

Sustainability Committee

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Inquiry into carbon reduction in Wales:
Residential carbon reduction

18 October 2007

Woking Borough Council/Thamesway Limited.

1.0 Purpose

1.1 This paper summarises the work carried out by Woking Borough Council over recent years in its response to climate change, and in particular, its actions aimed at reducing the level of carbon dioxide emissions arising from occupation and use of dwellings within the borough.

1.2 The paper has been prepared as a joint submission on behalf of Woking Borough Council and its energy and environmental services company Thamesway Ltd. It examines the opportunities available to a local authority to influence the level of household carbon emissions within its local communities, and identifies some of the critical factors that have been significant in enabling the local authority to play an active role in leading on carbon reduction. The evidence submitted to the Assembly in this paper concerns Woking's actions to reduce household carbon emissions in four areas of influence:

Community leadership;

Asset management;

Regulatory powers; and,

Council enterprises.

1.3 Whilst Woking has also worked to reduce carbon emissions from public and private transport and waste production, this has not been included in this paper.

2.0 Background

2.1 Woking is located in Surrey, approximately 30 miles south west of central London. The borough covers an area of 6,360 hectares (just under 25 square miles) and has a population of a little over 90,000. Over 60% of the land area in Woking is designated Metropolitan Green Belt, and much of this has high levels of protection as common land, habitat of national and international importance and/or floodplain.

2.2 Woking town centre is relatively 'young' having formed and developed largely over the last 150 years. Elsewhere in the borough there are a number of smaller settlements each with its own character and identity. Despite being located in an economically buoyant region with low levels of unemployment, housing affordability is poor, relative to the national average, with the current ratio of house prices to earnings in Woking 9.5:1. Expressed as an affordability index, Woking is ranked 240th out of the 354 districts in England and Wales.

2.3 Membership of Woking Borough Council comprises 36 locally elected Councillors, and since May 2007 there has been a Conservative majority. Woking is not a unitary authority and has no statutory responsibility for highways or education (these services being provided by Surrey County Council).

2.4 Since 2000, the Council has defined its key corporate priorities as:

Decent and affordable housing

A clean, healthy and safe environment, including reducing greenhouse gases and adapting to climate change

Improving the health and wellbeing of the community

2.5 For over 10 years Woking has led on a range of initiatives aimed at improving the sustainability of life in the borough. Notable achievements include:

Woking is believed to be the first UK local authority to adopt a comprehensive climate change strategy on a scale that is likely to meet the Royal Commission on Environmental Pollution targets of 60% reduction in CO₂ equivalent emissions by 2050 and 80% by 2100.

Woking has the UK's first sustainable energy 200kWh fuel cell.

The first heating and cooling sustainable energy station in the country is installed in Woking town centre.

2.6 In 2000 Woking was granted the Queen's Award for Enterprise in recognition of its work on sustainability. Woking was awarded Beacon Council status for Sustainable Energy in 2005 and earlier this year, Beacon Authority status for Promoting Sustainable Communities through the Planning Process. The Council has also been short listed for next year's Beacon theme on Climate Change.

3.0 Reducing carbon emissions through community leadership

3.1 The Council has set out its plans for reducing Woking's carbon emissions in its Climate Change Strategy. Adopted in 2002, the Strategy commits the Council to take action across all of its services to reduce the borough's carbon footprint by 60% by 2050 and 80% by 2100 (using 1990s figure of approximately 1MtCO₂ equivalent emissions per annum as the baseline). The strategy includes an implementation plan which identifies short, medium and long term actions and progress on these actions is reported by the Council's Chief Executive to regular meetings of a cross-party working group chaired by the Leader of the Executive. Woking's Local Agenda 21 and Chamber of Trade representatives also participate in the working group.

3.2 The Climate Change Strategy emphasises the opportunity (and the responsibility) for local authorities to take action locally and make a serious contribution towards reducing carbon emissions in the communities they serve. Moreover, Woking has made a public commitment to reduce carbon emissions by its inclusion in the Council's corporate priorities. These priorities are restated every year in the Council's Service and Performance plan, a copy of which is distributed to every household in the borough, and are displayed prominently in the Civic Offices reception area.

