DEPARTMENT OF ENERGY & CLIMATE CHANGE

Annexes to Appraisal of Sustainability for the revised draft Overarching National Policy Statement for Energy (EN-1)

Planning For New Energy Infrastructure

October 2010

Contents

Annex A: List of Abbreviations

AONB	Area of Outstanding Natural Beauty
AoS	Appraisal of Sustainability
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
BERR	Department of Business, Enterprise and Regulatory Reform (formerly DTI)
CAMS	Catchment Abstraction Management Strategies
CCL	Climate Change Levy
CCS	Carbon Capture and Storage
CHP	Combined Heat and Power
CLG	Communities and Local Government (Department for)
DCMS	Department for Culture, Media and Sports
DECC	Department of Energy and Climate Change
Defra	Department for Environment, Farming and Rural Affairs
DoENI	Department of Environment Northern Ireland
DTI	Department of Trade and Industry
DWS	Drinking Water Standards
DWSP	Drinking Water Safety Plans
EIA	Environmental Impact Assessment
ETS	Emission Trading Scheme
EU	European Union
GHG	Greenhouse Gas
GVA	Gross Value Added
HRA	Habitats Regulation Assessment
IEEM	Institute of Ecology and Environmental Management
IPC	Infrastructure Planning Commission
IPCC	Intergovernmental Panel on Climate Change
LDD	Local Development Document
LNG	Liquefied Natural Gas
LNR	Local Nature Reserve
MNR	Marine Nature Reserves
NERC	The Natural Environment and Rural Communities Act
NNR	National Nature Reserves

NPPG	National Planning Policy Guidance
NPS	National Policy Statement
NVZ	Nitrate Vulnerable Zone
ODPM	Office of the Deputy Prime Minister (now the CLG)
RSS	Regional Spatial Strategy
SAC	Special Areas of Conservation
SAM	Scheduled Ancient Monument
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TAN	Technical Advice Note
UKCIP	UK Climate Impacts Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCA	Wildlife and Countryside Act
WFD	Water Framework Directive

Annex B:Review of Policies, Plans and Programmes

1. Climate Change	
Objectives and Targets Identified in the Policies, Plans & Programmes	
The plans and programmes on climate change have the overall objective of stabilizing greenhouse gas. There is a need to contribute to the high level of quality of life for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment. The solution requires a coordinated effort. The Kyoto Protocol sets targets to reduce the collective emissions of developed countries by 5.2% from 1990 levels by the period 2008 to 2012. The UK Climate Change Act (2008) also sets binding targets for reduction of CO_2 emissions (an 80% reduction by 2050 compared to a 1990 baseline) (UK only) The plans also set out the likely effects of climate change on the regions of the UK and how the targets are to be achieved. The solution is a balanced approach across all sectors and parts of the UK and requires constant review. It will require technological innovation, and focus on flexible, integrated and cost effective policy options. (Climate Change – The UK Programme 2006: Tomorrow's Climate Today's Challenge)	
List of Policies, Plans & Programmes	
International	
• The United Nations Framework Convention on Climate Change (UNFCCC) • Kyoto Protocol to the UN Framework Convention on Climate Change (1992) • The Kyoto Protocol, (1997) • EU Emission Trading Scheme (EU ETS)	• EU Green Paper "adaptation to climate change in Europe – options for EU action" • European Climate Change Programme • EU Sixth Environmental Action Plan (2002 – 2012)
National	
• UK Climate Change Act 2008 • UK Low Carbon Transition Plan: National Strategy for Climate & Energy (2009) • Climate Change – The UK Programme 2006: Tomorrow's Climate Today's Challenge (HM Government, March 2006) • Policy Planning Statement 1 Delivering Sustainable Development (2005) • Committee on Climate Change (2008) Building a low-carbon economy • UK Climate Projections (UK CIP '09)	• Health Effects of Climate Change in the UK 2008 – An update of the Department of Health Report 2001/2002 • Stern Review of the Economics of Climate Change (2009) • Environment Agency Climate Change Adaptation Strategy (2008-11)
England	
• Planning Policy Statement: Planning and Climate Change Supplement to PPS1 (2007)	
Wales	
• Wales Changing Climate: Challenging Choices: the Impact of Climate Changes in Wales 2020 – 2080 • Sustainable Development Scheme WAG (emerging) • Green Jobs Strategy WAG (2008)	• Renewable Energy Route Map WAG (2008) • Wales: a Vibrant Economy WAG (2005)
Scotland	
• Scottish Executive 'Changing Our Ways' Scotland's Climate Change Programme (2006) • Scottish Government's Climate Change Adaptation Framework (under development)	• Climate Change (Scotland) Act (2009)
Northern Ireland	
• Preparing for Climate Change in Northern Ireland (2007)	
Relevant methodological guidance	
• Fourth Assessment Report of the Intergovernmental Panel on Climate	• UK Climate Impacts Programme (www.ukcip.org.uk)

Change.
- Strategic Environmental Assessment (Levett-Therivel et al, June 2007)

2. Ecology (flora and fauna)

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes on ecology seek to promote the maintenance of biodiversity especially those species and habitats whose conservation requires co-operation across several boundaries and those species and habitats that are rare and endangered. There are a number of EU Directives focusing on various types of wildlife and habitat. They provide the framework for national action and international co-operation for conservation on land and in the sea. The target is to take measures to maintain or restore at favourable conservation status, natural habitats and species of community importance. This includes the designation and protection of Special Areas of Conservation (SAC), Special Protection Areas (SPA) and it is usually accepted as also including Ramsar sites. Contracting parties are obliged to undertake, in its planning and development policies and in its measures against pollution, to have regard to the conservation of wild flora and fauna. The documents identified also seek to monitor and review the situation to ensure a halt in the decline biodiversity.

Targets include ensuring that 95% of the nationally important sites (SSSIs) in England are in favourable condition by March 2010 (Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000)) and reversing the decline in farmland birds by 2020 and bring 95% of nationally important wildlife sites into favourable condition by 2010. (Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000)).

List of Policies, Plans & Programmes

International

- The EC Habitats Directive (Directive 92/43/EEC)
- The EC Birds Directive (Directive 79/409/EEC)
- Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)
- Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)
- Directive on the Conservation of European Wild Birds (79/406/EEC)
- Directive on the Conservation of European Wildlife and of Wild Fauna and Flora (92/43/EEC)
- Environmental Liability Directive 2004/35/EC
- Freshwater Fish Directive (78/659/EEC) (updated in 2006 by Directive 2006/44/EC on the Quality of Fresh Waters Needing Protection or Improvement in Order to Support Fish Life)
- OSPAR Biological Diversity and Ecosystems Strategy
- Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971)
- UN Convention on Biological Diversity
- EU Biodiversity Strategy (1998)
- Water Framework Directive (WFD) (2000/60/EC)

National

- The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007
- The National Parks and Access to the Countryside Act 1949
- The Wildlife and Countryside Act 1981
- CROW Act 2000
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Protection of Badgers Act 1992
- Conservation (Natural Habitats, &c.) Regulations 1994
- Countryside and Rights of Way Act (2000)
- UK Biodiversity Action Plan (BAP) species and habitats. (1994)
- UK Red Data Book
- Nationally Scarce species
- Birds of Conservation Concern red list (Gregory et al. 2002)
- Conserving Biodiversity – The UK Approach (2007)
- Marine and Coastal Access Bill (2008)
- The Food & Environmental Protection Act (FEPA) (1985)

England

- A Strategy for England's Trees, Woodlands and Forests (2007)
- Working with the Grain of Nature: A Biodiversity Strategy for England (2002)
- Norfolk and Suffolk Broads Act (1988)
- PPS9 Biodiversity and Geological Conservation (2005)
- Securing a healthy natural environment: An action plan for embedding an ecosystems approach' (Defra, 2007).

Wales

- Planning Policy Wales (PPW) published in March 2002
- Wales Environment Strategy (2006)
- TAN 5: Nature Conservation and Planning (1996)

Scotland

- The Scottish Planning Policy (SPP) and National Planning Policy Guidance (NPPG)
- NPPG 14: Natural Heritage (1999)
- Planning Advice Note 60, Natural Heritage (2000)
- Scottish Biodiversity Strategy (2004)
- Scottish Executive (2000) Planning Advice Note 60: Planning for Natural Heritage
- Nature Conservation (Scotland) Act 2004
- Scottish Executive (2004) Scotland's Biodiversity: It's in Your Hands – A strategy for the conservation and enhancement of biodiversity in Scotland

Northern Ireland

2. Ecology (flora and fauna)	
• Environment Northern Ireland - A Vision for the Future • Natural Heritage Strategic Plan (2003)	• PPS 2 – Planning and Nature Conservation (1997) • The Northern Ireland Biodiversity Strategy (DOE) 2002
Relevant methodological guidance	
• *Guidelines for Ecological Impact Assessment in the United Kingdom (version 7 July 2006)*	

3. Material Assets and Resource Use

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and policies relating to resources aim to ensure sustainable development by not putting excess pressure on resources. Objectives include accelerating the shift towards sustainable consumption and production; reversing the trends in loss of natural resources; urgently and substantially increase the global share of renewable energy and significantly reducing the rate of loss of biodiversity (by 2010). Nationally the aim is to guarantee a secure energy supply and also establish a legislative framework to encourage the take up of new technologies.

The Energy White Paper: Meeting the Energy Challenge (2007) sets out the context for energy; increased recognition of climate change; increased reliance on imported energy; increased instability of oil and gas producing regions. The Energy Act 2008 implements this new legislative framework.

The Directive on the on the Promotion and Use of Energy from Renewable Sources (2009/28/EC) imposes a national target for the share of energy from renewable sources of 15% for the UK of gross final consumption of energy in 2020.

In terms of waste, the documents establish a framework for the management of waste across the European Community; priority is given to waste prevention, re-use and recovery of waste; prohibition of the uncontrolled disposal of waste; establishment of an integrated network of disposal installations; preparation of waste management plans; ensuring that the cost of disposal is borne by the waste holder; ensuring that waste carriers are registered; ensuring that waste is recovered or disposed of without endangering human health.

Targets include, for example: - 800MW of renewable capacity should be provided from strategic onshore wind energy development. A further 200MW should be provided from offshore wind and other low carbon technologies (Wales (Ministerial Interim Planning Policy Statement 01/2005 – Planning for Renewable Energy))

Promote the development of indigenous renewable energy generation to the extent that it will be capable of providing 12% of electricity consumed by 2012 and requiring that from 2007 overall consumption of electricity within Northern Ireland is reduced by 1% per annum until 2012. (Northern Ireland (Strategic Energy Framework, 2004))

List of Policies, Plans & Programmes

International

- EU Directive on Waste 75/442/EEC (as replaced by Directive 2006/12/EC)
- Directive on the Landfill of Waste (99/31/EC)
- Environmental Liability Directive 2004/35/EC
- Offshore Petroleum Activities (Conservation of Habitats) Regulations '01
- Directive 2009/28/EC on the Promotion and Use of Energy from Renewable Sources
- Waste Framework Directive (2008/98/EC)
- EU Thematic Strategy on the Prevention and Recycling of Waste
- European Sustainable Development Strategy (2006)
- World Summit on Sustainable Development, Johannesburg, September 2002
- Directive to Promote Electricity from Renewable Energy (2001/77/EC)

National

- UK Renewable Energy Strategy (2009)
- Planning for a Sustainable Future: White Paper (2007)
- Energy Act 2008
- Energy White Paper: Meeting the Energy Challenge (2007)
- Electricity Act 1989
- UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)
- The Energy Challenge – Energy Review Report (2006)

England

- Securing the Regions' Futures – Strengthening the Delivery of Sustainable Development in the English Regions (2006)
- Waste Strategy for England (2007)
- Water Resources for the Future: Strategy for England and Wales (2001)
- Environment Agency - Waste information 2007
- PPS1: Delivering Sustainable Development (2005)
- PPS10 Planning for Sustainable Waste Management (2005)
- PPS22 Renewable Energy (2004)

Wales

- Water Resources for the Future: A Strategy for England and Wales (2001)
- Minerals Planning Policy Wales 2000
- Environment Agency - Waste information 2007
- Wise about Waste The National Waste Strategy for Wales (2002)
- Ministerial Interim Planning Policy Statement 01/2005 – Planning for Renewable Energy

Scotland

- Scotland's National Waste Strategy SEPA (1999)
- Scotland's National Waste Plan (2003)
- SPP6 Renewable Energy
- NPPG 10 Planning and Waste Management
- Determining and Delivering Scotland's Energy Future
- New National Waste Management Plan (under development)

3. Material Assets and Resource Use	
Northern Ireland	
• A Positive Step – Northern Ireland - A Sustainable Development Implementation Plan (2006) • Northern Ireland Waste Management Strategy 2006-2020	• Energy: A Strategic Framework for Northern Ireland 2004 • Strategic Energy Framework (2004)

4. Economy and Skill

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to economics and skills have an overall aim of achieving sustainable development. Sustainable development aims to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations. In particular the documents seek to prevent social exclusion and channel investment to those areas most at need. In rural areas the aim is to couple economic development with environmental protection and biodiversity. A key element is the development of sustainable communities where decision-making is devolved and delegated. The documents set out how development in the UK will be focused on previously developed land and how development should follow sustainable patterns, particularly in rural area.

List of Policies, Plans & Programmes

International

- The European Spatial Development Perspective (ESDP) (1999)
- EU European Employment Strategy – EES (2005)

National

- UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)
- UK Climate Change Committee (2008) Building a low-carbon economy

England

- Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000)
- Review of the Rural White Paper – Our Countryside: the Future (2004)
- Rural Strategy (2004)
- Sustainable Communities: Building for the Future (2003)
- The Egan Review: Skills for Sustainable Communities
- PPG2: Green Belts (1995, amended 2001)
- PPS7 Sustainable Development in Rural Areas (2004)
- Good Practice Guide on Planning for Tourism which should be used instead of PPG 21 (July 2007)

Wales

- The Sustainable Development Action Plan 2004 – 2007 (2004)
- A Winning Wales – The National Economic Development Strategy of the Welsh Assembly Government (2001 & 2004)
- European Structural Funds In Wales (2000-2006)
- Achieving Our Potential 2006-2013: Tourism Strategy for Wales Mid-Term Review (2006)
- Wales: A Vibrant Economy (2005) - emerging new strategy

Scotland

- Scottish Executive People and Place Regeneration Policy Statement (2006)
- Scottish Executive (2004) Framework for Economic Development in Scotland
- Scottish Planning Policy SPP2 Economic Development 2002
- SPP15 Planning for Rural Development
- SPP21 Green Belts

Northern Ireland

- A Positive Step – Northern Ireland - A Sustainable Development Implementation Plan (2006)
- PPS 4 – Industrial Development (1997)
- PPS 4 – (Draft) Industry, Business and Distribution (2003)
- National Development Plan : Transforming Ireland – a Better Quality of Life for All (2007)
- National Spatial Strategy for the Republic of Ireland 2002 – 2020: People, Places and Potential
- The Northern Ireland Sustainable Development Strategy (DOE 2006)
- 2015 Economic Vision for the Northern Ireland Economy (2005)
- Draft Northern Ireland Regional Economic Strategy (2007) (OFMDFM)

Relevant Methodological Guidelines

- HM Treasury (2003), The Green Book: Appraisal and evaluation in Central Government
- DCLG (2003), Assessing the Impact of Spatial Intervention: Regeneration, Renewal and Regional Development – Main Guidance

5. Flood Risk

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to flood risk aim to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. Directive (2007/60/EC) require Members States to review all watercourses and coastlines to assess the risk from flooding, to map the flood extent and the population and assets at risk in these areas. Beyond this the Directive requires Member States to take adequate and coordinated measures to reduce this flood risk. (EU Floods Directive)

There are no specific targets or indicators of relevance.

List of Policies, Plans & Programmes

International

- Directive on the Assessment and Management of Flood Risks (2007/60/EC)
- EU Floods Directive (2007/60/EC)

National

- Future Water, the Government's Water Strategy for England (Feb 08)
- The National Flood Risk Assessment, National Flood and Coastal Defence Database

England

- Planning Policy Statement 25 (PPS25): Development and Flood Risk (under revision)
- Floods and Water Bill [currently being prepared]
- Local Development Documents (LDDs)
- Flood and Coastal Defence Appraisal Guidance FCDPAG3 Supplementary Note to Operating Authorities – Climate Change Impacts October 2003
- Making Space for Water: Taking Forward a New Government Strategy for Flood and Coastal Erosion Risk Management (2005)
- Policy and Practice for the Protection of Floodplains (1996)
- Planning Policy Statement: Planning and Climate Change – Supplement to PPS1 (2007)
- PPG20 Coastal Planning (1992)
- PPS25 Development and Flood Risk (2006)

Wales

- Technical Advice Note 15 (TAN15): Development and Flood Risk (2005)
- TAN14 – Coastal Planning (1998)
- TAN 15: Development and Flood Risk (2004)

Scotland

- Scottish Planning Policy 7 (SPP7): Planning and Flooding
- Flood Risk Management (Scotland) Bill (2008)
- Marine Strategy for Scotland's Coast and Marine Environment (2004)
- NPPG 13 Coastal Developments (1997)
- Scottish Environment Protection Agency Policy No 22 Flood Risk Assessment Strategy (1997)
- SPP7 Planning and Flooding (2004)

Northern Ireland

- Northern Ireland River Conservation Strategy. (2001)
- PPS 15 – Planning and Flood Risk (2006)

Relevant Methodological Guidelines

- CLG 'Improving the flood performance of new buildings (2007)
- CIRIA 'Designing for exceedance in urban drainage – good practice (c635) (2008)

6. Water Quality

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to water quality set standards for a range of drinking water quality parameters and includes standards that constitute legal limits (Drinking Water Directive (98/83/EC)). They restrict the direct or indirect discharge into groundwater of certain polluting substances (Groundwater Directive (80/68/EEC)). The plans also set standards for the monitoring and classification of bathing water quality, the management of bathing water quality and the provision of information to the public on bathing water quality.

The plans and programmes also ensure that flood risk and water quality are taken into account in spatial planning and land use decisions throughout the UK. Targets include;

- achieve good environmental status of the EU's marine waters by 2021 (Marine Strategy Framework Directive (2008/56/EC))
- reach good chemical and ecological status in inland and coastal waters by 2015 (Water Framework Directive (2000/60/EC))

List of Policies, Plans & Programmes

International

- Drinking Water Directive (98/83/EC)
- Directive 2006/7/EC concerning the management of bathing water quality and repealing Council Directive 76/160/EEC
- EU Marine Strategy
- Groundwater Directive (80/68/EEC)
- Proposed priority substances Directive (Directive 2008/105/EC)
- Fresh Water Fish Directive (78/659/EEC)
- Urban Waste Water Treatment Directive (91/271/EEC).
- Water Framework Directive (2000/60/EC)
- Shellfish Waters (79/923/EEC)
- Surface Water Abstraction Directive (75/440/EEC)
- Water Framework Directive (2000/60/EC)
- Dangerous Substances Directive (76/464/EEC)

National

- Future Water, the Government's Water Strategy for England (2008)

England

- Floods and Water Bill [currently being prepared] (2008)
- Surface Water Management Plans (SWMPs)
- Water Cycle Studies (WCSs)
- River Basin Management Plans (submittied to Ministers)
- Planning Policy Statement: Planning and Climate Change – Supplement to PPS1 (2007)
- Water Resources for the Future: A summary of the strategy for Wales (2001)

Wales

- TAN 5: Nature Conservation and Planning (2006)

Scotland

- Scottish Water Delivery Plan May (2006)
- The Water Environment (Controlled Activities) (Scotland) Regulations (2005)
- Scottish Environment Protection Agency 19 Groundwater Protection Policy for Scotland (2003)
- Draft River Management Plan for the Scotland River Basin District.

Northern Ireland

- Northern Ireland River Conservation Strategy. (2001)

7. Traffic and Transport

Objectives and Targets Identified in the Policies, Plans & Programmes

The overall aim of the plans and programmes relating to traffic and transport is to improve the quality and effectiveness of transport infrastructure in terms of efficiency, pollution and social justice. The European Transport Policy for 2010: *A Time to Decide*, outlines the need to improve the quality and effectiveness of transport in Europe and outlines a strategy which is designed to gradually break the link between transport growth and economic growth to reduce environmental impacts and congestion. At a national level the plans seek to support targets for the improvement of air quality and the reduction of gas greenhouse gas emissions. They seek to strike a balance between a growing economy and the increasing demand for travel, and also achieving environmental objectives. This means seeking solutions that meet long term economic, social and environmental goals. They also set out the circumstances where it is appropriate to change the emphasis and priorities in provision between different transport modes, in pursuit of wider Government objectives. For example, the car will continue to have an important part to play and for some journeys, particularly in rural areas where, it will remain the only real option for travel. Throughout the UK a number of programmes have established indicators and baselines to monitor the performance of transport.

List of Policies, Plans & Programmes

International

- European Transport Policy for 2010: A Time to Decide

National

- Government/Department for Transport (DfT) 10 Year Transport Plan (2000)
- The Future of Transport White Paper – A Network for 2030 (2004)

England

- PPG13 Transport (2001)

Wales

- Draft Wales Freight Strategy – Connecting Wales
- TAN 18 Transport (2007)
- Wales Transport Strategy April (2008)

Scotland

- Scotland's National Transport Strategy (2006)
- Natural Planning Framework (under development)
- Scottish Planning Policy SPP 17 Planning for Transport (2005)

Northern Ireland

- PPS 3 – Access, Movement and Parking (2005)
- PPS 13 – Transportation and Land Use (2005)
- Regional Transportation Strategy (2002-2012)
- NI Accessible Transport Strategy 2015 (DRDNI) (2005)
- Northern Ireland Regional Strategic Transport Network Plan (DRDNI) 2002

Relevant Methodological Guidelines

- '*Guidance on Transport Assessment*' – Department for Community and Local Government and Department for Transport (DCLG/DfT), 2007
- 'Guidelines for the Environmental Assessment of Road Traffic' - Institute of Environmental Assessment (IEA[1]), 1993.

[1] Now the Institute of Environmental Management and Assessment (IEMA)

8. Noise

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to noise aim to; avoid significant adverse health impacts from environmental noise and vibration; mitigate and minimise adverse health impacts from environmental noise; and where possible, contribute to the improvements of health and quality of life through the effective management and control of environmental noise. Under the Environmental Noise Directive (2002/49/EC) there is the requirement to draw up action plans to manage noise and its effects to reduce noise where necessary. There are a number of British Standards which apply to noise and vibration, including controls for vibration, industrial noise, construction noise and building. The documents also include guidance about how noise and vibration should be taken into account in planning decisions, to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs of business.

There are no specific targets or indicators of relevance.

List of Policies, Plans & Programmes

International

- The Environmental Noise Directive 2002/49/EC

National

- Environmental Protection Act 1990, Part III; as amended by the Noise and Statutory Nuisance Act 1993
- The Control of Pollution Act 1974 (as amended)
- British Standard (planning and Noise)

England

- The Environmental Noise (England) Regulations (2007)
- PPG24 Planning and Noise (1994)

Wales

- The Environmental Noise (Wales) Regulations (2006)
- TAN 11: Noise (1997)

Scotland

- The Environmental Noise (Scotland) Regulations (2006)

Northern Ireland

- Environmental Noise Regulations (Northern Ireland) (2006)

9. Landscape, Townscape and Visual

Objectives and Targets Identified in the Polices, Plans & Programmes

The plans and programmes relating to Landscape, Townscape and Visual aim to promote landscape protection, management and planning, and to organise European wide co-operation on landscape issues. Nationally the UK has agreed to recognise landscapes in law as an essential part of the shared cultural and natural heritage; establish and implement landscape policies; to establish procedures for the participation of the public and local & regional authorities; and to integrate landscape into regional & town planning policies and its cultural, environmental, agricultural, social & economic policies. Regionally information has been published for taking landscape into account in decision-making. This includes The Character of England Map in England and LANDMAP in Wales. Development plans within the UK set out how Landscape can be regarded as a material consideration within development decisions.

There are no specific targets or indicators of relevance.

List of Policies, Polices, Plans & Programmes

International

- The World Heritage Committee's 'Operational Guidelines for the Implementation of the World Heritage Convention'
- European Landscape Convention (2000)

National

- Planning Policy Statement 7: Sustainable Development in Rural Areas
- National Park Management Plans
- AONB Management Plans
- Registered Historic Parks and Gardens
- The 1981 Wildlife & Countryside Act;
- 1990 Environmental Protection Act;
- 2004 Planning & Compulsory Purchase Order Act
- National Parks and Access to the Countryside Acts 1949;
- Norfolk & Suffolk Broads Act 1988.
- Countryside and Rights of Way Act 2000.
- Natural Environment and Rural Communities Act (NERC) 2006
- Historic Landscapes Register in Wales

England

- 1949 National Parks and Access to the Countryside Act
- 1967 Forestry Act (as amended 1999)
- 1968 Countryside Act
- 1983 National Heritage Act (amended 2002)
- 1986 Agriculture Act
- 1990 Planning (Listed Buildings and Conservation Areas) Act
- 1995 Environment Act
- 1995 British Waterways Act
- 2000 Countryside and Rights of Way Act
- 2006 Natural Environment and Rural Communities Act
- Commons Act 2006
- PPG 16 (1990)
- PPS22 (2004)
- Joint Character Areas and Countryside Quality Counts

Wales

- LANDMAP data for Wales
- The Historic Landscape Characterisation programme
- Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales - Part 1 (Parks and Gardens) and Part 2 (Landscapes of Historic Interest in Wales)

Scotland

- National Trust for Scotland Landscape Policy (2005)
- The National Parks and Access to the Countryside Act 1949
- Natural Heritage (Scotland) Act 1999
- NPPG 14 Natural Heritage (1999)
- Natural Heritage Futures (2008)
- The Landscape Character Assessment
- SPP11 Open Space and Physical Activity (2006)
- The Countryside (Scotland) Act 1967
- The Town and Country Planning (Scotland) Act 1997
- National Parks (Scotland) Act 2000

Northern Ireland

- PPS 14 (Draft) – Sustainable Development in the Countryside (2006)
- Shared Horizons - Statement of Policy on Protected Landscapes (February 2003)
- Policy on Architecture and the Built Environment for Northern Ireland (DCAL) (2006)

Relevant methodological guidelines

9. Landscape, Townscape and Visual	
• Guidelines for Landscape and Visual Impact Assessment (2002) Landscape Institute and Institute of Environmental Management and Assessment (2002). • Assessing the Effect of Road Schemes on Historic Landscape Character EH, HA, DfT March (2007) • Topic Paper 6: Techniques and Criteria for judging landscape sensitivity and capacity (Countryside Agency and Scottish Natural Heritage) (2004)	• The Countryside Agency and Scottish Natural Heritage (2002) Landscape Character Assessment – Guidance for England and Scotland. • Guide to good practice on using the register of landscapes of historic interest in Wales in the planning and development process (2007).

