

# Gloucester City Council

<b>Meeting:</b>	<b>Cabinet</b>	<b>Date:</b>	<b>21 October 2015</b>
<b>Subject:</b>	<b>Energy Monitoring and Management - 2014/2015</b>		
<b>Report Of:</b>	<b>Cabinet Member for Environment</b>		
<b>Wards Affected:</b>	<b>All</b>		
<b>Key Decision:</b>	<b>No</b>	<b>Budget/Policy Framework:</b>	<b>No</b>
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<b>Appendices:</b>	<b>None</b>		

## FOR GENERAL RELEASE

### 1.0 Purpose of Report

- 1.1 To inform Cabinet on energy usage across the Council's buildings during 2014/2015 and how improved management of energy is reducing consumption and costs.

### 2.0 Recommendations

- 2.1 Cabinet is asked to **RESOLVE** that:

- (1) The positive progress that has been made in reducing energy usage, consumption and costs across the Council's buildings during 2014-15 be noted.
- (2) The continued implementation of projects to minimise energy usage across the Council's buildings be supported and;
- (3) The adoption of the framework agreement with Advanced Demand Side Management Ltd (ADSM Ltd) to access the 'Aquafund' for water conservation improvements across the Council's buildings be noted.

### 3.0 Background and Key Issues

- 3.1 Gloucester City Council adopted a revised and updated Energy Management Strategy in 2012. One of the key objectives of this strategy was a commitment to reduce the Council's energy use across its buildings by 2% per year, along with a commitment to prepare and present an annual Energy Monitoring and Management Report to Cabinet.
- 3.2 Since 2003 the Council has implemented a number of capital projects aimed at reducing energy usage in all its main buildings. Selection of projects to implement is focussed on the length of payback before energy savings can be fully realised. In 2014-15 the main projects delivered were:

- Voltage Optimisation Technology in Docks Warehouses: This was installed in Herbert, Kimberley and Philpotts Warehouses in November 2013 and is currently being evaluated. It thought to have reduced electricity use in the three buildings by 5% in its first year by regulating voltage levels to a constant mains supply. We are currently in Year 2 of 3 years payback and the Council stands to save £7000/annum as a result of this project.
- Air Handling Units and Duct controls at GL1: This major refurbishment for the three swimming pools air handling systems was completed in July 2014 and is making significant reductions in energy use at GL1 through re-use of waste gases. The installation will be subject to a full evaluation to verify energy savings over the first 12 months of operation. We are currently in Year 1 of 5 years payback and the project is estimated to deliver £20,000 of annual savings.
- LED Lighting at Kings Walk Multi Storey Car Park: A trial at the car park has tested new lighting technology against conventional fluorescent lighting tubes and has demonstrated the clear benefits in terms of energy savings. Following on from this, quotes for refurbishing Longsmith Street Car park with LEDs have been received and will be implemented over the autumn. The payback period for this project is less than 12 months with savings estimated to deliver in the region of £13,000 annually on energy alone.

3.3 A number of other energy saving projects are in the process of development and evaluation. These include; Oxstalls Tennis Centre lighting replacement scheme, Crematorium heat exchanger connection, Herbert Kimberley and Philpotts Warehouse heating controls zoning and Building Energy Management System replacement. These and any other projects that are worthy of pursuing will be reported in subsequent updates.

### **Alternative Funding Steams**

- 3.4 To make the available funding go further, Officers are investigating alternative funding opportunities to implement energy and water efficiency improvements. The most promising of these is an interest free loan from the Government branded as Salix Finance. This is available for certain eligible technologies, and whilst there are no specific deadlines for submitting applications, projects must achieve a payback of within five years to qualify.
- 3.5 Aquafund is another mechanism that can assist the City Council in making energy savings on water costs. Aquafund provides capital investment to reduce water costs for public sector bodies without the need for a budget. Gloucester City Council has now signed up to a framework agreement with ADSM Ltd and this will enable the City Council to access the finance. Projects to save water use in the Councils' buildings will be identified following an initial survey carried out within the Aquafund framework, and these will then be eligible for funding. ADSM have commenced bill verification process and will then undertake site surveys to look at current water use. A programme of action will then be agreed and implemented, paid for by the fund. Aquafund will then recoup their investment by equally sharing the savings with the City Council over an agreed term.

