

European Sustainable Energy Communities - effective Integrated Local Energy Action today (Sustainable NOW)

(Contract number – IEE/07/752/SI2.499210)

Study Visit to Woking - Minutes

Date: Thursday 26th February 2009

Venue: HG Wells

9.00am 10.30am

Welcome to Woking by Ray Morgan, Chief Executive of Woking Borough Council. Presentation on Woking's Climate Change Strategy and Energy Projects.

Woking's location twenty-five miles to the South West of London has played an integral part in the Borough's history as well as in its current development. Combining an attractive environment, excellent transport links by rail, air and road as well as locally high standards of education, workforce skills and business support, the Borough is regarded as a quality location for living and working. This is further enhanced by its reputation as the most energy efficient local authority in the UK.

Woking's climate change strategy was first published in 2002, revised in 2005 and 2007. The principles of the Climate Change Strategy for Woking incorporate three overarching topics:

- Reduction of borough-wide CO₂ equivalent emissions
- Adaptation to climate change
- Promotion of sustainable development

Key components of Woking's success are:

- Corporate Commitment – in the opinion of Woking's community, environment is the second priority after affordable housing
- Cross Political Party agreement and coordination
- Corporate Energy Efficiency Strategy from 1990/91 with a reduction target of 40% within ten years supported by financial structures to implement a range of initiatives
- Energy Conservation & Solar Centre – long term relationship
- Public Private Partnership "ESCO" established 1999 - Thameswey Limited and Thameswey Energy limited
- Beacon Council 2005- 2006 – Sustainable Energy

An additional strength is the community's commitment and empowerment as in the Council communication, the Local Agenda 21 and the cooperation with schools. Future projects of Woking are "Woking Cycle Town" and the "Car Club".

10.30am 11.00am

Outline of Objectives and Programme for Study Visit (Andreas Kress)

The study tour is part of the WP Capacity development. The work package addresses improvement of community partners' capacity in the field of sustainable energy, based on an assessment of their specific needs. Two groups of beneficiaries were present – a circle of learning and a circle of excellence. Exchange between these circles forms a core element of capacity development. The pooling of know-how is going to benefit the development of LEAPs and instruments, containing peer-to-peer exchanges through study tours.

The visit is one of two study visits to communities advanced in the topic, where participants visit model projects and learn from 1st hand observation. The study tour focuses on various types of sustainable energy implementation and local stakeholders.

However, participants should look at:

1. the planning process:
 - various steps leading to measures (from political resolution to implementation and monitoring)
 - stake-holders involved
 - time frame
2. the frame conditions for implementing measures (“enabling environment”)
 - legal aspects (building code, permits, etc.)
 - economic aspects (subventions, etc.)
 - social aspects (who benefits)
3. institutional setting (how does Woking deal with “Climate Change”)
4. single measures in the different fields of action (technical aspects, impact, etc.)

11.15am 1.30pm

Tour of Woking’s sustainable and renewable energy projects

The following projects have been visited:

- Brockhill
- Oak Tree House
- Town Centre Energy Station
 - Light Box

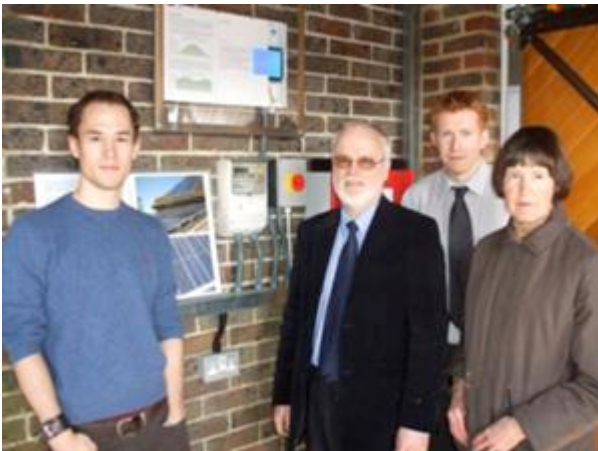
1. Brockhill



Brockhill is an ‘extra care’ sheltered housing scheme for elderly residents operated by Woking Borough Council. There are 52 residential units. It also incorporates community ‘drop-in’ facilities. The building itself was built in the mid-1980s and the CHP and PV technologies were installed as a retrofit in 1997/8 and 2001 respectively. The technologies combined provide all year round heating, hot water services and electricity to the residents and visitors of Brockhill.

