Nottinghamshire County Council

Report to Environment and Sustainability Committee

10 October 2013

Agenda Item:

REPORT OF THE SERVICE DIRECTOR FOR TRANSPORT, PROPERTY AND ENVIRONMENT

PERFORMANCE REPORT – ENERGY AND CARBON MANAGEMENT – 2012-13 OUT-TURN

Purpose of the Report

1. This report provides information to the Committee on the performance of the energy and carbon management service for the 2012-13 financial year.

Information and Advice

2. The energy and carbon management function provides a service on behalf of the Council's corporate estate, including schools, to ensure supply of electricity, gas and wood fuel is available at competitive rates; to promote and support investment in energy efficiency measures; to support investment in renewable energy technologies; to ensure compliance with energy-related legislation and to manage consumption data to enable effective monitoring, forecasting and reporting.

3. Performance measurement on energy and carbon management has been subject to changing central government requirements and legislation. The Council is currently obliged to report its annual carbon emissions under the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES), and is also required by the Department of Energy and Climate Change (DECC) to report and publish its greenhouse gas emissions. In addition, Council buildings over 500m^2 are subject to legislation requiring them to be assessed for their energy performance, resulting in a Display Energy Certificate showing a rating from A to G, which needs to be displayed in a prominent place.

4. CRCEES performance and the Council's local greenhouse gas emissions report are only reported annually. Due to the burden of reporting under the CRCEES, the Council has taken the decision to limit its greenhouse gas emissions report to those emissions covered by the CRCEES, with the addition of emissions from energy use in street lighting, which are currently excluded from CRCEES, but will be included from April 2014.

5. In addition to the above, a number of other measures have been selected to monitor performance of the service relating to finance and customer satisfaction. Carbon emissions are also shown as weather corrected data, which is an accepted way of excluding the effect of variations in external temperatures on heating energy consumption. An update on energy costs and procurement was the subject of a report to Finance and Property Committee in February. This showed the total annual costs for electricity and gas for the Council's properties and street lighting to be about £17million, of which the schools (and Academies) share is £10million, and

that for street lighting just over £4million. It also reported that figures from GPS, the Council's appointed central purchasing body for gas and electricity, show that it has generally achieved for its customers an average saving of 15% over the last 3 years compared to average market prices.

6. A summary of performance is detailed in Appendix 1. This indicates that overall performance for the service is still good, with a wide range of renewable technology initiatives being installed across the corporate estate and high take up of the Local Authority Energy Finance (LAEF) funding scheme. However, there has been an increase in the reported carbon emissions from the Council's buildings compared to 2011-12, and a relatively small increase in those from street lighting, highway signs and signals, over the same period. The table below details reported carbon emissions over the past three years and shows weather corrected carbon emissions for County Council buildings captured by the CRCEES over the same period.

County Council carbon emissions			
Year	Reported emissions from energy use in buildings (weather corrected figures in brackets)	Emissions from energy use in street lighting, signs and signals	Total (tonnes)
2010-11	78,579 (76,635)	24,619	**103,198**
2011-12	67,453 (72,404)	24,515	**91,968**
2012-13	73,400 (70,030)	24,772	**98,172**

7. Appendix 2 shows the changes in the Display Energy Certificates for County Council buildings, including schools, from 2008/09 to 2012/13.

Analysis

8. The scale of the increase in reported carbon emissions from buildings compared to 2011-12 was largely due to a colder winter in 2012-13. With much of the Council's energy use being for space heating, weather is a strong factor in determining overall energy consumption in any one year. This is supported by the weather-corrected emissions data, which show that when the effect of weather on emissions is taken into account, a year on year decrease in emissions form County Council buildings has been achieved. It is hoped that building rationalisation and improvements recently made under the Council's Ways of Working programme, combined with renewable energy investment and improvements in energy efficiency, will help sustain this downward trend in emissions.

9. Indicators shown in Appendix 1 show that:

- the Council's investment in photovoltaic arrays on its buildings is giving a return on investment of 12%, with income received through Feed in Tariff payments totalling nearly £60,000 and avoided energy costs amounting to around £20,000; and
- investment last year through the Council's revolving energy efficiency loan fund will save an additional £80,000 p.a. in avoided energy costs, bringing the total annual savings funded by the scheme to just under £400,000.

Further details of programmes and activities in place to tackle energy and carbon costs are detailed on page 3 of Appendix 1.