## Overall Energy Cost

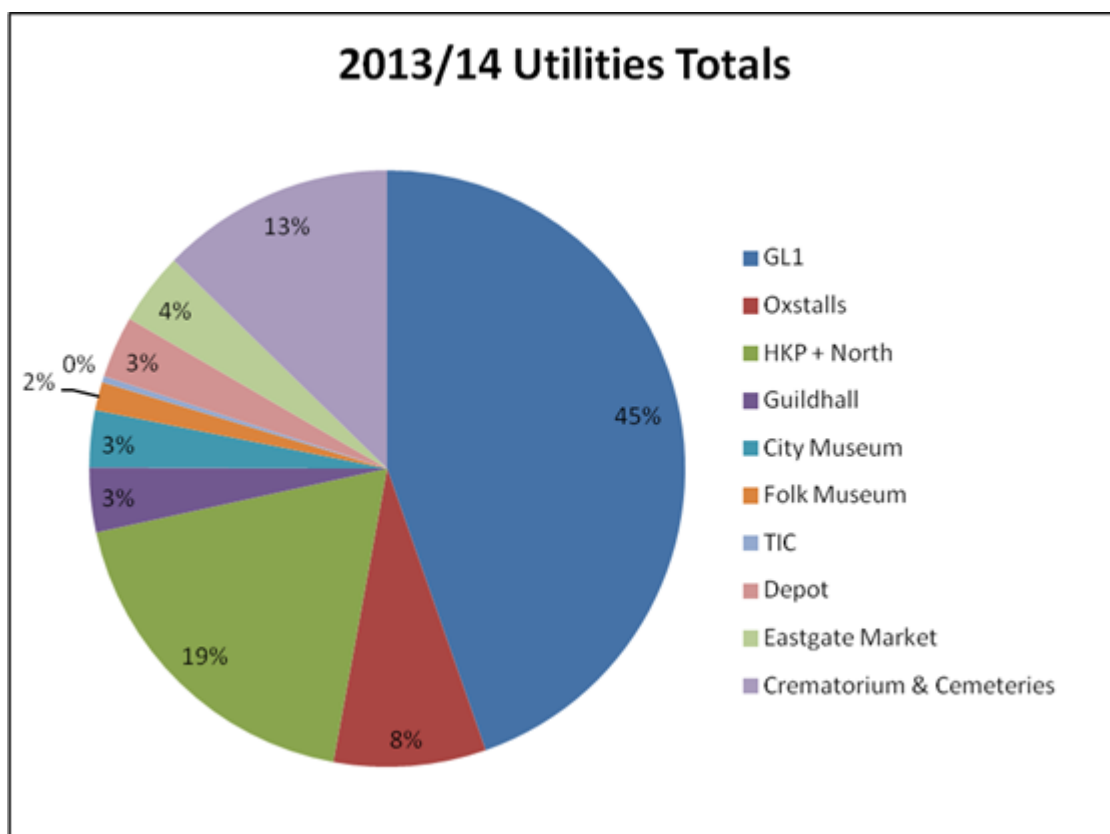
- 3.6 The Council's various operational buildings (including those operated by Aspire) reduced costs of electricity and gas in 2014/2015 by 12% from £852,205 in 2013/2014 to £742,892. The cost of water usage across all the Council's sites during 2014/2015 was £81,741 which was a 20% reduction on 2013/2014 where costs for water stood at £102,552.
- 3.7 The Council's total energy cost has reduced significantly over the last year with savings in part reflecting the reductions in energy usage as well as the reduction in the unit price of energy. In 2013-14 the wholesale reduction in oil price had not filtered through to the unit cost for power so although energy consumption was less there was an actual increase in cost.
- 3.8 Gas Use  
Gas use in kilowatt hours over the entire Council estate for 2014-15 reduced by 23% compared with the previous year. Gas heats most of the Council's buildings and is also used to cool HKP. The actual cost of gas also reduced by 27% when compared with the previous year. This reduction was due in part to the milder winter but also prudent management and previous investment in energy efficiency improvements to our main buildings. When compared with the average annual use for the last five years consumption is still down by 5% which is encouraging. Gas use is down on all sites compared with last year, the most notable being: GL1 (- 19%); Oxstalls Tennis Centre (- 17%), the Guildhall (- 22%) and the Crematorium (15%). It is also pleasing to report that usage of gas in Herbert, Kimberley and Philpotts warehouses are also down by 13% and this has historically been one of the most difficult sites to achieve more efficient use of energy.
- 3.9 Electricity Use  
Compared with last year electricity use over the entire estate has reduced by 13%, or 16% if purchased electricity is separated out (additional electricity is generated by the combined heat and power plant at GL1). When compared with electricity consumption over the previous five years, total electricity use has reduced by 12%. Interestingly for GL1, the site with the highest electricity use, it has seen a reduction of 28%, which is very significant and indicates that investment in new lighting and variable speed drives (pumps that rather than running flat out, vary depending on demand) are delivering efficiencies. The two sites where use has increased over the last 5 year period were the Folk Museum and the Eastern Avenue Depot operated by AMEY. These sites have both seen changes to occupancy and/or the fabric of the building and will be subject to further investigations to identify potential reductions in electricity usage.
- 3.10 Water Use  
The other main utility cost for the Council is water, currently supplied by Severn Trent. During 2013 Officers worked with Severn Trent to consolidate the Council's 45 separate sites into a single account with annual usage and cost reporting. There remains however, considerable scope for savings through bill validation, more efficient consumption and reduction of wastage. Now that the Council has signed up to the Aquafund framework this work will be rolled out over the coming months as a priority. By utilising the Aquafund as outlined previously in this report, there is the potential for significant savings in cost and usage to be made.

