

BIOMASS: JUST HOW SUSTAINABLE IS IT?

Institution of
**MECHANICAL
ENGINEERS**

19 November 2014
One Birdcage Walk, London
www.imeche.org/events/S1812

Power Industries Division
Seminar



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BIOMASS: JUST HOW SUSTAINABLE IS IT?

19 November 2014, One Birdcage Walk, London



BIOMASS WILL PLAY A KEY PART IN DELIVERING THE UK'S 2020 AND 2050 GREENHOUSE GAS REDUCTION TARGETS.

These targets will only be met if biomass is used economically and sustainably, therefore it is vital to understand issues faced by end users and suppliers and how to address these.

Attend **Biomass: Just How Sustainable Is It?** to get an insight into how business policy makers and the academic community are practically addressing sustainability requirements for biomass supply and managing supply chains to deliver genuine carbon reductions.

Discover what is really known with regard to the impacts and wider social implications of the greenhouse gas emissions targets.

This seminar will help you understand what can be done and what is being done to deliver real GHG reductions sustainably.

BENEFITS OF ATTENDANCE:

- **Hear** how inspection techniques are being revised
- **Learn** how to manage and ensure sustainable practices
- **Determine** the current issues in the sustainability debate
- **Identify** the real policy and sustainability questions
- **Understand** how these are being practically addressed in a global context

SUPPORTING ORGANISATIONS:

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WEDNESDAY 19 NOVEMBER 2014

- | | |
|--------------|--|
| 09:00 | REGISTRATION AND REFRESHMENTS |
| 09:30 | CHAIR'S WELCOME
George Stammers, Innovation Manager (Energy UK & Ireland), VEOLIA |
| 09:40 | THE ROLE OF BIOENERGY IN THE FUTURE UK ENERGY SYSTEM
Geraldine Newton-Cross, Bioenergy Strategy Manager, ETI <ul style="list-style-type: none"> • Overview of ETI and UK energy system • Role of bioenergy – potential/challenges etc • Projects to test potentials and realise objectives • Next steps |
| 10:00 | MYTH BUSTING LIFE CYCLE CARBON EMISSIONS
Marcelle McManus, Lecturer, University of Bath <ul style="list-style-type: none"> • LCA and a whole system approach gives a more reliable approach to determining energy and GHG balances of technologies and systems • Using LCA includes wide-ranging uncertainties, including those within tight system boundaries and external or more consequential approaches • Summary of current situation and how we best use the tools and technologies that we have to develop the most effective systems |
| 10:20 | SOCIAL MYTH BUSTING (EMPLOYMENT, FOOD VS FUEL ETC)
Patricia Thornley, Director, Supergen Bioenergy hub, University of Manchester <ul style="list-style-type: none"> • Identify the key socio-economic impacts of bioenergy systems • Quantitative data on employment, trade and land-use for biorefinery and bioelectricity systems • Key issues and constraints associated with land-use and related impacts for UK and overseas production |
| 10:40 | Q&A SESSION
Geraldine Newton-Cross, Bioenergy Strategy Manager, ETI
Marcelle McManus, Lecturer, University of Bath
Patricia Thornley, Director, Supergen Bioenergy hub, University of Manchester |
| 10:55 | NETWORKING REFRESHMENT BREAK |
| 11:25 | SUSTAINABLE BIOENERGY – A GLOBAL PICTURE
Adam Brown, Senior Energy Analyst, International Energy Agency <ul style="list-style-type: none"> • Large shares of bioenergy are a critical component of low carbon energy futures • Globally, markets for bioenergy are expanding, particularly in the EU and China • Reaching the shares of bioenergy envisaged in the scenarios will be a challenge logistically and economically. Can enough feedstock be made available sustainably? What role can new technologies play in delivering this future |
| 11:45 | THE RATIONALE FOR IMPORT OR INDIGENOUS
David Sanderson, Senior Biomass Fuel Developer, E.ON <ul style="list-style-type: none"> • Economics, investment decision making and regulation determine fuel sourcing strategy • Imported is not necessarily 'good' and 'bad' • Strategy needs to be assessed on a project by project basis |
| 12:05 | CLEAN WASTE WOOD AS BIOMASS FUEL FOR HEAT: THE SUSTAINABLE SOLUTION AND ITS CHALLENGES
George Stammers, Innovation Manager (Energy UK & Ireland), VEOLIA
Supply chain for waste wood <ul style="list-style-type: none"> • Clean or not: how do we achieve it? • Practicalities of supply: a worked example from feedstock to steam valve |
| 12:20 | Q&A SESSION
Adam Brown, Senior Energy Analyst, International Energy Agency
David Sanderson, Senior Biomass Fuel Developer, E.ON
George Stammers, Biofuels Development Director, Dalkia |
| 12:35 | NETWORKING LUNCH |

