



October 16<sup>th</sup> 2008

## **Adapting the UK to Climate Change – Submission to the Royal Commission on Environmental Pollution**

The UK Environmental Law Association aims to make the law work for a better environment and to improve understanding and awareness of environmental law. UKELA's members are involved in the practice, study or formulation of Environmental Law in the UK and the European Union. It attracts both lawyers and non-lawyers and has a broad membership from the private and public sectors.

UKELA prepares advice to government with the help of its specialist working parties, covering a range of environmental law topics. This response has been prepared by the Climate Change Working Party.

UKELA's current priorities include:

- Informing and actively influencing the broad law and policy debate on climate change including the measures to reduce greenhouse gas emissions and manage their impacts at the international, EU and domestic level
- Helping deliver more effective and efficient environmental regulation including enforcement at the EU and UK level, not lower standards nor less regulation unless the same or better outcomes will be achieved

UKELA works on a UK basis and seeks to ensure that best legislation and practice are achieved across the devolved jurisdictions.

### **Questions Inviting Formal Written Evidence**

#### **Adaptation - General Questions:**

##### *Definitions and Terminology*

##### Question

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- 1 The RCEP needs to have a clear view of the terms it should use for the study – is the IPCC view of adaptation adequate? Are there alternative views of adaptation to climate change that the RCEP should be considering?

Response

It seems sensible that the definition of 'adaptation' should be consistent with an authoritative report on climate change. It is interesting to note that the IPCC definition refers to human *and* natural systems, as opposed to the UNFCCC definition which only refers to climate change attributed to human activity and our view is that the former definition is a more complete and better definition to use.

Range of Climate Change

Question

- 2 There are several important factors when discussing climate change, which the RCEP needs to understand for this study:
  - (a) Over what time period should climate change be considered for the RCEP study – 2020, 2050, 2100, or some other time period?
  - (b) What are the magnitude, rate and kinds of climate change impacts in the UK that the RCEP studies should be considering?

Response

- (a) In the area of climate change, the science is being updated rapidly and building up a clearer picture of the effects on the environment. It is therefore crucial to adopt short, medium and long term review periods, and that these should themselves be reviewed regularly, in order that appropriate action may be taken to avoid disastrous consequences. Short term review periods might be on an annual basis.  
  
As a starting point, from now to 2018 may be a sensible first time period (a period which will hopefully include the second commitment period under the Kyoto Protocol). A further suitable time period might be up to 2050 (coinciding with the time period envisaged under the Climate Change Bill).
- (b) Whatever time periods are chosen, they should be based on short term, medium term and long term impacts.

Awareness of Adaptation to Client Change

Question

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- 3 The Royal Commission is interested in understanding the general level of awareness about adapting to climate change. How would you describe:
- (a) The level of awareness that either you or your organisation has about the need to adapt to climate change?
  - (b) Your awareness of what could or should be done to enable the natural environment to adapt to climate change.
  - (c) Your awareness of any actions (by the government or others) already planned or underway, to adapt the natural environment to climate change.

#### Response

- (a) UKELA appreciates the inevitable need to adapt to future climate change which is already locked into the world's weather system as a result of historical emissions and the inertia of the global climate system. However, we recognise that, whilst the disruptive potential of climate change at a global and regional level is generally accepted, local climate change impacts are plagued with uncertainty and strongly dependent not only on how much the world will mitigate greenhouse gas emissions over the coming decades but also on local climatic, hydrogeological, socio-political and economic factors to name but a few.
- (b) We would agree with Stern's recommendation that the first and key step is to work towards establishing a global carbon price through tax, regulation or trading.<sup>1</sup> A framework for internalising the cost of carbon urgently needs to be put in place to ensure that an economic value is attributed to carbon emissions in order to recognize that the atmosphere is a resource with a finite pollution carrying capacity. In this way, an economic signal is sent to consumers who thereby pay for the environmental cost of their actions. Provided the value ascribed is sufficiently high, behavioural change should result as people seek alternatives to high-carbon products and infrastructure. In this way, people would automatically begin to adapt without necessarily realising they are doing so.

However, it is clear that adaptation does not lend itself so easily to the introduction of an equivalent framework to stimulate investment in 'adaptation'. Adaptation requires multiple frameworks: to influence land use planning and the location and standards applied to new developments (e.g. to cope with heat and not just cold); to influence river, groundwater and coastal protection and flood risk management (e.g. rationalization of the absurdly disjointed mix of competencies and responsibilities that currently exist in relation to river management); to influence the provision of services to the elderly and vulnerable (to avoid repeats of the summer of 2003); to influence emergency planning and the provision of medical provision and dealing with emergencies; to influence transport policies. This requires a broad policy mix since there is no common target outcome comparable with mitigation (i.e. reduction in GHG emissions).

