

NATURAL ENGLAND BOARD

Meeting 5
6 June 2007

Paper No: **NEB P07 19**

Title: **Draft Climate Change Policy**

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1. Purpose

1.1 The purpose of this paper is to provide the Board with a draft policy on climate change.

2. Recommendation

2.1 It is recommended that:

1. the Board provides feedback on the draft policy;
2. Natural England consults with a range of stakeholders on the draft policy;
3. the final policy is signed off by the Chair incorporating the views of the Board.

3. Background

3.1 At the December 2006 Board meeting the Board agreed the scope for Natural England's policy on climate change.

3.2 A draft policy has been developed based on the agreed scope and is provided at Annex 1.

3.3 A summary of the current evidence base on which to base Natural England's policy on climate change is provided at Annex 2.

3.4 Input into the draft policy has been provided by Board Outcome Group 4.

4. Issues

4.1 Climate change adaptation is a rapidly developing area of policy and many stakeholders have an interest in this area. A range of stakeholders have called for Natural England's leadership in this area. Consulting with key stakeholders on the draft policy would provide an opportunity to build a shared understanding and commitment to the policy.

4.2 This policy aims to provide an overarching framework for our work on climate change. We recognise that further policy positions on various detailed aspects of climate change adaptation and mitigation will need to be developed within this overall policy framework.

4.3 There are a range of opportunities for Natural England's policy on climate change to be influential, most significantly in the debate and finalisation of the Climate Change Bill. The forthcoming Energy and Planning White papers may also be opportunities to advocate our policy. At a regional level the policy will be important in providing guidance to staff in responding to a range of planning proposals.

Annex 1

NATURAL ENGLAND

Draft Climate Change Policy

THE NEED FOR A POLICY

There is a clear scientific consensus that there is an urgent need to reduce greenhouse gas pollution to avoid extreme impacts that may arise from significant global temperature rise. Greenhouse gas pollution mitigation is therefore a critical task for all of us and will require major changes across many aspects of society.

Climate change is however already occurring. Whilst the exact nature and extent of climate change across England remains uncertain, changes in temperature and rainfall, along with seasonal changes and extreme weather events will have an impact on the natural environment.

Natural England needs a policy on climate change for a number of reasons. These include:

- to ensure that we have a clear approach to addressing a major risk to the natural environment in both the short and long term;
- to focus our efforts to better understand and communicate the impacts of climate change on the natural environment and help people prepare for change;
- to guide the use of Natural England's incentives, advice and regulation to most effectively contribute to both climate change adaptation and mitigation;
- to ensure that we are able to provide clear advice to landowners and managers on ways to make the natural environment more resilient in the face of climate change;
- to assist in developing partnerships with other organisations to work together to address climate change;
- to provide direction for our advocacy activities;
- to underpin our communication and engagement with the public.

The 2006 Stern Review on the Economics of Climate Change emphasised that the longer we put off action on climate change the more dramatic and costly the changes we will have to make.

This policy sets out Natural England's position on both climate change adaptation and mitigation, with a particular focus on the policy issues that directly relate to our remit.

SCOPE OF THE POLICY

Natural England's role in climate change is shaped by our purpose. The policy addresses two key issues directly related to our purpose:

- the need to increase the resilience of the natural environment to climate change (adaptation); and
- the need to reduce the long term risk to the natural environment from climate change, by being an active player in overall efforts to reduce greenhouse gas pollution (mitigation).

The development of policies on climate change mitigation is well advanced, although as yet these do not fully address the role of land use and management. By contrast policy development on climate change adaptation is significantly less well developed.

Climate change policy is already a focus for many government, business and community based organisations. Many of these organisations have extensive knowledge and expertise, particularly in relation to climate change mitigation.

Natural England's policy on climate change recognises the role and expertise of other organisations. Where our expertise is of value we will contribute to the work of these organisations, whilst focusing our own work on climate change on areas directly related to our purpose.

The scope of Natural England's policy on climate change is therefore:

- to lead the development and coordinate the implementation of climate change adaptation strategies for the natural environment;
- to contribute to the mitigation of greenhouse gas pollution through both land use and management, and through Natural England's own operations.

KEY POLICY ISSUES

Adapting to climate change

Although the focus of climate change policy both internationally and domestically has been on strategies to reduce greenhouse pollution, it is now accepted that adaptation is a necessary strategy to complement mitigation. This does not in any way diminish the need to maintain the urgent focus on mitigation to limit future climate change.