3.3 However, Woking believes that statements of intent are worthless if they are not backed up by credible evidence of action. Hence, the Council has sought to demonstrate its role as a community leader both through setting an example in the management of its own stock and assets and through widespread engagement with the communities it serves. In addition, the Council has provided a physical manifestation of this commitment in its buildings and open spaces. Examples include the construction this year of a canopy over a public square at Woking railway station. The concourse has for many years provided an unappealing entry point to the town centre. Through a combination of Section 106 Planning funds, grants and Council investment, the public realm has now been transformed with a glazed canopy and improvements in pedestrian access and landscape features. Significantly, the Council took the opportunity to incorporate over 35,000 photovoltaic cells laminated in the canopy's glazing. This will generate over 50,000 KWh/year and save in excess of 41 tonnes of CO₂ emissions a year.

3.4 Whilst the canopy provides a bold civic statement about green energy production, the Council acknowledges that for the borough as a whole, it is vital that every household can contribute in some way by reducing their own carbon emissions. Hence it has sought to engage the community through a wide range of initiatives:

Home Energy Conservation Act (HECA) - the Council has reported HECA figures for the housing in Woking every year since 1996. Over the period 1 April 1996 to 31 March 2006 year-on-year improvements in energy efficiency have been reported, with a total improvement of 32.6% over this time. In the last year of reported figures (2006) this equates to a reduction in domestic CO₂ emissions of over 15,000 tonnes. During this time, the Council has adopted a number of initiatives to help drive up domestic fuel efficiency and contribute to tackling fuel poverty. An example is "Winter Warmer", an insulation programme run in partnership with Thamesway Limited, EAGA Partnership and Instafibre. Winter Warmer provides free insulation measures to householders over 60 or in receipt of a qualifying benefit and is funded through a revenue recycling fund from Thamesway's commercial operations. Over 4489 properties have benefited from this scheme.

Energy Efficiency Questionnaires - during 2006 every household in the borough was sent a Home Energy Questionnaire. Of the 39,000 distributed, 13,000 questionnaires were returned and the results used for targeting improvements. Householders that completed the questionnaire received a Home Energy Check report with energy saving advice tips and signposting to available grants.

Woking Solar Frontier -Energy Saving Trust funding has been secured to provide an advice and promotional service for the borough's residents. The primary purpose is to increase the installation of domestic solar hot water panels, although advice is also provided on a wide range of energy efficiency measures. Woking Solar Frontier is delivered through a telephone hotline, online information and a series of public events, including open house sessions where residents can visit people who have installed solar panels and hear first-hand their experiences. The project will run until January 2008.

Woking's Low Carbon Demonstration House - this project is currently underway and when completed later this year will provide a demonstration of retro-fitted energy and water efficiency measures and domestic renewable energy. The house (a three bedroomed 1950's former police house) has been acquired by the Council and is currently undergoing a 'green refurbishment'. On completion it will be open to the public, and equipped with interpretation information.

1000 Low Carbon Homes Programme - Woking is shortly to commence an ambitious 5 year plan to 'recruit' a thousand households across the borough and work with them to provide focused support and assistance in reducing their domestic carbon emissions. The expectation is that these households will in turn act as community 'champions', encouraging friends and neighbours to make changes in behaviour and lifestyle, as well as improving the physical characteristics of their homes. A key component of the programme is ensuring that dedicated supply chains for low carbon and water efficient products are developed to make products more easily accessible to householders.

Local Agenda 21 - the Council has a strong relationship with the Woking LA21 group of volunteers. It has worked closely with the group and provided financial support and benefit in kind for many of the group's activities, including numerous talks and debates, solar energy promotional events in the local shopping centres and the publication of a Greener Homes Guide written for householders who are planning home improvements. This year, Woking Energy Meter Project was launched, a LA21/Woking Borough Council joint

initiative. The project lends small 'plug in' electricity meters to householders to enable them to accurately monitor electricity consumption of individual household appliances. Participants are encouraged to record the figures over a period of time before passing the meter on to a friend or neighbour.

4.0 Asset management

4.1 In the early 1990s the Council adopted its first Energy Efficiency Strategy. This was largely in response to a desire to drive down the council's expenditure on energy. Since 1992 the Council has produced an annual Energy Efficiency Report which summarises its progress on energy efficiency and carbon reduction. Headline figures for the period up to April 2006 include:

A reduction in the Council's energy consumption by 51% and in carbon dioxide emissions by 81% (equivalent to 144,380 tonnes CO₂)

In 2006, 94% of the energy purchased by the Council came from low carbon sources. 4% of the Council's electricity was from renewable sources (this figure is significantly lower than in 2005 when 11% was generated from renewable sources, due to a technical problem with some of the Council's photovoltaic panels).

