



Paper No. **NEB P06 08**

Title: **Scope of Natural England's climate change policy**
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1. Purpose

1.1 The purpose of this paper is to recommend the scope of Natural England's climate change policy.

2. Recommendation

2.1 That the Board endorse the scope of Natural England's climate change policy.

3. Introduction

3.1 Natural England's Strategic Direction recognises that climate change poses the most serious long-term threat to England's natural environment (see Annex 1).

3.2 At its meeting in September 2006, the Board confirmed climate change as one of Natural England's key policy priorities.

3.3 Since the September Board meeting, the Stern Review has been published and the Government has unveiled its plans for a Climate Change Bill.

3.4 Climate change is proposed as one of the key strategic issues to be addressed in Natural England's Corporate Plan 2007 – 2010.

3.5 The scope of climate change policy as a whole is very large. This paper outlines the proposed scope of Natural England climate change policy. The scope suggests the key areas where Natural England's policy needs to focus in order to fulfil its purpose.

3.6 Once agreed, the policy scope will be used to develop Natural England's detailed policy positions for approval by the Board.

4. Proposed policy scope

4.1 It is proposed that Natural England's climate change policy is focused in two areas:

- developing and implementing climate adaptation strategies for the natural environment;
- contributing to mitigation of greenhouse gas pollution both through both land use and management, and Natural England's own operations.

4.2 The scope of our climate change policy would seek to ensure that Natural England becomes a recognised leader in climate change adaptation and a major contributor to mitigation.

4.3 Marshalling the evidence on the potential impacts of climate change on the natural environment will continue to be important to build the case for action to address climate change. Work to develop our science and evidence base will however be increasingly focused on underpinning on-ground strategies and action to improve the resilience of landscapes, ecosystems and species.

4.4 Climate adaptation

4.4.1 Adaptation policy will seek to increase the resilience, therefore reducing the vulnerability, of the natural environment to climate change. Adaptation policy will need to complement land use policy in particular in seeking to reduce existing pressure on the natural environment arising from habitat fragmentation and land use changes.

4.4.2 Adaptation policy will be based on the following key principles:

- conserving existing biodiversity, particularly on protected sites is central to adaptation;
- integrating climate adaptation into all of Natural England's policy areas;
- adopting a landscape-scale approach to conservation management in which protected areas are a part;
- reducing habitat fragmentation by increasing landscape connectivity and permeability;
- building resilient natural systems and processes to accommodate climate change;
- demonstrating what adaptation looks like through exemplar projects and actions.

4.5 Climate mitigation

4.5.1 Mitigation policy will seek to enhance the role of the natural environment in helping to reduce greenhouse gas pollution. Climate mitigation policy will focus on three areas:

- supporting through planning processes, increased investment in clean energy technologies using a risk based approach which balances any short term impacts on the natural environment with long term imperative to reduce the threat of climate change;
- identifying and promoting land use and management which contributes to reducing and removing greenhouse gas pollution, including the role of land managers as carbon managers;
- leading by example through the target to halve Natural England's own greenhouse gas pollution by 2010 and its choices about energy use, transport and carbon off-sets.

5. Policy development and advocacy

5.1 In the development and advocacy of our climate change policy, Natural England will:

- work in partnership with Government, business and non-governmental organisations;
- contribute to the development and delivery of both domestic and European climate change policy;
- work with Defra to deliver priorities set out in the UK Climate Change Programme and the CSR07 PSA target;
- work with DCLG to produce guidance on the role of spatial planning in climate adaptation;
- input to the formulation of the Climate Change Bill;
- work with the EC to influence the revision of the European Climate Change Programme.