10. Archaeology and Cultural Heritage

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to archaeology and cultural heritage have the overall aim of protecting, conserving and transmitting archaeology and heritage to future generations. They aim to place the historic environment at the heart of the planning system and to implement a unified heritage protection system that will be easier to understand and use, more efficient, accountable and transparent and that will maximise opportunities for public inclusion and involvement. Across the UK, the policies explain how the development plan and development control systems, give weight to archaeology and heritage in planning decisions and planning conditions Where heritage and archaeology has not previously been measured or explored on a national level, plans seek the collection of baseline information to help inform future decisions. There are no targets within the plans and programmes.

List of Policies, Plans & Programmes

International

- European Convention on the Protection of the Archaeological Heritage 1992
- European Landscape Convention of 2000
- UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)

National

- Draft Heritage Protection Bill (2008)
- PPG15 Planning and Historic Environment (1994)
- PPG16 Archaeology and Planning (1990)

England

- Ancient Monuments and Archaeological Areas Act (1979)
- Planning (Listed Buildings and Conservation Areas) Act (1990)
- Protection of Wrecks Act (1973)
- Protection of Military Remains Act (1986)
- The Hedgerows Regulations (1997)
- Countryside Commission/English Nature/English Heritage The Character of England Map (1996)
- English Heritage: Wind Energy and the Historic Environment (guidance paper 2005)
- National Parks and Access to the Countryside Act 1949
- English Heritage: Biomass Energy and the Historic Environment (guidance paper 2006)
- English Heritage: Climate Change and the Historic Environment (paper 2008)
- English Heritage: Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008)
- Historic Environment: A Force For the Future (2001)
- Power of Place – The Future of the Historic Environment (2000)
- Norfolk and Suffolk Broads Act (1988)

Wales

- Ancient Monuments and Archaeological Areas Act 1979
- Planning (Listed Buildings and Conservation Areas) Act 1990
- Protection of Wrecks Act 1973
- Protection of Military Remains Act 1986
- Treasure Act 1996
- The Hedgerows Regulations 1997
- Welsh Office Circular 60/96 Planning and the Historic Environment: Archaeology
- Welsh Office Circulars 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas
- Cadw, International Council of Monuments and Sites (ICOMOS UK) and CCW Register of Landscapes of Outstanding Historic Interest in Wales (1998)
- Cadw, International Council of Monuments and Sites (ICOMOS UK) and CCW Register of Landscapes of Special Historic Interest in Wales (2001)
- DCMS, Welsh Assembly Government (2007) Heritage Protection for the 21st Century 2007
- The Research Framework for the Archaeology of Wales

Scotland

- Ancient Monuments and Archaeological Areas Act (1979)
- Planning (Listed Buildings and Conservation Areas (Scotland)) Act (1997) as amended
- Scottish Planning Policy 23: Planning and the Historic Environment (SPP 23) Consultation Draft SPP23
- Planning Advice Note 42 (PAN42): Archaeology in the Planning Process and Scheduled Monument Procedures (1994)
- Scottish Historic Environment Policy 1 Scotland's Historic Environment (2008)
- Scottish Historic Environment Policy 2. Scheduling: protecting Scotland's nationally important monuments (2008)

Northern Ireland

PPS 6 – Planning, Archaeology and the Built Heritage (1999)

Relevant Methodological Guidance

- English Heritage: Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008);
- Historic Scotland: Environmental Impact Assessment (Scoping).
- Institute for Archaeology: Standard and Guidance for Desk-based Assessment (2008).
- Cadw: Guide to Good Practice on using the Register of

10. Archaeology and Cultural Heritage	
Scoping of Wind Farm Proposals. Assessment of Impact on the setting of the Historic Environment Resource. Some General Considerations (paper 2007) • English Heritage, Highways Agency and the Department for Transport (2007) Assessing the Effect of Road Schemes on Historic Landscape Character	Landscapes of Historic Interest in Wales in the Planning and Development Process (2007).

11. Air Quality

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to air quality establish a framework for the monitoring and limiting of pollutants. The Air Quality Strategy (The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)) sets national air quality targets for nine air pollutants. Objectives for seven of the air pollutants have been included in national air quality regulations for the purpose of local air quality management, with local authorities being required to work towards the objectives. There is also a system of Pollution Prevention and Control to improve air quality through the regulation of industrial facilities. This system incorporates specific EU requirements in respect of large combustion plants, waste incineration plants and activities emitting solvents. Planning policies across the Uk stipulate that Air Quality is capable of being a material planning consideration.

Targets include setting the upper limit for the total emissions of the certain pollutants (e.g. sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia) which must be met by 2010 (National Emissions Ceiling Directive (2001/81/EC)).

List of Policies, Plans & Programmes

International

- Air Quality Framework Directives (96/62/EC) and Daughter Directives (1999/30/EC), (2000/69/EC), (2002/3/EC), (2004/107/EC) (2008/50/EC)
- EU Thematic Strategy on Air Quality (2005)
- EC National Emissions Ceilings Directive (2001/81/EC)
- National Emissions Ceiling Directive (2001/81/EC)
- Clean Air Act for Europe (Café (2001)
- Convention on Long Range Transboundary Air Pollution

National

- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)
- UK Air Quality Strategy 2007
- Gothenburg Protocol (2005)

England

- Air Quality Impacts - PPS 23 (2004)
- Greater London Authority Air Quality Strategy

Wales

- Air Pollution in Wales (2004)

Scotland

- Scottish Executive (2006) Changing Our Ways – Scotland's Climate Change Programme

Northern Ireland

- PPS18: Renewable Energy

Relevant Methodological Guidance

- ODPM et al (2005) A Practical Guide to the SEA Directive.

12. Soil and Geology

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and programmes relating to land quality and soil aim to create a framework for the protection of soil as a resource. They also aim to reduce water pollution caused or induced by nitrates from agricultural sources (Nitrates Directive (91/676/EEC)). Planning policies across the UK also stipulate that Land Quality should be a material planning consideration in development control decisions.

Additionally, monitoring information is required to help policy makers understand the state if the environment and how it is changing, and to understand the pressures upon it. Monitoring information will also support the development and implementation of future soil and environmental policy by providing evidence on the state of soils. The UK Soil Indicators Consortium (Defra) is a group of public stakeholders working collectively to identify the indicators that should be built into a UK soil monitoring scheme that meets both multiple national and European policy requirements, and also suggest the best mechanisms for funding and conducting the monitoring.

There are no specific targets or indicators of relevance.

List of Policies, Plans & Programmes

International

- EU Thematic Strategy for Soil Protection (2006)
- Nitrates Directive (91/676/EEC)

National

- UK Soil Indicators Consortium (Defra)

England

- PPG14 Development on Unstable Land (1990)
- PPS 1 – Delivering Sustainable Development (2005)
- PPS7 – Sustainable Development in Rural Areas (2004)
- Minerals Policy Statements (MPS)
- MPS 1 – Planning and Minerals (2006)
- MPS 2 – 'Controlling and Mitigating the Environmental Effects of Minerals Extraction in England (2006)
- MPG 7 – Reclamation of mineral workings (1996)

Wales

- TAN 6: Agricultural and Rural Development (2000)
- Wales Soil Action Plan (Draft 2007)

Scotland

- The Scottish Executive (2003) Organic Action Plan for Scotland

Northern Ireland

- Organic Action Plan Group (2005) – Northern Ireland (OAPGNI)

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13. Health and Well Being

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and policies relating to health set out and seek too inform further, scientifically grounded information needed to help EU member States to reduce the adverse health impacts of certain environmental factors and to endorse better co-operation between actors in the environment, health and research fields (The European Environment and Health Action Plan 2004 - 2010.) Based on the presumption that good health is of overall importance, they aim to provide an overarching strategic framework addressing health issues across the EU and health in all policies (Together for Health: A Strategic Approach for the EU 2008 – 2013). Health policies filter down into planning policies, promoting health and well being, through sustainable development.

Working for a Healthier Tomorrow – Dame Carol Black's Review of the health of Britain's working age population (2008) sets out the first ever baseline for the health of Britain's working age population, seeking to lay the foundations for urgent and comprehensive reform through a new vision for health and work in Britain.

There are no specific targets or indicators of relevance.

List of Policies, Plans & Programmes

International

- Children's Environment and Health Action Plan for Europe (CEHAPE) 2004
- The European Environment and Health Action Plan 2004 – 2010
- Together for Health: A Strategic Approach for the EU 2008 - 2013
- Canadian Lalonde Report 1974
- World Health Organization, 1986
- 'Together for Health – A Strategic Approach for the EU 2008-2013'.
- EU Health Strategy: White Paper Together for Health: A Strategic Approach for the EU 2008-2013
- Transport, Health and the Environment - Pan-European Programme (THE-PEP)
- World Health Organization European Centre for Environment and Health (2001), Health impact assessment in strategic environmental assessment (World Health Organization, Rome)
- Commission on Social Determinants of Health (2008), "Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health",
- The (current) Bathing Water Directive (76/160/EEC) As revised by Bathing Water Directive (2006/7/EC)

National

- Saving Lives: Our Healthier Nation White Paper (July 1999)
- A New Commitment to Neighbourhood Renewal National Strategy Action Plan (2001)
- Tackling Health Inequalities: a programme for action (2003)
- Securing good health for the whole population Report to the Treasury (Wanless, 2004)
- Choosing Health: making healthier choices easier (November 2004)
- Our health, our care, our say White Paper (2006)
- Health is Global; a UK Global health strategy 2008-13
- Strong and prosperous communities Local Government White Paper (2006)
- A stronger local voice: A framework for creating a stronger local voice in the development of health and social care services (July 2006)
- High quality care for all: NHS Next Stage Review final report. (Darzi, 2008)
- Strategy for Workplace Health and Safety in Great Britain to 2010 and beyond
- Working for a Healthier Tomorrow – Dame Carol Black's Review of the health of Britain's working age population (2008)

England

NA

Wales

- Breeze, C and J Kemm (2000), The health potential of the Objective 1 Programme for West Wales and the Valleys: a preliminary health impact assessment (Health Promotion Division, National Assembly for Wales, Cardiff)
- Ministerial Interim Planning Policy Statement (Draft) – Planning, Health and Well Being
- Well Being in Wales (2002)

Scotland

- Scottish Executive (2003) Partnership for Care: Scotland's Health White Paper
- Scottish Executive (2003) Improving Health in Scotland – The Challenge

Northern Ireland

- PPS 8 – Open Space, Sport and Outdoor Recreation (2004) Ireland
- Investing in Health: A Public Health Strategy for Northern Ireland

14. Equality

Objectives and Targets Identified in the Policies, Plans & Programmes

The plans and proposals relating to equality have the overall aim of tackling inequalities that are found across different geographical areas, between genders and different ethnic communities and also between different social and economic groups. There are a number of acts which seek to ensure this including the Sex Discrimination Act 1975, the Race Relations Act 1976, the Race Relations (Amendment) Act 2000, the Disability Discrimination Act 1995 and 2005, the Human Rights Act 1998, the Equality Act 2006

Targets include:

- By 2010 to reduce inequalities in health outcomes by 10% as measured by infant mortality and life expectancy at birth (Action 2003 (Including the 2007 Status Report on the Programme for Action))
- Starting with children under one year, by 2010 to reduce by at least 1-% the gap in mortality between routine and manual groups and the population as a whole (Action 2003 (Including the 2007 Status Report on the Programme for Action))
- Starting with Local Authorities, by 2010 to reduce by at least 10% the gap between the fifth of areas with the lowest life expectancy at birth and the population as a whole(Action 2003 (Including the 2007 Status Report on the Programme for Action))

List of Policies, Plans & Programmes

International

- The UN Millennium Declaration and Millennium Development Goals (2002)

National

- The Equality Act (2006)
- Communities and Local Government (2007), "Fairness and Freedom: the Final Report of the Equalities Review"
- The Sex Discrimination Act (1975)
- The Race Relations Act (1976)
- The Race Relations (Amendment) Act (2000)
- The Disability Discrimination Act 1995 and 2005
- The Human Rights Act (1998)
- The Equality Act (2006)
- Tackling Health Inequalities – A Programme for Action 2003 (Including the 2007 Status Report on the Programme for Action)

England

NA

Wales

- Race Equality Scheme 2005-2008 (2005)
- A Fair Future for our Children (2005)

Scotland

- Disability Equality Scheme 2008-2011
- Gender Equality Scheme 2008-2011

Northern Ireland

- Lifetime Opportunities: Government's Anti-poverty and Social Inclusion Strategy for Northern Ireland (OFMDFM)

General	
Objectives and Targets Identified in the Policies, Plans & Programmes	
Plans and programmes not covered previously, but which are relevant to sustainability and the NPSs are identified in this section. They include documents relating overarching sustainable development policies, rights of access to information, public participation in decision-making.	
List of Policies, Plans & Programmes	
International	
• Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters) (1998)	• Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991)
National	
• UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)	
England	
• Planning Policy Statement 1: Delivering Sustainable Development (2005)	
Wales	
• Environment Strategy for Wales (2006) • Making the Most of Wales's Coast – the Integrated Coastal Zone Management Strategy for Wales • People, Places, Futures – Wales Spatial Plan (WSP) (2004) • People, Places, Futures : Wales Spatial Plan Update 2008 (Consultation)	• Planning Policy Wales (2002) • Rural Development Plan 2007-2013 • The Sustainable Development Action Plan Starting to Live Differently (2004 – 2007) • Wales A Better Country – The Strategic Agenda of the Welsh Assembly Government (2003)
Scotland	
• 'Choosing our Future' Scotland's Sustainable Development Strategy (2005) • Meeting the Needs…Priorities, Actions and Targets for Sustainable Development in Scotland (2002) • Scottish Biodiversity Strategy (2004)	• Scottish Environment Protection Agency Policy Priorities Relevant to the Scottish Environment Protection Agency (Paper 2004/13) • NPPG13 Coastal Planning (1997) • Parts one and two of three elements of the new Scottish Government Planning Policy (2008)
Northern Ireland	
• Planning Policy Statements (PPS) 1 – General Principles (1998) • Programme for Government (OFMDFM) (2007)	• The Northern Ireland Sustainable Development Strategy (DOE 2006)

Annex C: Response to Scoping Consultation

The Scoping Report for the Appraisal of Sustainability for the NPSs for Energy Infrastructure was provided for consultation for 5 weeks from the 28th January 2009 to the 4th March 2009. A summary of the comments received is included in the table below.

Consultees
✓ Cadw
× Countryside Council for Wales (Cyngor Cefn Gwlad Cymru)
✓ English Heritage
✓ Environment Agency
✓ Historic Scotland
✓ Joint Nature Conservation Committee (JNCC)
✓ Ministry of Defence (MOD)
✓ Natural England
✓ Northern Ireland Environment Agency (NIEA)
✓ Scottish Environment Protection Agency (SEPA)
✓ Scottish Government
× The Sustainable Development Commission
✓ Scottish Natural Heritage
✓ Welsh Assembly Government

✓ Response received

× Response not received

Summary of Feedback from Consultation on Scoping Report

Response	Action/Comments
CADW (23/03/2009)	
Key Messages	
1. No substantive comments on the document. It sets out an appropriate methodology and is fairly comprehensive in its coverage of the historic environment.	Noted.
2. The historic dimension of landscape does not feature very highly in the 'Landscapes' section (A9). This gives the misleading impression that landscapes do not have an historic component. There should be a reference to the historic landscapes registers in both sections. (If a choice has to be made they would be better placed be in A9 rather than A10.)	This is captured by the AoS Objectives 9 and 10 and has been included in the guide questions.
3. There are a number of additional documents that are missing, need updating or need referencing in both the Landscapes Chapter & the Archaeology & Cultural Heritage Chapter):	See points 4 -13.
Plans, Programmes, Policy & Baselines	
4. Historic Landscapes Register in Wales (Landscapes chapter - page 21). (Annex D-page 10)	Added
5. Designated sites (Listed Buildings and Scheduled Monuments) of national importance (Archaeology & Cultural Heritage chapter) (Annex D-page 10)	Added
6. The Historic Landscape Characterisation programme details of which are available on the websites of the four Welsh Archaeological Trusts. ('regional, local and spatial plans and programmes' A9-4 and 5) (Annex D-page 10)	Added
7. 'Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales' both Part 1 (Parks and Gardens) and Part 2 (Landscapes of Historic Interest in Wales). (Annex A9) (A10-3)	Added
8. 'Guide to good practice on using the register of landscapes in the planning and development process'. (List of methodological guidance, A9-5)	This section has now been removed
9. The Research Framework for the Archaeology of Wales (www.archaeoleg.org.uk) (A10-3)	Added
10. The 'guide to good practice on using the register of landscapes in the planning and development process ' document is listed as the original 2003 not the revised 2007 edition. (Annex D-page11)	Added
11. The 'Guide to good practice...' document should be better placed in the 'relevant methodological guidance' section as it is not a plan or strategy. (Annex A10)	Added
12. 'Wales Landscape register' should be moved into the entry above on landscapes identified as being of national importance. (Page A10-4)	Amended
13. The Welsh Historic Environment Position Statement is not the most up-to-date edition is quoted. This is in fact an annual publication and is not really a plan or programme. (Annex D-page11)	Amended
English Heritage (20/03/2009)	
Key Messages	
14. The scoping report provides a clear overview of the proposed approach to the environmental assessment of the above National Policy Statements (NPS). Subject to the specific comments, I am content with the scope and level of detail proposed for the Appraisal of Sustainability (AoS).	Noted.

Response	Action/Comments
15. There should be a clear explanation of how locational criteria will be set. If the NPSs are not to be locationally specific, they must contain locational criteria in order to satisfy the requirements of the Planning Act. The AoSs should provide the evidence base for setting clear locational criteria in the NPSs.	The NPSs are not location specific (with the exception of the Nuclear NPS). The AoS Reports set the evidence base for the assessment.
16. We support an NPS alternative which includes as much information as possible, i.e. includes (a) high level Government energy policy, (b) defines areas which are or are not suitable for energy developments, (c) sets out approaches to avoid or mitigate impacts on the environment, particularly the historic environment.	Acknowledged. This was the preferred option.
17. Each individual AoS consider a wider range of alternatives. In particular, the role of demand management in limiting the need for future energy infrastructure, different economic growth scenarios and energy mixes. This will help to establish the need for energy infrastructure – one of the key aims of the NPSs.	A range of alternatives were put forward by the assessment team (see Section 2.5).
18. There should be clear guidance on how the AoS will address the cumulative impacts of all NPSs together with offshore non-wind energy and tidal power and new nuclear. Without clear guidance on this issue it will make it harder for the Infrastructure Planning Commission to consider applications.	Covered in the Overarching NPS (see Section 4.3).
19. We would support the view recommend that the AoSs provides the evidence to help the NPSs to comply with the Planning Act's requirements to mitigate and adapt to climate change.	Acknowledged
Designations	
20. Conservation Areas should be included as a national designation and like World Heritage Sites, AONBs and National Parks; they are classified as Article 1(5) land. Registered Historic Parks and Gardens are included but strangely not Registered Battlefields.	Amended
21. Under 10 all the types of designation under Article 1(5) (so the effect on conservation areas) should be added at the end of the second guide question.	Guide question has been amended
22. Although scheduled monuments and listed buildings are considered as individual sites and therefore are outside this strategic level evaluations, concentrations of them, such as in historic settlements might be considered an area of particular heritage sensitivity.	Noted.
Plans, Programmes, Policy & Baselines	
23. Assessing the Effect of Road Schemes on Historic Landscape Character EH, HA, DfT March 2007 should be referenced.	Added to Appendix B
24. SHEP 1 (Section 2)1 provides a useful definition of the historic environment.	Noted
Guide Questions	
25. In table 4.1 under 9 the first guide question should have in brackets at the end "(e.g. by preserving or enhancing the character or appearance by conservation and good design)" An element relating to views should be included as well.	The objective's guide questions have been amended.
Reporting & Scope of Appraisal	
26. AoS should clarify the role of these policy statements in Scotland further.	Clarified in Section 1 (but also in the NPSs themselves).

Response	Action/Comments
27. The environmental results should be reported clearly and independently from those which incorporate social and economic elements. This will allow a clear understanding of the environmental performance of each policy statement.	The results are reported clearly in different sections of the AoS Report. The SEA Directive includes consideration of topics such as human health, material assets, population, etc.
28. Content with the approach to alternatives. However, given that some alternatives will not be explored due to the specific nature of each NPS it will be important to clearly indicate what areas each NPS will address.	The scope of each NPS is Section 2 of the AoS and within each NPS
29. I note that the NPS will not cover any impacts that are specific to a particular technology and that these will be covered separately. A clear link should be retained with the environmental assessment of these specific technologies as they progress.	Noted
Environment Agency (03/2009)	
Key Messages	
30. There should be a clear explanation of how locational criteria will be set. (If the NPSs are not to be locationally specific, they must contain locational criteria in order to satisfy the requirements of the Planning Act. The AoSs should provide the evidence base for setting clear locational criteria in the NPSs. For example, the NPS may set criteria such as availability of a grid connection or ready supply of cooling water, avoidance of areas at serious risk of major flood or coastal erosion, availability of feasible carbon capture and storage options, proximity to heat customers or offshore locations.)	The NPSs are not location specific and do not contain generic locational criteria. It is not the role of the AoS to provide the evidence base for the NPS.
31. We support an NPS alternative which includes as much information as possible, i.e. includes: (a) high level Government energy policy, (b) defines areas which are or are not suitable for energy developments, (c) sets out approaches to avoid or mitigate impacts on the environment, particularly the historic environment.	Acknowledged
32. Each individual AoS should consider a wider range of alternatives. In particular, the role of demand management in limiting the need for future energy infrastructure, different economic growth scenarios and energy mixes. This will help the IPC to consider the merits of reasonable alternatives to satisfy the requirements of the EIA and Habitats Directives.	Alternatives are considered in section 2.5 of the AoS of the Overarching NPS and also within each of the technology-specific AoS Reports.
33. There should be clear guidance on how the AoS will address the cumulative impacts of all NPSs together with offshore non-wind energy and tidal power and new nuclear. Without clear guidance on this issue it will make it harder for the Infrastructure Planning Commission to consider applications.	Cumulative effects are addressed in section 4.3 of the Overarching NPS.
34. We would support the view recommended that the AoSs provides the evidence to help the NPSs to comply with the Planning Act's requirements to mitigate and adapt to climate change.	Acknowledged
35. The AoS should contain strong objectives relating to avoiding areas at risk of flooding and coastal erosion.	The objectives are considered appropriate.
36. The AoS should more overtly help to implement the Water Framework Directive by adopting clearer objectives and indicators on the water environment.	Guide questions amended
37. AoS give more emphasis to biodiversity and the value of ecosystem services, especially on non-designated sites.	Noted - the importance of non-designated sites, biodiversity and ecosystems has been reflected in our appraisal and in Entec's comments to DECC.

Response	Action/Comments
38. The AoS and NPS should make reference to the need for almost complete decarbonisation of the electricity sector by 2030. This will be a defining requirement for all future electricity infrastructure.	Decarbonisation of the UK energy market is discussed in the alternatives section of the Overarching NPS (Section 3.4.2).
Plans, Programmes, Policy & Baselines	
39. Several Welsh plans and programmes are currently missing from the list	Added
40. '*Sustainable Development Scheme'* WAG ('refresh' currently out for consultation), A1.2	Added
41. *Renewable Energy Route Map'* WAG A1.2	Added
42. 'Wales: a Vibrant Economy' WAG A1.2	Added
43. 'Green Jobs Strategy'. WAG A1.2	Added
44. Although it is currently a moving target, the work of the Committee on Climate Change should be mentioned under National Policy, as carbon budgets are referred to later. While the Committee's carbon budgets have yet to be formally endorsed by Government it appears likely that they will be. With the extremely challenging targets set by the first three carbon budgets,	Added
45. The following additional plans, programmes and strategies should be included in annex 2: A2.2	Added 46-48
46. The 'Environmental Liability Directive', which seeks to achieve the prevention and remedying of environmental damage - specifically, damage to habitats and species	Added
47. The 'Countryside and Rights of Way Act' which also covers effects of pollution on SSSIs and duty to protect non-statutory conservation sites.	Added
48. The 'Marine and Coastal Access Bill' which will introduce a network of Marine Protected Areas including new Marine Conservation Zones. These will need to be taken into account once they are designated.	Added
49. The paragraph on the Minerals and Waste Development Frameworks should be improved to state "Minerals and Waste Planning Authorities are required to produce development frameworks that show how they will make provision for the future extraction of minerals and the management of waste." A3.2	Section removed
50. The flood risk annex should refer to direct regulatory requirements and powers of operating authorities, Environment Agency land drainage consents, the role of local authorities as drainage authorities (to be strengthened by the Pitt report recommendations and the Floods and Water Bill) and Internal Drainage Boards.	Addressed in Section 5.1.1
51. For coastal erosion, annex 5 should refer to CLG's work on revising PPG20 – planning policy on the coast; 'Shoreline Management Plans' and future requirements under the Marine Bill.	Added
52. Annex 11 should refer to the 'Air Quality Directive 2008/50/EC', 'EC National Emissions Ceilings Directive', 'Gothenburg Protocol', 'UK Air Quality Strategy 2007' and 'Greater London Authority Air Quality Strategy'.	Added
53. Baseline evidence for protected sites and species should be drawn from the Nature Conservation Bodies (Natural England and CCW). The Conservation Objectives set by these organisations, for SSSIs, SACs and SPAs establish the correct baseline. It should be recognised that the majority of habitats and species are not achieving 'Favourable Conservation Status' (FCS) at present, as the AoS makes clear in A2.6, but FCS is the baseline against which the NPSs should be assessed, not the current condition if this is failing to meet targets. Further guidance on SEA and Biodiversity can be found at, http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc A2	Noted.