A National Adaptation Framework for Action

Adaptation cuts across sectors and disciplines. Without a clear national framework for action, there is a major risk that the adaptation response will at best be ad hoc, and at worst lead to conflicting or perverse outcomes. Natural England would need to make a major contribution to such a framework as many of the issues would have implications for the natural environment.

A National Adaptation Strategy for the Natural Environment

A central element of any National Adaptation Framework would need to be an adaptation strategy for the natural environment. This would assess the risk to the natural environment and communicate the potential impacts of climate change. It would also outline key priorities for actions to help people prepare for change. Natural England is already looking towards the development of such a strategy and securing government support.

The Climate Change Bill

Whilst the Draft Climate Change Bill provides for retrospective reporting of actions taken to address climate change adaptation, it does not provide for the proactive approach to adaptation outlined above.

Proposed policy position

Natural England welcomes the Draft Climate Change Bill, its focus on mandatory targets and the inclusion of adaptation.

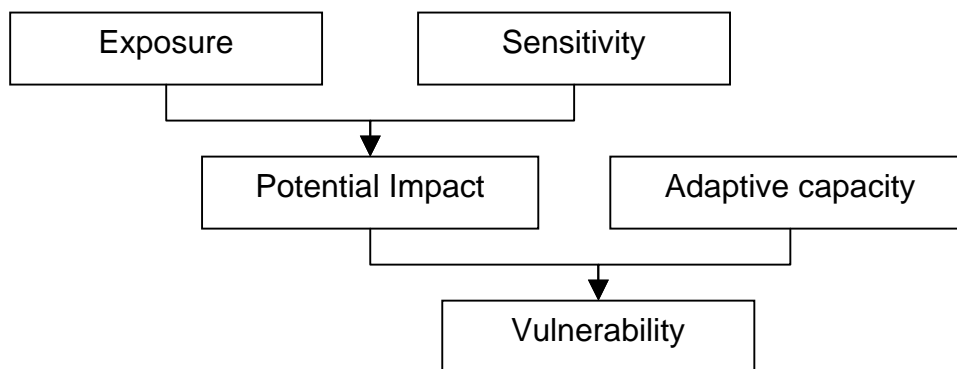
The Final Climate Change Bill needs to include statutory requirements to develop:

- ***a national framework to provide a cross-sector approach to climate change adaptation;***
- ***a strategy to ensure the natural environment is less seriously impacted by climate change;***
- ***enabling mechanisms which will allow incentives to be developed for adaptation and mitigation by land owners and managers.***

Assessing the risk and vulnerability of the natural environment

A consistent approach to the assessment of risk and vulnerability of the natural environment to climate change is required. Such an approach is outlined in Figure 1 below.

Figure 1: Framework for the assessment of the vulnerability of the natural environment to climate change.



Exposure relates to the likely climate change the natural environment will experience in a given location.

Sensitivity relates to the extent to which the species or feature of the natural environment can tolerate the change.

Potential impact is the assessment of the inherent risk to a particular element of the natural environment.

Adaptive capacity is the degree to which the natural environment can respond to the change such as by moving.

Vulnerability is the overall assessment of the degree to which climate change will impact on the natural environment and provides a guide to priorities for action.

Proposed policy position

- ***There is a need for a strategic and consistent approach to assessing the vulnerability of the natural environment to climate change.***

Adaptation principles

The following key principles are important in the development of adaptation strategies for the natural environment:

- adaptation strategies should increase people's understanding of the impact of climate change and lead to practical action;
- adaptation strategies should seek to building resilient natural systems and processes to accommodate climate change;
- adaptation strategies need to be based on a landscape-scale approach in which protected areas are a part;
- conserving existing biodiversity, particularly on protected sites should be at the core of adaptation strategies (see Annex 1);
- adaptation strategies should seek to reduce habitat fragmentation by increasing landscape connectivity and permeability.

Proposed policy position

- ***There is a need for climate change adaptation strategies to be based on a clear set of agreed principles.***

Adaptation strategies for the natural environment

Using both the framework for assessing vulnerability and the principles for adaptation strategies, Natural England is piloting an approach to the assessment of the impact of climate change on the natural environment in four character areas. These pilots are also developing a vision and strategies for land and freshwater use and management which increase the resilience of the natural environment to climate change.

