



Case Study 2:

Woking Borough Council Energy Services

1. Activity

Energy efficiency and local sustainable energy generation.

2. Summary

While world leaders continue to debate environmental issues on a global scale, a small borough council in leafy Surrey has been tackling global warming locally. Over the past 11 years Woking Borough Council has implemented a series of sustainable energy projects, including the UK's first small-scale combined heat and power (CHP) heating and heat fired absorption cooling system, the first local authority private wire (direct supply to householders) residential CHP and renewable energy systems, the largest domestic integrated photovoltaic/CHP installations, the first local sustainable community energy system, the first fuel cell CHP system and first public/private joint venture Energy Services Company (ESCO). These have resulted in savings of nearly £4.9 million for the Council, and further savings for householders and businesses in the Borough. Woking is recognised as the most energy efficient local authority in the UK, and in recognition of its pioneering energy services work the Council gained the Queen's Award for Enterprise: Sustainable Development 2001, the only local authority ever to be awarded a Queen's Award for Enterprise.

3. Key facts

Since the Council implemented its energy and environmental policies in 1990/91 (the base year), it achieved its target to reduce energy consumption by 40% in 10 years from 1991/92 to 2000/01. In 2002, the Council's energy efficiency policy was replaced by the Climate Change Strategy for Woking, not just for Council buildings and transport but for the Borough as a whole, shifting the focus from energy savings in kWh's to savings in tonnes of CO₂ emissions as well as adapting to Climate Change. The key target from this is to achieve an 80% reduction in Woking's CO₂ equivalent emissions of its 1990 level by 2090, in line with the Royal Commission on Environmental Pollution's targets.



Solar photovoltaic array
at Brockhill sheltered
housing scheme, Woking
Borough Council.

4. Achievements (Data)

Summary achievements against target over 11 years from 1991/1992 to 2001/2002 – energy and emissions savings from Council buildings and transport:

Energy consumption savings	170,170,665 KWh	43.8% saving
Carbon dioxide CO ₂ emissions savings	96,588 tonnes	71.5% saving
Nitrogen oxides NO _x emissions savings	319.1 tonnes	68 % saving
Sulphur dioxide SO ₂ emissions savings	976.6 tonnes	73.4 % saving
Water consumption savings	340,011,000 litres	43.8% saving
Savings in energy and water budgets	£4,889,501	34.3% saving

5. Potential for replication

To get a rough estimate of the potential impact in the South East region if all Local Authorities introduced similar measures to Woking, households have been used as a proxy. Woking has 40,027 households compared to a total of 3,388,838 households in the rest of the region (2002 ACORN figures), giving a multiplication factor of 84.7 to arrive at regional estimates.

Category	Savings over 11 years - Woking	Potential savings over 11 years – South East
Energy consumption savings	170,170,665 KWh	14,413.5 GWh
Carbon dioxide CO ₂ emissions savings	96,588 tonnes	8,181,000 tonnes
Nitrogen oxides NO _x emissions savings	319.1 tonnes	27,000 tonnes
Sulphur dioxide SO ₂ emissions savings	976.6 tonnes	82,700 tonnes
Water consumption savings	340,011,000 litres	28,799,000 m ³
Savings in energy and water budgets	£4,889,501	£414,141,000

6. Opportunities and barriers

Woking regards climate change as a reality that cannot be ignored, and sees local authorities having a key role to play in setting ambitious but achievable targets. The various national and international targets that have been set are all likely to be inadequate, and if strong action is not taken to reduce greenhouse gases over the next 30 years there will be an irreversible effect on the global climate. Already weather patterns have become more extreme with high winds, floods and high temperatures affecting Woking and many other parts of the UK, and there has been a blurring of seasonal changes in recent years.

The Royal Commission on Environmental Pollution has predicted that the target reduction in greenhouse gases, expressed as CO₂ equivalent emissions, should be 60% by 2050 and 80% by 2100. These targets have been adopted by Woking's Climate Change Strategy. Having been pioneers in this field it is now possible for others to learn from Woking's experience. For example the outcome of a decade of innovative work was the formation of an Energy and Environmental Services Company called Thameswey Ltd to take forward the work. The key concept of this is the provision of energy services (i.e heating, cooling, lighting and power etc) rather than just electricity or gas. Thameswey is wholly owned by Woking Borough Council and it works by

entering into public/private joint ventures to deliver energy and other environmental strategies and targets.

Although green electricity tends to be more expensive than conventional 'brown' energy, Thameswey can be competitive by the sale of heating, cooling and electricity directly to the customer. Locally supplied combined heat and power (CHP) can provide efficiencies of up to 90%, in comparison with the central power stations/national grid system which can be as little as 22% efficient at the point of use due to thermal energy wasted at power stations and losses in the grid.

Although Woking has avoided incurring penalty costs by utilising private wire networks and a local trading system, the existing regulatory regime limits the size of the local sustainable energy system and also the number of domestic customers that can be supplied with low cost green energy. This in turn limits the number of fuel poor households which could be provided with affordable energy. Locally embedded generation could supply all of the country's energy needs, and Woking argues that what is needed is a progressive move towards this goal. A key easy step for the government would be to increase the supply limits for local exempt suppliers to supply more customers, particularly domestic customers, with local sustainable and renewable energy.

7. Sources / contacts

Climate Change Strategy, Woking Borough Council, March 2003

An Innovative Climate at Woking, Woking Borough Council, 2002

Woking: Local Sustainable Community Energy and Fuel Cells, Allan Jones MBE, Woking Borough Council, April 2003.

Website: www.woking.gov.uk

For further information:

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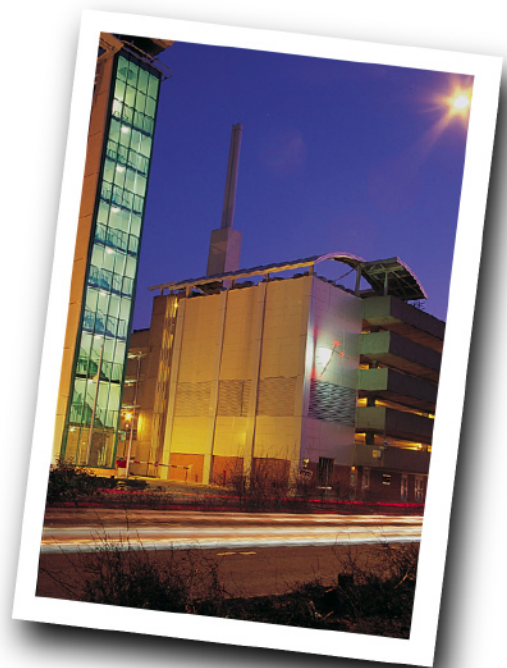
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Project Partners



Project Funders



Woking town centre CHP station, Woking Borough Council.