

## Cities sign low carb deal

Large conurbations are guilty of 80% of global emissions, but they may also have ways to develop a cleaner habitat, says **Mike Scott**



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How clean is your city?

Six months from now, three of England's biggest cities, Bristol, Leeds and Manchester, will have to come up with city-wide carbon-reducing schemes. The three cities are sharing a £250,000 grant from central government to develop schemes that will help cut their carbon dioxide emissions.

The low carbon cities programme, announced last month, has been set up by the Department for Environment, Food and Rural affairs (Defra). The cities will work with both the Carbon Trust, the private company set up by government to help organisations cut their carbon emissions, and with the Energy Savings Trust, which is funded by government and the private sector. According to the Carbon Trust, cities are responsible for 80% of global emissions of greenhouse gases and consume 75% of global energy. The three cities are part of the core cities group, which also includes Birmingham, Liverpool, Newcastle, Nottingham and Sheffield, and the Defra funding will help these cities, by producing audits of current emissions and identifying ways to cut them and save costs.

"Cities contribute to the causes of climate change, which in turn is already having major social and economic impacts on our major cities," says Richard Rugg, head of public sector at the Carbon Trust. "The core cities are located in areas that are adjacent to major rivers, flood plains or the sea and these populations are especially vulnerable to climate change impacts.

But Rugg says cities can provide answers as well as questions. "Cities have a huge impact on emissions, because of the numbers of people who live and work in them - the core cities regions are home to 16m people - and because of the example they can set." The density of their populations and the variety of organisations in cities provides opportunities for co-operation between groups such as local government, the NHS, education, and business.

### Track record

Manchester, Leeds and Bristol were chosen to lead the project because of their track record in addressing climate change over the last decade, their ability to devote staff to the programme, support from each council's leaders and previous success in working with other organisations. Each of the three cities will develop their own plans, taking into account local factors and have six months to come up with carbon reducing schemes. "The three cities are all very different and there is no one outcome we are looking towards," says Rugg. "They all have different schemes under way and we need to build on what they have already achieved."

Leeds, for instance, has trialled a process called tri-generation, where a single source of energy is used to create power, heat and cooling, while Bristol has done a great deal of work on waste and transport issues.

There is enormous potential for savings, according to Rugg, who believes city-wide reductions of 20% are realistic. Such significant cuts are possible because of the economies of scale that can be unleashed if different organisations within a city co-operate, he says. Measures such as combined heat and power (CHP) plants that are not cost effective for a local authority alone become much more attractive if you can also involve the city's hospitals, the university and social housing schemes.

### Joint projects

Alex Minshull, environmental quality and sustainable city team manager at Bristol city council, says the city is looking at the possibility of joint projects. "From my office window, I can see a university campus and a conference centre owned by the council and the whole area is surrounded by a timber-producing estate, so it is likely there will be potential for installing biomass boilers there, while in the city centre there are university buildings and hospital premises in close proximity, so we may be able to do something with CHP," he says.

Other possibilities include using publicly-owned land to develop community-scale wind power (see page 3) but the Carbon Trust emphasises that this scheme is not all "hard-core" technical development. There will also be a range of more prosaic measures, including opportunities to improve insulation and campaigns to encourage cycling and use of public transport. There are also likely to be opportunities to combine waste disposal and energy production. The cost of many of these plans can be cut if different groups join forces on procurement, producing economies of scale. On lighting, for example, Minshull in Bristol says if the council were to join forces with the university and the local NHS, it would be able to go to a lighting company with an order for 2m units. "That gives us the purchasing power to make savings that are not available to the individual organisations," he comments.

On the basis that you can only manage what you can measure, the city-wide 'state of play' audits that will be carried out in all the core cities will establish a city-wide carbon dioxide baseline, showing emission totals and providing a detailed breakdown of where emissions come from.

"We hope we will develop three beacons of good practice with highly replicable projects that other areas can build up and run with," says Rugg.

## The winds of change

A new initiative by the Carbon Trust to corral public land for renewable energy is rapidly winning the approval of local authorities, writes **John Vidal**

How much land in Britain is actually owned by public bodies? After a generation of privatisations, you might think there's not much left in the family landbank. Anything but. Nearly 15%, or just under one in seven acres not including the foreshore, is owned by us all.

You would also expect the ministries of defence and the environment, as well as the environment agency and the Forestry Commission to own farms, mountains and lakes, but it's less well known that organisations such as British Waterways, universities, local authorities, NHS trusts, research establishments and even schools all have surprisingly large tracts of land, often going back many decades.

Enter the Carbon Trusts' Partnership for Renewables (PFR), set up a year ago to try to get public sector land used in the national effort to become a low carbon economy, and specifically to bridge the yawning gap that has long existed between public authorities and private companies.

Stephen Ainger, PFR director, says the idea is to create partnerships to develop onsite energy projects on publicly owned land. "I was really surprised by both the scale of the opportunity, and the sort of projects that are now being proposed. Wind power is the most straightforward, but there will be biomass as well as small scale hydro," he says.

By next March, Ainger expects to be able to say that PFR has raised nearly £500m of investment money and lined up the first few megawatts of windpower on public land. Within five years they expect this to have become 500MW - the size of a large power station. The programme, says Ainger, should unlock a total of 3 gigawatts of power, roughly the amount of energy used by 1.5m households.

In theory, the scheme is simple. PFR, backed with £10m of government cash, takes all the financial risks, finds the sites, applies for planning permissions, manages and builds the projects and conducts the negotiations.

"All the public sector bodies have to do is call us. We screen their landbank and they tell us which areas they think would be feasible from their or the community point of view. We do everything and then give them a share of



Richard Osborne/Alamy

Remote, desolate and beautiful - and potentially a new source of clean power

the proceeds," says Ainger.

PFR says it has been working with 150 public bodies, of which 30 are set to go further in developing projects. All the projects so far are wind, and most of the projects are relatively small scale, in the region of 2MW-10MW. But Ainger is confident: "This is the first tranche. But when you are leasing a piece of land for 25 years is not trivial. It takes time. Once some are up, others will follow."

### Brownie points

The carrots for the public sector are considerable. Aside from earning brownie points from government and voters for helping meet UK climate emission targets, and moving the UK towards a lower carbon economy, large sums of money can be made and saved.

"It's complex, but if it's a straight lease [of the land] agreement, with the energy being sold to the grid, then they could make up to £30,000 a year from each turbine. If they enter an agreement to use the electricity generated, it can be as much as £90,000 a year per turbine for a typical large university," says Ainger. "We find the drivers are varied. Some are clearly financial. Some want to make a difference. Universities, for instance, want to make a statement to their students."

PFR will begin the development of 10 lead projects over the next year. It recently linked up with North Yorkshire county council and detailed studies will soon start to examine the council's smallholding estates as potential locations for wind turbines.

Until very recently, most of the public sector has been slow to see the potential, apart from the Forestry Commission, which occupies millions of acres in some of the most windswept corners of Britain and is committed to developing wind power on a major scale.

Some of the tardiness has been sheer blindness on the part of architects and trusts. The hospital and schools building programmes had the perfect opportunity to build in energy saving and renewables at an early stage. That hasn't happened, although there are isolated examples in the health service. Wansbeck general hospital, in Ashington, Northumberland, was built in 1993 as a 'low-energy' hospital, with a wind-turbine situated in one of the car parks.

Now a whole series of other initiatives is taking place. Local authorities, in particular, have begun to understand that they have immense influence in the climate change debate and their support of renewables can make a substantial difference. "People in the public sector just haven't realised until now what they can do," comments Ainger.