

**TACKLING CLIMATE CHANGE IN SUNDERLAND (REPORT 1: MANAGING THE COUNCIL'S CARBON EMISSIONS)**

**REPORT OF THE DEPUTY CHIEF EXECUTIVE**

**STRATEGIC PRIORITIES: SP1: Prosperous City; SP5: Attractive and Inclusive City**

**CORPORATE PRIORITIES: CIO1: Delivering Customer Focused Services, CIO3: Efficient and Effective Council; CIO4: Improving Partnership Working to Deliver 'One City'.**

**1 Purpose of the Report**

- 1.1 This report is the first of three reports, which will update the committee on the Council's work on climate change. There are many issues relating to climate change which the Council is pursuing. This first report updates the committee on the Council's progress and plans for reducing the carbon emissions of the Council itself.
- 1.2 Subsequently, further reports will follow that update the committee in relation to how the Council is managing the city's carbon emissions (including housing, employers and transport), and lastly, how the Council is managing weather impacts of climate change (report due on 24 April 2010)

**2 Background**

- 2.1 The Council's aim is for Sunderland to become a clean, green city with a strong culture of sustainability, which is one of the five main aims within the Sunderland Strategy. Within this aim, the partners to the strategy have a specific commitment to tackle climate change and reduce Sunderland's greenhouse gas emissions.
- 2.2 This commitment to tackling climate change is evidenced further by several national and international commitments that the Council are signatories to:
  - 2.2.1 The Nottingham Declaration on Climate Change (2001).
  - 2.2.2 The EURO CITIES Declaration on Climate Change (Nov 2008)
  - 2.2.3 The EU Covenant of Mayors initiative (Jan 2009)
- 2.3 In November 2008, the Council adopted Sunderland's Climate Change Action Plan, which sets out a series of initiatives as to how the city, as a whole will reduce its carbon emissions over the next 15 years. Initiatives include home energy efficiency, sustainable construction of new homes and developments,

commitments from employers to cut carbon emissions, efficient vehicles. (These will be addressed in the second report in this series).

- 2.4 Sunderland's work to date on climate change has been recognised nationally, by winning the Sustainable Communities Award for "Tackling Climate Change".

### **3 How the Council is managing its own carbon emissions**

- 3.1 In June 2007, Cabinet adopted Sunderland City Council's Carbon Plan, which set out a commitment and framework to reduce the Council's carbon emission by 10%, or 7,000 tonnes, between 2007 – 2012. This target accounts for an expected 10% growth in energy consumption, resulting from new leisure centres and streetlighting improvements. So in real terms, the Council will reduce emission by closer to 20%.

- 3.2 Future carbon emission savings are measured against the baseline year of 2006/07. During that year, the Council produced 69,689 tonnes of carbon emissions from its own operations. This equates to 8.5% of the all carbon emissions from the city's employers. Council emissions arise from the following activities

- 28% from gas consumption in buildings
- 32% from electricity use in buildings
- 24% from electricity use in streetlights
- 16% from travel at work, and to work.

#### **Progress so far**

- 3.3 Actual carbon emissions dropped in 2007/8 by 1.7%, then rose again in 2008/9, to +2.2% above baseline year. The cold winter of 2008/9 is the main reason for the increase observed in 2008/9, but if the influence of weather is removed (by applying a standardised weather correction), then Council carbon emissions are following a steady decline, with 2008/9 emissions 3.8% below 2006/7.

- 3.4 This reduction, after weather correction, is the result of:

- better billing
- the impact of the Cut your Carbon campaign on employee habits,
- building energy surveys leading to no-cost improvements,
- heating boiler upgrades,
- commencement of SALIX funded energy efficiency improvements
- 30% reduction in Sunderland Aquatic Centre carbon emissions, compared to architects estimates.

## Outlook for 2009/10 and 2010/11

- 3.5 Due to major projects being completed, particularly the opening of new schools within the Building Schools for the Future programme, it is expected that the weather-corrected year end carbon emissions for 2009/10 should see another 2.8% reduction, with a 4% reduction expected once we see the full year effect of all 2009/10 projects, in 2010/11. (Actual carbon emissions will still depend on winter temperatures).
- 3.6 These savings will be delivered through an agreed programme of projects and initiatives across many Council Services. Progress on all initiatives is summarised below in the next section.

