

# TACKLING CLIMATE CHANGE ON EXMOOR

YOUR CHANCE TO HELP ACHIEVE LOW-CARBON LIVING ON EXMOOR



**Exmoor National Park is leading the way in developing local approaches to mitigating climate change and achieving a low carbon economy. We can build on this success through sensitively exploiting our abundant renewable energy resources and help bring about significant benefits for our community, economy and environment. This document outlines the challenges faced by the National Park in seeking to achieve carbon neutrality by 2025 and provides you with an opportunity to get involved.**

It seems that barely a day passes without another gloomy story appearing in the media regarding the threat climate change poses to communities, economies and the natural environment around the world. While our location may mean that we are unlikely to face the worst effects in the United Kingdom, the impacts will still be significant.

On Exmoor, climate change is likely to result in hotter, drier summers, and warmer, wetter winters. An increase in the incidence of extreme weather events is also likely. The changes will have impacts on our moorlands and woodlands and local livelihoods – especially farming and tourism. The landscape is likely to be more arid, and changing patterns of agriculture will change the look and feel of Exmoor, impacting on the character which is so cherished by many. Sea level rises associated with climate change will also impact on some coastal communities such as those in Lynmouth and Porlock Weir.

It's not surprising that many people feel powerless to tackle these issues. But what if tackling these issues could produce a range of positive outcomes, right here in Exmoor, right now?

The Exmoor National Park Carbon-Neutral Programme is seeking such a local response, providing a model for other rural areas to follow. By implementing a range of actions to make the transition to low carbon living, the programme will result in warmer homes, cheaper energy bills for households and greater local self-reliance in the face of rising oil prices. It will help create local jobs as more people source fuel, construction materials and other goods and services locally. It could also provide Exmoor communities with an income stream for funding local projects from the recently introduced Clean Energy Cashback.

## Facts and Figures:

- Over 350,000 tonnes of carbon dioxide equivalent are emitted every year due to Exmoor's energy consumption, land use and agricultural activities
- Exmoor spends more than £11.6 million on energy (excluding fuel for transport) every year

## The benefits of low carbon living include:

- reduced energy bills
- warmer, healthier homes and improved comfort
- greater self-reliance - less dependence on imported fuel and energy
- local economic opportunities supplying renewable energy, supporting local jobs
- more money circulating in the local economy
- an opportunity to earn an income through the Clean Energy Cashback

# TACKLING CLIMATE CHANGE ON EXMOOR

## How much do we contribute to climate change in Exmoor National Park?

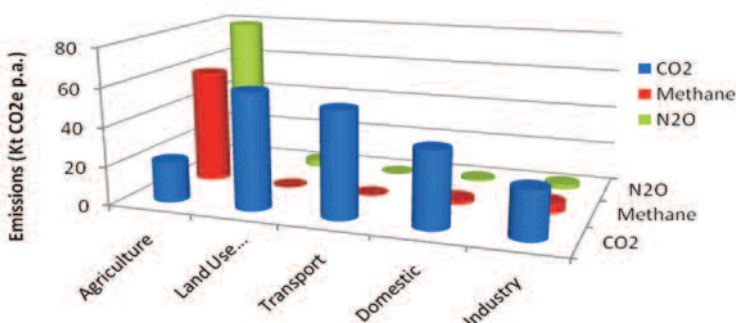
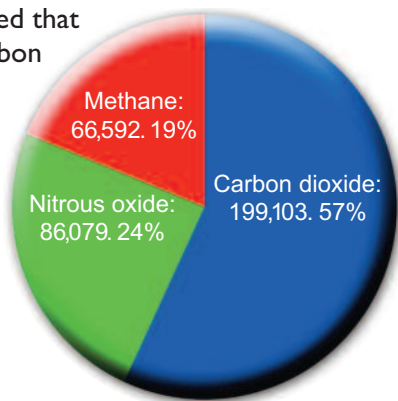
During 2008, Forum 21 was awarded funding through the Exmoor National Park Sustainable Development Fund to develop a carbon-neutral programme. The work included the identification of the current carbon balance of Exmoor National Park and the development of a programme aimed at achieving carbon neutrality by 2025 - a target in the Exmoor National Park Management Plan (2007-2012).

This work is now complete and a report entitled "Exmoor National Park Carbon Neutral Programme Consultation" has been produced and is available on the Exmoor National Park website.

The report indicates that carbon dioxide, methane and nitrous oxide are the most significant greenhouse gases arising from activity within the National Park. The principal source of carbon dioxide emissions is the combustion of fossil fuels for electricity, heating and transportation in homes and businesses in the National Park.

Certain types of land use and land use change can also contribute to greenhouse gas emissions by releasing methane and nitrous oxide. The relatively small population means that agriculture, forestry and other land uses are particularly important in determining the overall level of man-made greenhouse gas emissions arising within the National Park area.

Forum 21 has calculated that 351,772 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) are emitted every year in the National Park due to energy consumption, transport, land use and agricultural activities.

