

Division(s): All

**GROWTH AND INFRASTRUCTURE SCRUTINY COMMITTEE –  
19 NOVEMBER 2012**

**ENERGY REDUCTION UPDATE**

**Report by Director for Environment, Economy & Customer Services**

**Introduction**

1. The purpose of this paper is to provide members with an update on progress to date with reducing the County Council's energy consumption. The Corporate Plan sets out the Council's commitment to investing in energy efficiency measures, identifying this as a priority for action.

**Carbon Management Programme**

2. The County Council has long recognised the financial benefits of energy reduction. Most recently it partnered with the Carbon Trust to develop a Carbon Management Programme which ran from 2007 to March 2012.
3. Cumulatively, carbon dioxide emissions from buildings, transport and street-lighting have reduced by 28% from 1990/91 to the end of the Carbon Management Programme in March 2012. This can be compared with the UK statutory carbon target of a 28% reduction by 2017 (relative to 1990 levels).
4. The Carbon Management Programme set itself an ambitious 18% target reduction for the five year period 2007-2012. This was a stretch target and has provided the context for our investment in energy efficiency measures. The experience gathered over the course of the five year period has provided valuable learning (summarised in Annex 1) that is helping shape our approach into the future.
5. Over the course of the Carbon Management Programme, energy consumption in buildings has decreased by 7%. The reduction in gas consumption achieved has been partially offset by an increase in electricity consumption. This is particularly noticeable in schools where increased use of IT equipment has led to increased consumption. Electricity for street-lighting has been essentially constant despite steady growth in the number of street lamps. Fleet and business mileage has been reduced by 20%.
6. Capital expenditure in energy saving measures in corporate buildings and schools during the five year programme was £2.38m. The cost avoided in 2011/12 was over £250k including £30k of carbon tax. The cost avoided reflects the effect of investment in energy saving measures, energy saving campaigns, as well as a reduction in the overall property asset.

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### **Energy Tax – CRC Energy Efficiency Scheme**

7. Introduced in 2010, the CRC Energy Efficiency Scheme works as an energy tax to incentivise organisations which fall within the scheme to reduce their energy consumption.
8. The Council is responsible for paying the tax on emissions from the corporate estate and from schools, including academies. Street lighting is currently excluded from our emissions until 2013/14. Purchase of allowances for 2011/12, the first full year of the scheme, cost £480k.
9. The Council has agreed with the Schools Forum that it can pass on the cost of the tax to individual schools so that it incentivises individual schools to address the issue of energy consumption. At the same time, the Council is continuing to offer zero/low interest loans for investment in energy saving measures as well as providing technical support to help schools identify and deliver invest-to-save projects.
10. The scheme also incentivises accurate measurement of energy consumption. In response, the Council has installed additional automatic meter readers which feedback to a central website. Nearly 90% of the total electricity consumption is now covered together with nearly 80% of gas consumption. Council and school staff have been trained to use the web reports and the case study in Annex 2 illustrates the potential of this approach.
11. Members may be aware that the Government has recently closed a consultation on the simplification of the scheme and intends to publish its response 'this autumn'. Included in the consultation is the relationship between schools and their local authority. In its response, the Council has recommended that local authorities should no longer be responsible for paying the tax for academies or maintained schools.

### **Current strategy**

#### *Energy Management System*

12. Building on its experience with the Carbon Management Plan, the County Council has adopted as a way of working many of the principles that underpin ISO 50001 Energy Management Systems. This is based on the Plan-Do-Check-Act framework of continual improvement that characterises many international quality standards.
13. This approach will ensure that the County Council manages the energy work stream of the new Property and Facilities contract effectively, whilst at the same time enabling it to respond flexibly to changes in government policy and price increases.
14. In due course it may be appropriate to consider adopting more formally some of the principles of ISO 50001 or indeed work towards full certification. Certification brings additional rigor and independent verification at the cost of some additional staff time and so there would need to be an assessment made as to the benefits and costs of such a course of action.