10. The chart in Appendix 2, showing changes in the Display Energy Certificates issued to County Council properties of over 1,000 square metres, also shows that there has been a general trend in improving the energy efficiency of the Council's properties over recent years.

11. Emissions for street lighting, signs and signals are less subject to weather patterns. Action to improve performance in this area primarily rests with Highways where, in addition to the part-night lighting programme, officers are actively exploring opportunities for investment in low energy equipment. These were the subject of a report to Policy Committee in on 18 September at which the Committee agreed a revised street lighting energy saving project set to deliver savings of £700,000 by 2016-17. The slight increase in the annual carbon emissions from street lighting for 2012-13 compared to the previous year, is primarily due to an industry change to the calculation of energy consumption from certain lamp types.

Cost implications

12. For every tonne of carbon emitted under the CRCEES the Council is obliged to pay £12, amounting to £880,800 for 2012-13. As of next financial year, the cost per tonne will rise to £16, and then in line with RPI thereafter. Other changes to the scheme next year will see the exclusion of emissions from schools but the inclusion of emissions from street lighting. The net effect of these changes is predicted to be a saving to the Council of about £150,000. Carbon costs for 2012-13 are summarised in the table below.

Cost of carbon emissions for 2012-13 under the CRCEES		
	Carbon emissions (tonnes)	Cost (£)
Schools	55,228	662,736
Corporate	15,434	185,208
Pensions portfolio	2,738	32,856
Total	**73,400**	**880,800**

13. Although the cost of carbon is significant, it should be noted that for every tonne of carbon emitted, the Council will have spent more than ten times that on the energy cost. Looking at the total cost of energy for our buildings (including schools, but excluding street lighting) for 2012-13 of around £12million, the average energy cost per tonne of carbon emitted is about £160. Put another way, every tonne of carbon saved is roughly worth an additional £160 in saved energy costs.

14. A report outlining a potential energy strategy and further opportunities to generate income or reduce costs will be brought to this committee in the near future.

Other Options Considered

15. None – this is a report for noting only.

Reasons for Recommendations

16. Energy and carbon management is a significant area of spend for the Council, and has a major impact on the environmental and economic well being of the County. It is essential therefore that the Environment and Sustainability Committee is fully briefed on issues which impact on the delivery of the service.

Statutory and Policy Implications

17. This report has been compiled after consideration of implications in respect of finance, equal opportunities, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

Implications for Service Users

18. Performance in this service area has a major impact on schools in Nottinghamshire, with 99% of state schools buying electricity and gas through the Council's electricity and gas supply contracts. For schools and non school sites alike, good energy management and sensible investment can help limit the impacts of the predicted upward trend in energy costs and even yield budget savings, in addition to the environmental benefits accrued from reducing carbon emissions and pollution associated with the use of fossil fuels.

Recommendation

19. That Committee notes the contents of the report.

Mick Allen
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For any enquiries about this report please contact:
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Constitutional Comments

20. This report is for noting only.

Financial Comments (TMR 27/09/13)

