

# **CLIMATE CHANGE AND ENERGY**

## **'TOWARDS A MORE EFFICIENT FUTURE'**

### **An Eco-town for Leicestershire**

#### **A consultation paper**

## Overview

The Government's eco-town policy is driven by the need to take action to address climate change.

Climate change has risen up the political and social agenda to become the most important environmental challenge the world faces today.

Reducing emissions of carbon dioxide (CO<sub>2</sub>) in a developed consumer society is no easy task. Nonetheless, the Government has set clear targets for action and the UK, together with other Kyoto Agreement signatories, is committed to stabilising and to reducing emissions. A target of reducing emissions by between 26 and 32 per cent by 2020 has been set by the UK Government.

At the same time, the issue is far greater than just homes. In every part of modern life, we use energy and, as a result, create CO<sub>2</sub> emissions. How we use transport, how we manage waste, how we use commercial buildings, and how our industries perform – these are all major contributors to CO<sub>2</sub> and, in each case, there are things that can be done differently to make meaningful improvements.

The burning of fossil fuels for domestic energy contributes approximately 15 per cent of the UK's total CO<sub>2</sub> emissions (Source: DEFRA figures, 2005). This is largely due to energy consumption within the home for heating, lighting, cooking and domestic appliances. There is much more that can be done to improve standards of energy efficiency in the home – and to reduce overall levels of domestic energy consumption.

**We believe that our proposals for an eco-town for Leicestershire will help deliver a step change to the environmental agenda in the UK today.**

In this consultation paper, we explain more about our thinking on climate change and energy, and how we intend to address the twin eco-town policy challenge of providing new homes and helping the UK to reduce CO<sub>2</sub> emissions. We would welcome your views, ideas and opinions on how you think this challenge can be best addressed, and on what you think about our proposals.

We intend to pioneer the use of innovative technologies and promote sustainable behaviours within the eco-town community and to create a carbon neutral town. We believe that, by trialling a range of new innovations at an urban scale, the systems we introduce most

successfully will ultimately be adopted and replicated widely in the mainstream, thus making a broader and more valuable overall contribution to addressing climate change.

Our definition of environmental sustainability is not limited to the single goal of attaining carbon neutrality.

Our proposals will take into consideration the need to conserve water and manage waste, to provide green spaces and ensure biodiversity across our land. It is about looking right across the supply chain and lifecycle to achieve the best results.

### **The issues facing the region today**

Tackling climate change is a national and international issue. It is a problem for the world but the solutions have to start at our own front door.

In terms of energy production and consumption, water and waste management, construction and maintenance of homes and commercial buildings, there are things that can be improved at every level.

Because the impacts of climate change can be hard to measure, and because the consequences of the problem are not directly linked to the source of the problem, it can be easy to ignore. However, from the UK Government, down to regional, county, district and borough administrations, people are recognising the need to take action.

We intend to be part of the solution for Leicestershire while, at the same time, helping the city region to seize the commercial opportunities and benefits that the transition to a low carbon economy presents.

We want Leicester and the city region to become a UK centre of excellence for sustainable and environmental technologies – and we believe that the eco-town can play a significant part in strengthening Leicestershire's economy and status.

As well as addressing environmental objectives, living a more sustainable lifestyle can make a genuine difference to affordability issues. Oil is currently at more than \$130 a barrel at the time of writing, energy prices in the home are going up and 'fuel poverty' is becoming a more widespread concern.

The eco-town will help people to reduce their total expenditure on fuel because it will provide energy efficient homes and it will offer people realistic alternatives to the private car. Added up, living the lifestyle which the eco-town will make possible will make a significant difference

to household budgets and people's ability to spend what they may pay for fuel now on other things.

At the same time, the fact that the eco-town will provide localised energy supplies will deliver direct benefits in terms of energy security and, potentially, greater price stability for the energy people still need to buy.

### The Government's call to eco-town developers

Reducing carbon is about more than just energy reduction and we need to look across the whole development for opportunities and solutions.