- (c) UKELA is aware of important adaptation proposals in the Climate Change Bill, which currently state:

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<sup>1</sup>Stern Review Executive Summary (long): [http://www.hm-treasury.gov.uk/media/4/3/Executive\\_Summary.pdf](http://www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf), p xviii  
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- that a UK-wide climate change risk assessment must take place every 5 years
- that a national adaptation programme must be put in place and reviewed every 5 years to address the most pressing risks to England
- that the Government should have the power to require public authorities and statutory undertakers to report on how they have assessed the risks of climate change, and what they are doing to address those risks
- that the Government will publish a strategy outlining how it will use this power
- that the Government will provide statutory guidance on how to undertake a climate risk assessment and draw up an adaptation action plan
- that the creation of an Adaptation Sub-Committee of the independent Committee on Climate Change in order to oversee progress on the Adapting to Climate Change Programme and advise on risk assessment

UKELA welcomes the creation of a specialist Adaptation Sub-Committee whose focus would be purely on adaptation issues. Adaptation will be relevant now regardless of how much we mitigate greenhouse gas emissions, because historic emissions have committed us to a certain degree of global warming and consequential climate instability.

UKELA expresses some reservations over the proposals for a climate change risk assessment every 5 years, questioning whether this will be adequate to enable the UK to form and update an appropriate adaptation strategy. The science in this area is changing rapidly – which implies that risk assessments should be undertaken more frequently (for example on a yearly basis). Similarly, an adaptation programme should be reviewed more frequently and capable of being revised if the science suggests amending the programme is necessary or desirable to preserve the integrity of ecosystems and the natural environment.

UKELA feels that areas identified in the risk assessment as being particularly sensitive to the effects of climate change should be monitored closely throughout the period.

UKELA is aware that DEFRA's strategy in relation to coastal change is to adapt to changes rather than to resist them.<sup>2</sup> UKELA is also aware of the 'Pitt Review: Lessons Learned from the 2007 Floods' which considered the role of land use and flood risk, and made recommendations for adaptation including: providing better information about flood risk, a wider remit for the Environment Agency, more emphasis on the role of local authorities developing their technical capabilities to deliver a wide range of responsibilities in relation to flood risk management, more rigorous building and planning controls, the need to protect essential services, as

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<sup>2</sup> <http://www.defra.gov.uk/enviro/fcd/adaptationandresilience/coastalchange.htm>

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well as more co-ordination and preparation in time of emergency.<sup>3</sup> UKELA is in broad agreement with the recommendations in the Pitt Review.

UKELA is also aware of the proposals in the Planning Bill for adaptation, including a new, faster process for large infrastructure projects and the creation of eco-towns. UKELA has some concerns in relation to the Planning Bill, in particular regarding the ability of the proposed Infrastructure Planning Commission (IPC) to examine complex cases within the timescale, and the potential for major developments to be 'fast-tracked' through the planning system without adequate consultation and scrutiny.

UKELA is also of the view that whilst a strategic, central approach will be necessary to respond to some climate change impacts, much will be dependent upon local government, NHS Trusts and other non-central government public sector organizations. By way of example, the Local Government Association's 'Cutting through the Green Tape' highlights the availability of existing powers available to respond the challenge of climate change and cites examples of good practice. However, the publication is a response to their earlier finding that too many were doing too little. There is clearly a role for incentivisation towards faster action.

### *The relationship between adaptation and mitigation*

#### Question

- 4 The UK is committed to significant actions to mitigate climate change – what should be the relationship between adaptation and mitigation actions for climate change?

#### Response

As far as we can see, mitigation and adaptation actions are seldom interdependent. Therefore, save to the extent that economic resource is limited, there is no reason why either should take priority over the other. Equally, it is not possible to 'offset' a positive adaptation action against, say, CO2 emissions.

With mitigation, the overriding aim should be to stabilise (and reduce) greenhouse gas emissions to a safe level of below 400ppm and to prevent temperature increases above 2 degrees Celsius (measured against pre-industrial levels). The precautionary principle is helpful here. An above 2 degree increase in temperature is likely to result in 'runaway' climate change – which would make the costs of adaptation far greater than they might otherwise have been.