## 4 Carbon saving initiatives

### Major initiatives

- 4.1 **Sunderland Aquatic Centre.** Year-end energy consumption figures now confirm that the Aquatic Centre's carbon emissions are 30% lower than the 2,800 tonnes predicted by the initial architect's estimates (which were included within the original Carbon Plan), amounting to a further 800 tonnes of carbon savings to the Council's carbon plan.
- 4.2 **BSF programme.** Completion of 3 BSF schools in September 2009, 1 further in 2010, should realise carbon savings of 1,500 tonnes by the end of 2009/10, rising to 2,500 tonnes once full year effect is seen. These are conservative estimates, but like the Aquatic Centre, close monitoring of energy performance in the first year is needed to confirm this position.
- 4.3 **25m pools.** Completion of the 25m pools at Hetton and Silksworth in December 2009, will see an increase in carbon emissions of 188 tonnes in 2009/10, rising to 750 tonnes in 2010/11 (with an estimated increase in energy costs of £200,000 pa) .
- 4.4 **Other growth.** As for other years, growth from new streetlighting schemes and general ICT provision is estimated at 300 tonnes for 2009/10 (but energy saving measures in these areas are discussed in more detail at paragraphs 4.22, 4.24 and 4.26).

### Flagship Initiatives

- 4.5 **Wind Energy programme.** The Council has already installed a small, 6kW wind turbine at Hetton Lyons Primary School. To develop wind turbines further, the Council's Strategic Investment Plan has allocated £500,000 to developing small and medium size wind turbines, between 2008/9 – 2010/11.
- 4.6 Through extensive feasibility work, the suitability of locations for wind turbines within land and property that the Council owns has been assessed.
- 4.7 To date, it has been confirmed that Biddick Sports College / St. Roberts of Newminster Schools could accommodate a 100kW turbine of between 30-40 metres in height. Furthermore, funding has been secured under the DCSF's Low and Zero Carbon Schools programme (£300,000 for the turbine, plus an

additional £124,000 for lighting improvements). Council funds allocated in the Strategic Investment Plan should cover the remaining costs for this site. Grant funding will also be applied for additional turbines should further sites be identified.

- 4.8 A business case will be prepared and brought to cabinet in late 2009, to approve funding, and then proceed with a planning application early in 2010. Due to the 1 – 2 year waiting list for new turbines, the project may take 3 years to complete and will be subject to the successful granting of planning permission.
- 4.9 The Council is also working with Partnership for Renewables (a company backed by the Carbon Trust), to assess the potential for developing large wind turbines (up to 1MW, 80m high) on Council land. Feasibility work completed in June 2009, showed some Council-owned sites could accommodate large wind turbines.
- 4.10 The Council would benefit from these turbines by receiving a land-rental income, with the option to purchase green electricity generated at a reduced rate. The possible locations of these large wind development sites will be taken to Cabinet, to seek a decision whether pursue this initiative further.
- 4.11 **Wood Energy Programme.**
- 4.12 At present, 4 new secondary schools and 2 new primary schools have wood burning boilers installed and operational. These are currently estimated to be saving over 300 tonnes of carbon emissions per year.
- 4.13 Efforts to install wood boilers in existing council premises are still ongoing. Despite successfully securing £80,000 grant funding from DEFRA, plans to install a wood boiler at South Hylton House were cancelled in November 2008, due to critical issues coming to light regarding the existing boiler plant, and further cost increases for the wood boiler scheme. A gas boiler replacement is now going ahead, that will still save about half the carbon emissions of the wood boiler project. Feasibility work is ongoing to find another suitable location for a wood boiler.
- 4.14 The plans for an accompanying woodchipping station to service the proposed wood boilers have been put on hold, for several reasons; a grant funding application to develop a woodchipping station was unsuccessful; and in addition to losing the South Hylton wood boiler, Gentoo's Leaffield Green development is not going ahead with a wood boiler, as a result of the economic downturn. Until woodchip boiler installations are confirmed, a case for a woodchipping station does not exist.
- 4.15 **South Hylton House gas boiler replacement.** The existing gas boilers have been replaced funded by £160,000 from Repairs and Renewal budgets, and should save 125 tonnes carbon emissions, and £15,000 gas costs.
- 4.16 **SALIX fund.** In 2008/9, £280,000 was spent on schemes, largely for voltage reduction equipment in 3 schools, and lighting schemes at the Crematorium and Civic Centre car park. Other insulation works have been carried out at various buildings. For 2009/10, investment of £150,000 is planned, with sufficient projects identified.