Proposed policy position

- ***Adaptation strategies need to be developed through demonstration projects at a range of scales to enable learning.***

Adaptation policies

In addition to our overall policy positions on climate change adaptation, there is a need for policy positions on a number of specific issues, including:

- Protected area and land use designations;
- the adoption of land management practices which increase the resilience of the natural environment to climate change;
- our approach to coastal realignment;
- adaptation to climate change in urban areas;
- the impact of climate change on the marine environment.

Land use designations

Issue

Adaptation strategy must start with the conservation and enhancement of the existing features of the natural environment. The management of designated areas must therefore remain a cornerstone of adaptation strategy.

However, existing designated areas such as SSSIs and AONBs are based on the static conservation of the natural values of the area at the time they were designated. Whilst many of these values can be expected to remain despite climate change, areas may lose some or all of the values for which they were originally designated.

The majority of designated areas will continue to be important, although in some cases for a different range of values to their current designation. As a result existing conservation objectives for these areas will also need to change. Our approach to setting conservation objectives will need to become dynamic in order to respond to on-going change.

New types of designation may also be needed to provide land for landscape, habitat creation and species migration in the face of climate change. New areas may also need to be designated to enable climate change adaptation.

Evidence base

Whilst evidence exists for the existing natural values of designated areas, the evidence of what the natural values of these areas is likely to be in the future is very limited. Basic ecological information needed to understand what the impact of climate change may be, is absent for all but a small percentage of species.

Proposed policy position

The nature and approach to designations needs to be reviewed to:

- ***enable changes to be made to existing designations in the face of climate change;***
- ***enable new designations to be made in the future which allow for climate change.***

The approach to setting conservation objectives for designated areas needs to be reviewed to take account of the impact of future climate change.

Land management

Issue

Land management practices that are currently being encouraged through for example agri-environment schemes, aim to conserve and enhance the existing natural environment. Whilst the integrity of the existing features of the natural environment will be a key factor in determining resilience to climate change, new land management practices may be required to plan for climate change adaptation. Examples of these include:

- increasing core areas of existing habitat;
- reducing fragmentation and improving the connectivity of habitat across the landscape;
- modifying patterns of land use and management to increase the capacity of species to migrate across the landscape.

Whilst climate change adaptation strategies will need to be developed at an international, national and regional scale, strategies will also be required for particular areas to take into account local conditions.

Evidence base

The evidence base for what the impact of climate change will be at a regional and local level is very poor. Natural England's climate change pilot projects will identify key gaps in the information base which need to be filled.

Proposed policy position

Natural England will review the outcomes of the climate change pilots in the four character areas and establish a programme to develop climate change adaptation strategies for areas which are assessed as having the greatest vulnerability to climate change.

Coastal realignment

Issue

Rising sea levels present significant challenges in parts of England. Coastal landscapes along with estuarine and freshwater ecosystems are facing significant change. These landscapes and ecosystems will need space inland to adapt.

However there are major economic consequences of sea level rise and there will be pressure for significant investment in sea defences and flood protection to protect existing assets. Some of the strategies for protecting these assets may severely limit the capacity of the natural environment to adapt to climate change.

In some parts of England there is little or no capacity for managed realignment of the coast to address the impact of sea level rise and coastal erosion. Inland, continued urban development on flood plains is restricting the potential for the re-establishment of functioning ecosystems.

Evidence base

The coast has been extensively modelled in relation to the potential impact impacts of climate change, including the work which contributed to *Making Space for Water* (the Defra Flood Risk Management Strategy). There is however a need to review this modelling and assess the areas which are the most important landscapes and ecosystems that are under threat. In some specific work has been done on risks to saltmarsh, freshwater marsh and wet grassland (both coastal and fluvial) in specific. The information on where space for new habitat creation needs to be made is more limited.

Proposed policy position

- **The spatial planning system needs to anticipate climate change and provide for the adaptation of the natural environment.**

Climate change in urban areas

Issue

Climate change will impact on people in a range of ways. With approximately 80% of the population living in urban areas, the impact of climate change on urban areas will be a major issue.

The potential impact of climate change on people's health and wellbeing is only now starting to be understood. Urban greenspace will have an important role to play in helping people in towns and cities adapt to climate change.

