

# A CIBSE CHP Group conference



## Biofuels for CHP in Buildings

**Tuesday 29th November 2005**

**Building Services Engineering Centre, CIBSE, Balham, London, SW12 9BS**

The combination of biofuels and CHP has the potential to be a leading renewable solution for many buildings. Changes to Part L and planning guidance are encouraging at least 10% CHP/renewables in new buildings. With increases in energy prices and the introduction of emissions trading, renewables are becoming a more viable options in existing buildings particularly when combined with CHP.

This one-day conference aims to demonstrate the technologies and techniques for the use of biofuels for combined heat and power (CHP) in buildings. The day will include a number of interesting case studies ranging from the use willow coppicing in Northern Ireland, to cattle slurry in Devon. The conference will focus on the design and implementation, of engineering solutions available in the market to help you achive renewable solutions in new and existing buildings.

### **The CIBSE CHP Group**

The Chartered Institution of Building Services Engineers (CIBSE) runs a special interest group on Combined Heat & Power (CHP). The group aims to increase awareness of the potential economic and environmental benefits of CHP and encourage building professionals to consider CHP as a matter of course. The CIBSE CHP Group provides an open forum for all building professionals, whether CIBSE members or not. The Group considers any technology that produces both heat and power. This includes standard approaches using reciprocating engines and gas turbines for single buildings or in community energy situations. New technologies such as micro turbines, micro-CHP and fuel cells are also covered. As part of the group's commitment to keeping the industry informed, the group will hold a range of events from major seminars to site visit [www.cibse.org/chp](http://www.cibse.org/chp) for details.

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# Biofuels for CHP in Buildings

**12:30**

## **CHP technology type 1 — Biogas combustion in reciprocating engines**

- ◆ How biogas compares with natural gas when used in spark-ignition gas-engines
- ◆ Efficiencies, maintenance, lifetime
- ◆ Landfill gas and sewage gas are established fuels but usually for electricity only or with heat used only for the process
- ◆ Biogas from wood chips  
*Alan Barlow, EnerG*

**12:50**

## **CHP technology type 2 — Use of liquid biofuels in reciprocating engines**

- ◆ Biodiesel and CHP
- ◆ Efficiencies, maintenance, lifetime  
*Niklas Haga, Senior Development Engineer, Wartsila*

**13:10**

## **Questions**

**13:20**

## **LUNCH BREAK**

**14:00**

## **CHP technology type 3 — Indirectly-fired gas turbine systems**

- ◆ Principles
- ◆ Efficiencies
- ◆ Applications  
*David Pritchard, Talbott's Biomass Generators*

**14:20**

## **Case Study — Southwark CHP biofuels project**

- ◆ Overview of project
- ◆ Principles of AD
- ◆ Project development issues  
*Chris Dunham, SEA / RENU*

**14:40**

## **Case study — Willow coppicing on Brookhall Estate Londonderry, Northern Ireland**

*Michael Doran, Business Development / John Gilliland, Company Chairman & Proprietor, Brook Hall*

**15:00**

## **Questions**

**15:10**

## **Tea**

**15:40**

## **Case Study: Bullshit — the problems with specifying proportions of cattle slurry in the feedstock of biogas plants**

*Jason Prior, Operations Director, Summerleaze*

**16:00**

## **Case Study BedZED Project**

- ◆ Overview of project
- ◆ Gasification, heat and power production
- ◆ Operating experience
- ◆ Integration into private wire network  
*Peter Wright, Development Manager, BedZED*

**16:20**

## **Funding Biofuels for CHP**

*Tim Brooks, Senior Consultant, BRE Environment & Secretary of the CHP Group*

**16:35 – 16:50**

## **Questions and Chairman's round up followed by end of day**

# Biofuels for CHP in Buildings

**09:15**

## Arrival and coffee

**09:45**

## Welcome and introduction

- ◆ An overview of the CHP Group
- ◆ Why CHP & Biofuels?  
Conference Chairman: *Phil Jones, Chairman CIBSE CHP Group*

