

WEST DUNBARTONSHIRE COUNCIL

Report by the Executive Director of Infrastructure and Regeneration

Infrastructure, Regeneration and Economic Development Committee: 18 June 2014

Subject: Energy Strategy Action Plan Annual Report - Year 1

1. Purpose

- 1.1** To provide the Infrastructure, Regeneration and Economic Development Committee (I.R.E.D.) with an update of progress on the objectives included in the Energy Strategy Action Plan 2013 - 2014.

2. Recommendations

- 2.1** Note the contents of this report.

3. Background

- 3.1** West Dunbartonshire Council (WDC) produces more than 24,000 tonnes of Carbon Dioxide (CO₂) as a result of its energy consumption in its buildings and outside lighting. The financial cost to WDC of this energy in 2012-13 was over £4.8 million: Electricity (£2.1m), Gas (£900k), Oil (£600k), Water (£700k) and Street Lighting (£500k).

The Energy Strategy sets out the Council's approach to energy management between April 2013 and March 2018; demonstrating our commitment to reducing water consumption, energy demand and associated carbon emissions, improving efficiency and exploring new energy opportunities

4. Main Issues

Setting targets for all operational buildings

- 4.1** The Energy Policy sets out a 2% consumption reduction target per annum for all operational buildings. The baseline year was set as 2011/12 and all relevant operational buildings were included. This work is set against a changing picture of WDC operational buildings as a result of the asset disposal strategy, and progress of new builds within the 5 year timescale.

The electricity and gas consumption for 2012/13 increased in real terms by 5% and 9% respectively when compared with the baseline year of 2011/12. However the average temperature of 8.06 degrees C was 18% lower in 2012/13 compared with 9.5 degrees C in 2011/12 and therefore more heating was required in WDC buildings.

As the average temperatures in 2011/12 and 2013/14 are similar, the E&C Team expect that the consumption reduction target for 2013/14 will be met. However due to the utility companies' billing cycles, full financial and consumption data for 2013/14 will not be available until July 2014.

We continue to implement WDC policy in relation to heating and hot water provision in the operational buildings controlled by the Building Energy Management System (BEMS).

Energy awareness training for all employees

- 4.2** Energy awareness training has been developed which will be included in the induction training of all new employees. This will inform employees on how their actions can reduce the energy consumption and costs for WDC including the associated carbon emissions.

This training will be web accessible and the Energy Team is currently working with HR & OD to achieve this. The new induction training format is due to be launched in June 2014.

To ensure all employees have the same level of understanding regarding energy, a new awareness campaign is being developed with the help of Corporate Communications for all Council employees. This is expected to be complete and ready for launch by October 2014.

Upgrade Building Energy Management System (BEMS) dial up connections to Ethernet

- 4.3** The BEMS controls the heating and hot water provision in 64 of the council's buildings: including 6 leisure trust properties. These sites account for 66% of WDC's heating and hot water costs.

The Energy team has made progress in upgrading the BEMS. Upgrading sites to Ethernet communications reduces costs and improves manageability and effectiveness by enabling alarms to be set advising of system or component failure. In addition to upgrades of communications at sites, the energy team have added two further sites to the BEMS.

Sites that have been upgraded in 2013-14 from dial up to Ethernet: Levensale PS, St Kessog's PS, Haldane PS, Christie Park PS, Ladyton PS, Knoxland PS and Clydebank Town Hall. Sites added to the BEMS are Knowes Sports Pavilion and Edinbarnet Primary School.

Activation of alarms on the BEMS enables early detection of failure within the heating system and controls. These alarms have now been activated in all properties with Ethernet connections.

Procure and install Automatic Meter Readers (AMRs): Electricity

- 4.4** AMRs allow remote reading of consumption data and meter registers. This results in the elimination of estimated reads with the benefit of more accurate bills. The information provided will enable the Energy Team to better monitor, target and manage energy at the relevant WDC buildings; this will assist in reducing energy consumption and cost.

A site and asset list has been issued to EDF (our contracted electricity supplier), who are proposed to carry out the installations. 180 meters in 128 WDC buildings have been identified as suitable; covering schools, offices, sports pavilions, libraries and depots. These meters will accurately record 91% of WDC's electricity consumption that is not already covered by half hourly meters and excludes unmetered supplies such as street lighting and landlord supplies. The terms and conditions of this contract are currently being negotiated.

Convert oil fired heating systems to gas in suitable properties

- 4.5** There are 15 Council buildings which are currently heated with oil. Fuel switching by changing the heating fuel from oil to gas, or biomass, where suitable, can reduce the heating costs and reduce carbon emissions. Conversion to gas can save up to 50% costs and 25% in relation to carbon emissions.

Following surveys from Scottish Gas Networks (SGN), 11 Council properties have been identified as suitable for upgrade from oil to gas.

Resource Efficient Scotland (RES) provided consultant support to survey these properties and have produced a report detailing the works required, associated costs and payback. Of the 11 properties 9 have been identified as suitable for oil to gas conversions and one oil to biomass installation. Overall investment of over £700,000 is projected to save over 300,000 kWh, £94,000 and over 300 tonnes of carbon emissions each year.

Possible funding sources to have this work carried out over the next two to three years include: Capital spend to save, Central Energy Efficiency Fund, (CEEF) and Salix who are an independent, publicly funded company, dedicated to providing the public sector with loans for energy efficiency projects. All sources of funding will be examined.

Progression of this project will be informed by the Primary School Estates' Strategy.

Survey of insulation on all heating system pipework in operational properties

- 4.6** Surveys and installations are underway and will continue through 2014/15. The estimated payback for installing pipework insulation is less than 2 years; this measure reduces heat loss and therefore energy consumption.