21. The financial implications are set out in the report.

Background Papers

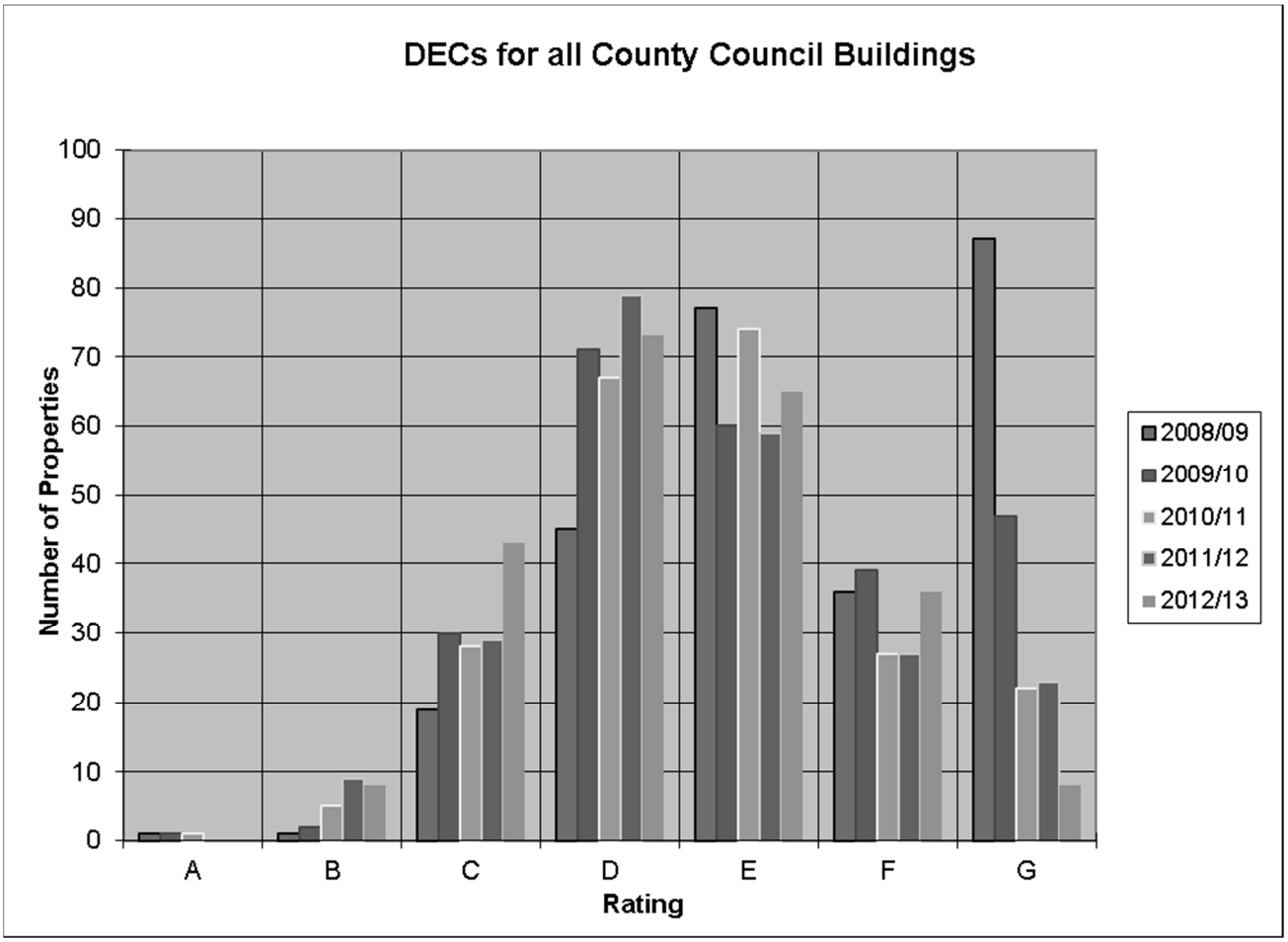
The County Council's local greenhouse gas emissions report can be found at http://www.nottinghamshire.gov.uk/enjoying/countryside/energy-and-carbon-management/climate-change/

Electoral Divisions

All

Appendix 2

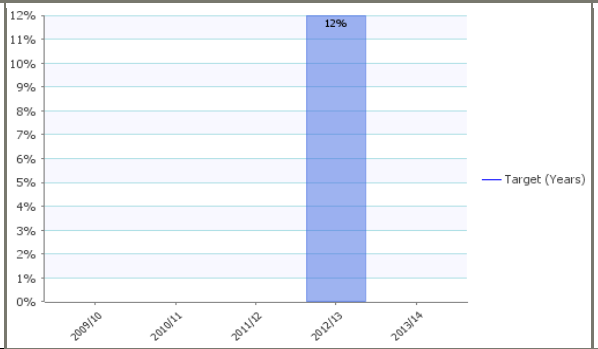
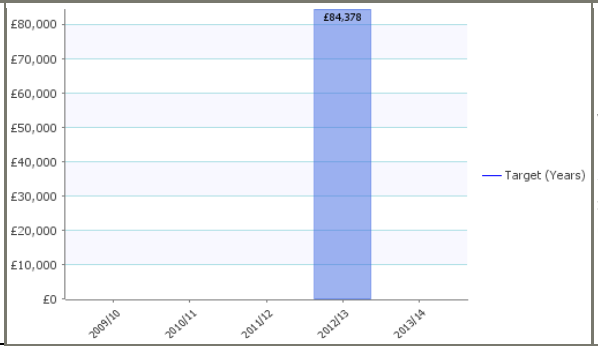
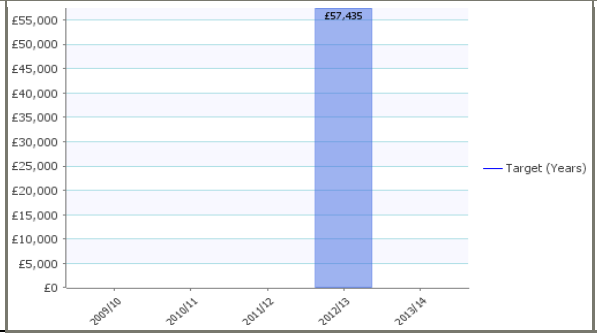
Display Energy Certificate ratings for County Council buildings, 2008/9 – 2012/13