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15. In light of the experience with the Carbon Management Plan the Committee may wish to offer its views on the approach being followed in terms of its Energy Management System.
16. Within the framework of its Energy Management System, the County Council is working to an overall objective of maintaining energy costs at 2010/11 levels in so far as it is cost-effective.

### *New Property and Facilities Contract*

17. Energy efficiency and use of renewable energy are fully integrated as part of the new Property and Facilities contract. Staff from the County Council and Carillion Capita Symonds (CCS) are working closely together in a dedicated energy management team to deliver the overall contractual targets of a 25% reduction in energy consumption over the next ten years and a 3% year on year reduction in carbon emissions across the estate.
18. The contract allows the Council to agree stretch targets with Carillion and at present the objective outlined above suggests that the energy target should be delivered over three to four years rather than ten. This is being considered with CCS as the team develops its forward programme of work.
19. The contract also includes resources to promote low energy behaviours, in the form of training, campaigns and support to energy champions etc. To this end, the Council's energy intranet pages are being updated and we plan to run a campaign in February to establish night-time base loads.
20. In addition the team is looking at embedding energy saving behaviours (Annex 3) within the Officers Code of Conduct. This reinforces the need for individual officers to 'seek opportunities to improve and promote energy conservation'. The intention is that saving energy should move from a "nice-to-do" to an integral part of the way we do business.
21. The Committee may wish to consider whether it would be appropriate to encourage a similar commitment for elected members.

### *Street lighting*

22. The Committee will be aware that changes in the energy supplier's tariffs made it no longer financially viable to convert street lights to part-night lighting.
23. Since that report, the Council has changed energy suppliers. Officers are now exploring the implications of this for street-lighting, including whether there is a case for increasing the rate of refurbishment of lighting assets if that were to lead to either a cost avoidance or cost saved.

### *Renewable energy*

24. In September 2011 members were briefed on the work to develop a solar panel framework contract for use by the County Council and schools. Tenders were returned last January at the same as the Government announced reductions in the Feed-in Tariff (FIT).

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25. As a direct result of the lower FIT, the schools solar PV programme was put on hold. This was because the financial model was no longer viable. Officers are keeping the position under review.
26. The Council is continuing to convert end-of-life oil boilers to biomass at schools to take advantage of the Renewable Heat Incentive. Five have been installed in the last year (Stadhampton, Kidlington, Fritwell, Carterton and Stonesfield).

### **RECOMMENDATION**

27. **The Growth & Infrastructure Scrutiny Committee is invited to note the report**

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November 2012

## Annex 1 – Lessons learnt from the Carbon Management Programme

### Lessons learnt

1. The Council's investment in energy efficiency has delivered significant savings but has not achieved in full the ambitious targets that were set. There are more lessons to be learnt from aiming high and not quite achieving the target than from easily achieving an unambitious target. The lessons for future programme design include:
  - confirmation that it is technically possible to make significant reductions in energy consumption (e.g. 50% in Speedwell House );
  - the difficulty of maintaining consistent plans to deliver an ambitious five year target in a rapidly changing political, policy and financial environment;
  - the need to secure commitment across all uses of energy to ensure that delivery is balanced;
  - the importance of reliable and consistent data to establish a baseline and to evaluate progress;
  - the usefulness of normalised data (adjusting for weather, opening hours etc.) to remove external factors when evaluating performance;
  - the limitations of volunteer-led behaviour change programmes for long term delivery;
  - the need to off-set growth in energy consumption by compensating efficiency or renewable energy measures if targets are to be met;
  - the strengths of Salix funding to make initial savings across the whole estate and its limitations as a funding source for deeper energy savings with a long-term payback;
  - the difficulties of convincing school governors of the benefits of energy saving compared to the risk of taking out a loan.

### Recommendations

#### Background

2. The recommendations should be set in the context of two developments since the Carbon Management Programme came to an end. These developments already include some of these lessons:
  - the Council has adopted the principles of ISO50001 Energy Management Systems to replace the Carbon Management Programme with the overall

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objective of maintaining its energy costs as close to 2010/11 as far as is cost effective;

- the Council has let a major 10 year property and facilities contract to Carillion Capita Symonds which includes a target to reduce energy consumption across the corporate estate by 25% by the end of the contract and to reduce carbon emissions across the whole estate by 35% compared to 1990/91 levels.