With adaptation, the overriding aim should be to identify the most likely, serious impacts and address these first – but in a resource efficient manner. For example, it is not an efficient use of public money to permit building on flood plains or channeling of rivers simply to increase flood defence and energy service costs.

### *Climate Change in the broader context*

<sup>3</sup> See: [http://www.cabinetoffice.gov.uk/thepittreview/final\\_report.aspx](http://www.cabinetoffice.gov.uk/thepittreview/final_report.aspx)

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### Question

- 5 Climate change is not the only major change that will take place over the coming years, or the only issue of importance for the environment and yet it is being used as a justification for many decisions and actions.
- (a) In broad terms, what are the important non-climate changes (e.g. social, economic, demographic, technological, cultural or other) that will interact with climate change to facilitate or inhibit adaptation? (It may be useful to cross-reference your answer with your response to question 2(a)).

### Response

#### **Social effects**

- Increased interconnectedness of all peoples - via the internet and social networking sites - poses opportunities for knowledge-sharing and raising awareness and mobilising people.
- New presidency in America - posing new opportunities to engage the US and broker a global climate deal.
- 'Climate change refugees' – a phenomenon that has already begun.

#### **Economic**

- Emergence of China and India as superpowers - making it imperative that both countries signs up to a global deal on climate change.
- Increasing prosperity of developing countries - posing an opportunity for these countries to 'leapfrog' conventional paths to development, e.g. instead of going through a process of economic growth facilitated by fossil fuels, they can install renewable technologies instead. However, it is also the case that as these countries develop they will put greater strain on natural resources, especially as their populations aspire to the lifestyles of those living in the West – e.g. by eating more meat and dairy products, the desire to own cars and consume greater amounts of energy.
- Global economic weakness - has the potential to benefit the environment (e.g. via decrease in excessive consumerism) or to exacerbate problems (e.g. people less concerned about environmental welfare and more concerned with cheap goods).

#### **Demographic**

- Global population increase from approximately 6 billion to 9 billion by 2050. In the UK alone the population is expected to increase from 61m (present population) to 77m in 2051.<sup>4</sup> This will be likely to inhibit adaptation as more people put greater strain on natural resources - particularly freshwater, agricultural land and forests.

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<sup>4</sup> Source: <http://news.bbc.co.uk/1/hi/uk/7057765.stm>

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- `Climate change refugees`. The UK will need to think about how to respond to the many people who will seek asylum here and how they can be integrated into our society.

### **Technological**

- Climate change poses many opportunities for innovation and technology will play a role in tackling climate change and adaptation. Examples of technologies that could make a real difference include carbon capture and storage, if it can be proven viable on a commercial scale, and renewable technologies such as solar, wind, hydro and wave/tidal power.

### **Cultural**

- Those who are less educated may not have the same level of awareness and understanding of the need for environmental protection.
- There is a cultural divide between the West/ East. We need to pull together on climate change for the benefit of all – but the West needs to expect resentment from the East as they will see the West as having created the problem of dangerous climate change.

### **Agricultural**

- There are food shortages in some countries as a result of competition for scarce resources, land conflicts, unpredictable weather events and droughts caused by climate change. Growing biofuels for use in transport has further exacerbated food shortages, and contributed to deforestation in countries like Indonesia and Malaysia, which in turn has contributed to climate change as the trees release carbon.
- Globally, there is a trend of people moving from rural areas to urban areas. This can increase pressure on natural resources.

### Question

- (b) When considering wider environmental priorities, what environmental goals may suffer if a strong climate change adaptation agenda is introduced? How can the priority of adapting to climate change be increased as part of the sustainable development agenda without detracting from other important issues?

### Response

UKELA is of the view that the environmental law framework is in need of urgent review. Environmental law should adopt an integrated approach to environmental protection to reflect the interconnectedness and interdependency of nature. If such a review of environmental law were to be conducted, as we suggest, it would have implications both in public law, i.e. regulatory powers and duties, and in private law, e.g. the law of torts, such as nuisance.

The conclusion of such a review may suggest that now is the time to move closer to an environmental philosophy of law. This could result in a more holistic approach to tackling

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environmental problems. In the short term however, and recognising the challenge this represents, this may be difficult to achieve.