In line with the Government's Eco Town Prospectus, the Co-operative Group's and English Partnership's proposals for an eco-town in Leicestershire need to:

- Provide local, renewable energy generation systems to ensure the development as a whole reaches zero carbon standards
- Demonstrate excellence in one particular aspect of environmental sustainability – technological or the adoption of embedded sustainable behaviours among the community
- Be planned in a way to support low carbon living, and in particular, minimise carbon emissions from transport
- Incorporate high standards of water efficiency
- Provide environmentally sustainable solutions to managing waste, wastewater, drainage and flooding (in line with PPS25: Development and Flood Risk)
- Use construction methods and materials which have a low environmental impact and generate minimum construction waste

### Our initiatives

Integral to the proposal for the town is that it will be as close to carbon neutral as possible from the outset. Our plans will incorporate mechanisms in pursuit of carbon neutrality and our intention is for the town to attain energy self-sufficiency from local, renewable sources once development activity is complete.

The development will also be carefully designed to support low carbon living. Our proposals include:

- **Renewable energy generation** – including using our expertise in wind power by connecting off site generation to support the town

- **Real time IT energy monitoring systems** – to help people understand their energy consumption and to take proactive steps to become more efficient
- **Design and construction** – to make it easier to be more energy efficient and to take carbon out of the supply chain. Modern methods of construction can deliver very substantial reductions in energy demands both during construction and through good design in the buildings' use after occupation
- **Behavioural change** – making it easier and more convenient for people to live a more sustainable and low-carbon lifestyle

#### Headline commitments – what can we do that's different?

**The eco-town will be as close as possible to carbon neutral from the outset.** We will develop our proposals to ensure that we achieve the highest standards of sustainability. This will apply to the way we design and build homes, commercial and community buildings, to transport, and to the way that we farm our land on the site.

**The Co-operative is one of the UK's leading renewable energy businesses.** We already have leading-edge wind farm expertise and we are one of the UK's biggest users of power from renewable sources. We have the experience and knowledge of renewable energy that is required to make this work.

Our proposals are for the eco-town to be a standard-setting and exemplar development for renewable energy and cutting CO<sub>2</sub> emissions. **We will work with our partners to provide low-carbon solutions right across the development. We will also ensure that the town is adaptable and flexible, with energy infrastructure designed for the long term and to be responsive to the needs of residents – and potentially the wider area.**

**Modelling the town: we will work with our expert partners to design an effective set of environmental performance criteria and a comprehensive monitoring system to ensure that new innovations are rigorously tested and that the most effective solutions are replicated and developed as the town grows.** This information will also provide a valuable educational and research resource to help advance new technologies at the urban scale.

**Question 1 - What do you think is the best way to tackle climate change? How do you think homes should become more energy-efficient?**

**Question 2 - What views do you have on improving energy efficiency? How do you think people can be encouraged to change their energy habits?**

## A more detailed look

### Renewable energy generation

Until such time that the town has the critical mass to generate its own energy, we will make renewable energy available from one of the Co-operative Group's own wind farms.

As the town grows, it will be weaned off remote green energy sources, and become supported by a localised network, generating energy from renewable sources within the existing estate, or connected to a wider renewable energy network operating across the city region. This self-sufficiency will be achieved through design, the **use of renewable resources and by creating sustainable energy on-site.**

Wind energy is recognised as the most successful large-scale renewable generator at present. The site could support an element of wind energy production, but we are keen to look beyond the site, working with the four local authorities, development agencies and others to identify whether alternative sites may offer a better solution to deliver a renewable solution that could benefit more than simply the eco-town's own residents.

We are also exploring options for **biomass energy systems** and looking at how, as we consider the link between the land and the town, we can use materials grown on the site to provide power to the people who live there.

Ground source heat generation and storage, generating power from waste, use of solar technology, hydro power, closing the loop with CO<sub>2</sub> into food production – these are all issues that need further investigation, but will most likely have a role to play in delivering a wide range of complementary sources to balance energy generation and match generation to requirements.

**Question 3** - What do you think about wind energy? Do you think having wind energy facilities on the site of the eco-town would be a good idea?

### Real time IT systems

To help residents save resources, people will have the opportunity to monitor their consumption of water, electricity and heat through real time IT systems fitted in their homes. This will make it **convenient and straightforward to know how much energy you are using** – and to work out what it is costing.