- 4.17 **Display Energy Certificates.** All public buildings over 1000m<sup>2</sup> are required to possess a display energy certificate and advisory report. This work is being carried out by the Energy Conservation Team. The certificates are required to be renewed on an annual basis.
- 4.18 **Automatic meter reading (AMR).** Since February 2009, for electricity, 100 automatic meter readers have been installed out of approximately 180 meters in total. The system is being reviewed, with regards to installing AMR at the remaining 200 sites. A review is being undertaken of gas AMR with regards to continuing the implementation of AMR on this utility. Trials are being conducted for AMR of gas and water consumption, and approvals to install these meters across all suitable sites will follow in 2009/10.
- 4.19 **Eco-Schools.** This project was launched in September 2008, and aims to take 19 schools through the Eco-Schools programme, to reach either silver or green flag status. As a result, Sunderland now has its first green flag school (St John Boste Primary School) and 5 others have moved up one level in the eco-schools standards. Energy audits are being carried out in Eco-schools, and one has secured £2,500 funding from Curry's to install energy efficient lighting.
- 4.20 **Vehicle tracking systems.** Fitting of the first 120 vehicle tracking systems were completed in February 2009, to Environmental Service Vehicles, with savings expected through in 2009/10 (130 tonnes of CO<sub>2</sub>, £45,000). A further 180 vehicles are due to be fitted throughout 2009/10, to cover all CCS vehicles and some from Adult Health and Housing.
- 4.21 **Whole life costing of vehicle procurement.** Ongoing replacement of fleet vehicles with the latest, most fuel efficient vehicle fit-for-purpose continues, estimated at approximately 60 vehicles per year.
- 4.22 **ICT energy management.** Following almost 12 months of monitoring, it's been confirmed that remote shutdown of any Council PC left on after 7pm, could save 5% on PC energy consumption, or 150 tonnes and £30,000 per annum. Approval from Executive Management Team is being sought, prior to implementing the automatic shutdown of all Council computers, which should be in place early next year, once necessary communications have been made with all staff. endorsement has been obtained.
- 4.23 **Employee lease cars.** The 185 g CO<sub>2</sub> / km carbon emissions cap on lease cars available to employees has helped to reduce the average carbon emissions of all lease cars by 8% in 2 years. Discussions with Corporate Personnel and the lease car scheme manager highlighted significant increases in company car tax for cars over 160 g CO<sub>2</sub> / km from April 2009, which should encourage further reductions in lease car CO<sub>2</sub> emissions, without the need for further Council intervention. This will be reviewed again in April 2010.
- 4.24 **Print Rationalisation project.** ICT are in the process of tendering for new provider of multi-function printing devices, which will allow the removal of the majority of desktop printing equipment. Current estimates indicates this could reduce carbon emissions by 115 tonnes per annum. Installation was planned for September 2009, but the tendering process had to be cancelled, with retendering due the end of 2009. Installation has therefore been put back to 2010/11.

4.25 **Water Coolers.** Further installations of mains fed water coolers were completed for 15 more buildings in July 2009, achieving an estimated £8,000 of savings, in addition to the £13,000 savings achieved from the scheme within the Civic Centre. A few remaining buildings require installations to be completed in 2009/10, and after the programme will be complete.

4.26 **Streetlight metering.** 12 months of monitoring dawn/dusk times has unfortunately shown that actual streetlight burning hours are very close to the figure NEDL impose on us. So there is no saving to be obtained from changing metering and billing arrangements. However, the study has shown that there could be a 2.5% saving to be realised (of 340 tonnes CO<sub>2</sub> and £75,000 per annum), from replacing all dawn/dusk sensor units, to move lighting up times slightly later, and switch off slightly earlier. Costs of this replacement are being explored with Aurora, prior to taking the decision to go ahead with changes to sensors. Once approved, this change will be implemented over 4 years (the time taken for complete lamp change cycle to all streetlight columns).

## **5 Outlook to 5 year target by 2012**

5.1 The Council is currently on track to achieve a 10% reduction, with existing commitments, through:

- BSF programme carbon savings (which require monitoring to ensure new school energy consumption meets predictions)
- Completing wind programme of 2 small and 1 large turbines
- Continuing SALIX funding levels
- Automatic Meter Readings achieving 5% and 2.5% saving in electricity and gas consumption across the estate.

5.2 Looking beyond the 10% target, it is essential that other initiatives are developed, and implemented. This could involve increasing investment in SALIX projects, to accelerate delivery, but also developing invest-to-save schemes for streetlighting, particularly for replacement traffic signals and more efficient streetlamp replacements. Also, general employee awareness and involvement in cutting energy wastage must be maximised.

5.3 Next years work programme, for 2010/11, will start the process of planning for the following 5 year Carbon Plan.

## **6 Recommendations**

6.1 That the committee note the progress on managing the Council's carbon emissions.