Response	Action/Comments
54. The data presented should also reflect EA strategic waste data. The existing data tends to lead the report into a municipal waste focus. Our strategic waste data is wider and 2007 data can be found at: Environment Agency - Waste information 2007 A3	Added
55. The National Flood Risk Assessment, National Flood and Coastal Defence Database should be included to aid site selection on broad basis. The Environment Agency is developing coastal erosion risk maps which will start to become available through Shoreline Management Plans and online later this year. These will show areas at direct risk from coastal erosion in England and Wales. A5	Added
56. The Air Pollution Information System should be included (APIS) for acid/nutrient nitrogen deposition or CEH, Defra SO2/NO2/NH3 AQ maps. Defra National Atmospheric Emissions Inventory shows mass emissions per sq km. A11	This information has not been added to the report (but has been considered during the assessment).
Scope of Appraisal	
57. For the proposed topics, - flood risk should include coastal erosion, water quality should include impacts to the marine environment and ecology should include fisheries. Recreation, water resources and carbon capture and storage should also be included as topics. Table 3.1	Noted. Fisheries included under water quality as is water resources.
58. The content of the NPSs should cover all the guide questions in table 4.1.	All the guide questions have been used to appraise the NPS in the AoS, not to drive the structure of the NPS.
59. A question on adaptation to climate change must also be included in table 4.1. We suggest “Will the NPS promote long term adaptation to the effects of climate change?”	Incorporated.
60. We also suggest including the questions: “Will the NPS significantly change the amount of energy generated by renewable energy sources?” and “Will the NPS significantly change	The NPS will not affect the amount of energy from different generating types. Consequently, it is not considered appropriate to include as a guide question.
61. We suggest including an additional question on resources and raw materials: “Will the NPS maintain water abstraction within carrying capacity?”	This has been addressed.
62. We recommend including an additional question on water quality: “Will the NPS protect and improve water bodies [replacing ground & surface water quality] in line with Water Framework Directive requirements?”	Amended.
63. The AoS objective on ecology should also have regard to habitats and species that are not protected by legislation or are found outside protected sites (in the wider countryside and built environment).	The guide questions include for the consideration of all ecological resources and this is reflected in the AoSs.
64. (Table 4.1 raises ecological objectives and issues that can only be appraised when there is some information on location.) The AoS should appraise each type of generation in terms of its site requirements and potential impact on typical types of sites (eg coastal, estuary, offshore shallow water’, upland, riverside etc) in the absence of any more precise location information.	The AoS appraises the effects of the NPSs on the existing baseline, project effects and site specific effects will be addressed through the planning process.
65. The ecology objective should include a specific comment on effect of air pollution eg “Will the NPS limit air pollution to levels which do not damage natural systems by acidification or eutrophication”.	Added

Response	Action/Comments
66. Acid deposition and eutrophication should be referred to in annex 2: A2.3.2, at end of 1st paragraph, page 4 should say "or acid deposition or eutrophication". A2.3.2, 2nd bullet, page 5 should also say "acid deposition or eutrophication" effects. A2.8.2, 2nd bullet, page 9 should also refer to acidification and eutrophication "of landbased ecosystems".	Amended.
67. Flood risk objectives should be strengthened and widened to reflect PPS25, Planning Policy Wales, TAN15 and the Government's response to the Pitt review. We recommend more emphasis on coastal erosion risks.	Amended
68. Objective 5 in table 4.1 should be amended to 'Avoid, reduce and manage flood risk from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime. Infrastructure should not increase risks elsewhere' Table 4.1	Amended.
69. Relevant methodological guidance should also make reference to future advice from the Committee on Climate Change on application of carbon budgets. A1.3.1	Reference is made to *Building a low carbon economy* (Committee on Climate Change, 2008). Future advice has not been referenced.
70. The long term perspective should address not only the impacts of climate change on location, but also gives due weight to the long term implications of the wholelife greenhouse gas emissions of long-lived infrastructure in the context of highly constrained carbon budgets (including virtually complete decarbonisation of the electricity sector) by 2050. A1.3.2	Decarbonisation of the UK energy market is discussed in the alternatives section of the Overarching NPS (Section 3.4.2).
71. The specific mention of aviation emissions is welcome, but should be reinforced by adding '… within the context of a rapidly-reducing overall national budget'.	This section has been moved in the AoS
72. 'UKCIP08' should now read 'UKCP09'.	Amended.
73. It should be clarified that climate change impacts are not confined to 'the productive systems that we depend on', but also the wider natural environment. A1.5	Amended.
74. The attempt to link the appraisal to a yardstick based on future anticipated greenhouse gas targets is admirable, but a direct linkage is inadequate for energy infrastructure and it will be necessary for new infrastructure to go well beyond this yardstick for the following reasons: • It is very likely that we will need to adopt a more demanding target for 2030 at some point before that time; • If the overall target (especially for 2030) falls at a given level, the yardstick for new plant will need to be more stringent than this to allow for the survival of some older plant within the generation mix; • As noted above, the electricity sector is expected by the Committee on Climate Change to have to do significantly more than its 'fair share' towards the 2030 and 2050 targets, and will on the contrary have to be almost completely decarbonised. It may also be appropriate to cover security of supply within the scope of the topic-specific issues. A1.7.1	Noted
75. It is not enough to suggest that the NPS 'may' cover carbon capture and storage (CCS). In reality all new coal and gas plant will need to be CCS-ready as of now, and virtually all will need to have been fitted or retrofitted by 2030 if the Committee on Climate Change's advice is to be followed. A1.7.2	CCS policy has been introduced such that new infrastructure will be required to be CCS ready.
76. We agree with raising the issue of rising river temperature on future cooling efficiency: but conversely, it may also impose constraints on the acceptability of future thermal plant discharging warmed cooling waters back into rivers. A1.7.2	Section removed.

Response	Action/Comments
77. The following change should be made to annex 11: A11.3.2 should say"… in, or likely to affect, areas …". A11.7.1 2nd bullet – local authorities have no duties on EU objectives and are only required to pursue UK ones A11.7.2 2nd bullet – CHP is not new technology. A11.7.3 2nd bullet – should say "… public concerns ..."	Noted. Changes made to this text.
78. We are pleased to see the commitment to carry out a Habitats Regulation Assessment where there is a clear link between a plan set out in the NPS and the likelihood of a significant effect on Natura 2000 sites. 3.4	Noted
79. The AoS should consider all sources of flooding, rather than just surface water, sewers, artificial sources, when this can easily be done. Projects of this scale must look at the whole issue comprehensively. The AoS should examine the potential of the NPS to improve overall flood risk to the surroundings rather than just mitigating the adverse impacts. A5	Acknowledged and this has been considered in the AoS in line with the guide questions.
80. The interaction between the energy NPSs should be made clearer. A range of likely scenarios over the time period covered by the NPSs will be needed in the over-arching NPS so that the AoS can assess the sustainability of options. This will help the IPC to consider the merits of reasonable alternatives when deciding development consent applications and ensure compliance with the EIA and Habitats Directives. This is especially important as tidal power is not being covered in the NPSs. The Severn TP project could provide about 5% of the UK's needs. 2.1	This is addressed in section 2 of the Overarching NPS.
81. We seek clarity whether oil storage is covered by the NPSs as accidental releases are subject to COMAH. 2.1	Refer to EN-4.
82. We support an NPS alternative which includes as much information as possible, i.e. includes (a) high level Government energy policy, (b) defines areas which are or are not suitable for energy developments, (c) sets out approaches to avoid or mitigate impacts on the environment, particularly the historic environment.	Noted (this is the preferred option).
83. A range of alternatives should be considered with in each individual AoS in the form of illustrative scenarios. If the NPSs are not to be locationally specific, they should contain clear locational criteria. The AoS should provide the evidence base for setting clear locational criteria. The hierarchy of alternatives included in the ODPM (now CLG's) Practical Guide to the SEA Directive should be used. 2.2	Noted, locational issues are not covered by the NPSs (with the exception of the Nuclear NPS) and as such are not covered in the AoS.
84. The best methodology to determine whether NPSs will have detrimental effects of European protected sites (SAC, SPA) is to regard them as Plans within the meaning of Article 6 of the Habitats Directive and carry out an assessment of their potential effects on HD sites and species. A2	Noted. See Section 3.8.
85. The sequential/precautionary approach should be used when considering flood risk, as typified by flood risk hierarchy in PPS25 Practice Guide. A5	PPS 25 is referenced as a key guidance document.
86. Additional targets and indicators should be used to reflect European and domestic policy on the protection of designated sites and species and biodiversity, for example, those within the UK Biodiversity Action Plan and Wales Environment Strategy. A2	These have been considered in the AoS and are referenced in the Plans and Programmes section.
87. A reference to greenhouse gases other than carbon dioxide should be made. This section should recognise the contribution of methane, estimated to be about 20 times more potent that CO2. That would make a link between A 1 (climate change) and A3 (material assets). A1.7.1	Amended
88. We support ecology being identified as a main issue, however the scoping report only focuses on nature conservation as driven by European and domestic legislation and initiatives. The AoS should consider the wider ecological implications of NPSs taking an ecosystem approach. For example the AoS should include potential impacts on natural habitats and species other than protected sites and species, and the risk of degrading or losing valuable ecosystem services in the wider environment. There is a need to value ecosystem services and natural capital. We recommend referring to: 'Securing a healthy natural environment: An action plan for embedding an ecosystems approach' (Defra, 2007). We suggest cross-	These issues are addressed in the AoS and are considered under the guide questions. Reference to the noted documents has been

Response	Action/Comments
referencing the Water Framework Directive (WFD) as it raises the prospect of infraction if the proposed Nationally Significant Infrastructure Project (NSIP) leads to deterioration of water status on biological and physical grounds that are both related to a non-designated water habitat. A2	added to the Plans and Programmes.
89. Section 3 A5 & A6 We welcome references in A5 and A6 to the WFD and River Basin Management Plans, although the text should state more thoroughly what WFD does. We consider that the scoping report underestimates what is required in order to avoid infraction. We suggest that an additional section 3.5 be included in section 3, scope of appraisal, on WFD that sets out what the Directive intends and how to deal with potential infraction. We suggest considering the application of Article 4.7 of the WFD. The Common Implementation Strategy for WFD have produced guidance on exemptions to the environmental objectives under WFD, this can be found by following the link, http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc Assessment of WFD and Article 4.7 implications should be provided as part of the AoS.	WFD is included in the plans and programmes and the requirements of the WFD have been considered as part of the appraisal.
90. We welcome recognition of flood risk as a key sustainability issue. However, there should be more emphasis on other sources of flooding, including urban drainage, groundwater and from man-made sources (e.g. reservoirs and canals). We would like to see more emphasis on coastal erosion risk management. We suggest changing the topic title within section A5 and table 3.1 to Flood and coastal erosion risk. A5	Incorporated in the objective and guide questions.
Further Comments	
91. The AoS should identify how uncertainty in NPSs can be reduced. This is referred to in the ODPM's Practical Guide to SEA and will help the IPC deal with uncertainty. We would also like to see the AoS state the assumptions it has made.	Technical difficulties and assumptions are identified.
92. We welcome the use of a non-technical summary to summarise and quickly get across the main points of the document. Piv-vi	Noted.
93. The statement on policy context should be expanded. 1.1	Expanded.
94. We are pleased to see the approach to incorporate the requirements of the SEA Directive and transposing UK regulations. Ensuring compliance with the SEA Directive requirements will reduce any future challenge to the energy AoSs on the grounds of compliance with SEA.	Acknowledged
95. We support the sharing of studies, reports and information between the Severn Tidal Power SEA, Offshore Energy SEA and the Energy NPSs. There should be some further clarification on how these projects, plans, studies and reports all relate to each other. 1.1	This has been clarified.
96. It should be expanded on how the consultation responses from this scoping consultation and future consultations will be taken into consideration and used to influence the NPSs. 1.3 & 1.4,	This is partly the purpose of this Appendix. A summary will also be included in the Post Adoption Statement (following consultation on the draft).
97. The AoS should clarify if the threshold of generation projects to be determined by the IPC is 50MW electrical or 50MW thermal.	Thresholds are identified in the NPS, not the AoS.
98. Mitigation techniques should also be mentioned in Fig 2.1 such as carbon capture and storage and combined heat and power.	Mitigation measures are identified in the NPSs.
99. We support the approach to prepare one scoping report to capture the scope of the appraisal of all 5 NPSs and then prepare 5 separate AoS reports, one for each NPS. 3.1.1	Acknowledged
100. It should be noted that: the SEA Directive was transposed into UK law by Statutory Instruments 1633 England, 1656 Wales, 280 Northern Ireland and 258 Scotland (as well as Environmental Assessment (Scotland) Act 2005). 3.1.2	Noted. SI 1633 applies when the SEA Applies to England and any other part of the UK.
101. 3.1.2 We agree that the aim of the SEA is to identify the associated environmental effects of implementing the plan or programme and how to avoid, manage or mitigate significant adverse effects. The aim of the SEA is also to increase or enhance positive environmental effects. We suggest this is	This is made clear through the guide questions and objectives feedback has been provided on the

Response	Action/Comments
made clear in the scoping report.	content of the NPSs and is included in each section of the appraisal.
102. We support an objectives-led approach which seeks to focus on sustainable outcomes, by minimising detrimental effects and enhancing positive effects. 4.1	Acknowledged
103. The guide questions shown in table 4.1 should be set as indicator statements for the AoS to give them weight and to focus the appraisal of the NPS e.g. for climate change, the NPS will promote future proofing against the risks of climate change.	Role of the guide questions is identified in section 3.4 of the AoS for EN-1.
104. We agree that commentary on impacts as detailed here will be very useful. However, it would be reassuring to see actual technique or method that will be used to assess impacts at this scoping stage. We would like to hear how DECC will scope which objectives and topics are significant for which NPS. 4.2	The methodology is for undertaking the assessment is outlined in Section 3.
105. Avoidance and reduction of any impacts/effects should be considered before mitigation measures are considered. (The hierarchy of mitigation is avoidance, reduction, mitigation, compensation, remediation, enhancement.)	Acknowledged
106. We agree that the matrix as shown in figure 4.1 is a possible method for assessing cumulative effects. However, the actual technique/s that will be used in the assessment stage to assess cumulative effects at this scoping stage should be stated. The cumulative impacts resulting from the implementation of the energy NPSs coupled with those resulting from the nuclear NPS, offshore energy proposals and Severn tidal power project need to be considered. 4.3	See Section 4.3
107. It should be explained how consultees' comments will be taken into account during the development of the NPSs and AoS processes. We recommend that an annex is included in the AoS report detailing how each consultee suggestion or comment was considered during the drafting of the NPSs and AoS reports.	See this Annex (Annex C).
108. The text 'anything still operating in 2030 having to be at least 26% less carbon intensive' (A1 A1.7.1 3rd bullet) is too low according to the Committee on Climate Change's report - Building a Low Carbon Economy. Their press release stated "The Committee on Climate Change (CCC) today urged the Government to commit unilaterally to reducing emissions of all greenhouse gases in the UK by at least 34% in 2020 relative to 1990 levels (21% relative to 2005). This should be increased to 42% relative to 1990 (31% relative to 2005) once a global deal to reduce emissions is achieved. The CCC says meeting these targets is necessary to contain the threat of climate change." Section A1.7.2 assumes that CCS will be feasible but this is uncertain. Even if it were feasible for power stations it is very unlikely to be feasible for steel works, refineries and similar facilities because of the engineering difficulties of collecting waste gases from multiple emission sources at these installations. We recommend amending the wording running through the report from assuming certainty that CCS will be a significant mitigation technique to show that there is some uncertainty surrounding this issue.	Section removed. CCS addressed in Fossil Fuel NPS.
109. We are pleased to see a commitment to ensuring that protected habitats and wildlife are fully considered for each project submitted to the IPC. However, we consider that this wording and the impression that overriding public interest could allow projects to progress despite negative effects does not reflect the UK government's commitments and duties under domestic and international legislation to protect wildlife. A strong message should be sent to organisations proposing projects that the starting point is that all projects will conform to domestic and international nature conservation legislation, will minimise the risk to the environment and seek to enhance the environment for wildlife.	Noted
110. We suggest that the Precautionary Principle be applied when considering the impacts of NPSs on ecology. The absence of location information makes it difficult to properly assess the potential impacts on habitats and species. The reliance on assessment of individual projects to safeguard the environment may not satisfy the requirements of the Habitats Directive (HD). The reliance on market forces to determine the location of projects (section 2.2) may not adequately safeguard natural habitats and species, because methods of valuation of habitats, species and ecosystems are not universally available or accepted. Where there is uncertainty about the impacts on or value of biodiversity the Precautionary Principle should be used. The scoping document gives the impression that adverse effects on European protected sites and species will not prevent projects going ahead, because of over-riding public interest. This may be the case, but Article 6 of the HD will apply, which would require the consideration of alternatives, for example other locations, and if a project does go ahead despite an adverse effect, because of reasons of over-riding public interest, then compensation would be required.	Noted

Response	Action/Comments
111. When considering applications for environmental permits to build operate and decommission projects that arise from the NPSs the Environment Agency in England and Wales will have to satisfy the requirements of the HD and other nature conservation legislation where appropriate, as will all competent authorities involved in projects. It is important that the potential effects of environmental permits linked to NPS projects are considered at the earliest opportunity and before high level consent for projects is given, otherwise it will limit our ability to do our job. For example the impacts of landtake for a project may be minimal, but the impact of water abstraction and discharge or air emissions may alone or, importantly, in combination with other permits, have an adverse effect on designated sites and species.	Noted
112. It should be made clear whether NPSs will be treated as 'Plans' within the meaning of Article 6 of the HD and therefore whether they will require Assessment of their potential effects on HD sites and species. The AoS should reflect the emphasis of Article 6(2) of the HD which is to prevent damage or deterioration of habitats and species.	See Section 3.8
113. The Topic Specific Issues section does not present all the ecology issues related to the energy NPSs. The AoS of these NPSs should identify all the pertinent issues relating to biodiversity and nature conservation.	Considered as part of the AoS.
114. We welcome the use of the waste hierarchy as a basis but, in the context of energy, the appraisal should recognise the potential tension between layers in the hierarchy. For example, energy from waste has the potential to undermine better options such waste recycling and waste reduction. We recommend a reference to 'life cycle thinking' as part of the appraisal methodology. A3.3.1/page 57	Section removed
115. Coastal erosion should be noted in the introduction to flood risk issues as it will be a significant environmental constraint for some energy infrastructure. A5.1	Included
116. The following corrections should be made to the text in section A5.2	
117. PPS25 acts to deliver the Floods Directive in England, not in the UK, as it only applies in England (page 2)	Noted
118. The correct term is Regional Flood Risk 'Appraisal' (RFRA), not Assessment (page 2).	Section removed
119. Regional Spatial Strategies are informed by RFRA so must be consistent with it.	Noted
120. Strategic Flood Risk Assessment (SFRA) should follow on from RFRA. SFRA should be listed in the second paragraph on page 2, rather than the first, as they are part of Local Development Document. We suggest adding the text " as guided by an SFRA" to the end of this paragraph.	Section removed
121. Surface Water Management Plans are local authority documents (not local planning authority) produced to assist in capital works, emergency response and planning. Local authorities have a role as drainage authority as well as planning authority. SWMPs aim to "manage" not mitigate the potential of surface water flooding to affect development. We suggest changing the end of the second sentence on SWMPs to: "means to manage it through the works of different partner organisations including water companies".	Section removed
122. We recommend including references to sewer flooding in this section and the role of water companies.	Section removed
123. Wales - Consultation did not happen as envisaged (end first paragraph). It is now part of the broader Bill consultation. The second paragraph should refer to Planning Policy Wales, which is where main policy statements are.	Section removed
124. Northern Ireland - The annex should refer to Northern Ireland, which has its own planning policy - PPS15.	See plans and programmes
125. The AoSs should be strengthened in reference to reservoirs. PPS25 states that all sources of flooding must be considered in applications and local development documents. We suggest replacing the second sentence with: "The appraisal will consider all forms of flood risk to the extent allowed by available information." The second paragraph moves too quickly to discus mitigation with the implication that these developments are going to happen without consideration of lower risk sites. Flood Risk and Environmental Assessments should include the sequential approach and avoid flood risk wherever possible. A bullet point should be added to A5.3.2 to state that the appraisal will consider, where feasible:	PPS 25 has been included as a plan and policy and has been considered as part of the AoS.

Response	Action/Comments
• A comparative assessment of flood risk on other reasonable alternative sites. The list of relevant methodological guidance in section A5.3.1 should include CLG's 'Improving the flood performance of new buildings'' and CIRIA's 'Designing for exceedance in urban drainage – good practice (c635)". This complements the SUDS manual as it covers assessment and mitigation of surface water, pluvial and sewer flooding. The appraisal should consider all sources of flooding. The first bullet point in section A5.3.2 should read: • "Flooding from all sources, for example, assuming a generic infrastructure type and size for each energy source". If the NPS will not consider flooding issues in all areas, then it needs to make the commitment to doing so at a later stage – before individual decisions are made.	
A5.4 The AoS should consider the impact of flooding on transport (including general travel on motorways, roads, rail etc, as well as specifically fuel for sites). This could be significant.	Added
A5.5 The AoS should consider the whole surface water system including sewers (not just failure to infiltrate), and artificial sources. We suggest changing the middle paragraph to read: "…it is increasingly being recognised that surface water (that is flooding as a result of rainfall being unable to infiltrate into the ground or overwhelmed sewer systems), artificial water bodies and groundwater flooding…"	Amended
126. The majority of recommendations from the Pitt Review only apply in England, not the UK. The new NSIP regime should therefore also consider flood risk in the same way as the 'traditional' planning system. A5.6	Noted
127. The Overarching NPS and AoS should include references to hydro or tidal power as these can have a profound effect on flood risk. We suggest including tidal barrage and hydro electricity in table A5.1	Section Removed and point noted.
128. There should be consideration of the impact on access to features constructed in flood plains for operation and maintenance. Onshore facilities for offshore wind ought to be able to avoid flood risk areas if they are as small as claimed. A5.7.3	Noted and considered in assessment.
129. Fossil fuels and onshore wind, as well as energy from waste plants, can also be constructed on brownfield sites. The reference to moderate flood risk due to being on brownfield sites should be removed. A5.7.3	Removed.
130. The impact of biomass planting on flood risk and erosion should be considered. This could provide positive impacts if done well. A5.7.3	Noted.
131. Infrastructure has the potential to be isolated for several days in times of flood making access and maintenance difficult or impossible. We suggest adding the following to the penultimate sentence: "…need to be assessed bearing in mind the likelihood that access for maintenance may be unlikely for several days at a time". A5.7.4	Noted
132. It should be noted that tanked oil storage can take up large sites and result in significant loss of floodplain. A5.7.5	Noted
133. The paragraph on energy from waste is misleading in two ways and should be made clearer. First waste isn't renewable. Second it should state that although there may be concerns about health impacts from energy from waste installations, there is currently no evidence to support this. A11.7.3	Noted
134. The NPSs needs to consider traffic and transport as major sources of greenhouse gases and thus their impact on greenhouse emission targets. A7	This has been considered in the AoS.
Historic Scotland (20/03/2009)	
Key Messages	
135. Welcome that the historic environment has been scoped into the assessment.	Acknowledged
Designations	

Response	Action/Comments
136. It is not clear why world heritage sites have been highlighted, when this is only one component of the historic environment that may be significantly affected. (table 4.1)	Additional guide question added considering other designated sites such as SAMs etc.
Guide Questions	
137. Refine the guide questions associated with AoS Objective 10 to mirror those for other objectives. e.g. Will the NPS have any direct, indirect of cumulative effect on the historic environment?	Amended
Plans, Programmes, Policy & Baselines	
138. Scottish Planning Policy 23: Planning and the Historic Environment (SPP 23) has superseded and consolidated NPPG18: Planning and the Historic Environment and NPPG 5: Archaeology and Planning. This should be referenced.	Amended
139. The Memorandum of Guidance on Listed Buildings and Conservation Areas is in the process of being withdrawn in stages (March 2008 – April 2009). More information is currently available at http://www.historicscotland.gov.uk/index/heritage/policy/memorandumofguidance.htm	Amended
Scope of Appraisal	
140. Information (contained in section 10.3.2) is welcomed which indicates that the AoS will consider the implications for all classes of historic environment features (as opposed each specific asset). This approach to assessment would not require the collection of detailed baseline data on the historic environment. However, an understanding of what constitutes the historic environment and how it may be affected by energy infrastructure should be demonstrated.	Noted
141. Given that the NPS are unlikely to prescribe the location for new infrastructure projects (as noted in section 4.2) it will be important that any potential for significant effects is clearly indicated in the AoS and appropriate mitigation provided so that this potential can be avoided at the spatial level of planning. As you will be aware, it is crucial that strategic alternatives are fully explored before proceeding with project level EIA.	Alternatives are discussed in section 2.5.
Joint Nature Conservation Committee (23/03/2009)	
142. JNCC welcomes the commitment to undertake an AoS for the National Policy Statements for Energy Infrastructure. We believe this process provides an opportunity to ensure that issues that would otherwise only be addressed at the project level, through EIA and other assessments can be considered in a more strategic manner. We also welcome the adoption of an approach that incorporates the requirements of the SEA Directive.	Acknowledged
143. The scoping report identifies the key concerns and drivers for the NPSs as wider energy policy, promoting economic and security of supply considerations. However, climate change and achievement of a low carbon economy do not appear to be given the same priority. Potentially this imbalance could run through the process and ultimately be reflected in the NPSs. There is an opportunity to integrate policy goals for energy security, a low carbon economy and protection and enhancement of the natural environment.	Noted
Scope of Appraisal	
144. The AoS should relate to all energy generation methods. This will help ensure the full range of energy solutions and alternatives are being considered in a coordinated and balanced way.	Refer to the NPS for infrastructure covered.
145. The AoS should define what is meant by these terms to help ensure consistency across the regulatory/advisory environment. (secondary, cumulative and synergistic effects under the SEA Directive)	Section 4.3 considers cumulative effects.
146. Under the assessment of alternatives, the NPSs should consider high level policy, define generic criteria and set out approaches for avoiding or mitigating impacts (for successful delivery of the energy policies in a timely and efficient manner).	Acknowledged