In attempting to encourage people to change their consumer habits, knowledge is a key factor. Trials of these systems have shown how, by seeing and being aware of what level of energy they are using, people will reduce their consumption significantly.

As with all aspects of the eco-town, we are not talking about restricting choice or limiting freedoms – we are talking about providing the facilities and tools that will make it easier for people to make more sustainable decisions.

**Question 4 - Do you think that monitoring systems are effective? What ideas do you have on helping people to understand more about how they use energy?**

### **Design and construction**

We are committed to identifying a series of challenging targets to reduce energy demand and CO<sub>2</sub> emissions from buildings. We will achieve this target by focusing on energy efficiency, through design, with efficient layouts, densities, and mixes of uses. In addition, we plan to construct the buildings to a high specification so that the need for heating will be minimised.

It is important, however, to be realistic. Different buildings and uses have different demands, and everything comes at a price. We are not interested in creating a technically brilliant town that fails to meet the practical demands of the new community. We want to build a real place, that works for its residents, that takes the environmental and ecological agenda further than before, but that is most importantly based on delivering the full needs of its people.

Our ongoing consultation and analysis processes are designed, in part, to establish exactly what the local community and potential future residents consider is most important for the new town.

The orientation of the new development will maximise the use of solar energy for passive heating and solar water heating. This can make a significant difference, capturing natural resources and lowering demand for 'conventional' power.

### **Behavioural change**

We will introduce a package of educational measures to raise awareness and encourage behavioural changes. We are proposing a "visitor centre" through which we can explain our vision for the eco-town to potential residents and other visitors as well as "welcome staff" to help new residents with practical guidance on every aspect of managing resources, including waste and energy. Our proposals for 'Fibre to the Home' IT connectivity will also provide information to show how the town is working generally, how energy is being produced, how

the town's carbon footprint is performing, and information that people can use to understand more about energy use and changing their own habits of energy consumption.

### **Low carbon transport**

The eco-town's design and the high quality public transport services it will provide will make a significant difference to how people choose to travel. We will reduce car use by providing attractive alternatives. We will also ensure that the engines powering the public transport services are **clean-burn and low-emissions**, and we are looking at options for gas and hybrid powered buses. Were we to introduce a tram system, this would enable us to use renewable energy sources to power the tram, reducing the carbon footprint of transport even further.

**Question 5** - What opinions do you have on reducing carbon from transport?  
(You might also like to see more details on this in our 'Transport' consultation paper)

### **Waste**

Significant amounts of energy are lost every day by the way people treat – or fail to treat – their waste. Firstly, we will **aim to minimise waste within the eco-town by encouraging more sustainable living**. Where waste is unavoidable, we will provide facilities to promote recycling, re-use, composting and all aspects of energy recovery.

We intend to pioneer new waste management technologies which, because of the opportunities presented by the eco-town, could become replicable and successful elsewhere in the UK and internationally.

**Question 6** - How do you think people can be encouraged to do more to reduce, re-use and recycle waste? What measures or facilities would you want to help you make better use of the waste generated in your household?

**Question 7** – Do you have any other views on other aspects of climate change and energy issues not covered in this paper?

## How to Respond:

Please direct any comments or responses to [www.ecotownforleicestershire.coop](http://www.ecotownforleicestershire.coop) and complete the online response form in the “your views” section, with ‘**Climate change & energy**’ in the subject heading. In order to help with the feedback process, please make clear to which questions you are responding in your feedback.

Due to the volume of submissions we are receiving it may not be possible to respond to each individual submission at this stage. However, all comments are noted and are very important to the development of a best-in-class eco-town.

This is just one of a number of consultation themes which we are exploring in the early phase of consultation. You can share views that you have on specific elements of transportation, environment, community, health and employment in response to our wider range of consultation documents. Any other views that you have at this stage can be submitted to the website.

We are also holding a series of local events at which we would be delighted to hear your thoughts on the specific questions posed in this consultation paper. You can also submit written responses to this and future consultation papers to members of the team at the events. Please check our website and news releases for the latest dates.

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