Woking Borough Council was one of the first local authorities to provide private wire residential Combined Heat and Power (CHP) and combined CHP and photovoltaic systems. It boasts a large scale domestic solar photovoltaic installation that converts daylight into electricity and was installed by BP Solar Ltd. The innovative and unique combination of technologies enables Brockhill to receive sustainable energy from the CHP plant and renewable energy from the photovoltaic roof. This approach makes a positive contribution to the Council’s Climate Change Strategy target of purchasing 20% and 100% of the Council’s electrical energy requirements from renewable energy resources and sustainable energy resources respectively by 2010-11. As the development provides a local community energy system and because of the way it functions, Woking has managed to avoid charges and costs which are imposed on power generators and suppliers accessing the national grid.

Oak tree house



Oak Tree House in Knaphill, Woking is a three bedroom detached house that has been refurbished as a show house, for local people to gain an insight in to how they might reduce their own domestic energy and water usage.

The project covered several aspects of sustainable living and these included:

- Sustainably sourced furnishings

- High level of insulation
- High-efficiency boiler and heating controls
- Solar thermal hot water
- Solar PV
- Passive solar harnessing
- Rainwater harvesting
- Water conservation measure, such as aerated shower and aerated taps.
- Drought resistant plant species in the garden

3. Town Centre CHP



The town centre Combined Heat and Power (CHP) station is the first commercially operating energy station of its kind in the country. The CHP station uses combined heat and power technology, together with heat-fired absorption cooling to produce environmentally friendly energy services. The station provides heat, power and cooling to town centre buildings by distributing electricity via private wire and heat and chilled water services via private pipe networks (Gas fired 1.3 mW electrical, 1.6 mW heating; 1.2 mW absorption cooling, island generation). It provides energy to:

- Private Supply network
- Council Buildings & Car Parks
- Businesses
 - Holiday Inn
 - Big Apple

It was the first project of Thameswey Energy Limited, a joint venture company of Thameswey Limited (a company wholly owned by Woking Borough Council) and Xergi Limited of Denmark. Thameswey Energy Limited aims to finance, build and operate small scale CHP stations (up to five megawatts) to provide energy services by private wire and distributed heating and cooling networks to institutional, commercial and residential customers. The Woking Town Centre CHP station is just one of a range of sustainable and renewable energy projects delivered by Thameswey Energy Limited, helping to meet the Council's Climate Change Strategy objectives. Projects outside the Borough are also investigated, of which profits can be used to improve the environment within the Borough of Woking and benefit its residents.

The Lightbox



The Lightbox takes its responsibility to the environment seriously. The building generates some of its own electricity from photo voltaic cells on the roof. The rest comes from the town centre combined heat and power station – a particularly low carbon way of generating power,

heat and cooling. In order to minimise resource use, it is naturally ventilated and has all sorts of touches like self-stopping taps and lights that turn off when you leave the room.

The main materials are gold - and silver - coloured aluminium tiles on the facade facing the town centre, while the canal side of the building is clad in timber that will weather to a silver colour. The main entrance uses full-height glass, creating a light and airy space to welcome people into the building.

The stone walls from the ground level of the building are continued into the garden, where a beautiful avenue of blossom trees create shady alcoves surrounded by fragrant plants. There's also seating for the cafe and fantastic views along the canal.

Inside, the triple height entrance area immediately allows you to see all the main spaces in the building. Flooded with light, there are stunning views to outside in surprising places throughout the building.