Response	Action/Comments
147. It is not clear how specific issues such as cumulative impact of noise on European Protected Species will be addressed within the scope of the AoS. Logically, leaving such issues to be addressed later in the process (e.g. at the project level) will increase the risk of delay and risk the timely and efficient delivery of the relevant policy objectives.	Given the strategic nature of the assessment and the localised effects of noise it is considered best that this be addressed at the project level.
148. There should be appropriate focus on offshore developments, and consideration of the marine environment throughout the AoS, like there is with terrestrial developments. (It may be suitable to separate the effects on the topics arising from terrestrial developments and marine developments, to avoid confusion and to give adequate emphasis to marine issues such as those arising from the development of offshore wind farms, electrical transmission networks and offshore and oil and gas. Clarity on addressing marine topics should facilitate integration with regulatory development such as the Marine and Coastal Access Bill.)	Noted.
149. We welcome the consideration of "Ecosystem functionality" in Table 4.1 Ecology Objectives. There should be an ecosystem approach developed within the scope of the appraisal. (Currently the focus of the appraisal is at the site and individual species level. As an outcome, an AoS that underpins the NPSs by effectively addressing sustainability criteria of ecosystem functionality would be welcome. For more information on the ecosystem approach we refer you to English Nature's publication cited as: Laffoley, Maltby, Vincent, Mee, Dunn, Gilliland, Hamer, Mortimer and Pound The Ecosystem Approach. Coherent actions for marine and coastal environments. A report to the UK Government (2004).)	The guide questions include reference to the importance of ecosystems.
150. The AoS should consider the potential for climate change to affect baselines. This is particularly relevant for the Ecology section where climate change will influence the baseline, and needs to be understood alongside natural variation to enable meaningful assessment of impacts at a strategic and project level.	Considered through the combined climate change and ecology sections.
151. The AoS should be integrated with the Marine Policy Statement. Marine Spatial Planning: In order to effectively address the likely need to more strategically manage the marine environment, we believe an integrated spatial approach to the marine area is likely to become an increasingly important tool. There is an opportunity for the AoS for the NPSs for Energy Infrastructure to be integrated with this approach to address issues relating to potential conflict and/or cumulative impact. The Offshore Energy SEA has a number of recommendations that might also usefully be considered in the context of integration with the AoS. For example we believe the potential effect of noise is an example of the type of cumulative issue that may result in effects on European Protected Species in the marine environment. Recommendations within the Offshore Energy SEA will seek to set out a framework for addressing specific issues of this sort. Our recommendation is that the AoS maximises the opportunity for an integrated approach.	Included in the Plans and Programmes and considered through the AoS process.
Ministry of Defence (20/03/2009)	
Key Messages	
152. The MOD is supportive of the market-led approach preferred in defining national policy on energy development which will entail the energy generation sectors identifying the most appropriate locations for specific types of energy generation and infrastructure that are compatible with relevant siting requirements and stakeholder interests	Acknowledged
Further Comments	
153. (I note that at section A7.7.3. the effect of wind turbines on aviation radar is identified.) The document should specifically identify defence radar facilities separately in this context to take account of the impacts on MOD radar facilities that wind turbine development can at localities not in proximity to aerodromes or designated civilian air traffic routes.	N/A to Overarching AoS
154. It should be clarified how the cumulative effect that wind turbine development may have upon UK defence interests of national importance, will appraised and taken into account in establishing and implementing the NPS governing Renewable Energy Electricity Generation?	N/A to Overarching AoS
Natural England (20/03/2009)	
Key Messages	

Response	Action/Comments
155. We welcome the decision to incorporate the requirements of Strategic Environmental Assessment (SEA) into the AoS. This will help provide a sound basis for considering and improving the environmental outcomes associated with the Energy NPSs throughout the process of their development.	Acknowledged
156. We welcome, in most respects, the proposed scope and level of detail of the AoS.	Acknowledged
157. The twin energy policy objectives of securing energy supplies and reducing greenhouse gas emissions should be approached and set out in a more balanced and integrated way throughout the development of the AoS and NPSs.	Entec to further consider balance of twin energy policy objectives
158. Outdoor recreation and access to the natural environment should be considered. (As a minimum, the AoS Scoping Report should clearly set out the need to consider the potential effects of NPSs on the people's enjoyment of the natural environment, with recognition of strategically important receptors such as National Trails and their users.)	Added as a guide question to the objective on health and well-being
159. The potential effects, on green infrastructure should be considered by the AoS.	Green infrastructure has been considered.
160. The content of Landscape, Townscape and Visual topic (Annex A9) lacks structure, consistency and adherence to good practice in SA/SEA.	Landscape team to consider
161. The AoS, in seeking to ensure that the NPSs deliver sustainable outcomes and transparent decision-making, has a crucial role in ensuring that the NPSs contain clear criteria for the IPC in respect of: a) coming to a view on the significance of effects of projects; b) making judgements about the acceptability of effects; and c) how those effects are considered against the benefits of projects.	Acknowledged
Overview	
162. We accept the justification for reasonable alternatives that will or will not be considered by the AoS, recognising that settled national energy policy will not be re-evaluated as part of the AoS.	Acknowledged
163. Of the alternatives presented, we believe that the option which - (a) sets out high level Government energy policy, (b) defines areas which are or are not suitable for energy developments, and (c) sets out approaches to avoid or mitigate impacts and determine the significance of the residual impacts – is most likely to deliver more sustainable outcomes.	Noted.
164. While accepting the justification of alternatives, we believe that settled policy on energy is not presented in balanced way through the introductory sections of the Scoping Report.	Noted
165. Reducing greenhouse gases should be given a much greater status throughout the report as a twin objective of national energy policy alongside securing energy supplies. Energy security aims appear to have primacy in the early sections of report at the expense of GHG reduction. There is a danger that this imbalance will permeate through the AoS and, eventually, into the NPSs. It can be redressed, in part, by a greater emphasis on the potential for integration of policy goals in the AoS, which is after all, the key principle of sustainable development and should be a key feature of any appraisal of sustainability. (For example, the Scoping Report (p.iv) states that the "energy NPSs will consider what development is necessary to ensure security of energy supply, in way that takes full account of environmental, social and economic considerations." Given the twin objectives of Government energy policy this should read that "..energy NPSs will consider what development is necessary to ensure security of energy supply and decarbonisation of the energy system, in way that takes full account of environmental, social and economic considerations." In other words, the energy NPSs, as an expression of national energy policy and the key material consideration for the Infrastructure Planning Commission, should be concerned with decarbonising the energy system as well as security of supply.)	Noted.
166. There should be greater emphasis in the AoS and NPS on the need to integrate policy goals and decarbonise the energy system as a key contribution to meeting GHG reduction targets will also help establish the need for energy infrastructure, (which is a key aim of the NPSs.)	Noted

Response	Action/Comments
167. While we understand the justification for not considering alternatives of energy efficiency, demand management and small scale generation as part of the AoS, we would also remind DECC of their importance in the context of need for major infrastructure. Large scale projects are a necessary and important part of meeting energy security and GHG targets, but the more that can be achieved on other fronts the less the need for major infrastructure. Actions and outcomes on energy efficiency demand management and smaller scale renewable generation can be quicker to implement, at lower cost and more sustainable.	Noted.
168. There should be an explanation of what the optimum or preferred energy mix might be in terms of implementing Government policy, in order to provide the IPC with the framework they need to consider the benefits and costs of projects. (Simply stating that an energy mix is required, with no explanation of what the optimum or preferred mix might be will not seriously constrain the ability of the AoS to consider the outcomes of the NPSs and how they might be improved.)	See Section 2.5 outlining the alternatives put forward to DECC.
169. We recognise that in a market-led approach predicting precise levels of deployment for different types of infrastructure is not possible, but undoubtedly some mixes are far more desirable (in social, economic, environmental and Government policy terms) than others and this is something that the AoS should explore. In setting the framework within which the market provides major energy infrastructure, we think it possible and necessary for the NPS to set out, at least in broad terms, the relative merits of different mixes of energy infrastructure.	See Section 2.5 outlining the alternatives put forward to DECC.
Scope of Appraisal	
170. (We recognise that undertaking a Habitats Regulations Assessment of the likely effects of the Energy NPSs will be difficult, given the nature of the NPS.) However there should be as rigorous an assessment as can reasonably be undertaken and one which adopts the precautionary approach embedded in the Habitats Regulations and EU Directive 92/43/EEC.	See Section 3.8
171. If HRA of the Energy NPS genuinely cannot assess the effects of a proposal on European site(s) then it would be appropriate to assess the effects at the project level. However this approach is only acceptable where the project level HRA will be effective in protecting European sites; there must be the capability, scope and flexibility within the project to avoid adverse effects on integrity.	Noted
172. We recognise that in some cases the decision may be made to proceed with projects that do affect the integrity of European site(s) because of imperative reasons of over-riding public interest. However the Directive requires that in these cases compensatory measures must be taken to ensure the coherence of the Natura 2000 network. It should be recognised within the NPS that the capacity for developing compensatory measures will depend on the features of interest of the particular European sites and that there may be occasions where a project may not be able to go forward	Noted
Cumulative effects	
173. (The indicative matrix set out in the report will help to identify in broad terms where cumulative effects of the energy NPSs may be significant, and potential generic mitigation measures.) It should be made clear how cumulative effects of all NPSs will be considered in the AoS.	See section 4.3 of the AoS.
174. It should be explored, through the AoS, the degree to which certain types of receptor are vulnerable or sensitive to cumulative effects as means of informing the development of the guidance in the NPS.	Cumulative effects are considered in the assessment.
175. More preliminary work should be undertaken through the AoS process on the assessment and significance of cumulative effects of energy infrastructure particularly in coastal areas which are vulnerable to climate change, have a high degree of environmental sensitivity and are subject to other development proposals, to make the process as clear as possible for the IPC.	Acknowledged
Guide questions for AoS objectives	
176. Climate change Will the NPS promote sustainable adaptation to climate change and the integration of adaptation with mitigation? Will the NPS reflect the ambition of Government GHG reduction and renewable energy targets? Will the NPS ensure that full life-cycle GHG costs of proposals are considered?	Prompt questions and AoS objective is considered to sufficiently address these issues.

Response	Action/Comments
177. Ecology (but equally applicable to Landscape, Water and other topics): Will the NPS respect that there are environmental limits to growth, in line with the UK Sustainable Development Strategy?	Prompt questions and AoS objective is considered to sufficiently address these issues.
178. Landscape Will the NPS steer inappropriate development away from nationally important landscapes? Will the NPS promote people's enjoyment of the natural environment?	Prompt questions and AoS objective is considered to sufficiently address these issues.
Plans & Programmes, Policies & Baselines and Topic Based Comments	
Annex A1: Climate change 179. We recommend that the need for adaptation strategies that are sustainable and recognise the benefits of increasing the natural environment's ability to accommodate climate change is addressed. For example, strategies should seek to reduce habitat fragmentation by increasing landscape connectivity and permeability. A1.3	Considered in the AoS, prompted by guide questions.
Annex A2: Ecology 180. Ramsar sites should be listed under international policy/legislation (pages 1&2). A2.2.	Included
181. A reference to CROW Act 2000 be included as this tightened up the Wildlife & Countryside Act. A2.2. (page 2)	See plans and programmes
182. The Food & Environmental Protection Act (FEPA) should be referenced here as it concerns, for example, placement of materials in the marine environment. A2.2. (page 2)	Added
183. Nationally Scarce species are now listed under recent IUCN guidelines as "near-threatened". (Also, please note that the UK Red Data Book is not a single book but comprises several books and a long list of specialist reviews.) A2.2.	Noted
184. The scope of the appraisal should recognise that ecological enhancement is advocated by PPS9, which reinforces and builds on the IEEM guidance. A.2.3.1. (page 4)	Both included within the list of plans and programmes
185. There should be a greater use of 'plain English' in some of the text – for "flora and fauna" read "plants and animals". A2.3.2. (page 4)	Noted
186. We recommend that indirect effects consider interruption of process, not just effects such as noise. On land this should include changes to hydrological pathways, whilst in the marine environment disruption of sediment transport and interruption of energy movement can be highly significant a long way away from the point of interruption. A2.3.2. (page 4)	Noted
187. European marine sites are not a separate designation – they are SAC in the marine environment. This reference could be deleted.• A2.3.2. (page 5) first bullet	Noted
188. The reference to impacts on "notable species" (6th bullet point) could be revised. The term Notable has specific meanings so we would suggest that the wording is changed to something like on species with restricted distributions or those known to be under threat and listed in the UK BAP.• A2.3.2. (page 5) Should add to this BAP habitats. A2.3.2. (page 5) 7th bullet point	Noted
189. The definition of Sites of Community Importance (SCI) is incorrect and should be changed. Sites under consideration for SPA/SAC are not known as Sites of Community Importance. SCI are restricted to those sites that have been adopted as SAC/SPA. When undergoing this process they are candidate SAC (cSAC) or potential SPA (pSPA).	Amended
190. The paragraph which indicates that the absence of NPS may be beneficial to designated sites suggests that NPS are intended to allow more rapid destruction of designated sites. If the sustainability appraisal is to do its job, this should not happen without sufficient provision being made to ensure that wildlife is not lost overall. (page 8) A2.7.	Noted

Response	Action/Comments
191. International legislation is not there just to make sure that protected wildlife is fully considered. It is there to make sure that the overall resource is not compromised. This statement seems to return to past approaches that "consider the wildlife and balance" – when there are clear requirements to make sure that the process does not compromise the overall wildlife resource. A2.8.1. (page 9)	Amended
192. Biodiversity issues relating to renewable energy should be included as a separate bullet point on the interruption of physical processes that causes changes to sediment sources or to sediment transport. A2.8.3.	Amended
193. Bird strike should be included as another potentially important impact in relation to electricity networks. A2.8.4. (page 10)	Noted
194. The assertion that biodiversity can be restored after pipelines are installed should be qualified. This may be true in places, but there are big caveats – the damage to soil horizons can have profound implications, as can local changes to hydrology. A2.8.5.	Noted in AoS of EN-4
195. An additional bullet point should be included on interruption of physical processes. A2.8.5.	Noted
Annex 5: Flood Risk 196. The sequential/precautionary approach to consideration of flood risk should be used in (PPS25 Practice Guide).	This is included in the Plans and Programmes.
197. The Environment Agency is currently mapping coastal erosion risk, which will provide useful baseline information.	Noted
198. The appraisal also considers implications for disruption of sediment transport and its knock-on effects on coastal evolution and flood risk. A5.3.	Noted
Annex 9: Landscape, Townscape and Visual 199. The Landscape, Townscape and visual annex should be revised to reflect good practice in SEA/SA as set out in Communities and Local Government guidance.	Noted
200. Inconsistencies in the way that Scotland, England and Wales are treated should be addressed. (For instance the Government's objectives for Scotland's for natural heritage are set out (A9.2, page 4), whereas those for Wales and England are not.)	Section removed
201. The subtitles International Policy Designations and National Policies are followed by a mixture of Acts, Conventions and Management Plans and should be changed to Subtitles International Context and National Context to better encompass the content of this section. A9.2 (page 1)	Amended
202. The 1981 Wildlife & Countryside Act; the 1990 Environmental Protection Act; and the 2004 Planning & Compulsory Purchase Order Act should be included in the list of Acts which directly or indirectly recognise landscape protection, management and planning should also include A9.2 (page 2)	Amended
203. The subtitle Policies related to landscape planning should read National planning policy on landscape. PPG16 and PPS22 should also be listed here. A9.2 (page 3)	Under 'England' in plans and programmes
204. The methodological guidance and good practice should include Topic Paper 6: Techniques and Criteria for judging landscape sensitivity and capacity (Countryside Agency and Scottish Natural Heritage) http://www.landscapecharacter.org.uk/files/pdfs/LCA-Topic-Paper-6.pdf A9.3.1 (page 5)	Amended
205. The appraisal should recognise that the sensitivity of landscape and visual receptors will also depend on the different types and scales of energy infrastructure (see Topic Paper 6 for further information).• A9.3.2 (page 5)	Noted
206. English Heritage's advice should be sought on the status of World Heritage sites and Registered Parks and Gardens as "non-statutory designations". A9.3.2 (page 5)	Noted

Response	Action/Comments
207. The overview of the baseline only refers to the fact that National Parks have been mapped and WHSs have been listed. There are a number of national sources of data which should will help define the baseline and its likely evolution, including Joint Character Areas and Countryside Quality Counts (CQC), which can be found on the Natural England website: http://www.naturalengland.org.uk/ourwork/landscape/englands/character/default.aspx A9.5	The strategic level of this appraisal meant that this information was considered but was not mapped.
Annex A12: Soil & Geology 208. It is worth mentioning the importance of soil age and history in relation to plant and animal distribution. A12.4.1.	Noted
Northern Ireland Environment Agency (23/03/2009)	
Key Messages	
209. The Scoping Report states (on page 9) that the NPSs are relevant for the whole of Great Britain. Great Britain includes England, Scotland, Wales but not Northern Ireland. The scoping report does not indicate if the NPSs will be a relevant consideration in planning decisions in Northern Ireland, it simply states that 'In Northern Ireland, planning consents for nationally significant energy projects are devolved to the Northern Ireland Executive, so the IPCs remit does not extend to Northern Ireland'. This issue needs to be clarified either in the Environmental Report or in the National Policy Statements.	Refer to the NPSs.
210. Ozone depleting substances (ODS) is included with climate change - ODS is a separate issue, and ODS are not mentioned in the guide questions, therefore their inclusion here is questioned.	Noted
Plans, Programmes, Policy & Baselines	
211. Legislation in Northern Ireland is referred to and referenced to varying degrees. This needs addressing. Northern Ireland is referred to, to varying degrees in the following areas: A 1 Climate Change A 3 Material Assets and Resources A 4 Economic and skills A 9 Landscape, Townscape and Visual A10 Archaeology and Cultural Heritage A 11 Air Quality A12 Soil and Geology A 13 Health and Wellbeing However, reference in not made to Northern Ireland in the areas listed below: A 2 Ecology A 5 Flood Risk A 6 Water Quality A 7 Traffic and Transport A 8 Noise	Amended - see Plans and Programmes
212. PPS 15: Planning and flood risk (NI) (Appendix A5).	Added
213. PPS 18: Renewable Energy (Appendix 11)	Added
214. The Water Frame Work Directive is mentioned twice (Annex D page 7 of 16). The Fresh Water Fish Directive (78/659/EEC) is not listed here; however reference is made to it in Annex A6 page 3 of 10.	Included under Plans and Programmes - Water Quality
215. A more quantitative assessment of changes in flooding due to climate change could be considered. (Appendix A5 in terms of Flood Risk, - Likely evolution of baseline (flooding))	Assessment in line with UKCP09
Topic Based Comments	
216. AoS Objective 2 should read 'Ecology (Flora and Fauna): To protect and enhance important and protected habitats, species, valuable ecological networks and ecological functionality'.	Noted

Response	Action/Comments
217. AoS 12 Soil and Geology should include an additional guide question which reads 'Will the NPS help to prevent damage to geologically important sites'.	Amended
218. Impacts on marine mammals should be considered in appraisals relating to ecology (although we acknowledge this should be included in the appraisal of European Protected Species).	Noted
219. Defence Heritage features should be added to the range of heritage categories which could be affected (A10.1)	Noted
220. The question "Will the NPS increase the national skills base?" should also be linked to the Population SEA topic requirement, in relation to Page 20, Table 4.1 section 4 Economy and Skills.	Amended
221. In section 9 Landscape, Townscape and Visual of this table on Page 21 we also consider that the SEA Topic Requirement should be Landscape rather than Population.	Noted
222. In section 13 Health and Well being on Page 21 a guide question reads "Will the NPS affect perceptions of risk?" We are unsure how perceptions of risk are to be measured and linked to mental and physical health impacts. This should be addressed.	Noted
223. In section 14 Equality on Page 21 the guide question is asked, "Will the NPS result in changes to community services or facilities?" As changes to services or facilities are local scale, perhaps this should be scoped out.	Noted
224. In section A3 Material Assets and Resource Use Page 11 of 10 we consider that the Habitats Directive could be considered here.	Noted
225. Page 2 point 1.3 superscript 4 refers to NIEA as EHS. As of 1st of July 2008 the Environment and Heritage Service has been re-named as the Northern Ireland Environment Agency.	Noted
226. Annex 12, page 1 of six International policy, please note that the Hazardous Waste Directive 91/689/EEC has now been subsumed by the Waste Framework Directive.	Amended in material assets and resource use section.
227. Annex 12.6.1 we believe that the first point here should be expanded to include agricultural value.	Noted
228. Annex 12.6.5 addresses Emergency management and contingent plans, we do not believe that these are adequate in terms of safeguarding soils and geology from potential contamination and suggest that this issue is readdressed.	Noted
Scottish Government (19/03/2009)	
Key Messages	
229. SEPA is satisfied with the content of the Appraisal of Sustainability (AoS) and in particular is pleased to note the level of detail provided at the Scoping Stage for context and baseline information.	Acknowledged
230. It should be clarified as to why a decision was made to group some AoS under the umbrella of Energy NPS whilst other AoS will be carried out separately (Nuclear, Tidal Power of River Severn). A more overarching approach would allow for a better overview of the energy situation in the UK. (However, in the absence of such approach, further references to the other NPS and their relation with the Energy NPS would be welcomed.)	See section 2.4
231. The report should provide detailed information about the remit of NPS and the role of IPC with a focus on their roles and responsibilities for Scotland.	See geographical scope of the proposed appraisal (3.3.2)
Appraisal Scope	
232. (SEPA notes the intention to incorporate the Strategic Environmental Assessment (SEA) as part of the Appraisal of Sustainability (AoS). A clear distinction should be made of the issues that are relevant only to the SEA in order to ensure transparency in the assessment. Page 2	Noted

Response	Action/Comments
233. SEPA consider the identification of alternatives of high importance within the SEA. Although it is appreciated that some alternatives will arise as the process develops, it would have been useful to identify some of them at the scoping report stage. SEPA notes that the alternatives will be reported in the individual AoS, ('the outcomes recorded in the relevant AoS Report) and recommends that alternatives are also proposed at an overarching energy level, reporting all the options, with clear explanation of the reasons why some of them can not be considered (for example: because of the nature of the NPS). This is another reason why that the remit of NPS needs to be made very clear in the AoS Report.	Entec to further consider alternatives with EIA and Energy teams
234. (SEPA welcomes the intention for DECC to prepare 5 separate AoS for each of the energy NPS identified, with the condition that:) An overarching energy approach should be maintained (for example in the introduction of each AoS and in the analysis of alternatives), such an approach would mirror the structure used in the Scoping Report.	Noted
235. References to the SR and relationship to the other AoS should be made clearer in the report.	Noted
236. Information for 'Landscape, Townscape and Visual' should be under 'cultural heritage' not 'population issues'. Table 3.1	Landscape, Townscape and Visual falls under all three Annex I issues.
237. (Footnote 9, page 15. The footnote states clearly that the IPC does not take decisions in Scotland.) Further information should be provided on this at a more prominent level of the report in order to clarify roles and responsibilities for different bodies and how NPS may be a relevant consideration in planning decisions in Scotland.	Refer to NPSs
238. Clearer reference should be made to indicators (as they seem to be covered in detail only in Annex D).	Noted
239. SEPA is content with the proposed timescale (12 weeks) for the consultation stage of the AoS Reports for each of the NPS.	Acknowledged
240. (SEPA agrees with the statement provided in respect of climate change i.e.' It is beyond the scope of this appraisal to predict the effects of climate change outside of the UK' A1.4.) However reference should be made to climate change as part of the trans-boundary effects.	Noted
241. SEPA is content with the reference to the individual NPS in the topic specific issues. It would be useful to keep a similar approach in the AoS Report. A1.3.2	Noted
242. Reference should be made to aspects that are not within the remit of the NPS too in order to consider alternatives at a strategic level. In particular, energy efficiency and demand management are important factors that contribute to the identification of energy needs and which could influence the outcome of the alternatives analysis. A.1.3.2 - Forth paragraph.	Noted
243. Further information about the remit of NPS should be provided. Section A3.5 - Overview of baseline - contains information on energy demands by sector and is provided as background. However it should be noted that the NPS are only directly concerned with the generation and transportation of electricity.' SEPA recommends giving further attention to demand by sector as this has great influence on the overall view of energy in the UK.	See section 3.1
244. Clarification should be given as to whether the pie chart for estimated total annual waste arisings by sector refers to the whole of the UK or to England only. A3, pages 15, 16 and 17 - Waste.	This is for England only
245. (SEPA agrees that the objectives identified cover the issues appropriate for appraising the five NPS, and welcomes the use of guide questions.) It should be made clearer in the report which indicators are going to be used, to facilitate the monitoring and the evaluation of progress towards the objectives in the appraisal.	Noted
Plans, Programmes, Policy & Baselines	
246. It should be noted that, since 2007, the Scottish Executive is also known as the Scottish Government.	Entec to Amend
Climate Change A1. 247. Scottish Government's Climate Change Adaptation Framework (under development)	Added
Ecology A2. 248. Scottish Biodiversity Strategy	Added