Evidence base

There is a growing body of evidence about the likely impacts of climate change on people's health and wellbeing. There is also significant research into how climate change may affect urban areas.

Policy position

There is an increasing need to integrate the natural environment into the design of urban areas, as a key strategy for helping people adapt to climate change.

The impact of climate change on the marine environment

Issue

Climate change will have a major impact on the marine environment. Unlike terrestrial ecosystems this impact cannot be limited or avoided. There is a need to ensure that these impacts are well understood and strategies put in place to ensure that marine ecosystems are able to adapt.

Evidence base

Evidence of the nature and distribution of our marine ecosystems and species is poorly understood. The marine survey work currently being undertaken by Natural England will improve our understanding. Further work will be needed to understand the likely impact of climate change on these ecosystems and species.

Policy position:

Marine protected areas need to be designed in anticipation of the impact of climate change and as a key strategy by which marine species and ecosystems can adapt to climate change.

Mitigation

The scale of climate change that will occur in the future will depend on the success of the international community in significantly reducing greenhouse pollution.

It is estimated that to avoid global temperatures rising more than 2 degrees above pre-industrial levels, the concentration of greenhouse gas pollution in the atmosphere should be stabilised at between 400 to 500 parts per million. Temperature rises above 2 degrees are considered to substantially increase the risk of severe impacts on global systems.

Reductions in greenhouse gas pollution of 60% by 2050 over current levels are believed to be necessary to achieve stabilisation. Failure to achieve stabilisation is likely to lead to far more severe impacts on the natural environment than those to which we already need to adapt.

Natural England accepts the scientific opinions of bodies such as the Intergovernmental Panel on Climate Change (IPCC) and recognises that estimates of impact and required action will continue to evolve as further evidence emerges.

Natural England's locus in relation to climate change mitigation comes in particular from our role:

- as a statutory advisor on land use developments in particular energy developments;
- in the global expansion of the biofuel industry, including the delivery of the Energy Crops scheme;
- in advising land owners and managers about how land management practices can contribute to climate change mitigation;
- in addressing mitigation in our own operations.

Land use: energy infrastructure

Issue

Through its role as the Government's statutory advisor on the natural environment, Natural England is directly involved in all major proposals for new energy infrastructure. Types of energy infrastructure include:

- sustainable energy infrastructure such as on and offshore windfarms and biomass energy plants;
- traditional energy generation facilities such as new coal and gas fired power stations;
- other energy infrastructure such as transmission lines and cabling.

There is a clear difference between sustainable energy infrastructure and other energy infrastructure in terms of its impact on the natural environment.

Sustainable energy infrastructure has a long term benefit for the natural environment through its contribution to reducing greenhouse pollution and therefore climate stabilisation. Sustainable energy infrastructure may also have a negative impact on the natural environment in the short term. Other energy infrastructure will to a greater or lesser extent have a negative impact on the natural environment in both the short and long term.

Evidence base

Natural England's evidence base is largely based on predictions of the short term impact of any development on the existing natural environment. There is a need to expand this evidence base to also consider how the natural environment is likely to change in the face of climate change.

Proposed policy position

Natural England will work proactively with the sustainable energy industry to identify areas of England where sustainable energy development can proceed in a manner that balances the long term benefits for the natural environment with any short term impacts.

Natural England will provide its advice on the implications of any proposed sustainable energy infrastructure development based on a balanced assessment of:

- 1. the impact of the infrastructure on the existing features of the natural environment;***
- 2. the changes to the existing features of the natural environment that will occur as a result of climate change which is already locked in;***

- 3. the potential for the infrastructure development to contribute to improving the resilience of the natural environment to further climate change;**
 - 4. The contribution of the infrastructure to reducing greenhouse gas pollution.**
- An example of the application of this policy to the Severn Barrage is provided at Annex 2.**

Land use: biofuels

Issue

There is a growing global demand for biofuels driven by both a need in some parts of the world to increase energy security and to contribute to efforts to reduce greenhouse pollution and mitigate climate change. In England it is expected that as a result of the EU Biofuels Directive, 10% of transport fuels will be required to come from biomass or other renewable sources. It does not require that production needs to be sourced domestically.

The impact of biofuels on the natural environment depends on both the nature of the biofuel and where it is grown.