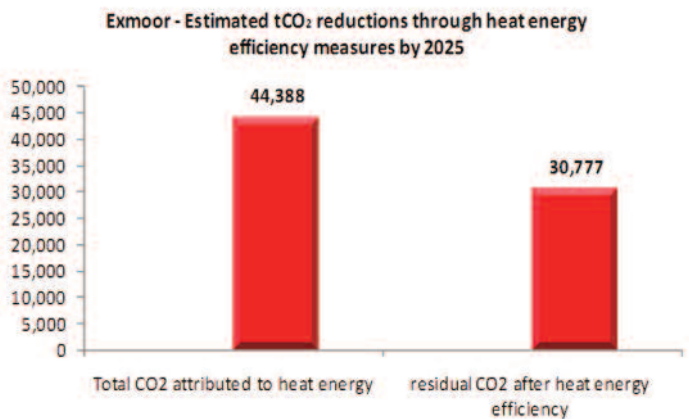


# Can we reduce our impact on the climate to zero?

## Meeting the demand for heat within Exmoor National Park

44,388 tonnes of CO<sub>2</sub> are emitted per annum as a consequence of the energy that we use for heating homes and businesses. Through implementing an ambitious energy efficiency programme, Forum 21 has calculated that this figure could be reduced to 30,777 tonnes of CO<sub>2</sub> by 2025. This would require the following actions:

- Improved draught proofing to 4,896 homes
- Loft insulation top-up to 4,310 homes
- Cavity wall insulation to 1,765 homes
- Solid wall insulation to 1,248 homes
- Floor insulation to 2,450 homes

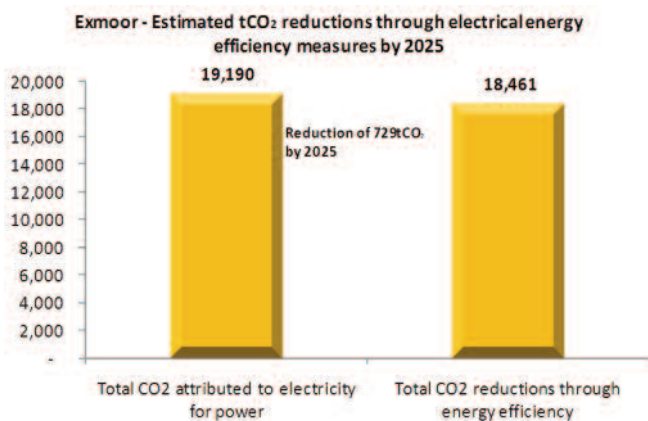


An equally ambitious programme to deploy the renewable heat technologies set out in the table below would result in 28,239 tonnes of CO<sub>2</sub> being saved, leaving a shortfall of 2,538 tonnes of CO<sub>2</sub> per annum by 2025.

- 2,973 biomass boilers saving 18,819 tonnes of CO<sub>2</sub> a year
- 1,962 Heat pumps saving 8,302 tonnes of CO<sub>2</sub> a year
- 979 Solar thermal units saving 725 tonnes of CO<sub>2</sub> a year
- Other measures adopted by local businesses saving 393 tonnes of CO<sub>2</sub> a year

## Meeting the demand for electricity within Exmoor National Park

The use of electricity within the National Park results in emissions of 19,190 tonnes of CO<sub>2</sub> per annum. The opportunities for reducing electricity usage are thought to be limited and Forum 21 has estimated that the demand reduction achievable by 2025 will result in emissions of 18,461 tonnes of CO<sub>2</sub> per annum, a fall of just 729 tonnes. The reason for this is the trend towards an increased demand for electrically driven technology. Though the energy efficiency of many technologies has improved considerably, the same amount of energy has been used to produce more services (e.g. bigger televisions, DVD recorder, 'set top box', etc)



A reduction of 19,560 tonnes of CO<sub>2</sub> per annum can be achieved within Exmoor National Park through the deployment of renewable electricity technologies. There are a range of ways in which this could be achieved and Forum 21 has suggested the following mix for illustrative purposes and debate.

- Three 2MW wind turbines
- 20 small scale biogas plants
- Fifty-one 15kw (11 metre) wind turbines
- Developing 100 small micro-hydropower schemes
- Developing one reservoir hydropower scheme
- Installing around 30 solar photovoltaic units