Response	Action/Comments
Materials assets and resource use A3. 249. New National Waste Management Plan (under development)	Added
Traffic and Transport A7. 250. National Planning Framework (under development), 251. Scotland's National Transport Strategy	Added
Material Assets A3. 252. Waste Data Digest http://www.sepa.org.uk/waste/waste_data_1/waste_data_digest.aspx and http://www.sepa.org.uk/waste/waste_data/municipal_waste/municipal_waste_reporting.aspx	Noted
Water quality A6. 253. Draft River Management Plan for the Scotland River Basin District http://www.sepa.org.uk/water/riverbasinplanning.aspx, 254. Draft River Basin Management Plan for the Solway Tweed River Basin District http://www.sepa.org.uk/water/river_basin_planning/solway_tweed.aspx	Added
Soil and geology A12. 255. Further information about the carbon reservoir of peat-lands in Scotland	Considered in the Renewables AoS.
Topic Based Comments	
256. It should be noted that the installation of wind turbines in peat-land areas could release the carbon stored in the soil. This negative effect on climate change would reduce the benefit of using the wind turbines. A12.6.3 - Renewable electricity generation	Considered in the Renewables AoS.
Scottish Natural Heritage (18/03/2009)	
Key Messages	
257. We are satisfied that the proposed structure will cover the information to be included in an SEA Environmental Report (as set out in Schedule 2 of the 2004 Regulations). We welcome the clear indication in Table 3.1 of how the various elements of the SEA will be reported through the 'topic sections' in the Appraisal of Sustainability.	Acknowledged
258. Subject to the comments, SNH is content with the scope and level of detail proposed for the environmental report, and we support the proposed AoS objectives and detailed criteria/guide questions for the topics.	Acknowledged
259. The topic based structure presented in this Scoping Report should be retained through subsequent reports and decisions so that the SEA components can be readily identified and evaluated.	Noted
260. SNH is content with the proposed 12 week period for consultation on the Environmental Report/Appraisal of Sustainability with the consultation on the draft NPSs.	Acknowledged
Appraisal Scope	
261. 'Landscape' should be included as an SEA issue in Table 3.1.	Added
262. A summary of the SEA conclusions should be provided alone (i.e. excluding the other sustainability elements) within section 5, as there is a risk that the inclusion of factors beyond the scope of the Strategic Environmental Assessment may cloud the role of the SEA in decision-making. (As we understand it, there are three topic sections – on 'Traffic and Transport', 'Economic and Skills' and 'Equity' which lie outwith the scope of SEA as they reflect socio-economic rather than environmental issues.) Although the Scoping Report concludes overall that spatial elements are difficult to address at the strategic level, there are two components that are relevant at this scale:	Noted

Response	Action/Comments
263. Coastal developments: many key energy developments occur on the coast, and it will be important to assess these at a strategic level taking into account the impacts of climate change, sea level rise, storm frequency and river flooding in estuarine areas, using the UK Climate Projections (expected Spring 2009).	Noted
264. Organic soils: in Scotland, organic soils contain the equivalent of around 170 years of Scotland's emissions at current rates, and management of these soils is an important factor in determining whether the soils function as a carbon sink or a carbon source. The potential impact of energy infrastructure on that carbon store merits consideration at a strategic level.	Noted
265. It is questioned whether, in the Overarching Energy NPS, the need for large-scale energy infrastructure can be disentangled from the need for energy efficiency, demand management, and small scale infrastructure. Section A1.3 on one hand specifically excludes aspects of UK energy policy which are not within the remit of the National Policy Statements, including energy efficiency, demand management and small scale generation; but on the other hand recognises that appraisal of the NPS can only be done meaningfully if the effect of other such energy policies is considered. Justification for large scale energy infrastructure can only be made within the context of an overall approach, following from the principles in the Energy White Paper. The more vigorously measures on the demand side are pursued, the less requirement there is for infrastructure to meet supply needs. Consideration of demand side measures is therefore central to the consideration of alternatives in the SEA of policy statement for new large infrastructure. We recommend that the scope of the appraisal for the Overarching Energy NPS be widened to include that overview. Given the need for energy policy to meet firm emission reduction targets, we believe this requires a quantitative approach in appraising likely emission reductions from different measures; the five-point scale used to assess cumulative impacts in Fig 4.3 would not be adequate.	See Section 2.5 on alternatives.
Plans, Programmes, Policy & Baselines	
Climate Change 266. UK Climate Projections (UK CIP '09), A1.2	Amended
267. Scottish Government's Climate Change Adaptation Framework (in preparation). A1.2	Added
268. UK Climate Projections (expected April 2009) A1.6	Added
Ecology 269. Nature Conservation (Scotland) Act 2004, and associated biodiversity duty	Added
270. SPP6 Renewable Energy	Added
271. SPP7 Planning and Flooding	Added
272. NPPG 13 Coastal Developments	Added
Economy & Skills 273. Add the UK Climate Change Committee (2008) Building a low-carbon economy - the UK's contribution to tackling climate change.	Added
274. National Planning Framework (currently coming to the end of its passage through the Scottish Parliament)	
275. Scotland's National Transport Strategy – published by the Scottish Government.	Added
276. Add the UK Climate Change Committee (2008) 'Building a low-carbon economy - the UK's contribution to tackling climate change' whose 'route map' to a low carbon economy should be included in the baseline and evaluation of measures.	Noted
Landscape Townscape & Visual 277. NPPG 14 Natural Heritage	Added
278. Planning etc (Scotland) Act 2006	Noted
279. National Parks (Scotland) Act 2000	Added

Response	Action/Comments
280. Natural Heritage Futures3 and the Landscape Character Assessment should be added to the Regional, local and spatial plans and programmes which are the equivalent systems in Scotland to the Joint Character Areas for England and Landmap for Wales.	Noted
281. Note that the duty in the Countryside (Scotland) Act 1967 is to have regard to the desirability of conserving the 'natural beauty and amenity of the countryside' (not 'natural heritage of Scotland'). The national statutory designations which relate to landscape are National Parks and National Scenic Areas. A9.2	Noted
282. Reference should be made to the latest guidance to calculate the carbon emission balance of windfarms on carbon-rich soils.	Considered in Renewables AoS.
Topic Based Comments	
283. In relation to the Geographical Scope of Possible Effects it is agreed that the impacts of climate change will vary across the UK (para A1.4).It should be noted however that the impacts of sea level rise are likely to be much greater in Scotland than hitherto considered as the effects of post-glacial isostatic rebound are markedly weaker than hitherto believed. Latest findings indicate a minimum of 20-30 cm sea level rise in Scotland by 20801, and the UK Climate Change Projections may revise this range upward. This is also likely to be significant in approaches to coastal and estuarine flood management (topic A5 Flood Risk)	Noted
284. When reporting progress in relation to the requirements of the UK Climate Change Act the actual and projected emission factor of the UK electricity system should be monitored as discussed by the UK Climate Change Committee2. A1.7.1	noted
285. As well as the potential benefits to biodiversity of operational CCS, the Fossil Fuels (A2.8.2) section should note the converse, i.e. the risks to biodiversity from climate change should the policy framework not stimulate emission reductions. There are also potential risks to biodiversity and protected areas associated with the transport infrastructure (including pipelines) associated with CCS.	Noted
286. The Appraisal should also consider the employment and economic benefits associated with alternatives such as energy efficiency, demand suppression, and small scale decentralised generation, which bring economic and skills benefits of their own.	Alternatives have been considered in section 2.5
287. Reference should be made to the need to accrue significant reductions in emissions from the transport sector. (The discussion of 'existing problems' is wholly in terms of congestion in the UK transport network, and makes no mention of the need for significant reductions in emissions of greenhouse gases from the transport sector in order to enable the requirements of the UK Climate Change Act and Climate Change (Scotland) Bill to be met. One of the three strategic priorities of the National Transport Strategy in Scotland is to reduce transport-related greenhouse gas emissions.).	Noted
288. The proposed scope of appraisal should be extended to include organic soils in general, rather than just soils in Sites of Special Scientific Interest. (Organic soils in Scotland, particularly peat land, represent a very significant carbon reservoir, containing 10,030 Mt CO2-equivalent6. Around 65% of that carbon is contained within peat lands, which cover 8,818 sq km. These soils represent a very significant carbon reservoir, which if released into the atmosphere would be equivalent to around 170 years of greenhouse gas emissions from Scotland at current rates. It is important that carbon-rich soils remain as sinks rather than becoming sources of greenhouse gases, which occurs when they are drained or damaged. The ECOSSE report contains information on the spatial distribution of organic soils in Scotland and Wales. A12.2.)	Due to the strategic nature of the appraisal local designations have not been considered, though these would be important at the project planning stage.
289. The Renewable Electricity Generation paragraph (A12.6.3) refers to the potentially significant effects on soils and geology associated with offshore wind. We assume this should be onshore wind. 290.	Noted
Welsh Assembly Government (27/03/2009)	
291. It is appropriate there should be a requirement for Welsh Ministers to be consulted by developers before applications relating to Wales are submitted to the IPC.	Noted

Response	Action/Comments
292. The report should acknowledge the exceptional situation in Wales regarding the transportation of wind turbine components to the site. (Although reference is made to the problems concerning the transportation of wind turbine components to sites, the document does not acknowledge the situation in Wales which makes this a particularly exceptional issue. Seven Strategic Search Areas (SSAs) have been identified as locations most suitable for large scale wind energy developments. A number of abnormal indivisible load movements would be required for the construction of each turbine. The construction of the mid Wales SSAs will take place over several years and a high level of co-ordination between developers will be essential to take these projects forward. The safe movement of Windfarm components to the SSAs will require an extensive programme of highway works and improvements to be carried out. Improvements will also be required to the highway network in England. The cost of these is yet to be established. The effective management of Abnormal Indivisible Loads will require a large dedicated police resource. In addition, the delay and disruption to the travelling public and communities along the delivery routes is likely to be considerable, with a consequential cost to the economy. Windfarm developers will be responsible for costs and a strategic approach is required and project consents will subject to agreed transport plans. We are discussing the question of a strategic, coordinated approach to managing these transport issues with BWEA, industry developers and other stakeholders including the Assembly Government's own transport experts and a national strategic transport plan is currently being prepared. Our aim is to ensure that work is carried out to a common end, minimising the impact of this activity on local communities.)	Noted
293. The report should consider the need for new grid infrastructure to connect renewables developments in Wales (The report does not adequately consider the need for new grid infrastructure to connect renewables developments. This is a major issue in Wales. With many of the SSAs for new windfarms being relatively remote, large developments in some of these areas will require the construction of major new grid connections. We are aware that The Electricity Networks Strategy Group (ENSG) has recently advised that NPSs, amongst other things, need to explain the "need case". In reaching a decision concerning grid infrastructure, it is likely that the IPC will not be able to rely solely on the NPS stating that there is a need for an individual project. Instead, the NPS should enable the IPC to determine whether a particular application supports delivery of the strategic need, i.e. to meet Welsh Assembly Government renewable energy targets.)	Noted
294. Although coal is recognised as an important fuel source, there is no real mention of indigenous extraction. Indigenous coal extraction would have benefits in terms of sustainability and employment. We would value clarification on whether this is an issue which will be covered in the fossil fuel NPS please.	Noted
295. Clarification should be provided as to where IPPC permitting fits in with NPSs. (There appears to be no reference to the parallel IPPC permitting process.)	Noted
296. There should be some reference to timings for the refreshment of NPSs it doubtful that NPSs can be expected to endure for the length of timescales that are associated with capital investment in infrastructure development.	The NPSs will remain in force in their entirety unless withdrawn or suspended in whole or in part by the Government and will be subject to review by the Government in order to ensure that they remain appropriate for IPC decision making.
Department of Health (23/03/2009)	
Key Messages	
297. There will be different health impacts according to the different sources of energy generation. Each NPS should be considered separately, although the Overarching NPS will presumably need to flag the main issues for consideration across all NPSs.	Noted
298. At the Whitehall meeting on National Policy Statements, the status of the SAGE report on electromagnetic fields was raised. The SAGE report has been published and the current position is that the Department of Health (DH) is still considering the Government response. I attach the link to the relevant part of the DH website. http://www.dh.gov.uk/en/Publichealth/Healthprotection/DH_4089500	Noted

Response	Action/Comments
299. We appreciate that the proposals for new sites or developments is up to the potential developers to determine through normal market forces, but when specific sites are being considered, the impacts on human health should be fully considered. When developers commission Environmental Impact Assessments (EIA) for Planning Permission, they very often do not cover health impacts, as at present the EIA requirements are for consideration of the impacts on the population which is interpreted as proximity and numbers, not the wider coverage of human health as in Strategic Environmental Assessment which covers health and well-being. We would therefore like assurance that site specific assessments continue the SEA approach at project level. This has been discussed with Communities and Local Government.	Noted
300. It should be clarified what DECC will put in place for the overall monitoring of the development of the different sites, to ensure that the right mix, or balance of sources of energy are being developed.	Noted
301. The list of considerations and regulations that the Infrastructure Planning Commission (IPC) has to consider when reviewing applications should be easily accessible, and clarity provided about what is covered by which of the regulatory regimes, e.g. Health and Safety.	Noted
302. Emergency preparedness should be considered.	Noted
303. Noise should be included in the AoS. (Noise will come from a number of different sources including transport, construction as well as operation of generators, so it is particularly important to consider the cumulative effects. There may be different effects from low frequency noise and infrasound or for occasional audible changes of noise. Different people respond to noise in different ways, for example people with mental health problems, or those who are frail or vulnerable might find even low levels of noise quite stressful. Sleep disturbance, hypertension, cognitive function, annoyance, and speech intelligibility are all health effects of noise. Although there may be different site specific issues, it would be best to have generic coverage of noise and health in the AoS so that it is considered either in technology-specific NPSs or at site level where appropriate. We understand that DEFRA are currently working on a noise strategy, so links with this work might be helpful.)	Included
304. There should be consideration of green spaces included in developments. The consideration of the cumulative effects of changes needs particular attention.	Noted
305. Health effects of climate change should be referenced (in particular, the issue of effects on food production, and particularly the need for healthy food, should be considered to support human health. The recent DH/HPA document on Health effects of Climate Change should be looked at. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007935)	Noted
306. Consideration of Economy & Skills needs to include issues such as population mobility, migration and exploitation of labour, and the importance of training up the local workforce to get employment in the generating business as well as re-training for those displaced by changes in energy production, especially in areas of multiple deprivation. In relation to fuel poverty and wider socio-economic indicators, it might be useful to look at the evidence from the Health Impact Assessment of the Warm Front policy commissioned by DEFRA. http://www.apho.org.uk/resource/item.aspx?RID=53281	Noted
307. Consideration of Flooding should include health effects, including the spread of infectious diseases, effects on vulnerable people and mental health should be included. (The University of East Anglia has researched the health effects of flooding as part of work on climate change. These findings need to be taken into account. They would apply both to the workforce and local population and in particular maintaining electricity supply to NHS services. http://www.uea.ac.uk/dev/faculty/Few/hazardshealth/Health&FloodRisk)	Noted
308. Water quality should include maintaining high quality drinking water, spread of infectious diseases and prevention of water-borne illnesses.	Noted
309. There is a great deal of evidence on the impact of transport on health, for example the WHO report Transport Environment and Health, www.euro.who.int/document/e72015.pdf and a recent report by South East Public Health Observatory on Road Transport and Health in the South East Region http://www.sepho.org.uk/viewResource.aspx?id=11621	Noted
310. The NPS on Transport Networks which is currently being produced should be referred to.	Noted

Response	Action/Comments
311. Air quality has significant effects on human health. This has been quantified in the Economic Analysis to inform the review of the Objectives for the Air Quality Strategy and is on the DEFRA website http://www.defra.gov.uk/ENVIRONMENT/airquality/publications/stratreviewanalysis/	Noted
312. There are a number of health related plans and programmes that should be referenced especially the Transport, Health and Environment (THE PEP).	Added
313. At Regional level there will be health strategies on the Government Office websites.	Regional policies have not been included due to the strategic level of the appraisal.
314. EU Health Strategy: White Paper Together for Health: A Strategic Approach for the EU 2008-2013	Added
315. The Tallinn Charter: Health Systems for Health and Wealth Closing the Gap: Social Determinants of Health	Noted
316. Transport, Health and the Environment - Pan-European Programme (THE-PEP)	Added
317. Health is Global; a UK Global health strategy 2008-13	Added
318. PSA 18 Promote better health and well-being for all, which includes health inequalities.	Noted
319. Health, work and wellbeing http://www.workingforhealth.gov.uk/	Noted
320. Health and Safety http://www.hse.gov.uk/	Noted
321. There are concerns about excluding some of the health impacts and leaving too much to local level impacts as EIA does not adequately cover human health and many health impacts are common to several types of energy generation. Many aspects of health can be covered under other topics e.g. climate change, air quality, noise etc. The Human Health section can draw these together in one section of the report as suggested in the Draft Guidance on Health in SEA. If all the health questions you have included from the above guidance were considered at national level, then developments would be undertaken at optimal sites as the NPS would shape where developments would be located. It should be noted that many of the effects relating to climate change also relate to human health so by mitigating climate change there is also a benefit to human health.	Noted
322. The DH publishes an annual Health Profile of England which may be useful http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_093465	Noted
323. Reducing inequalities in health is a key priority for DH and all aspects of the health inequalities should be considered to ensure the gap in health status is at least not made worse, but preferably reduced. WHO published recently published a report on the Social Determinants of Health called Closing the gap in a Generation. It is important that the NPS contributes to this work. The report can be found at http://www.who.int/social_determinants/final_report/en/	Noted
324. There are connections between the human health and equality sections, so that they can be seen as being complementary. The equality elements take a more focused view but can be incorporated with human health.	Noted
325. There are a number of additional papers which may be of use (these were listed in the response along with a short summary).	Noted

Annex D: Comparison of Consenting Requirements

This annex explores the comparison of the consenting requirements at present with the addition of the NPS.

AoS Topic	Existing Consenting Requirements for Energy Infrastructure	Future Consenting Process (with the NPS)[2]
1. Climate Change	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on climatic effects[3] • Sustainability Appraisal (outlining the sustainability credentials of the application) • Sustainability Statement (detailing the sustainability measures incorporated into application). • Energy Efficiency Statement	Includes: • EIA still required where applicable (4.2.1) and the IPC expects that the applicant will have also undertaken a similar assessment where EIA is not legally required. • The IPC needs to satisfy itself that applicants have taken into account the potential impacts from climate change over the estimated lifetime of the infrastructure.
2. Ecology (Flora and Fauna)	May include (but not limited to) preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on ecology and ecological receptors. Where EIA is not legally required an Environmental Report may still be requested. • The Environmental Statement (under the EIA Regulations) will include a consideration of alterative sites. • Species (birds, bats, reptiles) and habitat surveys. • Habitats Regulations Assessments (HRA) (Appropriate Assessment) for the site. • Ecological Constrains and Opportunities Report • Habitat Management Plan/Nature Conservation Strategy • Tree/Arboricultural Survey • Biodiversity Report	Includes: • EIA still required where applicable (4.2.1) and the IPC expects that the applicant will have also undertaken a similar assessment where EIA is not legally required. • The applicant should show, where relevant, how the project has taken advantage of opportunities to conserve and enhance ecology and geological conservation interests (4.18.4). • Habitats Regulations Assessments (HRA) for the site (4.3.1).
3. Resources and Raw Materials	May include preparation of: • Site Waste Management Plan • Applicants for landfill applications should also provide sufficient information to enable the Waste Planning Authority to fulfil its requirements under the Landfill (England and Wales) Regulations. This information	• The NPS contains information on the consideration of "good design" for energy infrastructure (4.5).

[2] Under Section 60 of the Planning Act 2008 the IPC must also have regard to any local impact report submitted within the given timescale by the relevant local authority.

[3] The Town and Country Planning (Environmental Impact Assessment) Regulations (SI 1999/293), as amended, set out the circumstances in which an Environmental Impact Assessment (EIA) is required. EIA may obviate the need for other more specific assessments.

Where an EIA is required, Schedule 4 to the regulations sets out the information that should be included in an Environmental Statement.

AoS Topic	Existing Consenting Requirements for Energy Infrastructure	Future Consenting Process (with the NPS)
	may be provided as part of the Environmental Statement.	
4. Economy and Skills	May include preparation of: • Economic Statement	Includes: • The NPS states that where the project is likely to have socio-economic impacts on local or regional levels, the applicant should undertake and include in their application an assessment of these impacts during the construction, operation and decommissioning phases (4.27.2).
5. Flood Risk	May include preparation of: • Flood Risk Assessment [4] • The FRA should form part of an Environmental Statement when one is required by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 as amended.	Includes: • Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 should be accompanied by a flood risk assessment (FRA) (4.22.4). • The FRA should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account (4.22.4). • Identifies the three elements of the exceptions test that will have to be passed for development to be consented.
6. Water Quality	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on water: aquifers, water courses, shoreline, including the type, quantity, composition and strength of any existing discharges. • Foul Sewage and Utilities Assessment	Includes: • EIA still required where applicable (4.2.1) and the IPC expects that the applicant will have also undertaken a similar assessment where EIA is not legally required. • The NPS states that '*where the project is likely to have adverse effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on water quality, water resources and physical characteristics of the water environment as part of the Environmental Statement (ES) or equivalent* (4.30.2)'. The NPS also identified what the ES should describe (e.g. existing quality of water, existing water resources, etc). • The NPS also provides guidance to the IPC on the Water Framework Directive and River Basin Management Plans.
7. Traffic and Transport	Must Include preparation of: • Design & Access Statement May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the	Includes • If a project is likely to have significant transport implications, the applicant's ES should include a transport assessment, using the NATA/WebTAG methodology stipulated in Department for Transport guidance, or any successor to such

[4] A Flood Risk Assessment (FRA) will be required for development proposals of 1 hectare or greater in Flood Zone 1 and for all proposals for new development located in Flood Zones 2 and 3 as designated by the Environment Agency.

AoS Topic	Existing Consenting Requirements for Energy Infrastructure	Future Consenting Process (with the NPS)
	assessment of effects of the development on local roads and transport. • Transport Assessment[5] • Travel Plan	methodology.
8. Noise	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on levels and effects of noise from the development. • Noise Assessment	Includes: • EIA still required where applicable (4.2.1) and the IPC expects that the applicant will have also undertaken a similar assessment where EIA is not legally required. • The IPC should expect the noise assessment to have been undertaken, where appropriate, which considers noise impacts during the construction, commissioning and operational phases of the development, as well as from any associated transportation infrastructure
9. Landscape, Townscape and Visual	Must Include preparation of: • Design & Access Statement May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the visual effects of the development on the surrounding area and landscape. • Open Space Assessment • Landscaping details	Includes: • The applicant should carry out a landscape and visual assessment and report it in the ES. This should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project.
10. Archaeology and Cultural Heritage	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the visual effects of the development on architectural and historic heritage, archaeological sites and features. • Heritage Statement	Includes: • EIA still required where applicable (4.2.1) and the IPC expects that the applicant will have also undertaken a similar assessment where EIA is not legally required. • The applicant should provide as part of the ES a description of the significance of the heritage assets affected and the contribution of their setting to that significance. This should set out the information that has been considered and the expertise that has been consulted.
11. Air Quality	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the levels and effects of emissions from the development during normal operation. • Air Quality Assessment	• Where the project is likely to have adverse effects on air quality the applicant should undertake an assessment of the impacts of the proposed project as part of the Environmental Statement (ES). • The ES should describe the existing air quality, any significant air emissions, their mitigation and any residual effects distinguishing between the construction and operation stages, any cumulative effects and any potential contribution to eutrophication impacts
12. Soil and Geology	May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the effects of the development on	Includes: • Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and

[5] Planning Policy Guidance 13 Transport (March 2001) advises that a Transport Assessment (TA) should be submitted as part of any planning application where the proposed development has significant transport implications.

AoS Topic	Existing Consenting Requirements for Energy Infrastructure	Future Consenting Process (with the NPS)
	geological, palaeontological and physiographic features, change in local topography, effect of earth-moving on stability, soil erosion, etc. • Land contamination assessment	locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity
13. Health and Well-Being	Must include preparation of: • Statement of Community Involvement May include preparation of: • Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the effects on population, of the development regarding risk of accidents and hazardous development	• The Local Impact Assessment provided by the Local Authority will also cover health impacts where they are relevant.
14. Equality	May include preparation of: • Affordable Housing Statement • Equalities Impact Assessment • Design and Access Statement	

Annex E: Quality Assurance Checklist

The Government's Guidance on SEA[6] contains a quality assurance checklist to help ensure that the requirements of the SEA Directive are met. Those relevant to this stage have been highlighted below.

Quality Assurance Checklist	
Objectives and Context	
The plan's purpose and objectives are made clear.	**Section`1**.
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in **Annex B**.
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	**Section 2** presents the AoS Objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	**Annex B** identifies a number of relevant plans and programmes.
Scoping	
The environmental consultation bodies are consulted in appropriate ways and at appropriate times on the content and scope of the Scoping Report.	The consultation on the Scoping Report ran for 5 weeks from the 13th February 2009 to 23rd March 2009. Two scoping workshops were also held during the scoping stage in March 2009 (one in Cardiff and one in London), to which all the consultation bodies were invited.
The SEA focuses on significant issues.	Significant issues were identified in the Scoping Report and were reiterated in **Annex F**.
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the **Scoping Report** where appropriate, and are presented in **Section 2.5and 2.6** of this AoS Report.
Reasons are given for eliminating issues from further consideration.	These are stated in the **Scoping Report** as appropriate.
Alternatives	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in **Section 3**.
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in **Section 3**.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to **Section 3**.
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to **Section 3** and the review of policies, plans and programmes in **Annex B**.
Reasons are given for selection or elimination of alternatives.	These are presented in **Section 3**.

[6] ODPM, Scottish Executive, Welsh Assembly Government, DoENI (2005) A Practical Guide to the Strategic Environmental Assessment Directive, ODPM, London.

Quality Assurance Checklist	
Baseline Information	
Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	See Annex F.
Characteristics of areas likely to be significantly affected are described, including areas wider than the physical boundary of the plan area where it is likely to be affected by the plan where practical.	See Annex F.
Difficulties such as deficiencies in information or methods are explained.	These are stated throughout the report where appropriate
Prediction and Evaluation of Significant Environmental Effects	
Effects identified include the types listed in the Directive (biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape) as relevant; other likely environmental effects are also covered as appropriate.	These are set out in **Annex F**.
Both positive and negative effects are considered, and the duration of effects (short, medium, or long term) is addressed.	This is covered in the appraisal in **Section 4**.
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to **Section 4.16**.
Inter-relationships between effects are considered where practicable.	Refer to **Section 4**.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in **Annex F.**
Methods used to evaluate the effects are described.	These are described in **Section 4**.
Mitigation Measures	
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.	This is presented in **Section 4**.
Issues to be taken into account in project consents are identified.	These are considered in **Section 4**.
Environmental Report	
Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in **Section 1**.
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in **Annex A** and technical terms are explained throughout where necessary.
Uses maps and other illustrations where appropriate.	Figures and tables have been used throughout to where appropriate.
Explains the methodology used.	This is presented in **Section 2**.
Explains who was consulted and what methods of consultation were used.	This is covered in **Section 1.4**.
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in **Section 4** and **Annex F**.
Contains a non-technical summary covering the overall approach to the SEA, the objectives of the plan, the main options considered, and any changes to the plan resulting from the SEA.	An NTS is provided separately.

