POST-CONFERENCE HALF DAY WORKSHOP AND SITE VISIT TO FORTUM VÄRME

- 09:00 Welcome Coffee at Meeting Point
(Travel to power station)
- 09:30 Welcome and Introduction to Fortum Värme
- 10:00 **Presentation and Guided Tour of the Plant**
The Högdalen plant is one of Europe's most modern plants for energy extraction from waste. At Högdalen, electricity is produced from the waste of Stockholm that can be incinerated, the waste is collected from households and the industry. The plant has been used since 1970 for incinerating waste. The waste is used for energy instead of being put on landfills.
- The plant is connected to the district heating system in Stockholm that distributes heat to most of the households in Stockholm. Since 1979 the plant has produced both energy and electricity. The plant consists of six boilers, of which four where waste is incinerated. One boiler is for oil and one is a CFB-boiler. With a full load the plant incinerates 80 tonnes of waste per hour. The smoke of the plant is cleaned.
- 12:30 Return to Hotel and End of Conference

Business Development Opportunities

Does your company have services, solutions or technologies that the conference delegates would benefit from knowing about? If so, you can find out more about the exhibiting, networking and branding opportunities available by contacting our sponsorship division.

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marcus evans corporate hospitality

Specialists in corporate hospitality linked to the premier international sporting events around the world. Trading as The Hospitality Group (thg), Sports Marketing Group (smg) and International Championship Management, the event diary is nothing less than an international sporting directory.

marcus evans congresses

marcus evans congresses bring together the leading vendors and decision makers from a wide range of services and industries. Each event provides an opportunity for key suppliers to exhibit and demonstrate their products to the region's key professionals. In addition to the exhibition format the event's educational conference is attended only by delegates who are pre-qualified, in most cases to a minimum spend of US\$5 million and many with budgets in excess of \$50 million.

Speaker Profiles

Josche Muth European Renewable Energy Council

Josche Muth joined the EREC Policy Team as Policy Adviser in June 2009. His responsibilities include working on sustainability criteria for bioenergy, financing of renewable energy technologies, including the 8th Framework Program as well as a 2050 renewable energy roadmap for the European Union. Before joining EREC, Josche worked as Energy Policy Adviser to MEP Mechthild Rothe, former Vice-President of the European Parliament. In his function, he was closely involved in the legislative process concerning energy efficiency and renewable energy, in particular the 2009 renewable energy directive. Josche holds an MA in Political Science from the University of Munich.

Richard Bonsall RWE Npower Renewables

Richard has worked in the UK electricity industry in a variety of roles including power station construction project management, service management, business development and for the last 5 years in project development. He was responsible for the project development of the 50MW biomass CHP plant at Tullis Russell's paper mill in Scotland which is currently being constructed. Richard is a chartered mechanical engineer and following university spent 6 years as a marine engineering officer in the Royal Navy. Richard is currently Head of Commercial for RWE npower renewable's biomass business. RWE npower renewables is one of the UK's leading renewable energy companies and is the UK subsidiary of RWE Innogy the renewables business of RWE AG.

Peter Lohmander Swedish University of Agricultural Sciences

Peter Lohmander obtained his masters degree in 1981 and doctor's degree in 1987. Lohmander's graduate studies focused on optimisation applied to economic decisions and operations research. He got a position as University lecturer at KVL in Copenhagen, Denmark, in 1986. In 1987, Lohmander defended his doctor's dissertation on economic optimization of decisions in forest management under the influence of different kinds of risk. In 1991, Lohmander was acting professor of management and business administration at SLU in Umea, Sweden. In 1995, Lohmander was appointed associate professor of forest economics and January 12, 2000, he was appointed professor of forest management and economic optimisation at SLU in Umea, Sweden. In 2007, Peter Lohmander was the chairman of the "Operations Research in the Forest Sector" cluster of INFORMS. The Institute for Operations Research and the Management Sciences (INFORMS) is the largest professional society in the world for professionals in the field of operations research (O.R.). It was established in 1995 with the merger of the Operations Research Society of America (ORSA) and The Institute of Management Sciences (TIMS). Peter Lohmander has also been the chairman of Scandinavian Society of Forest Economics. Peter Lohmander has organized several international conferences and conference clusters in different countries, including European Union of Operations Research Societies in Rotterdam and Istanbul. Lohmander has an army ranger officer education from the Swedish cavalry. Lohmander has also been developing game and decision theory, methods and software for military operations research. Peter Lohmander has been the supervisor and advisor of five PhD students from different countries that have already defended their doctor degrees and become doctors. Two of these former PhD students are now professors. Peter Lohmander is the SLU member of the board of the professors union in Umea. Presently, Peter Lohmander is the leader of the project "Economic forest production with consideration of the forest and energy industries", financed by E.ON Sweden.