In this context, we suggest that the following environmental goals may suffer as a result of climate change adaptation being prioritised:

- Less accountability if the government makes decisions of 'national importance' without adequate local or national consultation.
- Decisions of national and long-term importance taken in haste which turn out not to be appropriate in the long term.
- Wildlife protection (particularly with regard to energy generation).
- Less public participation and access to environmental justice, with potential to come into conflict with the Aarhus Convention.<sup>5</sup>

UKELA is of the view that whilst climate change adaptation should be a priority, some environmental goals must be protected at all cost, such as the protection of fresh water and clean air. However, from an environmental perspective, it may be that some adaptation measures (such as coal fired power stations without carbon capture and storage), are so damaging to the environment that they ought to be 'off limits'. A more pragmatic approach may be to ensure that the Climate Change Bill contains sufficiently strong targets for reduction of CO<sub>2</sub> emissions so that we are aiming to keep within 2 degrees Celsius of increased warming. UKELA welcomes the recent call by the Committee on Climate Change for an 80% cut in CO<sub>2</sub> emissions by 2050, and for aviation and shipping to be included.

Moving to a low carbon economy should be a priority of government.

## **The Natural Environment**

### *Resilience of the Natural Environment*

#### Question

- 6 When planning what adaptive action should be taken in order to increase the resilience of the natural environment in the UK, the RCEP is interested to know:
- (a) What form will this resilience take?
  - (b) How resilient to climate change does the UK want the natural environment to be?  
How resilient does it need to be to continue providing the services upon which society depends?

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<sup>5</sup> The Aarhus Convention is the Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters, and came into force in 2001. It grants the public rights and imposes on parties and public authorities obligations regarding access to information and public participation and access to justice. It links environmental rights and human rights. It acknowledges that we owe an obligation to future generations. It establishes that sustainable development can be achieved only through the involvement of all stakeholders, and it links government accountability and environmental protection. (Source: <http://www.unece.org/env/pp/>)

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- (c) To what extent is it possible to build in levels of resilience efficient to deal with potentially catastrophic events induced by climate change?

### Response

- (a) UKELA is of the view that land should be protected so as to preserve the integrity of ecosystems. Wherever possible protected areas should be maintained and preserved.

In general terms UKELA agrees with DEFRA's approach of allowing coastlines to adapt rather than to resist changes, although there may be important exceptions to this where unique ecosystems are located on the coasts (such as areas covered by the Broads Authority). Habitat connectivity is also vital to ensure the long-term survival of some species and this should be considered in the context of planning and resource management. To preserve species and habitats, in some cases, is likely to entail creating habitat connections and corridors where they do not currently exist.

Additionally, the government should also consider what compensation it will offer to people whose property may be affected. 'Compensation' to nature, where unique ecosystems are likely to be destroyed, may take the form of recreating that ecosystem in another place in the UK.

- (b) This question requires expert scientific input. In general terms we should preserve, maintain and seek to improve the natural environment and pass it onto future generations in a healthy and flourishing state. We ought to aim for an optimally resilient natural environment as it is the source of our well being and will continue to be so for a growing UK population.

Beyond ensuring that future generations can meet their basic needs from the natural environment for food, water, clean air and medicines, there is also the wider question of the value of nature in itself, traditionally a 'lower priority' issue. In this age of mass extinctions, it may now be time to reassess whether our anthropocentric legal systems are securing the results we want for ourselves and future generations.

For example, Ecuador's newly approved constitution states:

"Natural communities and ecosystems possess the unalienable right to exist, flourish, and evolve within Ecuador. Those rights shall be self-executing, and it shall be the duty and right of all Ecuadorian governments, communities and individuals to enforce those rights."<sup>6</sup>

- (c) Again, this question requires expert scientific input. The Pitt Review recommends, for example, that Government should consult on preventing householders and businesses from laying impermeable surfaces in their back gardens.<sup>7</sup> Other sensible

<sup>6</sup> Source: <http://www.guardian.co.uk/environment/2008/sep/24/ecuador.conservation>

<sup>7</sup> [http://www.cabinetoffice.gov.uk/thepittreview/final\\_report.aspx](http://www.cabinetoffice.gov.uk/thepittreview/final_report.aspx) p XV

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measures might include preventing people from paving over their gardens, thus preserving a natural drainage system, and providing habitats for wildlife and wildlife corridors. We see merit in these recommendations.

In addition, resilience can be enhanced by ensuring habitat connectivity to preserve biodiversity. Strategic planting of trees could also help to act as natural drainage systems and guard against soil erosion (which is emerging as a critical climate change issue).

Pollution laws can be used to build in resilience as floods and excessive drawdown on groundwater resources can lead to the creation of new pollutant pathways.