There is considerable debate about the extent to which biofuels will or will not contribute to greenhouse gas pollution abatement. Different crops and different production techniques are likely to make different contributions.

Biofuels which are grown in existing arable areas and substitute for existing arable crops are likely to have limited impact on the natural environment. Biofuels which are grown in areas which are currently natural or semi-natural in the UK or overseas are likely to have the greatest impact.

There are currently no standards or mechanisms to accredit the sustainability of biofuel production to ensure that its impact on the natural environment is minimised.

Natural England's policy position on biofuels needs to address the potential conflicts between the objectives for biofuel development and the natural environment.

Natural England will be delivering the Government's new Energy Crop scheme as part of the Rural Development Programme for England.

Evidence base

There is also much speculation about the extent to which the increased global demand for biofuels will lead to significant changes in land use in England. Simple extrapolations of the amount of land that may be required to meet for example the EU Directive on biofuels, do not take into account the fact that the biofuels market will be global and that production will come from countries and regions which have the most suitable conditions and can produce the fuel at the lowest cost. However, these areas may also have the greatest overall impact on the natural environment. More evidence of the economic viability of biofuel production in England relative to the rest of the world and the consequence for current land use is needed.

Biofuel crops and production techniques are developing rapidly. The evidence of both impacts on the natural environment and the contribution to reducing greenhouse gas pollution is contested and remains unclear. Further work is required in this area.

Proposed policy position

Natural England's position on the development of a sustainable biofuel industry is that it should:

- minimise the impact on the natural environment;***
- optimise the contribution of biofuel production to reducing greenhouse gas pollution;***

The contribution of biofuels to fuel security should not come at the expense of the natural environment.

Natural England believes that urgent action is required to establish agreed standards and methods of accreditation for sustainable biofuel production both domestically and overseas.

Natural England will work to ensure that the evidence base for biofuel policy and programme development is sound.

Land management

Issue

Land management practices have the potential to contribute to greenhouse pollution mitigation, predominantly through the storage of carbon.

Conservation of soils which are high in carbon such as peat is both an urgent need and a major opportunity. The rate of loss of peat from upland areas is very significant. It is estimated that the amount of peat currently being lost annually from upland areas is the equivalent of adding 2% to the passenger car fleet in England.

The restoration of upland peat areas is therefore an urgent priority and will also deliver on a number of other objectives including water quality protection, flood mitigation and bringing SSSIs into favourable condition. In the long term peat in good condition will also become a modest sink for carbon.

The cost of restoring upland peat is however substantially greater than what is available through agri-environment schemes. There are currently no mechanisms available by which the public benefits of peat restoration in terms of climate change can be paid for. Land restoration is not currently an option under carbon trading or carbon offset schemes.

Some lowland soils also play an important role in carbon storage. Once the evidence base on the carbon storage potential of other land management practices improves there will be a similar need and opportunity for funding to be provided to land managers to deliver on climate mitigation objectives. Forests can also play a smaller but important role as a store of carbon.

Evidence base

Agriculture is estimated to contribute around 7% of the UK's total greenhouse gas pollution. However it contributes 36% of the UK's total methane pollution and 67% of total nitrous oxide pollution. Its direct contribution to carbon dioxide pollution is estimated to be only around 1%.

Defra has an R&D programme devoted to agriculture and climate change of around £5.6m in 2007/08.

Proposed policy position:

Upland peat restoration and protection should be a major priority for climate change mitigation.

Carbon trading and carbon offset schemes should provide incentives for land management practices that deliver measurable savings in greenhouse pollution.

Sustainable recreation

Issue

Natural England has as one of its key objectives to increase the number, diversity and frequency of people enjoying the natural environment. The way in which Natural England

pursues this objective will have an impact on the extent to which this results in increased greenhouse gas pollution.

The development of accessible greenspace within 300m of homes will make a major contribution to minimising the impact of people's enjoyment of the natural environment on climate change. However initiatives which encourage increased visitation to places which are not accessible by sustainable forms of transport will have a greenhouse pollution impact.

Natural England is currently developing a plan to reduce the transport impact of nature-based tourism. However it is already clear that providing sustainable transport options alone may not be sufficient to achieve significant behaviour change.

Evidence base

There is limited evidence about the impact of current patterns of nature based recreation and tourism on climate change. Natural England has not yet assessed the carbon footprint of its recreation initiatives.