### **Consistent yet flexible delivery plans**

3. The Energy Management System will allow the Council to adapt its targets year by year in response to current performance and forecast energy prices, within the overall objective. The contractual targets on Carillion will ensure consistent progress towards a minimum energy saving of 25%.

### **Securing commitment**

4. All areas have made progress but some have made better progress than others. Now that the Carbon Management Programme has ended, there is a risk that energy saving will become a lower priority in some areas.
5. **Recommended** that the Council adopts the formal Energy Policy which underpins the Energy Management System to signal a continuing commitment to effective energy management, both internally and externally.

### **Data quality**

6. Data quality has improved since the Programme began. The majority of gas and electricity consumption is now monitored by automatic meter readers and fuel use is now monitored through fuel cards.
7. However waste data was and still is unsatisfactory. It is collected by a number of contractors who do not have automatic data collection systems, apart from the new waste contractor SITA. The data is incomplete and late.
8. **Recommended** that we work with all waste contractors to provide more reliable data preferably through web-based data reports.

### **Project evaluation**

9. The installation of automatic meter readers makes it much easier to compare performance before and after any energy saving intervention (see example in Annex A).
10. **Recommended** that all energy reduction projects are formally evaluated with a report submitted to the Council and building users, as appropriate.

### **Developing a low energy culture**

11. The time has come for low energy behaviours to become an integral part of the 'way we do business' so that using energy wisely no longer relies on volunteers and becomes as much a part of every job as working safely and turning up on time.

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12. One simple step is to link a set of basic low energy behaviours to the requirement in the Officer's Code of Conduct to "seek opportunities to improve and promote energy conservation". This has been agreed by the Head of Law and Governance.
13. Working with the new Single Service Property contractor, Carillion, we will be updating the intranet energy pages; delivering a campaign to raise awareness of the cost of energy and a top ten list of energy behaviours and lastly promoting a 'Switch Off' campaign to establish the base load energy consumption.
14. Alongside this Facilities Managers and Site representatives will have responsibilities for energy management included in their job descriptions and training.

### **Off-setting growth**

15. The Energy Management System includes an annual energy review to assess performance and the impact of price rises before setting savings targets for the following year. This process will automatically capture the impact of any increase in consumption for whatever reason.

### **Funding limitations**

16. In its pre-contract dialogue with Carillion, the Council has emphasised the need to move away from the short-term paybacks dictated by the Salix fund to a 'whole building' approach with a blended overall pay-back. Where appropriate Salix funding will still be used but it will be part of a package of funding, driven by the energy objective.

### **Schools**

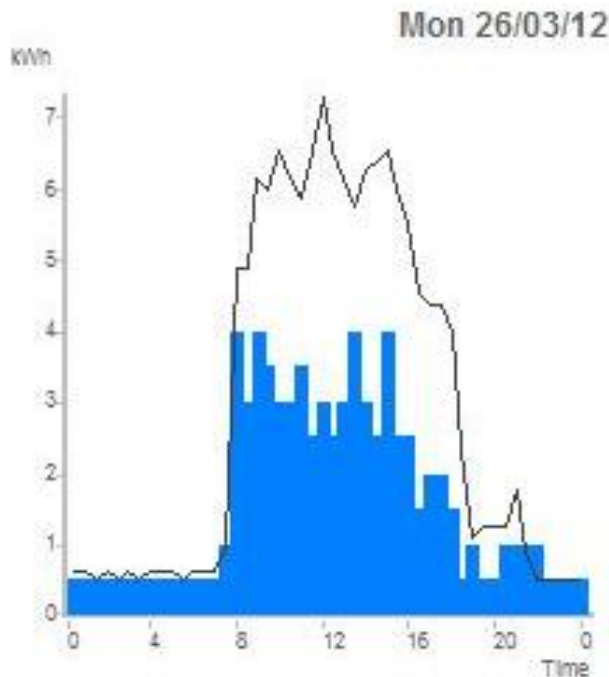
17. The Council is supporting schools to become academies. If convincing governors of maintained schools to invest in energy efficiency is considered difficult, it could be imagined that convincing governors of independent schools will be even more challenging.
18. Carillion sees energy saving in schools as a significant business opportunity given its experience in other counties. It is able to offer guaranteed energy savings which may prove attractive to school governors and academy trusts. The Schools Energy Strategy is being reviewed to explore how best we can work with Carillion to promote the benefits of energy saving in the context of the new contract and academies.