### Natural Responses and Thresholds

#### Question

- 7 The natural environment will respond to climate change in the absence of any human interventions. When considering the adaptation of the natural environment, when might a "do nothing" option be appropriate, whereby natural systems are left to respond without intervention?

#### Response

This question requires expert scientific input. We would suggest that a 'do nothing' approach could only be appropriate where:

- the consequences of a 'do nothing' approach do not contribute to environmental degradation; and
- the consequences of a 'do nothing' approach will not, based on the best scientific evidence, cause harm to plant, animal or human life (including harm to future generations).

The role of the environmental impact assessment (EIA) will have importance here. We would also welcome research into the extent to which developments that individually fall below the EIA thresholds may, by their combined effects, still have a significant impact on the environment.

In relation to managed retreat or other climate change adaptation schemes, consideration will have to be given as to the public consultation process, as well as compensation.

#### Question

- 8 In the natural world, there will be thresholds of response to climate change, which are defined by the ICPP as "the point where stress on an exposed system or activity, if exceeded, results in a non-linear response in that system or activity".
- (a) Should thresholds of response to climate change be identified for the natural environment and, if so, how should this be done and by whom?

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- (b) What would be an 'unacceptable' level of change to the natural environment? What are the key criteria which would underpin judgements of acceptable in this context?

Response

- (a) This question requires expert scientific input. It may be sensible to identify thresholds of response, based on scientific evidence. These would be used to demonstrate the boundaries between tolerable and intolerable levels of risk, and to help to identify particularly sensitive ecosystems.

The thresholds should be identified by an independent scientific panel. Such a panel could be appointed by the Committee on Climate Change, or one of its sub-committees.

- (b) UKELA is of the view that scientists should have input here as they are in the best position to know how the natural environment will change. The following criteria could be taken into account in making that assessment:

- a 2 degree increase in global average temperatures;
- any further environmental degradation;
- any change that undermines the ability of ecosystems to function properly in any area;
- an actual or likely extinction of any species, or an action that's likely to make a species endangered in any region, or an action that's likely to make a species vulnerable or rare in any region. ('vulnerable' and 'rare' to have the same meaning as they have in the Habitats Directive<sup>8</sup>);
- an actual or likely material loss of biodiversity in any area;
- a change that is likely to have an adverse effect on the natural environment (including (i) a change that reduces biodiversity in an area; or (ii) reduces people's long term ability to support themselves or maintain their livelihoods); and
- a change that is minor in its specific impacts but its cumulative impact poses a threat to the integrity of an ecosystem.

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<sup>8</sup> The Habitats Directive, see Article 1 (g):

(ii) vulnerable, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating; or

(iii) rare, i.e. with small populations that are not at present endangered or vulnerable, but are at risk. The species are located within restricted geographical areas or are thinly scattered over a more extensive range; or

(iv) endemic and requiring particular attention by reason of the specific nature of their habitat and/or the potential impact of their exploitation on their habitat and/or the potential impact of their exploitation on their conservation status.

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Some of the above may come into conflict in specific situations, in which case there would need to be some sort of balancing act – similar to that which takes place in the context of human rights.

### Institutional arrangements for environmental conservation

#### Question

- 9 How will adaptation of the natural environment interact with (either negatively or positively) adaptation responses in the major land uses (such as agriculture, water resource management, energy production, forestry, urban development, infrastructure) and what institutional arrangements, if any, are needed to facilitate changes in land use to support adaptation to climate change?

#### Response

Significant institutional changes are proposed in the Planning Bill before parliament. These include the creation of National Planning Statements on key areas of nationally significant land use policy. Whilst it is important for the Government to take swift and decisive action in relation to climate change, it is also important that adaptation strategies are well thought out and that there is appropriate 'buy-in' from local communities. This may mean that any National Planning Statements proposed will need to incorporate sufficient flexibility, especially on matters such as site selection, to enable the need for climate change adaptation to be progressively addressed.

We suggest the following as issues to consider:

#### **Agriculture**

Consideration will need to be given to the types of crops grown. Some crops may be more resilient to a changing natural environment. Research is likely to be needed into what types of pests and diseases may become prevalent in the UK and what measures need to be put in place to manage outbreaks and ensure food security. This will also be important in relation to livestock.

#### **Water Resource Management**

See the answer to 6 (c). Rainwater harvesting and storage, and water recycling will become increasingly important in the future.