Quality Assurance Checklist	
Consultation	
The SEA is consulted on as an integral part of the plan-making process.	Consultation has already taken place on the Scoping Report in February and March 2009. The AoS Report will be published alongside the draft NPS for consultation.
Consultation Bodies and the public likely to be affected by, or having an interest in, the plan or programme are consulted in ways and at times which give them an early and effective opportunity within appropriate timeframes to express their opinions on the draft plan and Environmental Report.	Stakeholders have been kept engaged throughout the report's preparation and comments have been sought during designated consultation periods and workshops.
Decision-making and Information on the Decision	
The AoS Report (Environmental Report) and the opinions of those consulted are taken into account in finalising and adopting the plan or programme.	This will be included in the Post Adoption Statement (to be issued following consultation).
An explanation is given of how they have been taken into account.	This will be included in the Post Adoption Statement (to be issued following consultation).
Reasons are given for choosing the plan or programme as adopted, in the light of other reasonable alternatives considered.	This will be included in the Post Adoption Statement (to be issued following consultation).
Monitoring Measures	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	These are presented in **Section 5** and draft Monitoring strategy
Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	Details of this are provided in **Section 5** and draft Monitoring Strategy
Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect).	Details of this are provided in **Section 5** and draft Monitoring Strategy
Proposals are made for action in response to significant adverse effects.	This will be set out in the Post Adoption Statement (to be published following consultation).

Annex F: Baseline Information

The baseline information presented in this Annex has been produced to support the appraisals of the National Policy Statements (NPSs) for Energy. The Annex provides an overview of baseline conditions for each of the technical topic sections (1-14), as well as the future baseline conditions. These sections allow the outcome of the AoS to be compared to the scenario without the NPS (the no NPS scenario).

1. Climate Change

1.1 Overview of Baseline

A stable global atmosphere, climate and weather system is a precondition for human security, wellbeing and prosperity. However, the climate of the UK is changing and this will have inevitable impacts, i.e. warmer winters, rising sea levels, etc. To manage the risks associated with these impacts, appropriate adaptation strategies must be developed. To limit these impacts, emissions of greenhouse gases (including carbon dioxide, methane, nitrous oxide and fluorinated gases[7]) into the atmosphere must be reduced rapidly and substantially. This means taking action by reducing the volume of emissions generated and by removing them from the atmosphere through sequestration.

There is now unequivocal evidence that the globe is warming. Global average temperatures having risen by nearly 0.8 ºC since the late 19th century, and have been rising at about 0.2 ºC/decade over the past 25 years. At the same time global sea-level rise has accelerated and is now about 3mm per year. Human releases of greenhouse gases have already altered the climate in ways that are causing additional stress, damage, uncertainties and costs to people, the productive systems we depend on and the wider natural environment. This is causing a significant risk of catastrophic runaway change, and any further increase in emissions will add to both the disruptions and the risks of catastrophe.

A recent report published by UKCIP described how the climate of the UK has changed. The headline messages of this report are given in **Box F1**.

Box F1 Summary of the way the UK's climate is changing

Annual mean precipitation over England and Wales has not changed significantly since records began in 1766. Seasonal rainfall is highly variable, but appears to have decreased in summer and increased in winter, although with little change in the latter over the last 50 years.

Central England temperature has risen by about a degree Celsius since 1980, with 2006 being the warmest on record.

All regions of the UK have experienced an increase in the contribution to winter rainfall from heavy precipitation events. In summer all regions except NE England and N Scotland show decreases.

Severe windstorms around the UK have become more frequent in the past few decades, although not above that seen in the 1920s.

Sea-surface temperatures around the UK coast have risen over the past three decades by about 0.7 ºC.

Sea level around the UK rose by about 1mm/yr in the 20th century, corrected for land movement. The rate for the 1990s and 2000s has been higher than this.

Source: The climate of the United Kingdom and recent trends, Geoff Jenkins, Matthew Perry and John Prior, Hadley Centre, Met Office, Exeter, December 2007.

The most recent figures relating to GHG emissions are for 2006. In 2006, UK emissions of the basket of six GHGs covered by the Kyoto Protocol were estimated to be 652.3 million tonnes carbon dioxide equivalent, 0.5% less that the previous year[8]. Carbon dioxide (CO_2) as the main GHG constitutes around 85% of total UK GHG emissions[9].

[7] Further information on these and other greenhouse gases and their effectiveness on trapping heat in the atmosphere can be found at http://www.epa.gov/methane.
[8] http://www.defra.gov.uk/ENVIRONMENT/climatechange/index.htm

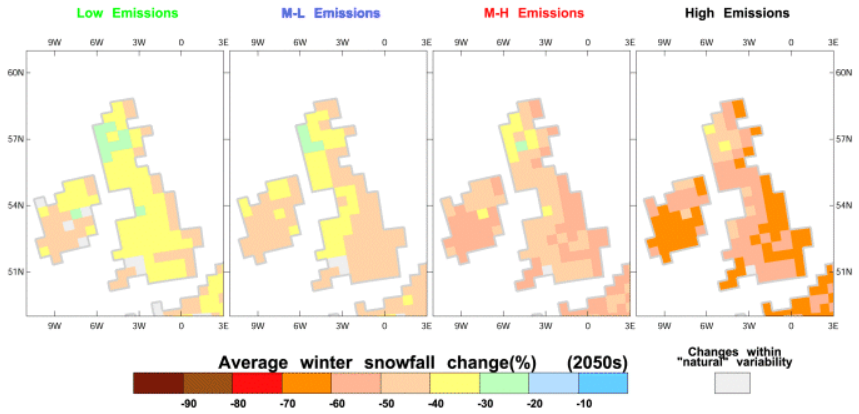
1.1.1 Existing Problems

Individual events, such as a heat-wave or a flood, cannot be attributed to climate change as they occur through the natural variability of the UK weather systems but some of these extreme events seen in recent years are consistent with the way in which the climate is changing and they are likely to occur more frequently in the future. In 2003, the record breaking heat wave is thought to have caused the deaths of over 35,000 people across Europe. During this event the nuclear power stations of France were in danger of overheating and faced being temporarily shut down as river water available for cooling became limited. During the heat-wave, there were power cuts across London as energy supply struggled to meet demand. Investigation has shown that this heat wave is unlikely to have occurred naturally and that it is likely to have achieved its record breaking level because of climate change caused by human activity[10]. It has also been shown that the summer of 2003 is similar to the kind of average summer likely by the 2040s, or a cool summer by the 2070s.

Similarly, the widespread flooding events of 2007 cannot be directly attributed to climate change but it is expected to see more extreme rainfall events, and hence more flooding as our climate changes. The weather that led to the flooding experienced in autumn 2002 has been shown to be consistent with the type of autumn rainfall we expect to see more frequently as climate changes.

1.2 Likely Evolution of the Baseline

The main source for determining how the climate of the UK may change is the UK Climate Impacts Programme scenarios, published in 2002 and known as UKCIP02. All of the information in the UKCIP02 is likely to provide relevant baseline information and has therefore not been duplicated within this report, but a summary of the key information is included below. The UK Climate Projections (UKCP09) gives climate information for the UK up to the end of this century (www.ukcip.org.uk/).



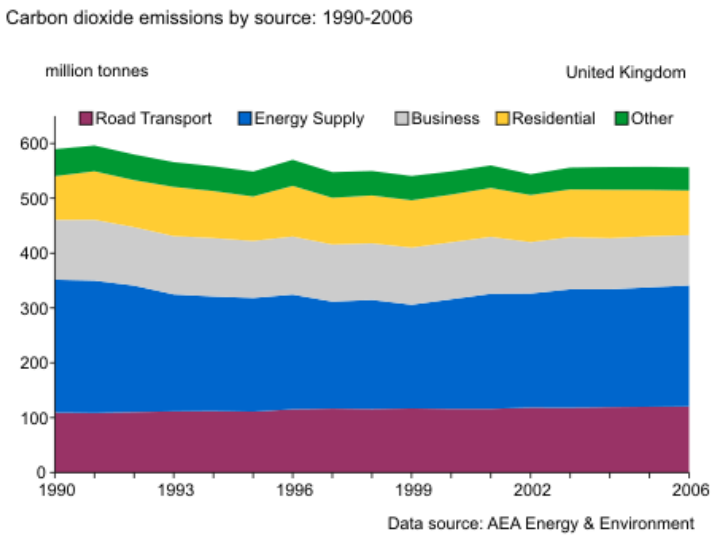
Source: UKCIP02 Climate Change Scenarios (funded by DEFRA, produced by Tyndall and Hadley Centres for UKCIP)

Temperatures across the UK will increase, with summer temperatures in southern England likely to be more than four degrees warmer, on average, than present day by 2050[11]. Temperatures in winter are predicted to increase with fewer days of ice, frost or snow (see the image which shows the projected change in snowfall (%) by the 2050s). Rainfall patterns are predicted to change with winters becoming wetter and summer drier. Again, southern England is likely to see the most extreme changes with the possibility of a greater than fifty percent reduction in summer rainfall by the 2080s (High emissions scenario). The majority of England and Wales is likely to see an

[9] The breakdown of different emissions in 1990 and 1999 can be viewed here: www.defra.gov.uk/sustainable/government/progress/national/climate-change.htm
[10] Nature 432, (2 December 2004) Human contribution to the European heatwave of 2003. pp610-614
[11] See UKCIP02 and the projected change in seasonal temperature (°C) and precipitation (percentage change) averages for the 2020s, 2050s and 2080s, under the Medium –High GHG emissions scenario.

increase of rainfall in winter months of approximately twenty five percent (as a seasonal average, High emissions scenario), with increases being greatest in the east. The frequency of heavy rainfall events and storms is likely to increase, particularly in winter[12].

The UK contributes about 2% to global man-made emissions and CO_2 accounted for about 85% of the UK's man-made greenhouse gas emissions in 2006. 40% of these CO_2 emissions were from the energy supply sector (the rest is generated by road transport (22%), businesses (17%) and residential fossil fuel use (15%)). Since 1990, emissions from the energy supply industry have reduced by 9% although there is year to year variation, see Figure (UK Emissions of Carbon Dioxide, Defra statistics, 2006).



Almost all energy supply and business, residential and transport fuel currently passes through and depends on installations of a type and size that will in future be subject to the Overarching NPS for Energy. The only exceptions are small scale renewables installations (though even these might pass through the national grid and be subject to EN-5.) These together amount to a significant proportion of the UK's CO_2 emissions (as well as a large proportion of the non CO_2 emissions).

[12] See UKCIP02 and the projected change in 20-year return period precipitation (%) and wind speed (%) seasonal average change (percent).

2. Ecology (Flora and Fauna)

2.1 Overview of Baseline

Throughout Great Britain there are a number of internationally and nationally designated sites. These are described below. These include sites designated at a European level: Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) designated under European legislation and transposed into UK law by The Conservation (Natural Habitats &c.) Regulations (1994) (as amended). Also those sites still undergoing designation and adoption (known as Sites of Community Importance (SCI) or Proposed SAC/SPAs (pSAC/pSPA)), and Ramsar sites (wetlands of international importance). Sites designated at a national level include Sites of Special Scientific interest (SSSI), National Nature Reserves (NNRs) and Marine Nature Reserves (MNRs).

Special Areas of Conservation (SAC) are designated under the EC Habitats Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are designated under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Offshore SACs, beyond 12 and 200 nautical miles are designated under the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007.

Sites which have been submitted to the European Commission by Government, but not yet formally adopted by the Commission, are referred to as candidate Special Areas of Conservation (cSACs). Sites which have been adopted by the EC, but not yet formally designated by governments of Member States are known as Sites of Community Importance (SCIs). In the UK, designation of SACs is devolved to the relevant administration within each country.

SPAs are classified for rare and vulnerable birds listed in Annex I of the Birds Directive and for regularly occurring migratory species.

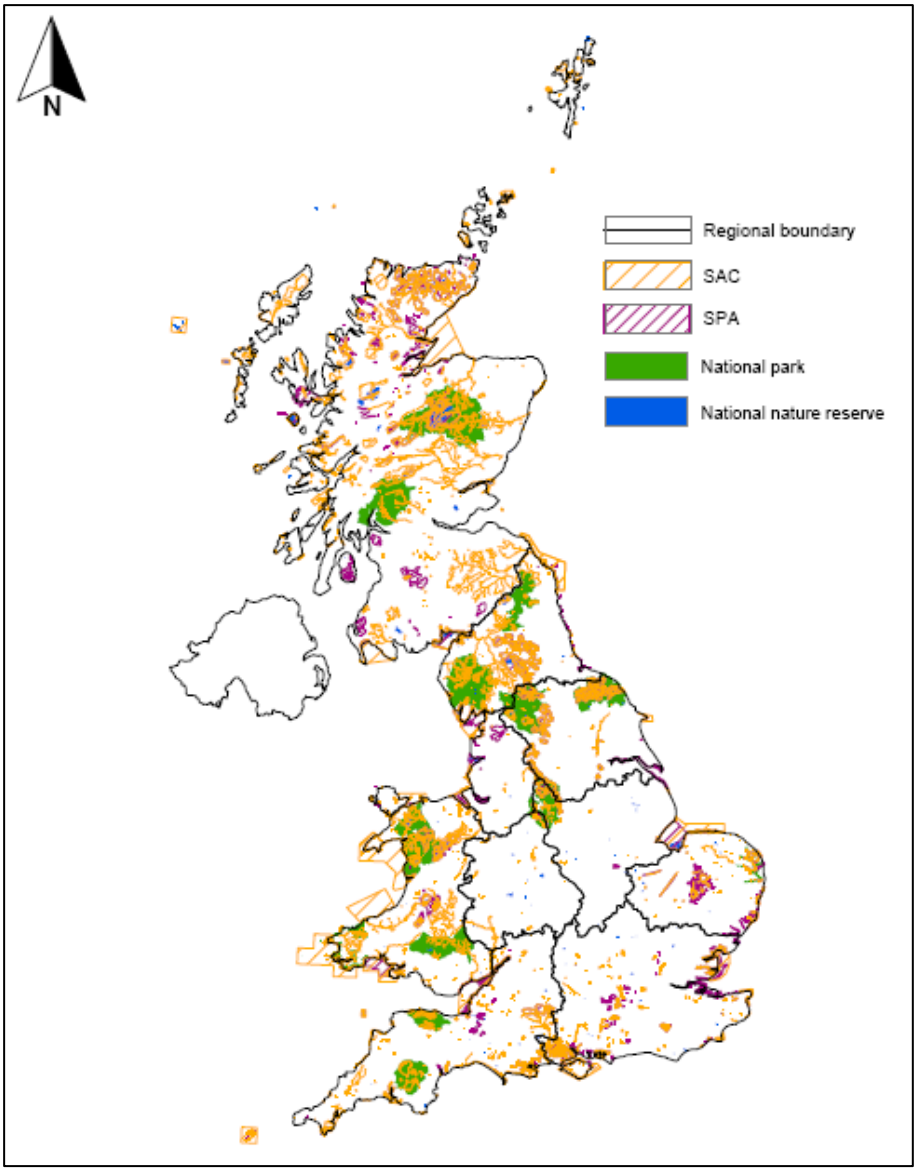
Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention adopts a broad definition of wetland, namely "*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*". Wetlands "*may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands*".

Sites designated at a national level are called Sites of Special Scientific interest (SSSI). SSSIs form the best of the UK's wildlife and geological sites.

Other nationally designated sites include National Nature Reserves (NNRs) which contain examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. NNRs are declared by the statutory country conservation agencies under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981.

Marine Nature Reserves (MNRs) are to conserve marine flora and fauna and geological features of special interest, while providing opportunities for study of marine systems. They are the mechanism for the protection of nationally important marine (including subtidal) areas. Their designation requires the agreement of statutory and voluntary bodies and interest groups. Statutory MNRs are established under the Wildlife and Countryside Act 1981 for England, Scotland and Wales.

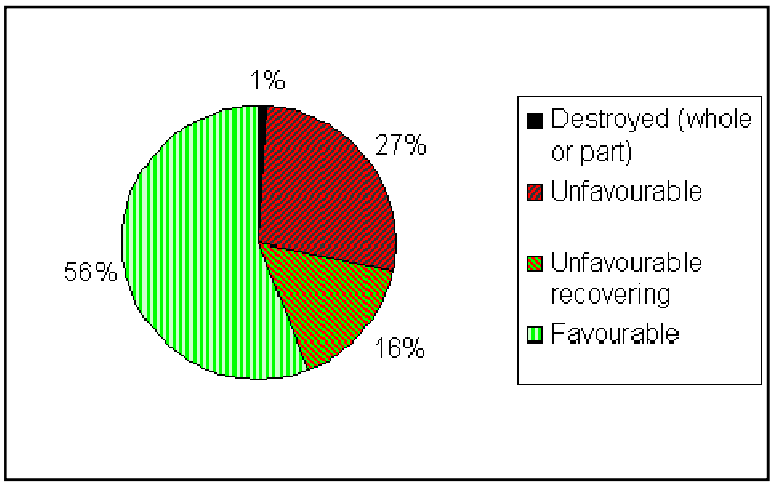
See map showing SACs, SPAs, NNRs and National Parks.



2.1.1 Existing Problems

There is currently ongoing development pressure affecting the integrity of European and UK sites (designated and non-designated). A recent report on the conservation status of Sites of Special Scientific Interest in the UK[13] showed that, of all SSSI assessment features, 56% were in a 'favourable' condition; 43% in 'unfavourable' condition; and the remaining 1% had been partly or wholly destroyed (**Figure F2.1**). Of the species assessed, fish (27%) and amphibians (47%) were least likely to be in favourable condition; and of the habitats assessed, heathlands, lowland raised bogs, calcareous grassland, acid grassland, and rivers and streams all had less than 30% of assessed features in favourable condition. Heathlands, bogs and grassland are all susceptible to nutrient enrichment by air pollution[14].

Figure F2.1 Condition of all features combined



The main activities with unfavourable conditions are lack of remedial management (850 SSSI features affected) and under- or over-grazing (736 and 679 features affected respectively). However, water management (311), water quality (314), development with planning permission (55) and air pollution (18) could all be linked to large-scale energy infrastructure projects.

2.2 Likely Evolution of the Baseline

In the absence of the NPS it is anticipated that the major energy infrastructure, which the NPS is designed to cover, would occur but at a slower rate due to delays in the determination process. There would still be designated sites and protected habitats and species to consider and the absence of the NPS may be beneficial to these sites as development would not occur as rapidly.

[13] Joint Nature Conservation Committee (2006) Common Standards Monitoring for Designated Sites: First Six Year Report, http://www.jncc.gov.uk/page-3520.
[14] Ibid.

3. Material Assets and Resource Use

3.1 Overview of Baseline

Energy

This section provides background information on energy demands by sector. However, it should be noted that the NPS is only directly concerned with the generation and transportation of electricity and not demand suppression (which is the role of other Government policies and strategies).

The transport sector has been the biggest energy user in the UK for the past 18 years and accounted for 39% of final energy use in 2007. Households are responsible for 28% of final energy use and industrial consumption accounts for 20%. The remaining 12% is used by the services (commercial and public administration) and agricultural sectors.

Overall energy consumption in the transport sector more than doubled between 1970 and 2007. Fuel consumption by road transport (the largest energy user within the transport sector) doubled between 1970 and 2007. Fuel consumption in the air transport sector was also over 3 times higher in 2007 than 1970. Petroleum was the major fuel consumed by all transport sectors.

Energy consumption per household has remained relatively stable since 1970 but consumption per person has generally increased until 2005 (due to the fall in the average number of occupants per household). Since 2005 there has been a reduction in personal and household energy consumption due to a combination of prices, weather and energy efficiency. In 2006, 83% of energy used in households was for heating (space and water). Since 1970, energy use for space heating has risen by 19%, for water by 15% and for lighting and electrical appliances by 152%.

The chemicals industry is the greatest consumer of energy, using 5,592 thousand tonnes of oil equivalent in 2007, accounting for 18% of overall industrial consumption. Other major sectors include the iron and steel industry (5% of industrial consumption), food, beverages and tobacco (combined 12%), minerals (8%) and paper, printing and publishing (7%).

Total oil and gas production from the UK Continental Shelf peaked in 1999. Remaining reserves of oil in the UK have declined since the mid 1990's as production has exceeded new finds of oil. In 2006, estimates of reserves decreased by 13 million tonnes from 2005 due to limited new discoveries. After stabilising in 2007 and 2008, production is expected to continue to decline as remaining reserves are depleted.

Remaining UK gas reserves have declined since the late 1990s. In 2006 reserves fell by 39 billion cubic metres (bcm) from 2005 due to limited new discoveries and only small extensions to reserves in some existing fields. However, gas production as a proportion of reserves has more than trebled since 1987.

UK coal production declined during the 1980's largely in response to falling demand caused by switching to cheaper imported coal and to gas for electricity generation. Production again fell rapidly in the early 1990s, (by nearly 40% between 1992 and 1995). The rate of decline then slowed to 25% between 1996 and 1999 and to just

under 10% between 2000 and 2003. There have been a number of further closures since, including the Selby Complex, Ellington, Rossington and Tower. But Hatfield colliery, which closed in 2003, restarted commercial production in 2007 and two further mines, which had closed for redevelopment are expected to restart full production in 2009. A project to re-open a fourth mine – Harworth, which was mothballed in 2006 – is also under appraisal. Even so the rate of decline in coal production between 2004 and 2007 has quickened to over 30%. The latest available estimates at 31st March 2007 from the Coal Authority show that the UK has 243 million tonnes of economically recoverable coal in the 'reserves category' (i.e. proved and probably mineable coal).

Installed renewable sources of energy accounted for just under 5% of all electricity generating capacity in the UK in 2007. Nearly 44% of renewables capacity was onshore and offshore wind which first exceeded hydro capacity in 2005. On average over the last 10 years, generation from wind turbines has grown at 23% a year. In 2007, generation from wind was 4 times the amount they generated in 2003. Generation from biogas plant has grown at over 14% a year and generation from other biomass combustion at 18% per year.

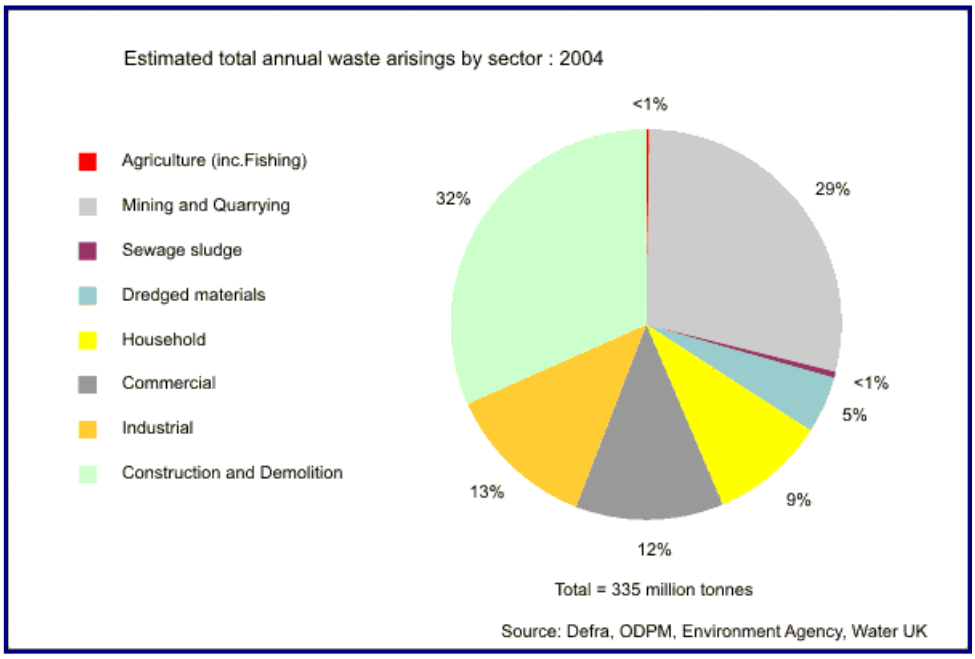
The installed capacity for electricity generation from renewable sources other than hydro is 30 times its level in 1990 and has doubled in the last 4 years. In total, electricity from renewable energy provided 5% of the electricity generated in the UK in 2007.

The UK's nuclear plant capacity has been declining since 1999 with the closure of older stations. However, at the end of 2007 capacity remained over three times greater than at the end of 1970. Nuclear electricity contributed just over 6% to the UK's primary energy consumption and accounted for 17% of electricity supplied in 2007[15].

Waste

In 2004, the UK produced around 335 million tonnes of waste. This included nearly 100 million tonnes of minerals waste from mining and quarrying and 220 million tonnes of controlled wastes from households, commerce and industry. Household waste represented around 9% of total arising[16].

