



# Energy and green issues – maximising the economic and environmental case

This briefing is one in a series of briefing papers being issued by APSE around efficiencies and how local authorities can deal with budget constraints and maximise their opportunities such as income generation. As councils face tougher times and unprecedented financial constraints, APSE have brought together some examples of where efficiency savings have been made and some examples of best practice. Whilst many ideas are transferrable between councils, APSE recognises that local circumstances will vary and some routes may be more appropriate to some than others. This briefing paper relates to energy and green issues and provides case studies, which collectively provide real financial savings of over £1.6 million per annum and a carbon reduction of over 13,000 tonnes of CO<sup>2</sup> per annum.

## Key issues:

- An outline of the legislative framework and financial benefits of specific 'green' projects
- Contains a range of case studies for front line services
- Further information and support is available from APSE by contacting [djohns@apse.org.uk](mailto:djohns@apse.org.uk)

## 1. Introduction

The Climate Change Act 2008, Climate Change (Scotland) Act 2009, One Wales commitment and Northern Ireland Programme for Government set challenging targets to reduce emissions. The UK low carbon transition plan was produced and laid before Parliament on 15 July 2009, which sets out a series of proposals and policies to meet the UK carbon reduction targets. It sets out the UK's first ever comprehensive low carbon transition plan to 2020.

The Carbon Reduction Commitment started in April 2010 and is the UK's first mandatory carbon trading scheme, covering both public and private sector organisations, including local authorities. It is designed to encourage large non-energy intensive organisations in the UK to reduce their CO<sub>2</sub> emissions. The aim of the carbon reduction commitment is to reduce the level of carbon emissions by approximately 1.2 million tonnes of CO<sub>2</sub> per year by 2020. As a Climate Change Act commitment, the scheme is aiming for an 80% reduction in CO<sub>2</sub> emissions by 2050. The scheme comes with penalties and bonuses which make the scheme both environmentally and financially important.

The legislative framework to reduce carbon is now in place and councils are increasingly examining ways of meeting their carbon commitments as well as managing service costs and generating income in the current financial climate. The following briefing details the financial context of the 'green agenda' as well as drawing on real examples for front line services where both financial and carbon savings have been made.

## 2. The financial context

Responding to the 'green agenda' is associated with economic benefits. There are both bonuses and penalties which local authorities need to be aware of as follows:

### ***(a) Carbon reduction commitment penalties and bonuses***

The carbon reduction commitment aims to use a bonus and penalty scheme as part of the incentive for organisations to reduce their levels of emissions. Any bonus or penalty administered to an organisation will be based on their position in the league tables. During the second year the margins for bonus and penalty will increase to 20%, with 30% being applied to the third year and so on. By the fifth year, organisations in the top half of the table will receive a bonus, whereas all the organisations in the bottom half will receive a penalty.

### ***(b) Landfill tax***

Landfill Tax is payable on waste that is disposed of at landfills. The Tax is regulated by HM Revenue and Customs. Rates for 2010/11 are:

- Active waste - £48/tonne (+VAT)
- Inactive waste - £2.50/tonne (+VAT)

Government announced in the Budget 2010 that the rate for active waste will continue to escalate by £8 per year until at least 2014/15, when it will reach £80 per tonne.

### ***(c) EU fines for landfill***

Under the EU landfill directive, the UK must reduce landfilling to 75 per cent of 1995 levels by 2010, 50 per cent by 2013 and 35 per cent by 2020. The Department of Environment, Food and Rural Affairs has said it will fine councils £150 for every tonne they land-fill above the total amount of allowances they hold. The Government may also pass on any EU fine to the local authorities, meaning that "failing councils" would be responsible for their share of fines reaching £180m a year – £500,000 a day – until the directive's demands are met.

## 3. Opportunities for front line services

Set out below are a number of case studies from local authority front line services throughout the UK which show real financial and environmental benefits from addressing the green agenda in a positive way. Further details, including contact information and case studies for other front line services, are available to APSE member authorities by contacting the APSE office on 0161 772 1810.

### ***(a) Waste and environmental services***

- **Case study 1: a metropolitan council in the north of England** converted 1000 tonnes of street cleaning leaf waste into good quality useable compost, to be used in their grounds maintenance service. They bought machinery which cost £20k but it is expected to save the council around £70k per year.
- **Case study 2: a council in the north of Scotland** aimed to deliver the first phase of an ambitious programme to plant 210,000 trees within the largely urban environment of the Council's boundaries. In this phase approximately 100,000 trees will be planted in five months at no cost to the Council. This has been achieved by securing external funding. To cover the costs of the trees and materials required

approximately £350k has been obtained by a dedicated group of Council officers. 45 hectares of new woodland will be created which will take up and store 15,000 tonnes of CO<sub>2</sub> over the next 50 years.

- **Case study 3: a council in Scotland** has 28% of its urban areas as parks or green space. Maintaining these areas gives rise to a significant volume of botanical waste and the impact of plant and vehicles used in these operations contributes to environmental pollution. Therefore, they have used mulch for existing tree and shrub beds and expanded the sale of this to the commercial market, introduced localised on-site chipping (reducing transport costs), sold this to specialist bio mass fuel suppliers and the timber is cut, split and seasoned for sale as fire wood. This means a real saving of £6,400 in Landfill Tax in 2008/09 and £12,000 in 2009/10.