#### **Energy production**

UKELA is concerned that the UK may not achieve its share of the EU target to source 20% of the EU's energy from renewable sources by 2020. We believe there needs to be considerable investment into renewable forms of power generation including solar, wind, wave/tidal, hydroelectric. These are decentralised forms of power generation, which may

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help to engage individuals and communities. There is also evidence that small distributed power systems may be more resilient in the face of climate change.

UKELA broadly supports the conclusions in the Environmental Audit Committee's report 'Are Biofuels Sustainable': that the Government and EU should not pursue an increase in the use of biofuel in the absence of proven, robust sustainability standards to prevent damaging land use change. Biofuels grown in some parts of the world (including Indonesia and Malaysia, for example,) have contributed to the destruction of rainforest and natural habitats and the near extinction of many species. Biofuels have also arguably aggravated food prices and caused land-conflicts and 'land grabs'.

### **Forestry**

Forests absorb carbon dioxide, provide habitats, provide green spaces for people and further other environmental goals such as preventing soil erosion. They should be protected and made maximum use of as part of an adaptation strategy.

### **Urban Development**

Planning will play a crucial role here. We would agree with the general thrust of the Pitt Review in relation to planning measures. In addition, we believe significant investment in the relocation of existing infrastructure is required, as well as investment in new infrastructure, including:

- the relocation of vulnerable transport routes away from areas at risk of flooding; and
- the relocation of vulnerable nationally and regionally significant developments (e.g. power generation facilities, hospitals, waste treatment and disposal facilities) away from areas at risk of flooding.
- UKELA is also of the view that the proposal of 'smart metering' for water, gas and electricity is a sound one.

Building design will also be of crucial importance in helping the UK to adapt to climate change. For example, energy demand increases dramatically during hot summers with increased use of air-conditioning systems and refrigeration. Good building design can help to ensure that buildings can maintain ambient temperatures without requiring significant amounts of energy in the form of air-conditioning or heat in winter.

Urban centres are particularly vulnerable to increased risk of heat waves and temperature rises as the Urban Island Heat effect (the localized pool of warm air that frequently builds up over towns and cities) will exacerbate high temperatures.

### **Infrastructure**

See above. In addition, supply chains and 'just in time' distribution systems may be affected by climate change impacts including floods, storms, increased rainfall and higher temperatures. Transport infrastructure is also vulnerable.

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Infrastructure should be assessed to see if it can be resilient to the changing climate. New infrastructure should be built on the basis of predicted climate data rather than on the basis of historic climate data. Business continuity plans should be tested to ensure that they can cope with increased occurrence and intensity of extreme weather events.

#### Question

- 10 As the climate changes, so the land, aquatic and coastal environments will change, including those areas protected for biodiversity and conservation. The RCEP is interested to understand what this means for conservation policies and whether the current arrangements enable or inhibit adaptation of the natural environment.
- (a) If the nature of existing protected areas changes as the climate changes, what does this mean for current conservation policy?

#### Response

See the answer to 8 (b). Conservation policy must be flexible and able to adapt. We believe that there needs to be some sort of balancing act between different environmental goals. An example of conflicting environmental goals might be the construction of a wind farm in an area covered by the Habitats Directive. Article 6 of the Habitats Directive effectively prohibits any project that may have negative impacts on the integrity of the protected site. Exceptions are only permitted where there is an 'overriding public interest' in favour of such projects and their impacts.

- (b) With regards to site-specific conservation policies, what should be protected now and in the future, especially if the present site is bound to change? How can a range of resilient habitats be provided to conserve biodiversity?

#### Response

Please refer to our responses at 6 (a), (b) and (c) above.

These are issues that largely depend on expert scientific input. From one perspective it is desirable to ensure that all such sites are protected. The reality is that very often hard choices will need to be made to favour some sites over others. These decisions need to be justified on scientific and biodiversity criteria, bearing in mind in mind that there will be species movement from specific sites as the climate changes.

- (c) How should current arrangements (such as protected areas or wildlife law) for the protection of species and habitats be adapted to ensure that the natural environment can adapt to climate change?

#### Response

See answer above. The Habitats Directive (implemented in Great Britain by the Conservation (Natural Species, &c) Regulations 1994), plays an important role in protecting many species at risk in Great Britain. This regime needs to be reviewed in the light of the likely adaptation constraints, so that both the criteria for protection, and the procedures for securing it, are still fit for purpose.

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## Values relating to the natural environment

### Question

- 11 How society perceives and interacts with the environment is different in each country, and within the different regions and sectors of that country. The values and attitudes of society will ultimately underpin its response to climate change.
- (a) How will climate change affect how society perceives and values the natural environment?

