



SCOPE AND PRIORITIES FOR JNCC WORK ON CLIMATE CHANGE AND ENERGY

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JOINT NATURE CONSERVATION COMMITTEE

SCOPE AND PRIORITIES FOR JNCC WORK ON CLIMATE CHANGE AND ENERGY

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1. Introduction

- 1.1 The purpose of this paper is to review the scope of JNCC work on climate change and energy and set out priorities for the next 3-5 years. The paper addresses the role of JNCC staff working alongside the country agencies and other bodies which provide advice to government on these topics, including the Inter-Agency Climate Change Forum.
- 1.2 JNCC has a limited resource to address these issues. The climate change and energy advice officer has the lead role in coordination within JNCC and outreach to stakeholders, otherwise climate change and energy issues are integrated within other programmes across JNCC. JNCC draws heavily on work undertaken within the agencies and elsewhere to support its advisory role. If agreed, the priorities set out in this paper will provide the basis for the development of cross-cutting project within JNCC which will identify more specific deliverables and schedules of work.

2. Background

- 2.1 Climate change affects biodiversity in many ways¹, for example causing shifts in species distribution, altering reproduction patterns, changing coastal habitat as sea level rises and affecting ecosystem function. Ocean acidification caused by increased levels of atmospheric CO₂ dissolving into the ocean is likely to affect the long-term functional integrity of the marine environment and its biodiversity². In addition, and possibly of greater significance, there will be impacts from adaptation and mitigation in other sectors on

¹ IACCF in prep *Biodiversity and Climate Change – a summary of impacts in the UK*. JNCC, Peterborough.

² Ocean Acidification Reference User Group (2009). *Ocean Acidification: The Facts. A special introductory guide for policy advisers and decision makers*. Laffoley, D. d'A., and Baxter, J.M. (eds). European Project on Ocean Acidification (EPOCA). 12pp. http://www.epoca-project.eu/images/RUG/oa_guide_english.pdf

biodiversity³ (e.g. through land use change and development of renewable energy). Impacts on biological and geological diversity arising from the production, distribution and consumption of energy in the UK are potentially significant.

2.2 Understanding the complex interplay between climate change and the way the natural environment, economies and society respond to such change is now essential for nature conservation. Exploiting potential benefits and avoiding negative impacts from climate change and energy policies is a key element of both domestic and international nature conservation and practice. JNCC's work in the UK and internationally, including the Overseas Territories, therefore needs to be underpinned by a thorough understanding of:

- i. the direct impacts of climate change on biodiversity;
- ii. the role of, and impacts on, biodiversity arising from adaptation/mitigation to climate change;
- iii. the potential for energy production to impact on biodiversity;
- iv. the potential impact of initiatives, such as green development mechanisms and payments for ecosystem services, on biodiversity, and where possibilities for synergies could be promoted for conservation gain.

2.3 The cross cutting themes of climate change and energy involve work in three distinctive areas of our overall role (as set out in the JNCC strategy). These are: (1) provision and interpretation of evidence to underpin both (2) operational advice in the offshore marine environment and (3) advice on international policy.

2.4 The sections (3-5) that follow review JNCC's current work and emerging issues and propose priorities for the next 3-5 years.

3. Promote, develop and apply the evidence base to underpin policies

Current work in JNCC and emerging issues

3.1 JNCC's surveillance programmes provide evidence on environmental impacts resulting from climate change⁴. We are working with Government and its agencies, the research community and key NGOs to gather better information about climate change impacts, more cost-effectively. New initiatives include: the Marine Biodiversity Surveillance and Monitoring Programme⁵; the

³ Secretariat of the Convention on Biological Diversity (2009). *Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change*. Montreal, Technical Series No. 41, 126 pages. www.cbd.int/doc/publications/cbd-ts-41-en.pdf.

⁴ JNCC 10 D02: Using surveillance of terrestrial biodiversity to detect and assess causes of change.

⁵ JNCC 09 D01: "Recent changes to the regulations transposing the Habitats Directive: implications for JNCC"

Biodiversity Impacts of Climate Change Observation Network (BICCO-Net⁶); and, the UK Greenhouse Gas Flux Inventory. Climate change is just one of a number of pressures that need to be assessed.