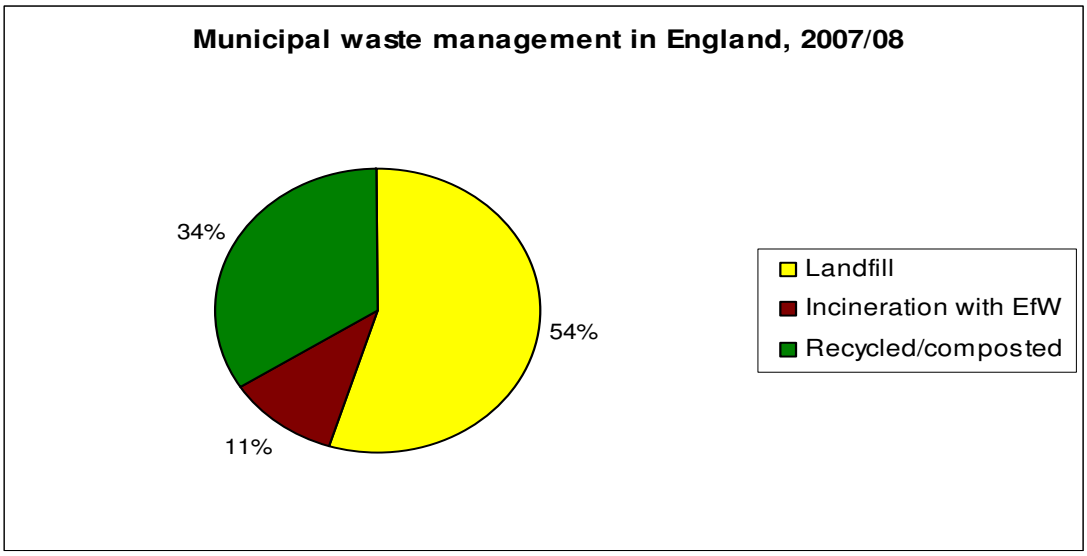
[15] Source: Dept of Energy and Climate Change, UK Energy Sector Indicators 2008.
[16] Source: www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm.



Currently, in England alone, around 100 million tonnes of waste is generated from households, commerce and industry per year. The main route for municipal waste disposal in the UK is landfill where biodegradable waste generates methane, a powerful greenhouse gas. However, to comply with the requirements of the European Landfill Directive, England and Wales must landfill no more than 12 million tonnes of biodegradable waste by 2009/10, 8 million tonnes by 2012/13 and 5.5 million tonnes by 2019/20[17].

- There was an increase in the national household recycling rate, from 30.9% in 2006/7 to 34.5% in 2007/8.
- Less municipal waste was sent to landfill, decreasing from 16.9 to 15.5 million tonnes, or 54% of total municipal waste.
- Total municipal waste decreased by 0.6 million tonnes from 29.1 million tonnes to 28.5 million tonnes, or 2.2%. A decrease in total household waste was also observed, from 25.8 to 25.3 million tonnes.
- The average residual household waste per head decreased from 353kg per head in 2006/7 to 324 kg per head in 2007/8.

[17] Source: www.defra.gov.uk/environment/statistics/wastats/bulletin08.htm



(Source: www.defra.gov.uk/Environment/statistics/wastats/archive/mwb200708.xls)

In 2006/07, 11% of municipal waste in England and 2% in Wales was incinerated with energy recovery (expected to rise to 25% in England and 30% in Wales by 2025). There are currently 18 energy from waste plants in England and Wales, with a total capacity of over 3 million tonnes per year.

3.1.1 Minerals and Aggregates

Each year, every person in the UK uses about 10 tonnes of minerals and aggregates[18]. To meet this demand, and to supply international markets, around 290 million tonnes of materials are extracted from the UK landmass, as well as a further 178 million tonnes of marine-dredged sand and gravels from the continental shelf.

In 2006, 84% of the extracted minerals were used in the construction sector, with a further 9% used in industry, 6% is coal and a further 1% is extracted as oil or gas. The UK is well-resourced in terms of aggregates however their distribution is not consistent and therefore, despite the high costs and low value of aggregates, they are now transported around the country. This readily available supply of minerals has made the UK a net exporter of primary aggregates; however there is some importation relating to the availability of specific materials in specific areas.

In recent years, the amount of primary material extracted has been complemented by materials reclaimed from waste streams. The Waste and Recycling Action Plan and their AggRegain programme are supporting the industry to re-use waste materials by providing tools, techniques and specifications for re-using materials, thus avoiding the need for virgin materials and generally saving the contractor money. In 2006, a report was released estimating that the use of Recycled and Secondary Aggregates (RSA) would increase from 25% to 30% by 2011. This information provides a background to the trends in the use of minerals and aggregates in the construction (and other industries).

[18] Source: http://www.bgs.ac.uk/mineralsuk/mineralsyou/use.html

3.1.2 Existing Problems

Reliable energy supplies are fundamental to the economy as a whole and to sustainable development. In addition, in order to achieve social objectives the Government must ensure that every home is adequately and affordably heated.

The worst effects of climate change can be avoided if concentrations of greenhouse gases in the atmosphere can be stabilised and we can reduce carbon dioxide emissions by reducing the amount of energy we consume (e.g. by increasing energy efficiency), combined with a rapid acceleration in electricity generation through renewable energy.

The UK faces significant challenges if waste is to be managed sustainably. Recycling already saves the equivalent in greenhouse gases of taking 3.5 million cars off the roads due to virgin materials that would otherwise be used in production being conserved, and waste being recycled and not sent to landfill. However, increasing the recovery of energy from waste will further reduce the volume of waste that is landfilled as well as contributing to the long term sustainability of energy provision in the UK.

3.2 Likely Evolution of the Baseline

In 2004 the UK became a net importer of energy, with imports accounting for 4.5% of UK primary energy consumption. This figure rose to 20.4% in 2007. The production of oil and gas in the UK are expected to decline as remaining reserves are depleted. The rate of decline of coal production quickened to over 30% between 2004 and 2007 although the production of coal may increase slightly due to projects to re-open a number of mines.

Renewable energy production is expected to increase. In particular, the proportion of municipal waste that is incinerated with energy recovery is expected to increase. Household energy consumption has been in decline since 2005 due to a combination of prices, weather and energy efficiency. Energy consumption for transport however, is expected to continue to increase.

4. Economy and Skills

4.1 Overview of Baseline

There is a vast wealth of economic and skills information available. A summary of the key sources, headlines and trends from this information is identified in this section. This draws on the 2003 UK Energy White Paper[19] and the UK Energy Sector Indicators 2008[20] as they are reliable, readily available, regularly updated and relevant to the scope of this work. Future baseline trends can be less easy to define, however the baseline information in presented for the following topics:

- Competitiveness of UK industries and businesses;
- Reliability of national energy supply; and
- Wider socio-economic effects such as impact on fuel poverty or effects on specific groups (such as low income or elderly).

4.1.1 Competitiveness of UK industries and businesses

Baseline indicators in this category illustrate:

- The relative liberalisation of the energy market across the supply chain - energy markets that are more competitive may in theory be less likely to be dominated by monopolistic companies who may, for instance, reduce opportunities for entry to new businesses or result in 'unfair' prices for consumers (however, this is not always the case and therefore this theory involves some uncertainties);
- There may be no incentive for a commercial supplier to promote whole system resilience: that has to be required by Government;
- The relative productivity of energy industries in terms of output per worker employed. A higher level of productivity represents a greater contribution to UK economy per worker;
- The relative contribution, in terms of Gross Value Added, to the UK economy in relation to other sectors; and
- The relative price of energy to industrial sector consumers which affects the competitiveness of UK businesses (but low prices may reduce pressure to be more efficient, leaving us more vulnerable in longer term).

[19] BERR (2003), Meeting the Energy Challenge: A White Paper on Energy
[20] BERR (2003), UK Energy Sector Indicators

Box F2 Summary of Competitiveness of UK Industries and Businesses

Competitiveness

The methodology for assessing the competitiveness of energy markets was developed by OXERA on behalf of the Department for Business, Enterprise & Regulatory Reform based on indicators of energy market liberalisation at each stage of the supply chain (upstream, wholesale markets, network and retail) and applied to energy markets in the EU and G7;

The UK market scores highest for both gas and electricity suggesting that the UK has the most competitive energy markets in the EU;

Data for the UK in 2005 (by the same source) indicated that the UK was still the most competitive and had relatively higher score for the electricity market (a score over 9), indicating recent relative reduction in competitiveness in this market;

Productivity in the Energy Industry

This measure considers the relative productivity of energy industries (as defined) in terms of the amount of 'output' per worker employed in them;

Since 1980 the productivity of the energy industries has increased nearly six fold and has trebled since 1990;

Productivity peaked in 2004 at £234.7 thousand per head. It has fallen in the last three years and the provisional figure for 2007 is £202.4 thousand per head (Source: Office for National Statistics)

Gross Value Added Accounted for By Energy Expenditure

The amount of GVA spent on energy in the industrial sector is 7.5%. This is reportedly larger than the amount spent on energy in the commercial sector and the education, health and social work sector which are 2.6% and 0.8% respectively

GVA spent on energy in the industrial sector fell in 2001 and 2002 and has risen since. GVA spent on the commercial sector fell in 2001, but has risen since. In the education, health and social work sector GVA spent on energy fell every year between 2000 and 2004, before rising in 2005 and 2006 (Source: BERR estimates based on Office for National Statistics data)

Fuel Price Indices

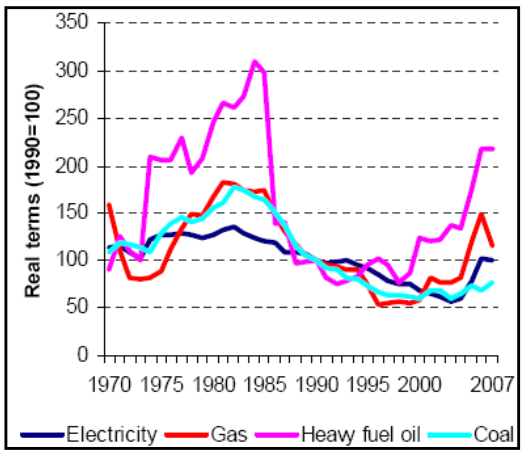
There are implications for businesses (and the UK economy) if they cannot afford the energy they need to produce goods and services

Fuel prices to the industrial consumer is significantly affected by the global price of raw materials (esp. crude oil), as well as balance of supply and demand, taxes, costs of extracting, manufacturing, distributing, retailing and marketing individual fuels

In 2007, annual average real terms industrial electricity prices, including the Climate Change Levy (CCL), fell by 1% compared to 2006. Gas prices in real terms including CCL fell by 23%. Heavy fuel oil prices rose by less than 1% and were at the highest level since 1985

Between 1997 and 2007, industrial fuel prices including CCL have risen in real terms by 21% for coal and 28% for electricity. Over this period the price of gas increased by 109% in real terms and the price of heavy fuel oil by 130%

Fuel price indices for the industrial sector (Source: BERR (1) Prices deflated by the GDP (market prices) deflator, (2) Including CCL)



Box F2 Summary of Competitiveness of UK Industries and Businesses

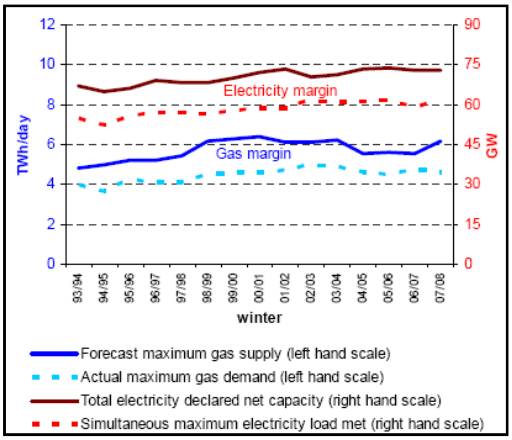
Gas and Electricity Capacity Margins

Target is to ensure that the market provides sufficient capacity to meet maximum gas and electricity demand in each year

In response to higher electricity prices, more previously mothballed capacity was returned to service for winter 2005/06 and has remained in operation. There was a small increase in capacity in 2007/08 arising from new plant, but a bigger increase in maximum demand with the winter not as mild as in 2006/07. As a result, the plant margin of 23% for the winter period in 2006/07 fell back to 19% in 2007/08

For gas, Liquefied Natural Gas (LNG) imports and increased pipeline flows in 2007/08 kept maximum gas supply well above that of 2006/07. Higher gas prices meant that maximum gas demand in 2007/08 was not as high as in the previous year and the gas margin widened

See graph: Gas and electricity capacity margins - maximum supply and maximum demand 1993/94 to 2007/08 (Source: National Grid and BERR)



Electricity generating capacity for major power producers

Total electricity generating capacity remained within the 60 to 70 GW band between 1970 and 1999, but after that started rising and exceeded 74 GW at the end of 2005. Since 2006 Transmission Entry Capacity (TEC) has been used, and thus a small fall since 2005 from the closure of two Magnox nuclear stations is not evident

Since the 1970s the capacity utilised (i.e. the load factor) has risen from around 40% to 56% in 2003, falling back a little to 52% in 2007

Maximum demand in 2007/08 was slightly less than the record highs of 61.7 GW recorded in 2002/03 and 2005/06. In 2006/07 warm weather saw maximum demand 2.6 GW lower than the record. In 2002/03 maximum demand was equal to 88% of the capacity of major power producers. However, in 2007/08 it was equivalent to only about 84% of the capacity of major power producers on a comparable basis (and 82% on the TEC basis)

Security and availability of electricity supply for the average customer

During 2006/07 there were 88 interruptions per 100 customers. This was 18% higher than the 2005/06 figure of 75 per 100 customers

The average length of time without supply in 2006/07 was 100 minutes per customer. This was 44% higher than the 2005/06 figure of 70 per customer, and is at its highest level since 2002/03

In a number of years, storms have impacted significantly on performance such as the October 2002 storms in 2002/03, the January 2005 storms in 2004/05 and the storms in December 2006 and January 2007 in 2006/07 (Source: Ofgem)

Box F2 Summary of Competitiveness of UK Industries and Businesses

Shares and diversity of fuels used for electricity generation

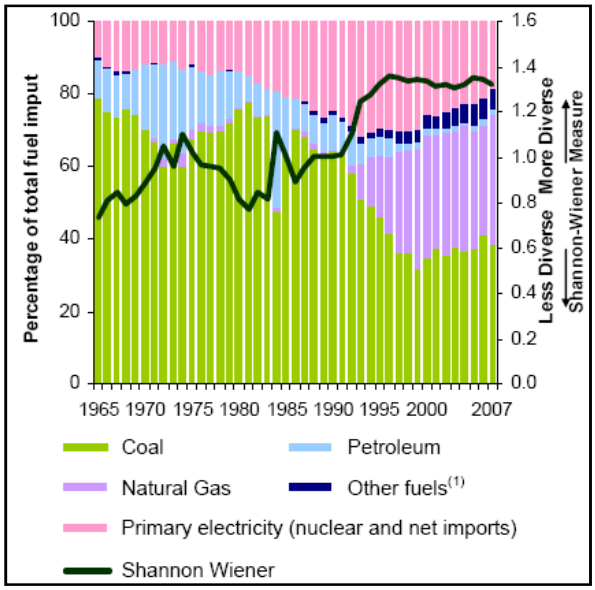
Fuel use for electricity generation became more diverse through the late 1960s and early 1970s, as the share of electricity generated from petroleum grew at the expense of coal, peaking at 29% in 1972. This trend was reversed in the late 1970s

The 1990s saw more rapid increases in diversity, with gas's share of fuel used for electricity generation rising to 34% in 2000 after the introduction of Combined Cycle Gas Turbines stations. This was coupled with the decreasing share of coal, down to 32% in 1999

After 2000 gas's share fell back but returned to 34% in 2004, declining again to 30% in 2006 but reaching a new record share of 36% in 2007. Correspondingly coal's share has been on a rising trend since 1999 reaching 41% in 2006 before falling back to 39% in 2007. In 1999 nuclear's share fell below 25% for the first time since the early 1990s with increased outages at nuclear stations for repairs, maintenance and safety case work. With closures, nuclear's share has declined further (on this fuel input basis) to under 17% in 2007

Under the Shannon-Wiener measure, diversity increased in the 1970s and the use of oil in generation grew but fell back in the 1980s. It increased temporarily in 1984 during the miners strike as more oil and less coal were used. Diversity increased once more in the early 1990s with the use of gas for generation

After 1996 the diversity measure declined because coal, gas and nuclear squeezed other fuels (particularly oil) from 10% of the total down to below 2%, despite the shares of these three main fuels becoming more equal. The recent resurgence in coal use has tended to increase diversity a little, while nuclear's decline has pulled the indicator in the opposite direction



ce: BERR Notes: (1) Mainly coke and breeze, coke oven gas, blast furnace gas and renewable sources other than hydro and wind

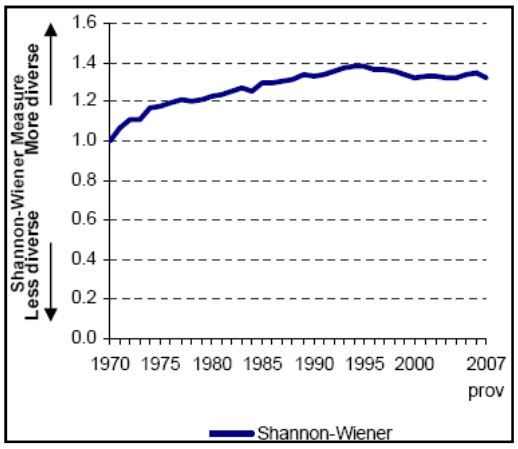
Diversity of supply for primary users

There was a slight increase in diversity in the early 1990s as nuclear electricity use increased

In the late 1990's there was a steady decline in diversity due to the growth of gas supply and decline in the use of other fuels

In 2005 and 2006 there was a small increase in diversity due to an increase in the use of coal and renewables. Diversity fell slightly in 2007 as consumption of coal, and nuclear electricity fell

See graph: Diversity of supply of primary fuels (Source: BERR. Notes: (1) Includes coal, oil, natural gas, electricity generated from nuclear energy, hydro electricity, net electricity imports and renewables).



4.1.2 Reliability of national energy supply

Baseline indicators in this category illustrate the relative range of features;

- The ability of the UK market to meet maximum energy (gas and electricity) demand;
- Security and availability of electricity supply for the average customer (interruptions and time without supply);

- Resilience of the economy (in the sense of ability for households and companies to keep going more or less as usual) over a wide range of possible future scenarios including:
- Interruptions in the supply of any fuel(s) for whatever reason including geopolitics (e.g. Russia/Ukraine standoff over gas), terrorism, domestic politics (e.g. strikes, refinery blockades), extreme weather (e.g. Katrina)
- Price rises for non-renewable fuels, for whatever reasons (including the above, tax, climate policy, depletion)
- Extreme weather causing unusual levels of energy demand
- Currency fluctuations (especially weakening of the £ against energy import currencies)
- 'Perfect storms' combining any of these.

4.1.3 Fuel poverty and wider socio-economic indicators

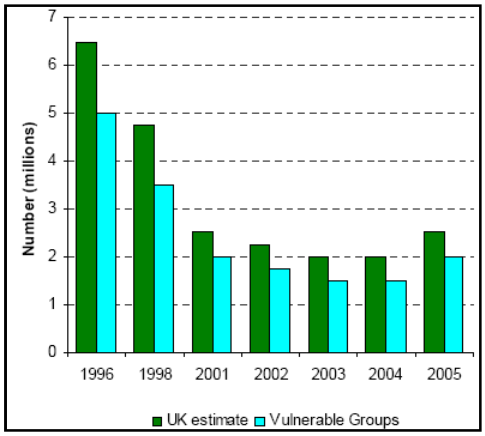
Fuel poverty is caused by the interaction of three variables: (high) energy costs, (low) incomes and (poor) energy efficiency of buildings. These are all influenced by policy. Energy efficiency of buildings is the policy lever which helps reduce fuel poverty and reduce climate change. Reducing income inequality is desirable for social reasons. Keeping fuel cheap is an unsustainable way to reduce fuel poverty, but there is also scope for fuel poverty to exist where people have higher incomes but may live in energy inefficient housing. Together with the energy efficiency of properties, the price of fuel is also important factor in fuel poverty and the general decreasing trend in price to energy consumers has helped reduce the amount needed to spend to provide sufficient warmth.

Box F4 Summary of Competitiveness of UK Industries and Businesses

Number of Households in Fuel Poverty

A fuel poor household is one that needs to spend more than 10% of its income on fuel to maintain a satisfactory heating regime. Vulnerable households are defined as those containing children or those who are elderly, sick or disabled

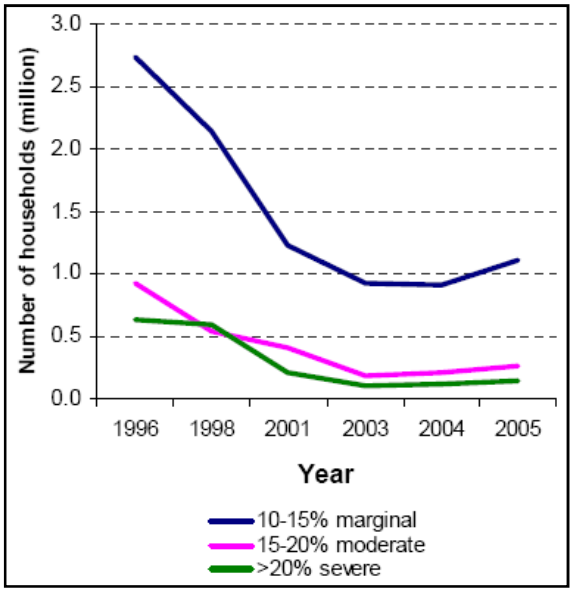
The number of households in fuel poverty has remained lower than 1996, as has the number of vulnerable fuel poor. In broad terms it is estimated that the number of fuel poor households in the UK has fallen from about 6½ million in 1996 to about 2½ million in 2005. This is an increase on 2004, primarily due to the higher energy prices experienced since 2004. The number of vulnerable fuel poor households is estimated to have fallen from about 5 million to about 2 million over the same time period. Analysis of the overall effects of changes in fuel prices and incomes, excluding consideration of energy efficiency improvements, suggests that the total number of vulnerable households in fuel poverty is likely to be around 2 million in England in 2006, up from 1.2 million in 2005, with a proportional rise in the Devolved Administrations



See Graph Number of Household in Fuel Poverty (Source: BERR: www.berr.gov.uk/energy/fuel-poverty/index.html)

The chart shows trends in fuel poverty by severity, defined by the proportion of household income that must be spent on fuel to obtain an adequate standard of warmth. The total number of fuel poor reduced significantly between 1996 and 2004 with the greatest fall coming from the "marginal category", those needing to pay between 10% and 15% to achieve an adequate standard of warmth. In 2005, fuel poverty increased, with the main contribution again coming from households in the marginal fuel poor category. Although fuel poverty at a moderate and severe level decreased between 1996 and 2003, a significant core of households remain in these categories (Source: BERR, Department for Communities and Local Government)

Notes: (1) Based on the definition including Housing Benefit and Income Support for Mortgage Interest (ISMI) as income, (2) England only (see: www.berr.gov.uk/energy/fuel-poverty/index.html)



Fuel price indices for the domestic sector

Between 1997 and 2007, annual average domestic prices in real terms including VAT rose by 12% for electricity, 23% for coal and smokeless fuels, 42% for gas, and 74% for heating oils

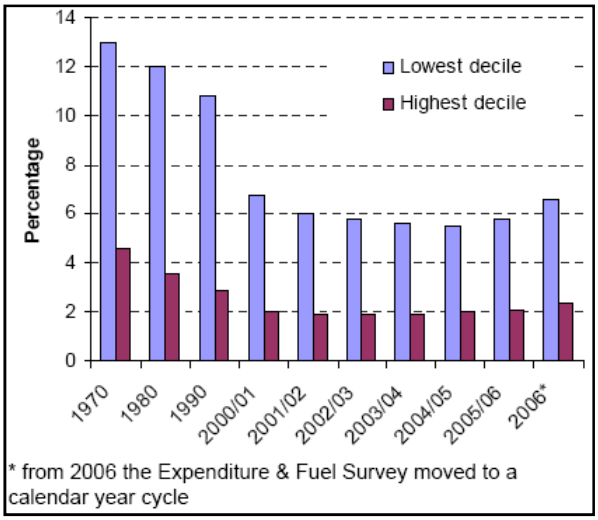
Between 2006 and 2007, domestic electricity prices increased by 5% in real terms, while gas increased by 4%. Coal and smokeless fuels rose by 4%, whilst heating oils fell by 2%

Source: Office for National Statistics (Notes: (1) Prices deflated using GDP (market prices) deflator)

Box F4 Summary of Competitiveness of UK Industries and Businesses

The proportion of expenditure on fuel has changed between 1970 and 2006 for both the lowest and highest income groups. Whilst there has been an overall reduction in the proportion spent by both groups, a significant difference still exists. The proportion of expenditure spent on fuel dropped most significantly for the lowest income group over the period 1990 to 2003/04 with most of this fall having taken place since 1995/96. There has been a rise since 2004/05; the proportion of expenditure on fuel for the lowest income decile was as high in 2006 as it was in 2000/01

See graph showing fuel expenditure as percentage of total expenditure by income group Source: Office for National Statistics Notes: (1) Income groups are defined in terms of weekly income, in pounds (for further definitions see ONS).



4.1.4 Existing Problems

The UK is increasingly reliant on imported energy and fuel to meet demand from the various industrial and domestic consumers. This makes consumers susceptible to, patterns of supply, global price increases (both in terms of energy and other factors of production) and the energy management policies of external providers. The UK is also committed to a range of international initiatives to reduce carbon emissions to counter the potential effects of climate change.

A key challenge is to balance the wider social and economic benefits of infrastructure proposals with potential negative local benefits. The baseline sets out a number of important indicators that can be used to qualitatively assess the effects of the NPSs. A more detailed quantitative appraisal would require the use of a dynamic economic model of the energy sector set up to examine the impact of proposals under a range of potential future scenarios and the feasibility of this may be explored in the appraisal stage.

4.2 Likely Evolution of the Baseline

The Overarching NPS for Energy provides a statement of how the government anticipates the baseline will change within the section 'The need for new infrastructure'. Generally there is a continuation of trends highlighted earlier:

- It is unlikely, given the average age of most of the housing stock in the UK and the cost to retrofit some efficiency measures that energy efficiency will change at any greater rate unless there is a further and more dramatic cultural shift in behaviour;
- Demand for industrial and domestic energy is likely to continue to grow;
- Generating capacity needs to be replaced.