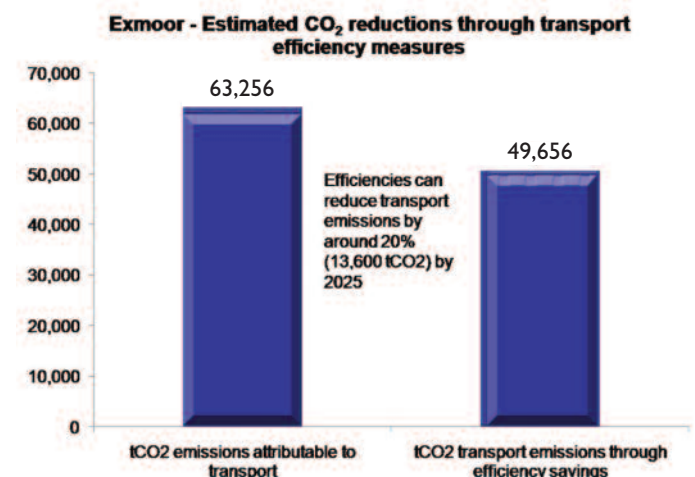
**It is thought likely that few people within the National Park would support large wind turbines on the scale suggested here. However, this does illustrate the scale of development required and the challenge we face in exploiting our renewable energy resource without detracting from Exmoor's special qualities.**

## Tackling emissions from transport

Reducing greenhouse gas emissions arising from transport represents a significant challenge in a rural environment of the nature of Exmoor. Services are often dispersed and public transport provision is limited. Furthermore, our ability locally to influence the technological advancement of vehicles and vehicle fuels (which are the main actions required to address vehicle emissions) is limited.

Forum 21 estimates that 63,256 tonnes of CO<sub>2</sub> per annum are emitted as a consequence of transportation within the National Park. This figure includes all road-based transportation within the National Park including that made by visitors. The UK government forecasts a significant increase in traffic volumes, accompanied by a range of policy measures that increase fuel efficiency.

The net effect is expected to be that vehicle emissions in 2025 will be similar to those today under 'business as usual' conditions. Locally, through a combination of improving local service provision, encouraging car-sharing schemes and private car clubs, and extending the current demand responsive transport network, it is estimated that approximately 13,600 tonnes of CO<sub>2</sub> per annum can be saved by 2025. This leaves an outstanding balance of 49,656 tonnes of CO<sub>2</sub> per annum



## Tackling emissions from land use, land use change and forestry

Agricultural activity, land use and land management can influence overall carbon emissions due to human activity in positive as well as negative ways. Enhancing so-called 'carbon sinks' through woodland planting, peatland restoration and soil management can help to lock up carbon from the atmosphere so reducing our overall impact. Conversely, more intensive uses of land through activities such as ploughing and use of inorganic fertilisers can lead to significant levels of greenhouse gas emissions. Currently, it is estimated that land use changes in the past and current land management activities produces almost 61% of all greenhouse gas emissions emanating from the National Park.

On Exmoor we have the potential to lead the way in considering the impacts of land management by engaging in a dialogue with farmers and land managers and developing local solutions. The National Park Authority, therefore, will be setting up a working group to help develop approaches that can help to tackle climate change while achieving profitable farming and delivering other public benefits.

### Case Study:

#### Exmoor Mire Restoration Project

Rewetting the top layer of peat prevents it from drying out, oxidising and releasing carbon into the atmosphere. In addition to this, the peat that will accumulate as a consequence of this work will store an estimated 135 tonnes of carbon in the new layer.

The annual restoration rate is likely to be at least 270 hectares per annum.

It has been estimated that savings of 4,500tCO<sub>2</sub>e could be made from mire restoration by 2025.



## Consultation

The proposed Exmoor National Park Carbon Neutral Programme will require a major programme of action that has big implications for the National Park. To allow sufficient time to debate and discuss the issues, the National Park Authority will be supporting a programme of local discussions over the forthcoming year to end on 30th April 2011. To view the full programme and supporting documentation, please visit [www.exmoor-nationalpark.gov.uk/carbon-neutral-programme](http://www.exmoor-nationalpark.gov.uk/carbon-neutral-programme) or telephone 01398 323665 to obtain a printed copy and alternative formats.

## Carbon Neutral Exmoor

However, while taking the time to think through longer term actions we believe there is no time to waste in making the transition to low carbon living. The National Park Authority together with a range of representatives from the community, and from the public and private sectors has therefore embarked on an ambitious new project called Carbon Neutral Exmoor. Carbon Neutral Exmoor will support communities in developing and implementing a wide range of low carbon initiatives. It will focus the activity of a range of partners on communities within Exmoor to create low carbon zones.

Through the Low Carbon Communities Challenge funding secured by Exmoor National Park Authority from Department of Energy and Climate Change (DECC), a range of exemplar low carbon projects will be deployed, helping communities to generate renewable electricity and to engage local residents in making the transition to a low carbon future. To find out more about this programme and other related activity, please visit [www.exmoor-nationalpark.gov.uk/carbon-neutral-exmoor](http://www.exmoor-nationalpark.gov.uk/carbon-neutral-exmoor), or ask to speak to the Sustainability and Economy Manager on 01398 323665.

### How you can get involved

If you would like to get involved contact the Carbon Neutral Exmoor team on 01398 323665 or by e-mail to [lowcarbon@exmoor-nationalpark.gov.uk](mailto:lowcarbon@exmoor-nationalpark.gov.uk)