- 3.2 **BICCO-Net** is a collaborative research project between Defra, JNCC, the Country Agencies and a number of data providers including BTO, CEH, Rothamsted Research, Forestry Commission, Bat Conservation Trust and PlantLife. Work is ongoing to identify species and groups of species that are undergoing abundance changes in response to climate, as well as other species that may be at risk. The suitability of a range of analytical techniques for measuring impacts has been reviewed. Regular reporting will be available once the initial analyses have been completed, and these reports will link to other research on climate change.
- 3.3 Analysis of biodiversity data to assess the key impacts of climate change and energy generation, and to model future changes is being done both in-house and in collaboration with partners. Ongoing work includes that done by the Marine Climate Change Impacts Partnership⁷ (MCCIP) and the BTO (British Trust for Ornithology).
- 3.4 Examples of past work include MONARCH (Modelling Natural Resource Responses to Climate Change programme⁸); MarClim (Marine Biodiversity and Climate Change⁹) and PRINCE (preparing for climate change impacts on freshwater ecosystems¹⁰).
- 3.5 JNCC's Global Impacts Project¹¹ has analysed the scale, nature and location (by country) of impacts arising from current liquid biofuels use by the UK and predicted where such impacts may occur in the future. There are plans to update this work to match economic and political changes that influence the use and source of such fuels. A similar approach is now being developed for analysis of the direct use of biomass for bioenergy within the UK, in particular to assess the location and nature of future impacts.
- 3.6 The Inter-Agency Climate Change Forum (IACCF) has collated evidence from many sources to produce a booklet¹² that provides a broad overview of the observed effects of climate change on biodiversity across the UK. This is the first collation of its kind and provides an introduction to the issue for non-specialists.

⁶ www.bicconet.org

⁷ MCCIP website: www.mccip.org.uk/

⁸ MONARCH web site - www.ukcip.org.uk/index.php?option=com_content&task=view&id=330&Itemid=9

⁹ MarClim report available from: www.ukcip.org.uk/index.php?option=com_content&task=view&id=329

¹⁰ PRINCE report available from: <http://publications.environment-agency.gov.uk/pdf/SCHO0507BMOJ-e-e.pdf>

¹¹ Global Impacts Project - www.ukglobalinfluence.org/

¹² "Biodiversity and Climate Change – a summary of impacts in the UK" www.jncc.gov.uk/iaccf

- 3.7 Initiatives such as The Economics of Ecosystems and Biodiversity (TEEB) project, REDD (Reducing Emissions from Deforestation and forest Degradation) and the National Ecosystem Assessment (NEA) of the UK are attempting to better understand the economic value of biodiversity contributing to ecosystem services, including carbon sequestration.
- 3.8 JNCC's support to Overseas Territories and Crown Dependencies¹³, includes the need to improve and further develop surveillance and monitoring programmes that will inform understanding of the impacts of climate change on biodiversity and geodiversity.
- 3.9 JNCC is engaged with UK and international groups assessing priorities for climate change research e.g. the Biodiversity Research Advisory Group (BRAG) and the European Platform for Biodiversity Research Strategy (EPBRS). JNCC provides advice to research funders on user requirements and application of results to inform policy, but has very limited direct funding for research.

Future priorities for JNCC in developing the evidence base

- i. Develop JNCC's surveillance schemes to detect impacts of climate change on biodiversity and work with partners to provide a risk-based assessment of climate change impacts on biodiversity. Produce regular reports and maintain a web-based digest of evidence on climate change impacts on biodiversity in the UK in partnership with BICCO-Net, MCCIP, through the IACCF and other, similar initiatives.*
- ii. Work with partners to assess the potential impacts on biodiversity in UK and globally of biomass production for UK/EU energy markets.*
- iii. Work with partners to identify appropriate economic metrics that capture the true costs associated with carbon trade mechanisms.*
- iv. Work with Overseas Territory and Crown Dependency administrations and agencies to promote integrated surveillance strategies and analysis of evidence on climate change impacts at appropriate geographic scales.*

¹³ JNCC09 D11: Priorities for JNCC's work in the Overseas Territories and Crown Dependencies.