#### ***(b) Highways and street lighting services***

- **Case study 4: a council in the east of Scotland** has introduced a new low-emission road repair process which has a lower cost per-repair, shorter repair time and a fraction of the carbon footprint. It allows for a complete recovery of the existing surfacing material without cutting any of the existing surfaces first, eliminating the need for multiple vehicles, noisy jack-hammering and landfill waste. It reduces the carbon footprint of road repair by over 85% and has an average cost saving of around 40% per repair compared to traditional methods of road repair.
- **Case study 5: a unitary council in the south west of England** has developed a Whole Life Carbon Evaluation Model for their street lighting service to ensure that all new technologies and strategies were properly evaluated before being implemented. In the first full year they have saved 3% of the carbon generated by street lighting and is expected to generate financial savings of over £150k per annum.
- **Case study 6: a county council in central England** has constructed a new gully waste dewatering site simultaneously with the provision of a new waste recycling centre, which provides the local community with a much improved facility, a cost reduction to the tax payer for the provision of the service and a carbon reduction of over 79 tonnes.
- **Case study 7: a metropolitan council in central England** has sourced section 106 funding through a new development in their local centre, to undertake a number of projects to improve the visual appearance of the area and to attract individuals to continue their shopping experience in the town centre. These improvements came about through public consultation which resulted in modernisation of the area and relighting using environmentally friendly products in line with the carbon agenda and climate change initiatives. Overall the project will see energy and CO<sub>2</sub> saving of 38%.

#### ***(c) Building maintenance and housing services***

- **Case study 8: a district council's ALMO in central England** has a programme in place to replace 140 properties with Ground source heating in 2009/10 (saving an average of 9665 CO<sub>2</sub> across 3 properties). They are piloting Air Source Systems to several properties as an alternative to Ground Source Heating (saving 60% in CO<sub>2</sub> emissions and typically between £3 and £6 per week for tenants). They are in the process of installing a Wind Turbine within their main depot, which will generate about 25% of the electricity required for their office blocks, vehicle maintenance depot, and Training and Development Centre.
- **Case study 9: a council in Northern Ireland** is developing a deep geothermal led district heating network project for the town. This will attract £50 million plus into

the town, create employment, reduce carbon emissions, improve energy efficiency and reduce the annual energy cost and long-term volatility.

- **Case study 10: a council in the east of Scotland** has improved waste management in its Buildings Service over a 20 month period from only 4% of total waste being diverted from landfill to achieving the target of 90% being diverted from landfill. Cost savings have been realized to the value of over £200,000.
- **Case study 11: a council in south Wales** launched its Waste and Sustainability agenda for Building Services in 2007 to address the waste produced at their depots and construction sites. The changes implemented have led to cost reductions of £480K, reduction of 44% of waste produced, 70% of the remaining waste diverted from landfill and achievement of Green Dragon Level 5. The service has reduced its overall utilities by 38%, water consumption by 34.2% and reduced CO2 emissions by 829 tonnes since 2007.
- **Case study 12: a metropolitan council in the north of England** retrofitted insulation and low energy light bulbs to all households regardless of income. This was a 3 year programme with £20m investment. The Council have invested approximately 50% of the funds from its own capital investment programme with a further 50% match funded from Scottish Power. Estimated carbon dioxide reduction from the first year's installations is 10,537 tonnes CO2/pa.

#### ***(d) Transport and vehicle maintenance services***

- **Case study 13: a city council in the north of England** began a demonstration trial of two compressed gas powered Refuse Collection Vehicles using biomethane. Initial research suggests that if the technology was rolled out on a large enough scale, the benefits would not just be significant reduction in CO2, but also has the potential to reduce the council fuel bill by up to 10%. This reduced running cost is likely to cancel out the initial investment required to purchase the vehicles.
- **Case study 14: a council in the north of Scotland** reduced carbon emissions from their vehicles by 76.5% collecting used vegetable oils and then reprocess them to produce biodiesel to run in the council" fleet vehicles. The collection of waste oil previously using another supplier was 33 pence per litre, now the council gets paid 5 pence per litre for the oil collected. The cost of fuel is 10 pence cheaper per litre to run the bio diesel vehicles with no difference in mileage output.

## **4. APSE commentary**

There are three ways in which councils can reduce their carbon footprint and therefore its energy use;

(a) Reduce the amount of energy that is used in the performance of its current activities, such as using 'Green Champions' to encourage energy efficiency.

(b) Improve the energy efficiency of its buildings and other assets, transport and related areas, such as electric car schemes and retrofitting insulation into public buildings.

(c) Generate its own energy from renewable sources, such as building solar parks, constructing wind farms and biomass and district heating networks.

The case studies above collectively demonstrate real financial savings of over £1.6 million per annum and a carbon reduction of over 2,700 tonnes of CO<sup>2</sup> per annum. Further support is available from APSE via obtaining these full case studies, additional support in creating a business case for environmental projects, skills development and training, as well as advisory services. Please contact [djohns@apse.org.uk](mailto:djohns@apse.org.uk) for more information.

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