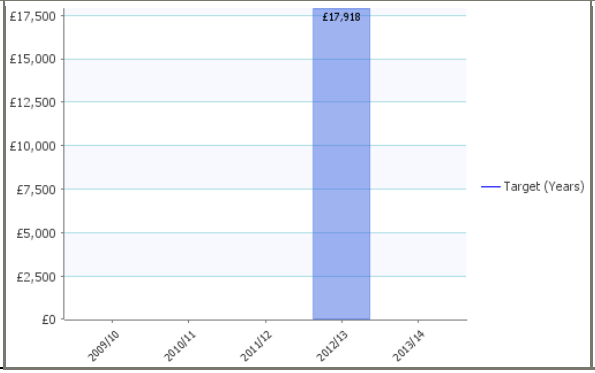


The above chart shows how the Display Energy Certificate ratings for County Council buildings, including schools have been changing over time, with A being the best performance, and G the worst in terms of energy consumption and carbon emissions per unit floor area. Such certificates were initially required for public buildings with a floor area of greater than 1,000 square metres, which are shown above. Since 2013, this requirement also applies to public buildings above 5,000 square metres.

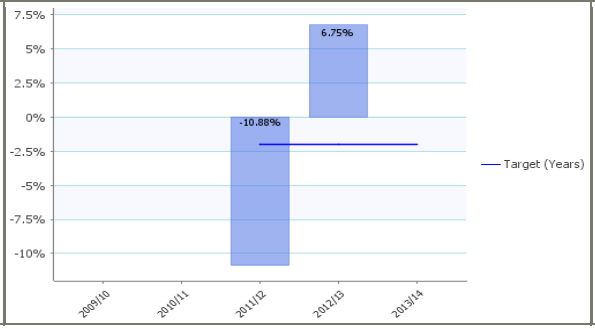
Analysis of the chart shows a gradual general improvement in ratings, with more B and C ratings and fewer G ratings.

Appendix 1. Energy and Carbon Management Performance Report 2012/13

Indicator	Maximise or Minimise	Actual Versus Target	Trend Chart	Improvements
Energy Management - Annual Income Generation - Return on Investment from photo voltaic cells	Aim to Maximise	**Actual** 12% **Target** Data only		
Indicator	**Maximise or Minimise**	**Actual Versus Target**	**Trend Chart**	**Improvements**
Effectiveness of our Energy efficiency recycling fund (Salix) - annual energy savings	Aim to Maximise	**Actual** £84,378 **Target** Data only		In 2012/13 the fund invested in projects to the value of £397,750, worth £84,378 in saved annual energy costs and 548 tonnes of carbon saved p.a. In total the fund has now invested £1.57million, saving annually £390,000 in energy costs and 2,326 tonnes of carbon (£27,912 worth)
Indicator	**Maximise or Minimise**	**Actual Versus Target**	**Trend Chart**	**Improvements**
Energy Management - Annual Income Generation from photo voltaic cells	Aim to Maximise	**Actual** £57,435 **Target** Data only		

Indicator	Maximise or Minimise	Actual Versus Target	Trend Chart	Improvements
Energy Management - Annual Income Generation - Energy Cost Savings	Aim to Maximise	**Actual** £17,918 **Target** Data only		

Performance

Indicator	Maximise or Minimise	Actual Versus Target	Trend Chart	Improvements
CO2 emissions - annual reductions	Aim to Minimise	**Actual** 6.75% **Target** -2%		See Below

There has been an **increase** from 91,968 to 98,172, and this is down to the winter of 2012-13 being colder than 2011-12.