4. Advice for European and global policy development and negotiations

Current work in JNCC and emerging issues

- 4.1 JNCC provides support to government in relation to global multilateral environmental agreements (MEAs). Recent work includes provision of technical advice to the CBD AHTEG¹⁴ on biodiversity and climate change and recent meetings of the Ramsar Convention on Wetlands, the Convention on Migratory Species (the Bonn Convention) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). JNCC has produced a collation of recent decisions and resolutions on climate change and biofuel within MEAs¹⁵. Currently JNCC is providing advice to Defra on papers for CBD SBSTTA14 in preparation for CBD COP10 in Japan later this year.
- 4.2 JNCC has commissioned work to help understand the issues and identify where we can make an effective input to negotiation of the REDD initiative (Reduced Emissions from Deforestation and Degradation in Developing Countries) under the UN Framework Convention on Climate Change (UNFCCC).
- 4.3 JNCC, with the country agencies, has provided advice to the European Commission on biodiversity elements within various climate change policy initiatives including the European Climate Change Programme, the 2009 White Paper on climate change adaptation¹⁶, and the discussion paper: Towards a Strategy on Climate Change, Ecosystem Services and Biodiversity¹⁷.
- 4.4 JNCC, with the country agencies, has provided detailed technical advice relating to sustainability criteria for liquid biofuel production from biomass in the context of mandatory EU targets for renewable included in the Renewable Energy Directive¹⁸ and the Fuel Quality Directive¹⁹.

Future priorities in JNCC for advice on European and global policy development

- v. *Compile and publish evidence and examples of best practice in climate change impacts assessment, ecosystem-based adaptation and synergy*

¹⁴ CBD AHTEG on Biodiversity and Climate Change report - <https://www.cbd.int/doc/publications/cbd-ts-41-en.pdf>

¹⁵ JNCC MEA event website: <http://www.jncc.gov.uk/page-4663>

¹⁶ EU white paper: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0147:FIN:EN:PDF>

¹⁷ Towards a Strategy on Climate Change, Ecosystem Services and Biodiversity. A discussion paper prepared by the EU Ad Hoc Expert Working Group on Biodiversity and Climate Change. http://ec.europa.eu/environment/nature/pdf/discussion_paper_climate_change.pdf

¹⁸ EU Renewable Energy Directive: <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2009:140:SOM:EN:HTML>

¹⁹ EU Fuel Quality Directive: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0088:0113:EN:PDF>

between climate change and biodiversity, to support UK negotiating positions, in particular REDD+²⁰ and similar initiatives for other ecosystems e.g. peatlands.

- vi. *Provide advice to Government on the likely impacts of international trade in energy products on biodiversity based on analysis of appropriate indicators.*
- vii. *Provide technical advice and support to UK government negotiating teams, including advice on surveillance and monitoring of REDD, impacts of renewable energies and geo-engineering proposals in preparation for upcoming MEA meetings.*
- viii. *Assess EU proposals and provide advice in relation to the development and subsequent implementation of EU climate change and energy strategies (including development of strong environmental sustainability criteria).*

5. Advice on UK policy development and, for the offshore marine environment, policy implementation

Current work in JNCC and emerging issues

- 5.1. Integration of policy workstreams established, largely independently, to address climate change, energy and nature conservation is a challenge that is being addressed within each of the countries. The IACCF, supported by JNCC, has provided opportunities for exchange of information about different approaches and sharing of best practice between country agencies. Where necessary JNCC has taken the lead in development of UK-wide common standards, for example in the development of a common definition of biodiverse grasslands, based on experience in the UK, as required under the EU Renewable Energy Directive.
- 5.2. JNCC provides advice to Government on a number of oil and gas activities that occur throughout all stages of development from exploration to production and through to decommissioning and on renewable energy proposals in the offshore environment. JNCC also assist with UK policy development on renewables, and have advised on the Strategic Environmental Assessment (SEA) processes for Round 2 offshore wind in England and Wales and for Wave and Tidal Technologies in Scotland and the Energy SEA. Input is also required to individual project Environmental Impact Assessments.

²⁰ REDD+ - the plus here refers to added environmental safeguards added to the general principle of paying for carbon storage in intact forest.

Future priorities for UK policy development and implementation

- ix. *Work with the IACCF and other inter-agency groups to provide co-ordinated guidance to Government in development of UK policy, reporting obligations and identification of research needs.*
- x. *Continue to provide statutory advice to regulators and stakeholders in relation to offshore SEAs and project level EIAs. In addition, provide advice to Government on implementation of EU policy at the UK level where positioning of energy installations is likely to have an impact.*

6. Conclusions

6.1 JNCC has a significant role to play, working with the agencies, in developing the evidence base and providing advice at the interfaces between climate change, energy and nature conservation policy. In line with the new JNCC strategy, this paper puts emphasis on development and application of the evidence base in the UK, further work on the UK's global impacts, and support for work in the Overseas Territories. JNCC's policy advisory role is focused at the international level, in particular providing support to the UK Government in the negotiations under the main multilateral environmental agreements, and providing technical support on EU policy development. JNCC also provides policy advice, and delivers specific operational responsibilities with regard to energy installations, in the offshore marine area, and supports co-ordination where necessary at the UK level, including the Inter-Agency Climate Change Forum.