### 3.11 Carbon Dioxide Emissions

The burning of fossil fuels generates greenhouse gases that contribute to climate change and the Council is committed to reducing its carbon footprint in line with Government targets through its Climate Change Strategy. The current UK emissions target is to reduce CO2 emissions by 80% by 2050 using 1990 as the baseline year. As we do not have detailed energy data from the year 1990 to present, our figures use the last ten years to track progress starting in 2003-4 when we launched our energy strategy. The Council's CO2 emissions have reduced by 19% when compared with the previous year. When compared with the baseline year 2003-4 they have reduced by 32%.

### 3.12 Energy Consumption Costs.

The pie chart at table 4 shows the proportion of energy cost by site. GL1 is clearly the largest energy user in the Council's property portfolio; however costs have fallen significantly as savings have been made as a result of capital investment. Next comes the HKP office complex followed by the Crematorium most of which is made up of gas for use in the cremators.



### 3.13 Other facts of interest are:

- Winter heating for the docks offices (Herbert, Kimberley and Philpotts and North Warehouses) costs approximately £423 per day.
- Summer cooling by the gas powered chiller units for Herbert, Kimberley and Philpotts Warehouses costs £62.20 per day.
- Energy costs at GL1 are £930 per day.
- Lighting and other electricity usage at the Docks Offices (Herbert, Kimberley, Philpotts and North Warehouse) costs £372 per day.

- 3.14 It should be noted that energy management of the Council's main buildings is a complex issue as there are many different types and uses of building. The basic policy seeks to reduce the energy used whilst not adversely affecting operational efficiency and levels of comfort for all types of users be they visitors, customers or staff.

#### **4.0 Asset Based Community Development (ABCD) Considerations**

- 4.1 Having considered the content of this report and the subject area there is little opportunity to introduce ABCD principles to this area of the Council's work.

#### **5.0 Alternative Options Considered**

- 5.1 A do nothing option if pursued would result in short term savings as capital investment would not be required. This would however result in long term financial impact especially as energy prices are expected to increase over the next several years and beyond. It would also mean the Council would not hit its own or the UK Government's CO2 reduction targets.

#### **6.0 Reasons for Recommendations**

- 6.1 It is important in assisting with the Council's medium term money plan, to utilise existing framework agreements to deliver both energy efficiency and water savings. With the predicted long term rises in utility costs, identifying energy and water savings is an important function of our business. For this reason we have chosen to adopt the Aquafund framework agreement as an alternative delivery mechanism for our water efficiency programme. Any new energy saving projects will be presented to the Capital Bid Programme Board.

#### **7.0 Future Work and Conclusions**

- 7.1 The Council approved a revised and updated Energy Management Strategy in 2012, part of which required an annual report to be presented to Cabinet on the energy used in the Council's buildings. This report confirms there has been a significant reduction in energy use across all our main sites. The continuous investment in improvements made to our main buildings is beginning to achieve the planned savings. Energy costs have also fallen due to external factors such as the oil price and a mild winter, but again reductions in use across the estate through efficiency mechanism has helped to further increase these savings.

#### **8.0 Financial Implications**

- 8.1 There are no financial implications arising from this report in terms of capital expenditure. However, in terms of preparing for future energy price increases which were predicted to rise by as much as 7% per annum), these forecasts need to be taken into consideration.
- 8.2 Aquafund is cost neutral as it allows access to a separate fund. This is the reason for adopting this framework scheme to deliver savings. Larger schemes such as lighting replacement with LEDs which do require capital investment will be subject to separate Salix funding bids and/or capital projects board approval.

8.3 With regard to overall costs there was an increase in electricity cost of £4,755.28 a saving of £20,810.81 on water and a saving of £114,068.43 on gas. There has been therefore total savings of £125,368.70 when compared with 2013-14 expenditure on utilities. It should be noted that the any energy saving in a building occupied by Aspire is a financial saving to the Leisure Trust and not to the City Council.

(Financial Services have been consulted in the preparation of this report.)

## 9.0 Legal Implications

9.1 One Legal will be consulted on any detailed component of the framework agreement.

9.2 They will also be consulted on any large scale procurement to ensure it fulfils procurement requirements.

9.3 One Legal advised Officers on the Aquafund framework agreement which was approved and then signed off at Director level which has enabled the City Council access to the scheme.

(One Legal have been consulted in the preparation this report.)

## 10.0 Risk & Opportunity Management Implications

10.1 The following risks and opportunities have been identified:

Risks	Opportunities
Increases in utility costs	Decreases in utility costs
Technology Failure/New technology not delivering	New technology delivering increased savings

## 11.0 People Impact Assessment (PIA):

11.1 The PIA Screening Stage was completed and did not identify any potential or actual negative impact, therefore a full PIA was not required.

## 12.0 Other Corporate Implications

### Community Safety

12.1 There are no community safety implications to this report.

### Sustainability

12.2 By introducing further measures to reduce energy use the Council is working steadily towards its environmental targets.

### Staffing & Trade Union

12.3 Staffing - There are no direct staffing implications from this report.

Press Release drafted/approved

- 12.4 The reduction on energy usage is a positive story and when appropriate the County Council's press office will be contacted to help promote the story.

**Background Documents:** None