4.2 Woking has achieved these results through investment in both improvements in energy efficiency of its public buildings and residential stock, and in decentralised (local) energy supply and distribution networks.

4.3 Woking's decentralised energy networks comprise a number of low carbon energy sites (primarily gas-fired Combined Heat and Power [CHP]), renewable energy generation (mainly photovoltaic [PV] energy), and a distribution network of private wires, heat and chilled water pipes. In some cases, such as Priors Croft in Old Woking, the energy demands are met by on-site generation. Here, 33 warden-assisted one bed flats are supplied by a small on-site CHP unit which produces 22kW of electricity and 50kW of heat. On the roof, PV arrays generate 51kWp of electricity. Each individual flat is served by private electricity supply wire and an electricity meter. A similar model is used at a larger site, Brockhill extra-care housing. Here, 81kWp of electricity is generated by roof mounted PV and combined with on-site gas fired CHP, meaning Brockhill is self-sufficient in energy and saves over 30 tonnes of CO₂ a year.

4.4 Woking town centre energy station was constructed in 2000 to provide low carbon electricity, heat and cooling to large buildings in the town centre. Incorporated into the structure of an existing multi-storey car park, the station generates 1.35 MW of electricity and 1.6MW of heat, much of which in summer months is converted to chilled water for comfort cooling. The energy station supplies a 150 bed Holiday Inn hotel, Woking YMCA, a conference centre and entertainment complex, the Council's Civic Offices and The Lightbox (a new museum and art gallery). In addition, construction is currently underway of 126 one- and two-bed apartments to be sold on the open market which will also be supplied by the energy station. Elsewhere in the borough, a hydrogen fuel cell CHP is used to generate electricity and heat for the Council's swimming pool complex.

4.5 The Council as a land owner/developer is seeking to bring forward new housing which demonstrates exemplary standards for carbon reduction. In the Hoe Valley, contaminated land in the flood plain is to be remediated and developed to provide 154 new family houses and apartments. Whilst the development serves a number of strategic purposes, including securing extensive flood defences and providing purpose built accommodation for a number of community organisations, the Council has required the dwellings to be designed to maximise the use of passive solar energy, to be connected to an existing CHP station and to have PV integrated into roofs.

5.0 Use of regulatory powers

5.1 Woking's current Local Plan was adopted in 1999, and the origin of many of its policies can be traced back some years prior to that. The Local Plan provides no strong local policy context through which to secure significant carbon reductions in new development. Furthermore, as adoption of a new Local Development Framework (LDF) Core Strategy is unlikely prior to 2008 at the earliest, the Council was faced with a policy vacuum in which to achieve its carbon reduction ambitions for new development. Consequently, in 2003 the decision was taken to introduce voluntary guidance for developers as an interim measure for increasing awareness of the need to address climate change mitigation and adaptation. Woking's Climate Neutral Development Guidance was published in July 2004 and sets out five key areas of focus for promoting carbon reduction and adaptation in new development.

5.2 In December 2004 the Surrey Structure Plan was adopted. Influenced by policies for renewable energy such as the London Borough of Merton's, the Structure Plan introduced its policy SE2, which sets out three requirements:

That development should be designed to reflect best practice for energy efficiency;

That a minimum of 10% of predicted energy demand must be generated from renewable sources on site; and,

That combined heat and power (CHP) be encouraged, with an expectation that all development over 5,000m² connect to it.

5.3 Significantly, Policy SE2 developed the Merton policy by including residential development, and removing the 1,000m² threshold. In short, it applies to all development.

5.4 Since March 2005 Woking has used this policy with increasing rigour. Initially, it was only applied to major development schemes, but with increasing understanding and confidence the threshold has been steadily lowered and for the last 12 months or so has been applied to all new commercial and residential development. Significantly, this has included a number of development proposals that may otherwise have been considered 'hardhard to treat', including:

Single dwellings

Conversions of listed buildings

Development within Conservation Areas

High density single use commercial buildings

5.5 This broadening of the policy's application has been possible because the Council has invested time and effort in communicating its expectations to developers. Key to this has been:

Early contact with the applicant, often prior to planning submission

Defining a clear process by which the Council will assess the energy implications of a proposal and promoting this on the Council's website and in other media

Providing awareness raising for applicants through seminars

Providing training for Planning Officers

Dedicating Officer time to assess energy statements

Demonstrating a willingness to explore innovative ways to meet the policy requirements

Involving delivery partners (such as the Council's ESCO) in early discussions

Building relationships with energy consultants acting for developers and seeking to establish a collaborative approach to jointly resolving the challenges this policy creates

5.6 Whilst considerable progress has been made in securing energy efficient design and providing on-site renewable energy, the Council recognises it needs to make more progress on the use of CHP by new development. Despite the presence of 11 CHP installations across the borough, developers have often been reluctant to connect to existing installations. The reasons for this include:

Developers' low knowledge and experience of the technology;

Developers' uncertainty about perceived risk and delay in progressing their schemes;

The need to ensure appropriate management and consumer billing arrangements are in place;

The high costs for installation of pipes and cables.