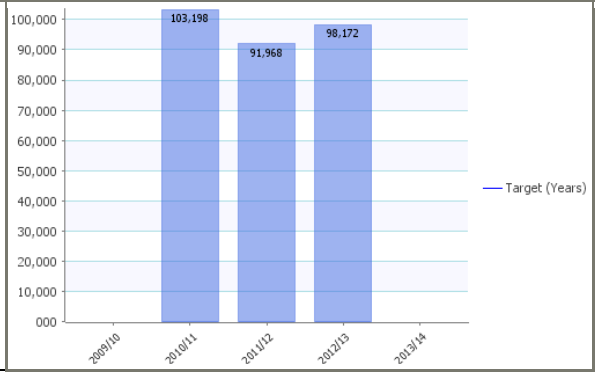
The Council has a number of key programmes in place to tackle energy consumption and reduce its carbon emissions. These include:

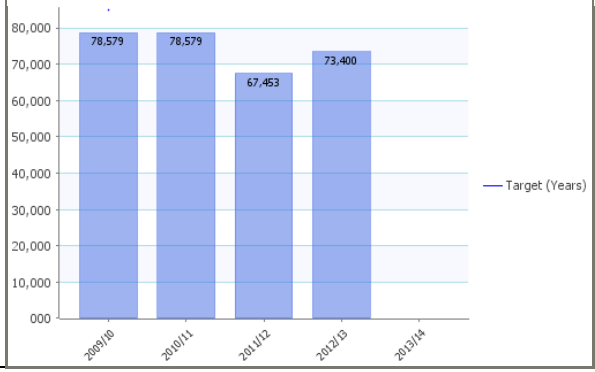
- A £1.2million revolving loan fund for investment in energy efficiency measures, which up to the end of March 2013, had invested over £1.5million in the Council's schools and other buildings, saving 2,326 tonnes of carbon dioxide and £390,000 in energy costs per year. Measures funded include low energy lighting, energy management systems, improved heating controls and voltage optimisation.
- A programme of street lighting energy saving measures is currently being implemented aimed at reducing energy use by 26% (compared with 2009/2010). This includes part night lighting, dimming and the use of alternative, more efficient lighting equipment.
- Investment of £800,000 in the SunVolt programme to install photovoltaic (PV) panels on the roofs of various Council properties. To date a total of £617,061 has been spent through the programme, with £57,435 so far received as income by way of Feed in Tariffs. In addition to this, the panels have offset over £17,918 worth of electricity that the Council would otherwise have had to pay for, bringing the total financial benefit of the project to £75,353, representing a return on investment of 12% so far. In addition to the financial benefits, the programme has also prevented the generation of nearly 100 tonnes of carbon dioxide and raised awareness of energy issues amongst staff at the affected buildings. Environment and Sustainability Committee has agreed to a further £250k p.a. investment in photovoltaics (PVs) on council buildings over the next 4 years, following the success of the SunVolt programme.
- A £2million programme approved in September 2012 to replace remaining ageing coal, oil and LPG boilers in Council properties with modern biomass heating systems. The programme will utilise the Government's Renewable Heat Incentive (RHI) to repay the capital costs and generate a surplus income for the Council. Several schools have already contacted the Council and expressed a high level of interest in taking part. This programme follows on from previous activity, which has resulted in over 60 Council sites now heated by modern biomass boilers, saving each year over 6,000 tonnes of carbon, currently worth £72,000. This activity has been supported over the years by c£1.85million of external funding.

The Council will also be limiting its carbon emissions through its programme of property rationalisation and the creation of more energy efficient working environments. This has included the integration of energy efficiency measures into the refurbishment of County Hall, energy efficient design for new Council buildings such as Worksop library, and the use of low carbon technologies, such as ground source heat pumps, which feature in the new bus station at Mansfield.

All Council new build projects are designed to meet current building regulations and incorporate, where possible, daylight sensitive lighting controls, natural ventilation, sustainable drainage, rainwater harvesting, and other measures that save energy and reduce running costs. Use is increasingly being made of modular construction methods, which reduce time on site, help minimise waste and meet requirements for improved air tightness. Where refurbishments, such as the Schools Capital Refurbishment Programme and Day Service Review, are being undertaken, every opportunity is taken to upgrade the buildings and services to meet the current regulations and reduce future energy use.

Indicator	Maximise or	Actual Versus Target	Trend Chart	Improvements

	Minimise			
Total Emissions - Excluding Transport (tonnes)	Aim to Minimise	**Actual** 98,172 **Target** Data only		Increase compared to 2011/12 due to a colder winter

Indicator	Maximise or Minimise	Actual Versus Target	Trend Chart	Improvements
CO2 emissions from Council buildings	Aim to Minimise	**Actual** 73,400 **Target** Data only		Increase compared to 2011/12 due to a colder winter

Indicator	Maximise or Minimise	Actual Versus Target	Trend Chart	Improvements
Emissions from street lighting , traffic signals and signs	Aim to Minimise	**Actual** 24,772 **Target** Data only