Proposed policy position

Natural England will assess the carbon footprint of its recreation initiatives and ensure that future programmes actively promote and provide incentives for forms of transport which minimise their impact on climate change.

Natural England's own operations

Issue

Natural England needs to lead by example in the mitigation of climate change.

Evidence base

Natural England's current carbon footprint is 6175 tonnes, around 2.5 tonnes per staff member. Travel in cars represents the greatest single contribution to our carbon footprint – 47%.

Policy position

- ***Natural England will halve its greenhouse gas pollution by 2010.***

Annex 1: Summary of Guidelines for conserving biodiversity¹

SUMMARY OF THE GUIDELINES

1 Conserve existing biodiversity

The richness of future biodiversity, in a changing world, will depend upon the diversity we conserve today.

■ 1a Conserve Protected Areas and other high quality habitats

These areas will remain important because they have characteristics which will continue to favour high biodiversity: eg, low-nutrient soils.

■ 1b Conserve range and ecological variability of habitats and species

It is impossible to predict which localities will continue to have climatic conditions suitable for a given species or habitat; by conserving the current range and variability we will reduce the probability of all localities being lost, although some losses will be inevitable.

2 Reduce sources of harm not linked to climate

Climate change is one of many threats to biodiversity and by reducing other sources of harm we will help natural systems maintain their biodiversity in the face of climate change.

3 Develop ecologically resilient and varied landscapes

By ensuring landscapes remain varied, and allowing space for physical processes to take place, we will increase their ability to retain biodiversity.

■ 3a Conserve and enhance local variation within sites and habitats

Maintaining diversity in the landscape in terms of features such as vegetation structure, slope, aspect and water regime will increase the chances that species whose current habitat becomes inhospitable will be able to spread locally into newly favourable habitat.

■ 3b Make space for the natural development of rivers and coasts

Changing rainfall patterns and rising sea levels will affect our rivers and coasts. By allowing natural processes of erosion and deposition to take place we will increase the potential for wildlife to naturally adapt to these changes.

4 Establish ecological networks through habitat protection, restoration and creation

Some species will need to move some distance from their current locality if they are to survive climate change; creating new habitat, restoring degraded habitat, or reducing the intensity of management of some areas between existing habitat, will encourage this.

5 Make sound decisions based on analysis

Adopt an evidence-based approach which recognises that biodiversity is constantly changing.

■ 5a Thoroughly analyse causes of change

Not all change will be due to climate change and by thoroughly analysing the causes of change we will identify those situations where climate-change adaptation is needed.

■ 5b Respond to changing conservation priorities

Regularly review conservation targets to ensure resources are directed towards genuine conservation priorities as some species increase, others decline and habitats change in character.

6 Integrate adaptation and mitigation measures into conservation management, planning and practice

When reviewing conservation management plans consider the impacts of climate change – for example more frequent summer fires and floods – and make changes as appropriate. Where they can be identified, reduce additions of greenhouse gases to the atmosphere.

¹ Hopkins, J.J, Allison, H.M. and Walmsley, C.A. Defra 2007 (in prep) *Conserving biodiversity in a changing climate: guidance on building capacity to adapt.*

Annex 2

Application of policy to the assessment of the Severn Barrage.

The impact of the infrastructure on the existing features of the natural environment.

This would involve assessing the impact of the Severn Barrage on the existing landscape, designated areas, ecosystems and species.

The changes to the existing features of the natural environment that will occur as a result of climate change which is already locked in.

This would involve considering the changes to the existing landscape, designated areas, ecosystems and species that are already going to occur as a result of climate change. An example might be reduction or loss of mudflats as a result of increase sea levels or changed hydrological regimes.

The potential for the infrastructure development to contribute to improving the resilience of the natural environment to further climate change.

This would involve looking at the potential for the Severn Barrage to actively create new landscapes and habitat, and how such landscapes and habitat creation may contribute to strategies and plans to increase the capacity of the natural environment to adapt to further climate change.

The contribution of the infrastructure to reducing greenhouse gas pollution.

This would involve assessing the contribution of the Severn Barrage to meeting the UKs targets for reducing greenhouse gas pollution and considering possible alternatives such as wind energy developments.

Natural England would then make a balanced assessment of overall impact of the Severn Barrage and come to a view about whether to support or oppose the development.