These surveys will identify which properties require installation or upgrade of heating pipework insulation. Insulating the heating pipework ensures that heat is delivered to the areas that require it, thus reducing heating costs and associated carbon emissions.

Comparison of energy and water performance of WDC operational buildings against WDC and national averages

- 4.7** Comparing energy and water performance against the national averages highlights properties with higher than average energy consumption. This information is then used to prioritise energy audits which will identify areas of wastage, bad practice and enable a reduction in energy consumption

In relation to water performance a number of properties were identified with above expected consumption. During 2013-14 water efficiency measures were installed in 25 properties across the WDC estate.

Appendix 1 details the sites included in this project, the costs incurred and anticipated savings.

Identify properties which have potential for Solar PhotoVoltaics and Solar Thermal

- 4.8** This is to provide information for pilot renewable energy projects. These projects will reduce energy consumption and associated carbon emissions as well as provide a revenue stream for WDC.

Solar thermal installations are best suited to sites with a high demand for heating and hot water; especially sites open during the summer. Within WDC these buildings would be care homes and other residential facilities as they are occupied throughout the year. Solar thermal will be considered as part of the design for the new care homes.

Loft insulation

- 4.9** Ensuring that properties have the minimum depth of loft insulation will assist in reducing heat loss and lowering heating costs for buildings. Surveys have been carried out in 33 buildings to identify those which do not have the minimum depth of 270 mm insulation; identifying 4 buildings requiring additional insulation. Loft insulation is now complete in Loch Lomond Outdoor Centre. The remainder of the buildings will be progressed as sources of funding are identified.

Lighting upgrades

- 4.10** Lighting can account for up to 40% of a building's electricity consumption. This consumption can be reduced by installing energy efficient high frequency fluorescent lighting, LED floodlights and PIR (Passive Infra-Red sensor or motion detector) controls.

Following surveys, lighting controls have been installed in Municipal Buildings, Dalreoch Primary School, Linnvale Primary School and St Martin's Primary School. These controls will reduce the energy consumption associated with lighting in these properties; approximately 25,000 kWh with a potential financial cost saving of £2,700 per annum.

Surveys have been carried out on a further 18 properties. The results from these surveys will be assessed to identify further lighting projects across the WDC estate.

Replace lighting at depots with LEDs

- 4.11** The depots at Richmond Street and Elm Road have high powered lighting in the workshops. Replacing these lights with LED fittings will reduce the energy consumption associated with lighting. The payback for this project is approximately 5 years, however it is anticipated that the depots will be replaced in 4 years' time. Therefore this project is no longer considered viable.

RES/ SFT energy surveys

- 4.12** WDC were approached by Resource Efficient Scotland (RES) and Scottish Future's Trust (SFT) in February 2014 to offer assistance in identifying energy projects that could save the council £0.5m per annum. RES have assisted WDC and provided a consultant to carry out in depth energy surveys in 18 WDC properties and 2 leisure trust properties.

The surveys were carried out in February and March 2014. The reports are expected to be complete by the end of June 2014. The results from these surveys will assist the Energy Team develop future projects.

LED street Lighting upgrade project

- 4.13** West Dunbartonshire Council has agreed a plan to replace all street lighting lamps with equivalent LED lamps. On completion of this project, the current reported electricity consumption of almost 7,000 MWh per annum will be reduced by 65% to just under 2,500 MWh per annum; which annually presents a significant cost saving of £487,000 and a reduction in carbon emission of 1,900 tonnes of CO₂.

Council approval of this project was awarded at the HEED Committee meeting on 7th August 2013 and there is a report to this IRED committee to bring this project forward and accelerate implementation.

Upgrade cremators and heating system at Clydebank Crematorium

- 4.14** An assessment has been carried out of the existing facilities at Clydebank Crematorium: this included the heating system and the cremators. It has been recommended that the existing inefficient heating system and cremators are upgraded. By replacing the three existing cremators with two more efficient cremators, it is estimated that the gas consumption will reduce by approximately 25%: £13,000 at 2014/15 gas prices. Work is due to commence on this project in March 2015.

5. People Implications

- 5.1** There are no personnel issues as this is an update of progress on the objectives included in the Energy Strategy Action Plan 2013 - 2014.

6. Financial Implications

- 6.1** A number of refunds have been identified and captured to date through monitoring and targeting activity: this resulted in refunds of £233,000 to date for 2013/14.

The breakdown of the refunds are as follows:

Energy - Electricity £187,000 which relates to the identification of overcharging (estimated bills) and rebilling of domestic accounts at 5% VAT which entails a refund of Climate Change Levy, removal of meters and incorrect billing by a supplier.

Water £46,000 - Identification of incorrect water supply charges in car parks, reduction in rateable values in line with Scottish Assessors' values and meter reads and closing duplicate accounts. Classifying sites as vacant which stops all water charges.

7. Risk Analysis

- 7.1** As this is an update and progress report a risk analysis is not required

8. Equalities Impact Assessment (EIA)

- 8.1** As this is an update and progress report a Equalities impact assessment is not required

9. Consultation

- 9.1** The relevant Sections of the Council have been consulted in relation to this report including Legal Services and Finance through CMIS.

10. Strategic Assessment

- 10.1** The Energy Strategy supports the following council priorities:

Improve local housing and environmentally sustainable infrastructure

- 10.2** The Energy Strategy action plan supports the achievement of environmentally sustainable infrastructure through various efficiency projects improving the council's estate.

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Appendix: Appendix 1 - Water efficiency project- site list

Background Papers: Energy Strategy report to HEED committee 14 November 2012

Wards Affected: All