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### Annex 2 – Using automatic meter readers to evaluate and identify savings

#### St Edmunds RC Primary School, Abingdon

1. Many schools are installing LED lighting to save money on their electricity bills.
2. The diagram below shows the electricity consumption at St Edmunds RC School before and after installing LEDs, a report generated by the Stark web site based on automatic meter readings.
3. The actual consumption on Monday 26 March is shown in blue half-hourly columns. The black line shows the average consumption for the previous four weeks.
4. The average saving for the week was over 40% compared with the average consumption over the previous four weeks.



#### Tetsworth Primary School

5. After training in the use of the Stark reports, a staff member at Tetsworth Primary School noticed that electricity consumption seemed high at night and weekends. Working with a member of the Carillion energy team, they discovered that the timers on a water heater were wrongly set. Changing the timer so that the heater only comes on during the school day is saving the school £600 per year.



## **Annex 3 – Energy behaviours**

### **Using energy wisely**

#### **Introduction**

The Officers' Code of Conduct sets out how the Council expects its staff to carry out their work. Specifically, it states "you should seek opportunities to improve and promote energy conservation".

This note sets out how to do this. There are core energy behaviours for all staff and some building specific behaviours which will need to be agreed locally, if relevant.

#### **Core energy behaviours for all staff**

##### **Switch off**

1. Switch off your monitor and any local lights when away from your desk for more than 10 minutes.
2. Switch off all lights whenever they are not needed and when you are the last to leave a room, including kitchens and toilets.
3. Switch off your computer, monitor and all lights at the end of the day.

##### **Save energy**

4. Only charge laptops and mobile phones etc which are used for work. Remove the chargers from the mains when they are not in use – some still draw electricity even though they are not in active use
5. Keep external doors and windows closed when the heating is on.
6. Dress for the weather; wear extra clothing rather than relying on space heating alone to keep warm. (The Chartered Institute of Building Services recommends a temperature of 20 degrees in areas where desk work takes place.)

##### **Travel wisely**

7. Follow the travel hierarchy: Avoid travelling; walk, cycle or use public transport; use a pool-car or a shared trip before using your own car.

##### **Help others**

8. Take action for colleagues if they forget. Be prepared to be challenged and be open to suggestions.
9. Report energy waste and opportunities to save energy to whoever manages your building.

#### **Core behaviours for all managers**

In addition to above:

1. Ensure your team adopts the core energy behaviours.
2. Support your building manager in the work they do to reduce energy waste.

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### **Building specific behaviours**

These behaviours may not be relevant to all buildings so will need to be agreed locally:

1. If there are different bins for different wastes, take the time to understand what goes where and use the bins correctly.
2. Even if there is a lift, use the stairs if you can.
3. If you use a kettle at work, fill it with only the water you need; no more.
4. If your office has older printers, turn off all printers and scanners when not in use or if you are the last to leave your part of the office. Print double-sided in black and white.
5. Do not use additional electric heaters, unless:
  - you have agreement from the building manager when the temperature in your office has fallen below the acceptable 20 degrees C and you have tried to make yourself warm without the use of a heater.
  - you have permission from your head of service to use a heater for health reasons, or have been recommended to do so by an occupational health specialist .
  - and it has been PAT tested.

### **Role of the building manager**

From an energy perspective, the key role of the building manager is to monitor energy use in the building; to identify any waste and to take action as far as they can or to report it.