13:35	THE RWE MARKINCH CHP BIOMASS PROJECT John Farrell, Biomass Procurement Manager, RWE npower <ul style="list-style-type: none"> • Introduction to the project • Feedstock supply • Issues
13:55	BIOMASS SUSTAINABILITY IN PRACTICE Nigel Burdett, Head of Environment, Drax Group <ul style="list-style-type: none"> • Why sustainability is important • Drax programmes and biomass procurement • Sustainability in legislation • Drax policy and strategy
14:15	Q&A SESSION John Farrell, Biomass Procurement Manager, RWE npower Nigel Burdett, Head of Environment, Drax Group
14:30	NETWORKING REFRESHMENT BREAK
15:00	OVERVIEW OF PELLET PRODUCTION IN THE US SOUTHEAST Todd Bush, Senior Biomass Fuel Developer, Green Circle Bio Energy <ul style="list-style-type: none"> • Overview of pellet production in the US Southeast • Supply of fibre • Sustainability benefits of pellets
15:30	PANEL DISCUSSION: ARE WE HEADING IN THE RIGHT DIRECTION, AND WHAT IS NEEDED TO HELP US 'DO THE RIGHT THING'?
16:00	CHAIR'S CLOSING REMARKS George Stammers, Innovation Manager (Energy UK & Ireland), VEOLIA
16:05	CLOSE OF SEMINAR

Find out more about our speakers at www.imeche.org/events/S1812

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

Organising committee:

Renewable Power Committee

Advisory Board:

- George Stammers, VEOLIA
- David Maunder, Sinclair Knight Merz
- Patricia Thornley, The University of Manchester

SPEAKERS AND CONTRIBUTORS



BIOMASS IS BIOLOGICAL MATERIAL DERIVED FROM LIVING, OR RECENTLY LIVING ORGANISMS. IN THE CONTEXT OF BIOMASS FOR ENERGY THIS IS OFTEN USED TO MEAN PLANT BASED MATERIAL...

- Biomass Energy Centre

ADAM BROWN

SENIOR ENERGY ANALYST, INTERNATIONAL ENERGY AGENCY

Adam Brown has expert knowledge of renewable energy gained through over 35 years of experience in planning, developing and managing programmes and projects for governments and other clients in the UK and overseas. In his current role as a Senior Energy Analyst at the IEA in Paris, he has been the lead author of a major review of renewable energy policy (Deploying Renewables 2011), the IEA's Roadmaps on Biofuels for Transport (2011), on Bioenergy for Heat and Power (2012) and of a review of renewable heat technology and policy (Heating without Global Warming, 2014). His current projects include an in-depth review of the prospects and challenges for bioenergy to be published in 2015.

DAVID SANDERSON

SENIOR BIOMASS FUEL DEVELOPER, E.ON

David Sanderson has spent the majority of his career in the forestry sector managing a number of timber trading and sawmilling businesses. Geographically he has extensive experience in Slovakia, Scotland, New Zealand and British Columbia. Since May 2011, David has been developing international wood pellet supply chains for E.ON.

GEORGE STAMMERS

INNOVATION MANAGER (ENERGY UK & IRELAND), VEOLIA

George Stammers is responsible for investigating both current and potential new biofuels for development and optimisation in line with clients industrial and commercial processes. George is also responsible for developing Veolia's biomass management strategies in line with current and projected renewable fuel policy including sustainability. This role has involved him working extensively on quality management systems to ensure both environmental and sustainability compliance are aligned with ensuring fuel effectiveness in terms of cost and performance.

GERALDINE NEWTON-CROSS

BIOENERGY STRATEGY MANAGER, ETI

Geraldine Newton-Cross worked in the policy and evaluation team at the Waste and Resources Action Programme, before going on to manage a sustainable resource use programme at the Environment Agency. She has been with the Energy Technologies Institute (ETI) almost since its inception in December 2007, initially as Programme Manager for the marine energy programme area, then later launching the bioenergy programme area. In 2013, she became ETI Bioenergy Strategy Manager.