### Response

As the negative effects of climate change take effect (here and abroad) and become more widely experienced and understood, society will come to value the environment more and come to recognise just how much their well-being depends on a healthy and flourishing environment. In other words, perception of the effects of climate change changes as individuals are affected.

In general terms, this process has started already and in developing countries, the effects of climate change are already very visible.

- (b) As the climate changes, it is likely that non-native (or alien – see *definitions at Annex B*) species will migrate into the UK. When and how do previously non-native species come to be regarded as part of the UK's native biodiversity, and what will this mean for the UK?

### Response

This question requires expert scientific input. We suggest short, medium and long term monitoring of such species.

- (c) Is the legal framework for species and habitat protection adequate for dealing with invasive non-native species under climate change?

### Response

See the answer to 10 c) above.

## *Opportunities presented by the changing natural environment*

### Question

- 12 Whilst much of the debate is focused on how humans can help protect the natural environment as it responds to climate change, how can the changes to the natural environment be used to help UK society adapt to climate change?

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## Response

Ironically there are potential agricultural benefits from climate change, e.g. vineyards, cider and spring water production. The tourism industry in the UK is likely to benefit as warmer weather means people may choose to holiday in the UK during traditional summer holiday periods. (Likewise, countries in southern parts of Europe may become less attractive as holiday destinations if people decide they are uncomfortably hotter and drier.) To benefit from these changes, operators must maintain high quality environments, with efficient transport systems and sufficient capacity to cope with an increase in tourist numbers. The impact on local communities ought to be taken into account also.

There are also likely to be opportunities as a result of technological developments.

## **Institutional arrangements in capacities**

### *Institutional adaptive capacity*

## Question

- 13 To what extent do UK institutions and organisations recognise and understand their dependence on the natural environment, and how this affects their capacity and capability to adapt? Are there examples of organisations in the UK that have quantified their level of dependence?

## Response

It appears that UK institutions, in general, do not appreciate their dependence on the natural environment. Indeed, many businesses have little idea as to how the natural environment will change in their area and how this will impact on their processes. Environmental policies of many large businesses focus on 'easy wins' (such as plastic cup recycling or carbon offsetting), which can be achieved without materially changing their business models. Many businesses do not see environmental issues as key to their business and do not allocate a budget for tackling environmental challenges (although they may be more receptive to measures which save money). Environmental issues tend to be confined to corporate social responsibility and PR campaigns. CSR tends to be a discrete area of the business which rarely impacts on the core business areas.

Government policy itself appears to be contradictory and incoherent<sup>9</sup>, with different departments pulling in different directions. This is of major concern. Conventional coal-fired power stations and airport expansion are plainly not compatible with a low-carbon economy. The 'Fit for the Future'<sup>10</sup> review concluded that all the main political parties lacked green vision. We note with interest the recent creation of a new department for energy and climate change, and await clarification of its relationship with DEFRA which has hitherto had responsibility for climate change issues.

## Question

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<sup>9</sup> See 'Fit for the Future The Green Standard 2007-08 Review of the Parties', a review commissioned by CPRE, Friends of the Earth, Green Alliance, Greenpeace, National Trust, RSPB, The Wildlife Trusts, Woodland Trust and WWF.

<sup>10</sup> Ibid

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- 14 Does the UK have the right capacities and institutional arrangements to be able to identify the changes to which it should be adapting?

Response

Whilst the UK may have the right capacities and institutional arrangements to enable it to identify changes to which it should be adapting, there is a lack of political will to use these capacities and arrangements effectively and to implement the changes that are required.

UKELA suggests that a task force be set up, perhaps as a sub-group under the Committee on Climate Change, to respond to disasters. The committee would be made up of experts (including technicians), and should make use of NGO experience.

Question

- 15 What are the relative roles of government, communities, individuals, civil society, and/or companies with regards to adapting to climate change for the three exemplar issues? For example, is there too much of a focus on institutional responses and needs versus understanding of individual concerns and needs?

Response

UKELA is of the view that all these parties should be involved. It is important from the view of participatory democracy that communities are involved in decision making. It is right that the focus should be on present and future generations, but also there should be a recognition that nature is valuable in itself (see answer to 6 (b)).

It will be appropriate to take many decisions at the local level (in line with the principle of subsidiarity), but the Government should take the role in brokering a global climate deal.

Question

- 16 As society adapts to climate change, decisions will need to be made as to what is an appropriate range of adaptation objectives and responses.
- (a) What should be the key objectives of climate change adaptation strategies for the three exemplars?