In addition, CHP as a stand-alone energy supply system is not always the most efficient method for reducing carbon emissions, especially if serving small single-use development schemes.

5.7 However, over the last year a number of residential and commercial development proposals have come forward which propose either connection to existing CHP installations or installation of stand-alone CHP. The Council is now more actively engaging with developers to explore opportunities for greater take up of CHP, and is also working on proposals for development to contribute to the costs of new CHP and decentralised energy infrastructure through planning obligations.

6.0 Council enterprises

6.1 Woking's achievements reflect a series of step changes in its approach to energy efficiency and minimising carbon emissions. This has been achieved over time and has been made possible by the Council adopting new and innovative approaches to its activities.

6.2 In 1999, Thamesway Limited was established as the Council's wholly owned energy and environmental services company (EESCO). Its purpose is to promote energy efficiency, energy conservation and environmental objectives by providing energy and/or environmental services, and acts as a contractor to Woking Borough Council. In addition to generating and selling energy, Thamesway is able to develop and implement new technologies.

6.3 As a company, Thamesway Limited can acquire and hold interests in the share or loan capital of another company. In May 2000, Thamesway invested in its joint venture company, Thamesway Energy Limited (TEL), to finance the first energy station in Woking Town Centre. TEL is a joint venture company, 90% owned by Thamesway Limited and the remaining 10% owned by Danish company, Xergi Limited. Thamesway Energy Limited aims to build, finance and operate small-scale combined heat and power stations (energy stations), of up to five megawatts electricity output, providing energy services to institutional, business and residential customers. The profits generated by this activity are reinvested in the capital fund for environmental initiatives in the borough primarily concerning energy, waste, green transport and fuel poverty. Many projects have benefited from this investment, ranging from funding household insulation through the Winter Warmer scheme, to a technology joint venture with EETS Ltd, a Cardiff-based renewable energy development company. In 2005, TEL worked with EETS to install and trial a hybrid renewable energy street light ('hybrolight'). Powered by solar and wind energy the hybrolight save 170kg CO₂ per year compared to a conventional street light and offer the advantage of operating in off-grid locations. The hybrolight has now also been developed to power other types of installation, including number plate recognition cameras in Woking town centre.

6.4 Thamesway is also able to compete for sustainable energy supply contracts elsewhere in the UK and has been selected to supply the energy for central Milton Keynes. Over the next five years, Thamesway Central Milton Keynes Ltd will supply energy to over 2000

private and commercial customers.

6.5 Thamesway funds have also been invested in developing C-Plan, an internet browser based system for assessing the carbon footprint of new development, and the carbon savings arising from planning policies (www.carbonplanner.co.uk). It offers the benefit of consistent modelling of emissions against recognised benchmark data, and enables greater clarity and ease in assessing a planning application against local policy. The system has been piloted in Woking and is being made available as a commercial software product to local planning authorities and developers.

7.0 Summary

7.1 The evidence set out in this paper describes the very many opportunities that have been taken by Woking Borough Council over recent years to reduce household carbon emissions and the examples quoted serve to illustrate the influence that a local authority can have in addressing this challenge. It emphasises the importance of exploiting the diverse roles played by local authorities, whether by acting as a community leader and encouraging others to engage, or through the regulatory powers and duties available to it. In addition, Woking has found that rising to new challenges (such as reducing our dependence on fossil carbon fuels), demands new and imaginative ways of working.

7.2 Woking's approach can be characterised as a willingness to lead, to innovate, to be willing to take risks and to push the boundaries. However, the Council also recognises the value of partnerships, both locally and strategically, and has sought to capitalise on the limited resources available to it, along with the skills and resources offered by others.

7.3 Most significantly, Woking has demonstrated that a strong commitment alone is not sufficient and it must be matched by demonstrable actions in order to make real progress on reducing carbon emissions.

Ends