**10:00**

## Keynote speech

### The future of biofuels and CHP in the national context

- ◆ What is the contribution that biofuels could make to the energy mix?
- ◆ What are the economics compared to other renewables?
- ◆ The role of CHP in biofuels
- ◆ Development of the biofuels industry
- ◆ Current policies on biofuels  
*Professor Paul Ekins, Royal Commission on Environmental Pollution*

**10:20**

## Regulatory issues and economics

- ◆ Results from the Biomass Task Force
- ◆ Renewables Obligation Certificates
- ◆ Levy Exemption Certificates
- ◆ Planning Consents, Environmental Impact
- ◆ Enhanced capital allowances  
*Sue Finlay, Policy Team Leader, Crops for Energy, DEFRA*

**10:40**

## Overview of biofuels available for use in CHP for buildings

- ◆ Waste materials: wood & agricultural waste, municipal waste and sewage
- ◆ Fuel crops: coppice, miscanthus grass, rape seed oil, sugar beet
- ◆ Fuel processing: turning these sources into usable fuels
- ◆ Fuel storage drying, chipping and pelletising  
End products: solids, liquids and gases for a CHP applications
- ◆ Fuel availability in cities, regions and internationally
- ◆ Embedded energy needed for production, processing and transport
- ◆ Costs/benefits  
*Chris Jessop, BRE Associate*

**11:10**

## Questions

**11:20**

## Coffee

**11:50**

## Energy conversion technologies

- ◆ Reciprocating engines using biogas
- ◆ Reciprocating engines using liquid biofuels
- ◆ Gas turbines using biofuels
- ◆ Indirectly fired gas turbines
- ◆ Fuel cells using biofuels
- ◆ Larger-scale steam turbine (with community heating)  
*Phil Owen, Eco Solutions UK Ltd*

**12:10**

## Design review of biofuel CHP

- ◆ Technical risks
- ◆ Economic risks
- ◆ Environmental risks  
*James Dickson & Amber Jenkins, PB Power Energy Services*

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Please post or fax the booking form below to:

CIBSE Services Ltd, 222 Balham High Road, London SW12 9BS

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## Booking Details

Registration includes course notes, light lunch and refreshments

**CIBSE Member Rate: Membership No:**

Please reserve  ticket(s) at £170 each + £29.75 VAT = £199.75

**Non-Member Rate:**

Please reserve  ticket(s) at £250 each + £43.75 VAT = £293.75

**Yes, I would like to join CIBSE as an Affiliate Member at £85 (membership until Jan 2007) MAEV05**

### Address Details

Title: \_\_\_\_\_ First name: \_\_\_\_\_ Surname: \_\_\_\_\_

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**Payment Method** Due to the high level of non-payments of delegate fees it has unfortunately become necessary to ask for payment in advance from all delegates, including members.

I enclose a cheque totalling £ \_\_\_\_\_ (Payable to CIBSE Services Ltd)

Please debit card number below the amount of £ \_\_\_\_\_

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### Applicant's declaration for those applying for CIBSE membership

*I confirm that the information contained in this application and supporting documents is correct. I agree that, in the event of my election to any class of membership of the Chartered Institution of Building Services Engineers, I will be governed by the provisions of the Royal Charter and By-laws as they are now formed or as they may be hereafter altered; that I agree to abide by the Code of Professional Conduct, and do all in my power to advance the objects of the Institution; providing that whenever I shall signify in writing to the Secretary that I wish to withdraw from the Institution, I shall, after payment of any arrears which may be due by me at that period, be free from this obligation.*

Signed \_\_\_\_\_ Date \_\_\_\_\_

### Booking conditions

Notification of cancellation **in writing only** will be accepted up to 14 days in advance of the event, but an administrative charge of 15% + VAT will be made. After that date no refunds will be made although substitutions will be welcomed. The Institution's liability in the event of a seminar being cancelled is limited to the refund of the full fee.

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