JOHN FARRELL

BIOMASS PROCUREMENT MANAGER, RWE NPOWER

John Farrell has worked in the bioenergy industry for 10 years with experience of small to large scale biomass organisations. John was initially involved with producing UK energy crops for large scale biomass plants in Yorkshire and Scotland before spending some time with the Forestry Commission as a Biomass Development Officer. In April 2012 John took up the role of Biomass Procurement Manager with RWE Innogy UK where he is currently responsible for fuel supply contracts as well as fuel measurement and sampling and sustainability, relating to the fuel supply chain for a 65mw dedicated biomass CHP plant.

SPEAKERS AND CONTRIBUTORS



**WOODLAND COVER
IN THE UK IS
NOW AROUND 3
MILLION HECTARES,
EQUIVALENT TO 13%
OF THE TOTAL LAND
AREA.**

- Forestry Commission

MARCELLE MCMANUS
LECTURER, UNIVERSITY OF BATH

Marcelle McManus is a lecturer within the Department of Mechanical Engineering, University of Bath. After finishing her PhD in Life Cycle Assessment (LCA) of hydraulic systems she worked in consultancy and then on a large EU project during which she spent much time in Brussels. During this period she became aware of a communication gap between engineers and policy makers and so completed an LLM in environmental law to try to help bridge it. Her current interest is the use of LCA to improve products and systems, primarily focusing on bioenergy, and the changing nature of LCA.

NIGEL BURDETT
HEAD OF ENVIRONMENT, DRAX GROUP

Nigel Burdett is responsible for optimising environmental policies and environmental investment programmes as an integral part of business strategy and for minimising costs of current and future compliance. This involves assisting with the development of the biomass programme at Drax with a responsibility for ensuring the procurement of sustainable biomass. Nigel is also responsible for implementing environmental management systems and providing advice and support on environmental issues across the site. Nigel has 35 years experience of environmental issues management within the electricity generating industry, advising senior management on implications of environmental policy compliance and strategic direction.

PATRICIA THORNLEY
DIRECTOR, SUPERGEN BIOENERGY HUB, UNIVERSITY OF MANCHESTER

Patricia Thornley has over 20 years' experience working in energy and environment projects in industry and academia. She works at the internationally renowned Tyndall Centre for Climate Change Research and her research interests focus on the nexus between land, climate change and energy. Patricia is Director of the UK's £4.5M SUPERGEN Bioenergy hub, which brings together stakeholders to focus on the research challenges associated with delivering sustainable bioenergy systems. As well as this, she leads the University of Manchester's bioenergy work within the Manchester Energy Initiative. She is a Chartered Physicist, with practical engineering experience in the power industry and particular expertise on life cycle assessment.

TODD BUSH
SENIOR BIOMASS FUEL DEVELOPER, GREEN CIRCLE BIO ENERGY

Todd Bush heads up sales and marketing activities at Green Circle Bio Energy including long and short term sales, sustainability issues and risk mitigation. Prior to his current position he worked as a Consultant in the Global Bioenergy Practice for Poyry Management Consulting in London where he helped develop and evaluate international biomass sourcing strategies for European utilities and developers. He has also worked in renewables development for a US utility and in forest management for the U.S. Navy. He holds an MS Hons in Forestry from the University of Florida and a BA Geography/Economics from the University of Texas.

BOOKING FORM

EVENT CODE: S1812AB

EARLY BIRD ENDS 17 OCTOBER

BIOMASS: JUST HOW SUSTAINABLE IS IT? 19 November 2014 One Birdcage Walk, London SW1H 9JJ

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Registration fees include entry to the sessions, refreshments, lunch and an event guide.

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Member, Institution of Mechanical Engineers	£238.00+VAT	£280.00+VAT	£
Member, supporting organisation	£238.00+VAT	£280.00+VAT	£
Non-member	£306.00+VAT	£360.00+VAT	£
Student/retired	£88.00+VAT	£74.80+VAT	£

PAYMENT DETAILS

Payment must accompany this registration form. Registration will be confirmed only on receipt of full payment.

PLEASE INDICATE METHOD OF PAYMENT:

☐ **Cheque** Cheques should be made payable to IMechE and crossed. Please note international delegates may pay only by credit card, BACS or banker's draft. A copy of the draft must accompany this form. It is the delegate's responsibility to pay any bank charges.

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Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

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Nottingham

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www.imeche.org/events/C6137



27 November 2014
London

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www.imeche.org/events/W6151



9 December 2014
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