Response

Again UKELA supports an integrated approach to dealing with environmental problems. At the same time it must be recognised that there are key objectives. We would suggest that some of these might be as follows:

- the provision of clean drinking water and clean air;
- dignified living;
- preserving biodiversity and nature conservation and ensuring a balanced and maintained ecosystem;

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- compensation to people whose livelihoods and properties are ruined as a result of climate change;
  - relocation of habitats in risk areas, e.g. in cases of managed retreat schemes;
  - the creation of new habitats to compensate for habitats which have been destroyed.
- (b) What should be the criteria for determining appropriate adaptation objectives and the responses that would meet these objectives for the three exemplars?

#### Response

See answer at 16 (a) above.

- (c) How should different adaptation objectives and responses be prioritised for the three exemplars?

#### Response

See answer at 16 (a) above.

- (d) Some adaptation responses could disadvantage some individuals or groups (e.g. coastal realignment could lead to individuals or communities having to move). How should the “fairness” of different adaptation responses be considered?

#### Response

See comments at 16 (a) above. There would have to be a balancing act and judgment made in the same way human rights are balanced.

### European, National and Regional Approaches

#### Question

- 17 What is the appropriate level (e.g. European, UK, regional, local) at which decisions should be made for climate change adaptation?

#### Response

We should be guided in part by the principle of subsidiarity. Many decisions will be taken at local level. Nonetheless the EU’s role in effecting minimum standards and in brokering a global climate deal is crucial. Indeed the scale of the problem demands consideration of the creation of new international institutions such as an International Environmental Agency and an International Court for the Environment.

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### Question

- 18 The regions of the UK will experience different levels of climate change impacts, and will correspondingly need to adapt in different ways. What variations in institutional capacity do we find in the different regions? What do these differences imply?

### Response

Inevitably there will be variations in effects and need. This implies that a co-ordinated local approach is necessary. We would agree with the recommendation in the Pitt Review that local authorities should be better prepared and more technically adept. Local authorities should share information to ensure a co-ordinated response.

A climate change emergency task force could also provide assistance in times of emergency.

### Question

- 19 Which existing EU mechanisms (e.g. the Common Agriculture Policy or the Water Framework Directive) could play a role in delivering adaptation to climate change in the UK? What are the aspects of such mechanisms that enable or hinder adaptation?

### Response

See also the answer to 10 (c) above. The Water Framework Directive (WFD) states at Article 1.1 that water is a heritage which must be protected. Perhaps this concept should be emphasised more to encourage a change in our attitude to water and more responsible use of water. The WRD could also be useful in relation to enforcement measures.

We also suggest that there may be benefits in requiring applicants seeking planning permission of significant projects to assess their water resource requirements, as part of the planning permission.

In addition, research could be carried out into the benefits of requiring large scale developments to quantify their projected use of water resources during the operational phase of the development and to propose measures and schemes to ensure water is used as sustainably as possible, as part of an Environmental Impact Assessment or similar process.

The Common Agricultural Policy could play an important part although it will need to radically alter its current agenda. Changes could include measures to reduce emissions associated with agriculture such as the digestive processes connected with animals, their waste, as well as fertilizers, land use changes and the use of fossil fuels.

Further changes to the Common Agricultural Policy agenda might include measures to deal with responsibly and sustainably farmed non-food crops used in biofuels, as well as using

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funding to promote farming measures that will help to encourage sustainability and biodiversity.

The Environmental Liability Directive may also help to enable adaptation. In particular the remediation requirements of complementary remediation and compensatory remediation, which go beyond simple primary remediation, offer new concepts of compensation and remediation. Also see response to 6 (a) above.

The EU Emissions Trading System is a further EU mechanism that will help with future adaptation. For the scheme to be fully effective in doing so, we are of the view that the scheme should be extended to incorporate more industry sectors such as aviation (which is due to be covered from 2012) and shipping.

#### Question

- 20 As other countries in Europe experience climate change, they also will experience changes in the natural environment. What indirect impacts might this have on the natural environment of the UK?

#### Response

See answer to 5(a). There will be increased food insecurity and 'climate change refugees', particularly from countries in southern EU states.

#### Question

- 21 Are there are other issues which should be included within the RCEP study?

UKELA would welcome discussion of wider issues, including co-operation with other member states, encouraging local production and the idea of a Mission Statement covering issues such as quality of life, sustainable development and living with the effects of climate change.

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