6. Details of these policy opportunities and Natural England's role are set out in Annex 2.

Climate Change Policy Scope

Summary of scientific evidence

1. The Earth's climate has changed continually since it was formed 4,600 million years ago:
 - evidence comes from fossils and other environmental signals in rock sequences, ocean and lake sediments, peat deposits and ice cores;
 - these changes have affected the distribution, diversity and abundance of all life forms and the functioning of natural systems.
2. The rate of climate change is increasing dramatically:
 - industrial and social development has resulted in increasing greenhouse gas pollution accelerating what was a wholly natural process;
 - the Intergovernmental Panel on Climate Change (IPCC, 2001) concluded that "there is now strong evidence that most of the warming over the last 50 years is attributable to human activities".
3. There is clear evidence of recent climate change:
 - global average temperatures have increased from 13.7°C to 14.3°C in the last 100 years;
 - the 1990s was the warmest decade in the last 1,000 years;
 - Arctic sea ice has reduced by about 40% in recent decades;
 - ice sheets in Antarctica and, to a lesser extent, Greenland are retreating;
 - montane glaciers are also retreating;
 - the frequency of extreme weather (floods, droughts, storms) is increasing;
 - populations, ranges, migration patterns, and seasonal and reproductive behaviour of animals and plants, on land and in the sea, are changing.
4. An up-to-date set of global climate change scenarios was produced by IPCC in 2001:
 - based on projected greenhouse gas emissions under a range of socio-economic futures;
 - global average temperatures are projected to rise by between 1.4 and 5.8°C and sea levels by between 9 and 88 cms by 2100;
 - by way of comparison, global average temperatures have increased by 5°C since the last glaciation, 15,000 years ago!
5. IPCC's regional climate change projections subdivide Europe into two regions - Northern Europe and the Mediterranean:
 - both regions will experience annual temperature increases greater than the global average, with winter temperatures in Northern Europe and summer temperatures in the Mediterranean being in excess of 40% higher (rising by up to 6.3°C);
 - precipitation in Northern Europe will increase by up to 20% in winter and decrease by up to 20% in summer, and the Mediterranean will experience a large decrease (over 20%) in summer.

6. For the UK, a new set of climate change scenarios was produced as part of the UK Climate Impacts Programme in 2002 (Hulme *et al*, 2002):
- based on IPCC (2001) greenhouse gas projections;
 - by the 2080s
 - temperatures across the UK will increase by 2 - 3.5°C
 - the south-east could be 5°C warmer
 - the English Channel will be between 2 and 4°C warmer in summer
 - annual precipitation will decrease by up to 15% and snowfall by up to 90%
 - sea level in the south-east will rise by between 26 and 86 cms
 - summer droughts, winter floods and storm surges at sea will increase;
 - the projections take account of the weakening of the Gulf Stream, and a possible reduction in heat transfer of up to 25% by 2100.
7. Climate change will impact on England's natural environment, with species and habitats projected to show a range of responses including:
- in the broadleaved woodlands of the south east, beech is likely to decline whilst more drought-resistant species like ash increase;
 - coastal salt marsh in the east and north west will be lost due to sea level rise unless policies to allow their movement inland are implemented;
 - the lowland raised bogs of the north east are highly sensitive to climate change, with dwarf shrubs and grasses likely to increase on drying bog surfaces;
 - in the Peak District, species such as cloudberry and cowberry are at their southern range limits and could lose suitable climate space here by the 2050s;
 - the wetland meres and mosses of the West Midlands may suffer declining water levels and water quality and a reduction in habitat for the great crested newt;
 - climate change is likely to benefit species such as the clustered bellflower and the silver-spotted skipper butterfly in the south west's calcareous grasslands.

Climate Change Policy Scope

Summary of policy framework and opportunities

1. Background

- 1.1 There is broad scientific and political consensus that we have entered a period of unprecedented climate change driven largely by greenhouse gas pollution from human activities. Climate change is the most significant environmental threat to face the modern world and, because of the residence times of greenhouse gases once in the atmosphere, we will be subject to at least 50 years of climate change which cannot be prevented and a temperature rise of up to 2.5°C in that time (IPCC, 2001; Hulme et al, 2002).
- 1.2 Warming in excess of 2.0°C will increase the risk of dangerous climate change and environmental, social and economic disruption to an unacceptably high level (Green et al, 2003). The concentration of greenhouse gases in the atmosphere is currently 430 parts per million CO₂ equivalent and rising at over 2 ppm per year. Stabilisation within the range 450 to 550 ppm is needed, with 450 ppm implying a medium likelihood (~50%) of staying below the critical 2.0°C threshold (Schellnhuber et al, 2006). However, despite the risk of overshooting becoming considerably greater higher in the range, stabilisation below 500 ppm is not currently technically or economically feasible (Stern, 2006).
- 1.3 The Kyoto Protocol to the UN Framework Convention on Climate Change aims to reduce global emissions of greenhouse gases. The Kyoto commitment period (2008 - 2012) requires a global reduction of 5.2%, an EU reduction of 8% and a UK reduction of 12.5% on 1990 levels. However, these targets are insufficient to tackle the severity and urgency of the climate problem. The post-2012 agenda is currently being negotiated.

