

‘SMALL STEPS – BIG STRIDES’ : Carbon reduction in County Durham and a very special Solar PV project

As a very new unitary authority, formed in 2009 after Local Government Review, Durham County Council is really proud of its commitment to tackling climate change and of what it has achieved so far. With a population of over 500,000, and high levels of deprivation, there are 238,000 households in the County, of which 63,000 are in fuel poverty.

Within the first few months of becoming a Unitary authority, we set ourselves the ambitious and stretching challenge of reducing carbon emissions from the Council’s own activities by 40% by 2015 from the 2009 baseline (107,000 tonnes).

We knew it was important to involve key stakeholders, to ensure that all sectors have a say in the process, so we set up a Climate Change Partnership, externally chaired, with membership from local businesses, Durham University, schools and community groups, etc..

Internally, we established a cross-directorate Carbon Management Board, chaired by the Director of Economic Development. We also began an Eco-Champions Programme, so that all 20,000 staff could get engaged in identifying ways to reduce emissions from their own work areas, alongside a Schools Carbon Programme to tackle emissions from our schools.

A public and staff training session on solar PV at a local installation company



In order to make a real difference, the Council also made a serious financial commitment, setting up a capital investment fund of £6 million for renewable energy technologies and a further £2 million per annum for energy efficiency retrofits to public buildings.

We looked at different renewable energy

technologies and decided to move forward on solar energy, while developing a wider renewable programme to run over subsequent years.

The SPA (Solar Photovoltaic Arrays) project was a highly complex initiative designed to install solar photovoltaic (PV) arrays on as many public buildings as possible. The aims were to lead by example, to achieve value for money, to stimulate the local renewable market to encourage employment opportunities and to raise awareness of what could be achieved in generating clean, renewable energy.

We selected buildings that had a high carbon footprint and were well used by the community, so as to inspire and engage local people. Leisure and sports centres were chosen, along with business centres, libraries and museums, SureStart buildings, the theatre, offices, park and ride centres, etc.

In one year we succeeded in installing over 3,500 individual panel, with a capacity of 870kWp on 35 buildings. These will generate approximately 700,000 kW hours of electricity per annum; 17gWh over the total 25 years of the project and, importantly, will save 370 tonnes of CO₂ every year. The total cost of the solar investment was £2.8 million.

The arrays ranged in size from 3kWp to 150kWp and were installed on flat, curved and pitched roofs, comprising both flat panels and integrated solar tiles, using a variety of fixing methods that were designed and developed to suit each building. As far as possible we used local installers to do the work and we issued regular press releases and other communications to keep people informed and engaged.



There were significant challenges involved in the project, including a detailed analysis to ensure that buildings were suitable, concerns around roof strengthening and other structural issues, safety problems with erection of scaffolding and access for installers to buildings in constant public use, and unfavourable weather conditions during the installations but through good team work all of these problems were overcome and the deadlines met.

Solar PV installation on a Park & Ride facility

Every building has a display readout of the solar outputs prominently displayed in the public area to raise awareness, and training is also taking place for building managers to maximise the financial and carbon savings from the solar panels.

The results of the project have seen an increase in the general uptake of solar PV across the County in both the domestic and business sectors and we have worked closely with local community organisations to embed sustainability and to support them to install renewable technologies.

Solar PV installation at Derwentside Business Centre

It doesn't stop here though. Initially, legal reasons prevented our investment in school buildings, but we have resolved that and are now embarking on a programme of solar PV for as many of our 280 schools as practically possible.

The Council has also developed a national lead on biomass boilers, which it has been installing since 1996. This is a challenging technology, but we have assessed past successes and failures and are now embarking on a programme of biomass boiler installation in our buildings. Backed by a re-assessment of our own woodland management, to generate our own biomass resource, the project will also create sustainable local employment opportunities.



Alongside these renewable energy initiatives the Council is also investing heavily in energy efficiency projects. These include an evaporative cooling scheme for our IT Data Centre, a focus on our worst performing public buildings and a major energy efficiency retrofit scheme.

Other project areas include, Energy Performance Contracting for our larger secondary schools and an interest free loan scheme to enable schools to invest in a range of energy saving measures that will pay back well.

These initiatives, in partnership with the behavioural change Eco Champions programme and Schools Carbon project have already resulted in a reduction of 9% in carbon emissions against the 2009 baseline, despite the significant increase in winter fuel requirements from two very harsh northern winters.

We still have a long way to go to achieve our daunting 40% target by 2015 but we're taking small steps to achieve big strides and we mean business!