Christer Segerstéen Södra Timber

Christer Segerstéen is a well known profile both in the Swedish forestry community and forestry industry. He has been 19 years in the Södra Board of Directors. Christer's contributions to the Swedish forestry industry are based on personal experience from his forestry estate. These are the roots from which his genuine interest in forestry management – and in the natural and cultural value of the forest – has grown, and from which his passion to defend and promote the interests of forestry, especially family forestry, has developed. After the annual meeting in May 2010 Christer Segerstéen stepped up to the position of Chairman of the Södra Board of Directors. To spend more time with his new position in Södra he ends an eleven year period as Chairman of The Swedish Federation of Forest Owners this summer. He has a holistic view of the forestry industry, combining his forestry perspective with active involvement in process industry development and the marketing of forest products. On the market side he is an enthusiastic "wood ambassador" and has had a key role in developing forest certification as an effective tool for marketing forest and forest industry products. He works actively on a national, Scandinavian, European and global level to promote family forestry and forest certification. Christer is also President of the Confederation of European Forest Owners (CEPF).

Martin Orrill British Gas

Martin's current responsibility is to assist in the development of renewable and low carbon products and services within British Gas. He has worked in the Gas industry for over 30 years in a range of engineering, operational, sales and marketing roles. Prior to joining the New Energy team he was National Product Manager for British Gas Services which helped develop a passion for low carbon and renewable opportunities. Examples of Martin's team's most recent projects in the low carbon space have been the partnerships and investments with Cerespower, Solar Technologies, Semplice Energy, Baxi and vPhase, his team's latest objective is to deliver the 5 Biomethane to Grid projects recently announced by British Gas. Martin is currently chairman of the SBGI's domestic combined heat and power section. He is a Director of the National Home Improvement Council and an Executive member of the Micropower Council.

Jaap Kiel ECN

Jaap Kiel graduated from the University of Twente, the Netherlands, and conducted a PhD study at the same university on simultaneous SO_x/NO_x removal from flue gases of coal fired boilers. In 1990, he joined the Energy research Centre of the Netherlands (ECN) and became involved in the execution, and later organisation and management of a broad range of experimental projects in the field of thermal conversion of solid fuels. This included pulverised-coal combustion, high-temperature coal gasification, biomass co-firing, and fluidised-bed combustion and gasification of biomass. His R&D efforts were focused on slagging and fouling, agglomeration, tar formation, biomass pre-treatment and upgrading, gas cleaning, and ash quality and utilisation. Currently, Jaap Kiel is programme manager Biomass and Coal and deputy unit manager Biomass, Coal & Environmental research at ECN. As such, he is managing the torrefaction development at ECN.

Per Ottosen Dong Energy

Per Ottosen graduated from the Technical University of Denmark and conducted a PhD study at the same university and National Laboratory RISØ on two phase flow in nuclear reactors during loss of cooling water. In 1986 he joined ELKRAFT Power company Ltd. and became deputy manager for the coal fired plant Avedøre unit 1 (250 MW). Responsible for coordination and design of fuel and environmental plants. Responsible for design and implementation of fuel systems, fly ash systems and desulphurization systems. Later on he became involved in a broad range of experimental projects in the field of using biomass as straw and wood. This included testing of new materials for super heaters in biomass boilers, new fuel feeding systems and flue gas cleaning systems. He has also been involved in burning coal in boilers with high steam temperatures 580/600 C and that in connection with the design of Avedøre unit 2 plant a multi fuel plant capable of burning heavy fuel, natural gas, coal and wood pellets. At Avedøre 2 he was responsible for design and specification of multifuel boiler, straw boiler, gas turbine and flue gas cleaning equipment. Further he has worked with wood and straw pellets manufacturing and biomass gasification. Currently Per Ottosen is working with the general transfer from fossil fuel use to biomass in Dong Energy. The work consists of project- and business development of the involved projects. Many technical issues are taken care of such as corrosion, fouling, deactivation of catalyst materials in SCR use, fuel logistic and fuel handling and feeding of fuel into the boilers

Yves Ryckmans GDF SUEZ

Yves Ryckmans graduated from the University of Louvain-la-Neuve, Belgium, and conducted a PhD study at the same university on modeling heat transfer in furnaces by finite elements techniques. In 1989, he joined Laborelec research Centre of Electrabel as a research engineer in the field of nuclear energy. From 1996 on, he initiated the development of fixed bed gasification and CFB gasification through several Belgian and European projects. In 1999 he became Head of the Biomass Competence Centre of Electrabel at Laborelec. This competence centre covers more than 10 years technical issues like co-firing biomass in pulverised-coal power plants, biomass gasification, biomass fuel quality, biogas applications and biomass sustainability verification. His R&D efforts were focused on CFD modeling of PC boilers, slagging and fouling, NO_x and SO_x emissions, biomass milling and upgrading, ESP, ash quality and utilization, as well as the verification of sustainability criteria for solid biomass. Currently, Yves Ryckmans is Chief Technology Officer Biomass at Laborelec. As such, he is managing research and services for bio-energy applications within GDFSUEZ Group.