Further information:

<http://www.woking.gov.uk/environment/climate/Greeninitiatives/sustainablewoking>

3.15pm

4.30pm

Financing action on climate change – the Woking ESCO Model **A presentation by John Thorp, Chief Executive of Thameswey Ltd**

Thameswey Limited is an energy and environmental services company which is wholly owned by Woking Borough Council. It was established in February 1999 to:

- promote energy efficiency, energy conservation and environmental objectives by providing energy and/or environmental services
- develop and implement new technologies for the production and supply of energy
- produce and supply energy (and any related by-products) in all its forms
- acquire and hold interests in the share or loan capital of any company or corporation and in particular, companies engaged in energy and/or the environment business
- provide financial, managerial and administrative advice services and assistance
- make facilities and services available for its customers and customers of companies in which it holds an interest.

Thameswey Limited acts as a contractor to Woking Borough Council to invest in combined heat and power plant (energy stations), to sell heat and power in an environmentally friendly way, with a view to improving the environment within the Borough. In May 2000, Thameswey Limited invested in its joint venture company, Thameswey Energy Limited, to finance the first energy station in Woking Town Centre. Since then, Thameswey Energy Limited has continued to deliver a range of sustainable and renewable energy projects in order to meet the Council's Climate Change Strategy objectives.

An example of an ESCO is Thameswey Energy Ltd., a public/private joint venture Energy Services Company. Thameswey designs, finances, builds and operates local community energy systems for both new and existing developments. Thameswey already owns and operates a number of local community energy systems on private wire district or distributed energy networks in Woking. These include the Woking Town Centre and Woking Park district energy systems as well as a number of residential local community energy systems

around the Borough based on CHP, fuel cell, photovoltaic, thermal storage and heat fired absorption cooling technologies.

Woking Borough Council's approach to local sustainable energy systems is to supply customers on private wire combined heat and power (CHP) networks as well as implementing energy and environmental services in both the public and private sectors. The key to the Council's success so far is the combination of technical innovation (such as CHP, absorption cooling, private wire systems etc); partnership with the private sector; and the use of the national scheme for electricity trading. The starting point is an energy services concept.

The energy services concept is not the provision of electricity and gas but energy services, i.e., heating, cooling, lighting, power, etc., and intrinsically includes the primary energy plant. Thameswey Energy Ltd's approach to energy services is to use the customer's own brown energy costs to calculate and provide them with a green energy services proposal in place of their brown energy supplies. Green energy is more expensive than brown energy because of the higher cost of the plant but Thameswey Energy Limited is able to provide green energy services for the same costs as brown energy services through the payback on the green energy plant by the sale of heating, cooling and electricity to the customer.

Key Components of Woking's Success

- Borough owns the land
- Strong political commitment
- Access to finance
- Start small and develop....

<http://www.thamesweygroup.co.uk/>

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2nd COL Talks and COE Talks - Minutes

Date: Friday 27th February 2009

Venue: HG Wells

9.00am 4.00pm

COL – COE partner exchange workshop

4.00pm 4.30p

Visit conclusion (Holger Robrecht and Andreas Kress)

The facilitators pointed out that the results show a big potential of support measures within the project. Hence, for most of the needs indicated by the specific partners corresponding support has been identified. Practical instruments foreseen to implement support measures within the project (staff exchange, training, site visits, etc.) seem to be quite adequate.

Feed back from participants regarding the visit and the COL – COE partner exchange workshop were positive. Participants appreciated the outcome, and expressed that they learned a lot from the exchange and especially from the visits. Particularly the awareness raising, communication and information activities (notably the Oak Tree House, etc.) were mentioned by the participants. At the same time the financing strategy of Woking (the ESCO Model) was considered as main success factor. Finally the participants were impressed by the political and personal commitment of people involved in energy and climate policies in Woking. Participants expressed their thanks to Woking for the very well organised event.

The facilitators thanked the whole team of Woking for the excellent organisation of the visit and the COL – COE partner exchange workshop

A second study visit is planned to take place in Munich in 2010.