2. UK Climate Change Programme

- 2.1 The first UK Climate Change Programme was launched in November 2000. It set out Government's commitments to address the climate change challenge at international and domestic levels and comprised measures to meet both Kyoto and more rigorous domestic targets to reduce emissions. Little attention was given to adaptation.
- 2.2 December 2004: Defra launched its review of the existing programme and a consultation on the scope and content of a revised programme (English Nature highlighted the significance of adaptation).
- 2.3 Summer 2005: Defra sought input from English Nature in designing the Adaptation Policy Framework (contributes to the strategic outcome in Defra's Five Year Strategy "UK successfully adapting to climate change").
- 2.4 January 2006: Defra consultation on the first stage of development of the Adaptation Policy Framework aimed at capturing the national picture of current adaptation activities (English Nature led on providing input on behalf of Natural England founding bodies).
- 2.5 March 2006: the second UK Climate Change Programme was published (including a section on "Adapting to the impacts of climate change"). Natural England will influence and/or contribute to the delivery of a number of policies and measures including:

- development and delivery of the Adaptation Policy Framework (stage 2, analysis of current activities, due to commence in 2006 but delayed until 2007; stage 3, assisting wider adaptation, timetabled for 2008);
- production of guidance on the role of spatial planning in climate adaptation (including input to DCLG consultation on climate change PPS beginning December 2006);
- reduction of greenhouse gas pollution from the agriculture, forestry and land management sector (including support for Defra programmes and involvement with Rural Climate Change Forum).

3. Climate Change Bill

- 3.1 Announced in the Queen's Speech on 15 November 2006, the Climate Change Bill will set out a statutory commitment to reduce CO₂ pollution by 60% from 1990 levels by 2050. Natural England will explore opportunities to input to the bill, particularly from the perspective of enhancing the role of the natural environment in reducing greenhouse gas pollution.

4. Defra CSR07 Performance Framework

- 4.1 Defra is proposing that a PSA target be developed for Government to "Avoid and adapt to dangerous climate change". It is proposed that this would include a number of components/indicators concerned with greenhouse gas pollution reduction. Natural England will work with Defra and HM Treasury to agree an adaptation indicator based on resilience of the natural environment to climate change and explore funding mechanisms to support adaptation activities.

5. European Climate Change Programme

- 5.1 The European Climate Change Programme (ECCP) was established in June 2000 to help identify the most environmentally and economically effective measures which would enable the EU to meet its Kyoto targets and complement those of Member States. It comprised a package of 12 measures, with action plans, to reduce emissions.
- 5.2 October 2005: the second European Climate Change programme was launched at a stakeholder conference in Brussels (which produced a draft mandate to address adaptation for the first time).
- 5.3 Spring 2006: an impacts and adaptation working group comprising 10 sectoral groups (including biodiversity) was established; each sectoral group was charged with debating and formulating policy and practical advice (English Nature was involved with a Defra project team convened to agree and coordinate UK input, and a member of the biodiversity sectoral group).
- 5.4 31 May 2006: a biodiversity sectoral workshop was held in Brussels, the outputs of which are being fed into the production of a green paper on climate adaptation in the EU (English Nature gave the introductory presentation and subsequently took the UK Government lead in finalising the biodiversity input to the green paper).
- 5.5 21 February 2007: the EC will hold a conference in Brussels to launch the adaptation green paper, followed by workshops in the UK, Greece and Finland. A consultation exercise will begin shortly thereafter, to which Natural England will make an input. An EU adaptation white paper will be produced later in 2007.

References cited in annexes

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