If the NPS is not taken forward there is a concern that proposals to meet future energy demand will not come forward. The replacement of 30-35 GWs of power production is required over the next 15 -20 years and therefore accelerated evaluation of planning applications for energy infrastructure is required in order to ensure that services can be constructed in time to meet this demand. What might happen if capacity not brought forward:

- Greater disruption to supply, which may have an impact upon local businesses and individuals, with economic implications;
- Greater dependence on imported energy increasing UK plc's vulnerability to fluctuations of global energy markets, this imported energy may also be less sustainable;
- Less ability to tackle domestic fuel poverty;
- Potential loss of employment in the energy sector as the industry rationalises to maximise returns - export of jobs, businesses, skills, knowledge, etc. to non-UK industries.

5. Flood Risk

5.1 Overview of Baseline

5.1.1 Existing Problems

Over 12% of the population of the UK live on fluvial flood plains or areas identified as being subject to the risk of coastal flooding. This equates to around 5 million people in England and Wales living in areas of flood risk from these sources.

The recent major flooding in Britain which occurred in summer 2007 was caused by the wettest summer since records began. In this event 55,000 properties were flooded, 7,000 people were rescued from the floodwaters by the emergency services and 13 people died. It resulted in the largest loss of essential services since WWII, with almost half a million people without mains water or electricity. Transport networks failed, a dam breach was narrowly averted and emergency facilities were put out of action. The insurance industry expects to pay out over £3 billion – other substantial costs will be met by central government, local public bodies, businesses and private individuals.

One outcome highlighted by this event was that whilst flood risk as a result of rivers (fluvial flooding) and the sea is relatively well understood, it is increasingly being recognised that surface water (that is flooding as a result of rainfall being unable to infiltrate into the ground or overwhelmed sewer systems), artificial water bodies and groundwater flooding, which also present a significant risk to development, are largely unknown processes.

The planning process is one of the key mechanisms for ensuring that flood risk is adequately addressed now and into the future through the application of Planning Policy Statement (PPS) 25: Development and Flood Risk. PPS25 sets out government policy and requirements for managing flood risk where new or redevelopment is planned. PPS25 defines three flood risk zones for fluvial and tidal flooding, ranging from Flood Zone 1 (Low Risk) to Flood Zone 3 (High Risk) and requires Flood Risk Assessments (FRAs) to be prepared for all development proposed in Flood Zones 2, or 3. Furthermore, development on sites greater than 1 hectare located in Flood Zone 1 will still require the preparation of a FRA so as to ensure that surface water runoff is appropriately managed and does not increase flood risk elsewhere.

5.1.2 Likely Evolution of the Baseline

Flooding has become an increasingly prevalent issue in the UK, particularly as a result of the summer 2007 flood events, but it has also been accepted that climate change and increased development pressures will exacerbate the frequency and severity of flood events in the UK over time.

Projections of future climate change indicate that more frequent short-duration, high intensity rainfall and more frequent periods of long-duration rainfall could be expected. Sea levels are also expected to continue to rise. These kinds of changes will have implications for fluvial and coastal flooding and also for local flash flooding.

There are several indications that the climate in the UK is already changing. Central England's temperature rose by almost 1°C during the 20th Century. Heat waves have become more frequent in summer and there are fewer frosts and winter cold spells. Winters over the last 200 years have become wetter and a larger proportion of winter precipitation now falls on heavy rainfall days. The climate changes already seen in the UK suggest that winters will become wetter by as much as 20% by the 2050s.

Global sea level will continue to rise, depending on greenhouse gas emissions and the sensitivity of the climate system. The relative sea level rise in England also depends on the local vertical movement of the land, which is generally falling in the south-east and rising in the north and west. Recommended contingency allowances for net sea level rise in the East of England, East Midlands, London and the SE of England relative to 1990 are 8.5mm for the period 2025 to 2055, are 8.0mm for the South West and are 7.0mm for the NW and NE England.[21]

Extensive, low-lying coastal lands around most British estuaries are particularly susceptible to flooding. Changes to the drivers associated with coastal erosion (surges, waves, coastal sediment supply and morphology, and relative sea level rise) will affect the probability of flooding to new developments.

[21] See PPS25: Table B1.

6. Water Quality

6.1 Overview of Baseline

Average annual rainfall over England and Wales is 890mm. Nearly half of this is lost by evaporation leaving an average 465mm run-off to rivers and streams or for percolation to groundwater (i.e. effective rainfall). There is a large variation in effective rainfall amounts across England ranging from 2500mm in the Lake District to less than 200mm in parts of Eastern England. The total amount of water abstracted from all sources in England and Wales in 2006/7 averaged almost 60,000 megalitres (ML) per day. Around 10% of that is from groundwater sources. The shows the percentage of abstractions for public water supply by region. Water companies abstract almost 50% of the total amount taken from non-tidal surface waters but return over 70% as treated effluent. In 2007/8 average household water use was 148 litres per person per day.

Table A5.1 Percentage of abstractions for public water supply by region

Region	Surface Water	Groundwater
North West	90	10
North East	87	13
Midlands	67	33
Anglian	63	37
Thames	66	34
Southern	29	71
South West	71	29

Ref: http://www.defra.gov.uk/evidence/statistics/environment/eiyp/pdf/eiyp2008.pdf

Over the last few decades, legislation has increasingly addressed pollution, driving large scale investment targeting the most polluting processes in industrial sectors. This has lead to substantial improvements in the quality of rivers. River water quality in England has been steadily increasing since 1990 and in 2007 72% of rivers were of good biological quality. Between 2006 and 2007, the percentage of rivers of 'good' chemical quality rose from 74% to 76% (based on the General Quality Assessment system which is based on 3 determinands – dissolved oxygen, biochemical oxygen demand and ammoniacal nitrogen). High levels of phosphorus can result in increased algal growth in freshwater and high levels of nitrate are of concern in relation to drinking water abstractions. Rivers with the highest concentrations of phosphate and nitrate are mainly in central and eastern England reflecting geology, agricultural inputs and higher population density.

In 2008, 67% of England's bathing waters met the guideline standard of the European Bathing Water Directive. The biggest improvement in bathing water quality has been in the Anglian region (from 26% in 1995 to 79% in 2008).

The principal aquifers of the UK are located in the lowlands of England. The most important are the Chalk, Permo-Triassic sandstones, the Jurassic limestones and the Lower Greensand. Around 81% of groundwater bodies in England are at risk of failing Water Framework Directive objectives because of diffuse pollution.

6.1.1 Existing Problems

Development has the potential to exacerbate existing problems with the water environment. In England, Wales and Scotland there are a number of processes which identify those areas where the water environment is already at risk from external pressures. A number of key processes are identified below.

- Water Company **Drinking Water Safety Plans** (DWSP) highlight those catchments which support supplies which are at risk of failing Drinking Water Standards (DWS).
- The **Water Framework Directive** (WFD) (in the form of the recently published RBMPs) has designated a number of freshwater (surface and groundwater), transitional (estuaries) and coastal waterbodies in England, Scotland and Wales as failing to meet "Good Ecological Status" (GES) on the basis of a number of physio-chemical and biological standards and thus are in need to measures to achieve GES. Flows in rivers and freshwater inputs to transitional waters are considered to be a 'supporting element' in the achievement of GES.
- The Urban Wastewater Treatment Directive (UWWTD, now part of WFD) identifies waters that are nutrient sensitive.
- Mapped compliance with **Bathing Water Standards** is an indication of those areas of coastal waters which are currently failing these standards.
- The EU **Marine Bill** will build upon the work undertaken for the WFD and assess the marine environment. It is currently being transposed into UK law in the form of the Marine and Coastal Access Bill.

Processes which apply to England and Wales only are detailed in the bullet points below:

- The Environment Agency's **Catchment Abstraction Management Strategies** (CAMS) have identified a number of catchments in England and Wales which are designated as Over-Licensed or Over-Abstracted. That is, the current level of licensed abstraction could result in an unacceptable stress on the catchment's ecology (designated over-licensed) or possibly is resulting in an unacceptable effect (designated over-abstracted).
- The Environment Agency's **Restoring Sustainable Abstraction** Program (RSA) has identified a number of sites in England and Wales where the hydro-ecological environment is unacceptably stressed by current levels of abstraction.
- The **Nitrate Vulnerable Zone** (NVZ) mapping indicates those areas which are (or are at risk of) a failure of Drinking Water Safety Standards with regard to Nitrate levels.

6.2 Likely Evolution of the Baseline

Key pressures which are likely to affect the baseline are as follows:

- Climate Change – current climate change predictions indicate that rainfall patterns will become increasingly seasonal, with lower amounts of flow in the summer. This will lead to lower summer river flows, especially in those catchments with a low groundwater component. This could lead to increased abstraction pressure, increased stress on sensitive hydrological systems and a decrease in dilution potential leading to a failure against water quality targets.

- Population Pressure – population pressures are predicted to increase in certain parts of Great Britain, for example in the south east. Increased population density will result in an increased pressure on natural resources and could exacerbate current problems or cause new ones.

- Legislative Change – increased awareness of the water environment and understanding of the pressures upon it could lead to a tightening of the legislative framework regarding allowable effects on the water environment.

7. Traffic and Transport

7.1 Overview of Baseline

The UK is a small land mass with its urban centres geographically close to each other. The historic, organic growth of the UK's transport networks is linked to this geographic proximity. The UK's urban centres are served by '*dense and inter-twined road networks*'[22] which reflect the historic development of these inter urban road links. For many urban centres rail links are also present. As the UK's economy has developed, facilitated in part by technological advances, the rural/urban demographic of the UK has changed. This change has resulted in an increase in the volume of traffic on certain transport links (urban hubs) is much greater than the function for which they were originally intended. The following subsections review the current situation on the UK's transport networks.

7.2 Road

The roads and streets of the UK are an important resource for commuting, private journeys and the transportation of freight. Between 1980 to 2004, the total traffic on the UK's roads has increased by 81%[23]. The majority of this increase occurred in the 80s, since 1990 the increase has only been 20%. The UK has a road infrastructure of 395,000 km, the majority of which (87%) is made up by minor roads[24]. In the UK, the average resident in 2004 made just fewer than 1,000 journeys by car. In 2007, the number of road deaths on UK roads was 3,059 which, in terms of deaths per 100,000 of the population are amongst the lowest in Europe[25].

Congestion in the UK is a well documented issue for road traffic and the statistics show that for the slowest 10% of journeys on the Strategic Road Network there is an average of 4 minutes delay per 10 mile journey[26].

7.3 Road Freight

In Great Britain there has been a steady increase in the road freight, between 1997 and 2007 the amount of freight moved by road increased from 148.9 billion tonne kilometres to 166.4 billion tonne kilometres. In terms of modal change this represents an increase from 81% of freight being moved by road within the UK in 1997 to 84% in 2007.

[22] Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/
[23] Economic and Social Research Council (2004) Transport fact sheet. Available online at: http://www.esrcsocietytoday.ac.uk
[24] Transport statistics Great Britain (2008) Department for Transport, pp127. Available online at: /www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[25] Transport statistics Great Britain (2008) Department for Transport, pp176. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[26] Transport statistics Great Britain (2008) Department for Transport, pp131. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf

7.4 Rail

Rail traffic

Across the UK the number of passenger journeys undertaken on the railways has increased from 34,700 million kilometres in 1997 to 49,007 million kilometres in 2007. This change has occurred on a reduced amount of route kilometres open to passengers. There has been a decrease in route kilometres open to passengers from 15,024 in 1997 to 14,484 in 2007[27]. These trends suggest that although there has been a decrease in the amount of line available in the UK, there are more trains running moving more passengers.

Rail Freight

The volume of freight transported by rail has increased in the short term from 16.9 billion tonne kilometres in 1997 to 21.2 billion tonne kilometres in 2007[28]. Over the last ten years this represents a change in the percentage of domestic freight being transported by rail changing from 7% of the total to 8% of the total. However in the longer term, over the last 50 years the volume of freight transported by rail has decreased, from 294 million tonnes of goods being lifted in 1953 to 102 million tonnes of goods being lifted in 2007.

7.5 Air

Air traffic in the UK has been rising steadily. In 1953 there were 195 thousand air traffic movements, by 2007 this figure was 2,409 thousand. In this time both the number of passengers flying (240,772 thousand) and the amount of freight transported (2,326 thousand tonnes) has risen dramatically. This has put increased pressure on the UK Airports. There are now 30 'major' airports in the UK, these are airports either identified in the 2003 white paper on air travel or those airports predicted to have a minimum of 20,000 passengers by 2030[29].

7.6 Water

Domestic freight movements by water have increased over the last 50 years. In 1953, 52 million tonnes worth of domestic freight was moved by sea whereas in 2007, 126 million tonnes of domestic freight was moved by water. In the last ten years the amount of domestic freight transported by water has remained relatively constant at around 50 billion tonne kilometres which represents approximately 20 percent of the domestic freight movements[30].

[27] Transport statistics Great Britain (2008) Department for Transport, pp108. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[28] Transport statistics Great Britain (2008) Department for Transport, pp66. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[29] Transport statistics Great Britain (2008) Department for Transport, pp39-46. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[30] Transport statistics Great Britain (2008) Department for Transport, pp66. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf

Since 1980 there has also been a steady increase in the total amount of freight moved by water from the UK's ports. In 1980 a total of 424.1 million tonnes of freight was moved to and from ports in the UK. In 2007 this figure was 581.5 million tonnes[31].

Domestic ferry traffic has remained relatively constant over the last 10 years, at around 1,500 thousand vehicles per year. International ferry traffic has seen a minor decline over this time from 6,395 thousand cars in 1997 to 5,072 cars in 2007[32].

7.6.1 Existing Problems

Currently there are areas of the UK's transport network which are stretched beyond their capacity at peak times of the day[33]. This is particularly true where routes are placed under a number of demands from different transport users (e.g. freight traffic, commuters, etc). There are a number of key hotspots where congestion occurs which can have knock on effects on all types of transport (particularly on strategic routes and the south east). Ultimately transport problems can have a knock on effect on the economic performance[34].

7.7 Likely Evolution of the Baseline

According to the Eddington Transport Study (2006) [35] without action;

> *Travel demand is forecast to grow strongly across all modes under a range of plausible scenarios. Existing pressures will widen in their geographical impact and their intensity, concentrated on urban areas, around international gateways and on some sections of the inter-urban networks.*

The report summarises, according to modelling, that without action there will be a dramatic increase in congestion (up to a 37% increase in congestion) with a greater number of roads experiencing congestion. Inter-urban rail services are due to be well beyond capacity by 2025 on city approaches with the number of passengers standing increasing. The demand for flights is due to more than double by 2030 which will impact the existing airports operating in the UK. The demands for shipping is also due to outgrow capacity (by 2020).
The Eddington Transport Study depicts these changes should things carry on as they are without intervention. However, the government has published a number of white papers including:

- The White paper on transport - published in 2004 this set out a framework for tackling the capacity issues faced by the UK's transport networks.
- The White paper on aviation which seeks to meet the need to meet the growing demand for air travel.

[31] Transport statistics Great Britain (2008) Department for Transport, pp80. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[32] Transport statistics Great Britain (2008) Department for Transport, pp88. Available online at: www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf
[33] Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/
[34] Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/
[35] Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/

- Delivering a Sustainable Railway - the government's white paper on the future of the rail network.

The government is pushing forward major infrastructure improvements to the UK transport infrastructure. These changes should help to avoid a number of effects predicted by the Eddington Transport Study.
The drive to reduce carbon dioxide emissions is driving the investment in new technologies which aim to reduce our reliance on fossil fuels. These new technologies (such as electric cars) will still require some form of energy. In the future the make up of the transport related fuel and energy demand could well change meaning a switch in the demand for alternative energy sources.

8. Noise

8.1 Overview of Baseline

The quality of the environment, in which we live and work, has become an increasing concern to both Government and the public over recent years. Noise (and vibration) has been identified as one of the factors that can affect the quality of everyday life. This has been reflected in the gradual introduction of European Legislation and Government guidance in the UK to regulate the environmental noise and vibration impact of developments, and the regulation of personal noise and vibration exposure within the workplace.

8.1.1 Existing Problems

The UK planning system recognises that noise has the potential to seriously impact on quality of life and to cause disturbance to sensitive ecological receptors. With the increase in development there is a 'noise creep' occurring across the UK with gradual increases in noise levels resulting in an overall increase in ambient noise levels. A recent World Health Organisation study[36] looks at the link between elevated ambient noise levels and health and finds that an elevation in noise levels can exacerbate a number of conditions including cardiovascular disorders.

8.2 Likely Evolution of the Baseline

Ambient noise levels are on the increase as a result of 'noise creep', the phenomenon where by slight increases in noise which, individually would not be perceivable, but together lead to a general increase in the baseline noise levels. Although existing planning guidance is designed, at least in part, to control ambient noise creep it is likely that over time there will be a general increase of noise levels, particularly in built up areas.

[36] WHO (2006) Quantifying burden of disease from environmental noise: Second technical meeting report.

9. Landscape, Townscape and Visual

9.1 Overview of Baseline

The UK has a number of landscape designations which are afforded differing levels of protection in the current planning system. The highest level of protection is afforded to national designations such as National Parks, Areas of Outstanding Natural Beauty (AONB), Conservation Areas and the Broads. Other local landscape designations exist which often characterise distinct landscape types. Around some of the larger urban conurbations Green Belts and Green Wedges exist, these are areas of land which are strategically protected to help prevent unchecked urban sprawl.

9.1.1 Existing Problems

Natural England's *'State of the Natural Environment Report'* (2008) demonstrates that the natural environment of England is much less rich than 50 years ago and remains under pressure from a significant range of threats. It illustrates the impact of those threats on our landscapes and biodiversity.

9.2 Likely Evolution of the Baseline

Economic growth and development is putting pressure on many of our protected and sensitive landscapes. Any significant effects on these assets are considered as part of Environmental Impact Assessments undertaken on development proposals. It is anticipated with time an increased urban expansion will further reduce the value of the rural landscape.

10. Archaeology and Cultural Heritage

10.1 Overview of Baseline

In England there are approximately 372,905 listed buildings, 19,446 scheduled ancient monuments, 1,563 registered historic parks and gardens, 9,080 conservation areas, 43 registered historic battlefields, 93 designated wrecks (the density of shipwreck remains in the English territorial sea is amongst the highest in the world due to the combined effects of historically high volumes of shipping traffic, a long history of seafaring and an often hazardous coastline) and 15 World Heritage Sites (see Box F4). It also includes:

- Cadw: Welsh Historic Monuments and the International Council of Monuments and Sites (ICOMOS UK), CCW Landscapes of Outstanding Historic Interest in Wales;
- AONBs; and
- National Parks.

Box F4 World Heritage Sites in Great Britain

These include Blaenavon Industrial Landscape; Blenheim Palace; Canterbury Cathedral, St Augustine's Abbey, and St Martin's Church; Castles and Town Walls of King Edward in Gwynedd; City of Bath; Cornwall and West Devon Mining; Derwent Valley Mills; Durham Castle and Cathedral; Frontiers of the Roman Empire; Heart of Neolithic Orkney; Ironbridge Gorge; Liverpool – Maritime Mercantile City; Maritime Greenwich; New Lanark; Old and New Towns of Edinburgh; Royal Botanic Gardens, Kew; Saltaire; Stonehenge, Avebury and Associated Sites; Studley Royal Park including the Ruins of Fountains Abbey; Tower of London; Westminster Palace, Westminster Abbey and Saint Margaret's Church; Dorset and East Devon Coast; Giant's Causeway and Causeway Coast.

Note: There are also properties submitted on a tentative list. For full details see http://whc.unesco.org/en/statesparties/gb

10.1.1 Existing Problems

English Heritage suggest that 1 in 7 conservation areas are at risk from neglect, decay or inappropriate change, as are a significant number of Grade I and II listed buildings. Scheduled monuments although protected by law are vulnerable to development and are also exposed to pressures such as agricultural intensification, forestry and coastal erosion which are not controlled by the planning process. Historic parks and gardens whilst typically affected by development and neglect; can also be affected by development beyond the boundary of the site which can impact on designed views and alter the relationship between the site and its setting. It is estimated that 42% of England's 45 protected wreck sites are at high or medium risk from damage, decay or loss unless action is taken.

Current legislation and guidance is under review (England and Wales) or developing (Scotland).

A new Heritage Protection Bill for England and Wales was published in 2008, but was not included in the December 2008 Queen's Speech. However, it, or elements within it, could be brought forward in the future. A draft new Planning Policy Statement (PPS) and accompanying guidance to replace PPGs 15 and 16 in England is due for publication early in 2009. A similar document for Wales is predicted for autumn 2009, whilst draft conservation

principles for the historic environment in Wales are due for publication in the summer. Publication of the WAG Minister for Heritage's Strategic Statement on the Historic Environment is expected in spring 2009.

The Scottish Historic Environment Policy (SHEP) is an evolving document with elements yet to be incorporated after consultation.

10.2 Likely Evolution of the Baseline

The registers of designated sites and historic landscapes undergo regular review and this will continue, in most cases resulting in increases in the number and area of protected sites and landscapes. Similarly, the sum of knowledge of the cultural heritage resource (archaeology, historic buildings, historic landscapes) is constantly increasing at national and local levels as a result of research and recording. This will occur regardless of the introduction of the NPSs.

11. Air Quality

11.1 Overview of Baseline

The following baseline has been used to appraise the Overarching NPS for Energy against.

- Map showing which local authorities have declared AQMAs (see figure). This indicates where there are areas of poor air quality in the UK, which would be more sensitive to changes in air quality.
- Reference to Environment Agency air pollution mapping resource[37].
- Air Pollution Information System (APIS).
- Defra National Atmospheric Emissions Inventory.

11.1.1 Existing Problems

There are regional and localised areas in the UK which are currently not meeting UK and EU legislation with regards to air quality.

11.2 Likely Evolution of the Baseline

Strategies, policies and legislation are in place across the UK and Europe to improve air quality, both at local and regional levels. It is likely that these will have effects on the baseline in the absence of the Overarching NPS for Energy.

Research by AEA Technology suggests that background air quality throughout the UK will improve very significantly over the next 10-15 years, primarily as a result of tightening European emission standards for cars and lorries, and cleaner energy generation[38]. However, the model used does not include the higher housing figures being proposed in various Regional Spatial Strategies, nor recent proposals for new power stations (for instance it assumes that the number of fossil fuel burning power stations will decrease from 23 in 2005 to 12 in 2010 and 5 in 2020). Even if the new stations use 'clean coal' technology as proposed, they will still have some impact on air quality. A recent Defra study[39] also suggests that assumptions about vehicle emissions should add 15% to Euro emission standards to take account of real-world effects such as poor maintenance, low tyre pressure, poor driving,

[37] http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&lang=_e&textonly=off&topic=airpollution

[38] Grice, S. et al (2006). Baseline projections of air quality in the UK for the 2006 review of the Air Quality Strategy, report to Defra et al [online] available at: http://www.airquality.co.uk/archive/reports/cat16/0604041040_baselineprojectionsreport5.pdf (accessed 14 May 2008); and Grice, S. et al. (2007). Updated projections of air quality in the UK for base case and additional measures for the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007, report to Defra et al [online] available at: http://www.airquality.co.uk/archive/reports/cat17/0707171116_newbaselineandadditionalmeasuresreport_v6.pdf (accessed 14 May 2008).

[39] Defra (2007). Passenger transport emissions factors: Methodology paper [online] available at: http://www.defra.gov.uk/environment/business/envrp/pdf/passenger-transport.pdf (accessed 14 May 2008).

and increasing use of air conditioning. Nevertheless, one can assume that, in most parts of the UK, the future air quality will be better than at present.

However, it is worth noting that air quality in some areas will continue be close to, or exceed, European and UK standards.

12. Soil and Geology

12.1 Overview of Baseline

In the UK, there are a number of nationally and internationally significant geological SSSI sites. Geological SSSIs are protected by statutory instruments and considered of national importance. According to Natural England, approximately one third of all SSSI sites, out of a total 4000, have a notified geological interest in England. In Scotland the number of SSSI with a notified geological interest is 507 (according to data from the Scottish Natural Heritage). The Countryside Council for Wales states that the number of SSSI sites in Wales with some form of geological interest is 265.

The UK has a total of seven Geoparks[40]. Geoparks are internationally important areas defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) to be areas of scientific importance that in which the geological heritage is safeguarded and sustainably managed, with strong local involvement.
Of the seven UK Geoparks, three of these are in England, two in Scotland and one each in Wales and Northern Ireland. The English Geoparks are the English Riviera Geopark, the North Pennines AONB Geopark and Abberley and Malvern Hills Geopark. The other UK Geoparks are the Fforest Fawr Geopark in Wales, North West Highlands Geopark and Lochaber Geopark in Scotland and the Marble Arch Caves and Cuilcagh Mountain Park in Northern Ireland.

Soil is a cornerstone of the UK's prosperity as almost all human activities can be associated with soils in one way or another. It is an essential link between other components of the environment including air and water. Within England, 87.7% of the land area is classed as agricultural land[41]. Of the remainder, 5% is non agricultural and 7.3% is urban. Six grades of agricultural land have been defined, which are:

- Grade 1 (excellent);
- Grade 2 (very good);
- Grade 3a (good);
- Grade 3b (moderate);
- Grade 4 (poor);
- Grade 5 (very poor).

Of the 87.7% of land classed as agricultural, 65.1% is classed as Grade 3b (moderate) or better. The Government policy as set out in relevant Planning Policy Statements or similar documents for England, Wales, Scotland and Northern Ireland where significant developments are proposed is to use land of poorer soil quality, except where this would be inconsistent with other environmental objectives and wider sustainability considerations.

[40] The European Geoparks Network
[41] Agricultural land classification (ALC) Statistics from the digital 1:250,000 scale Provisional ALC map (www.magic.gov.uk)

12.1.1 Existing Problems

A significant proportion of all the SSSIs designated in the UK has a notified geological interest and are considered to be of national importance. Defined Geoparks have an identified geological interest of international importance. In addition, the distribution of habitats and plant and animals specifies depends in part to the distribution suitable soil and geological landforms.

There is currently increasing pressure on rural and agricultural land from developers as urban areas expand. At the same time, there is an increase in awareness for the need to protect and conserve the UK's natural resource and heritage including soils and geologically important sites. This has led to the Government adopting policy measure aimed at protecting our soil, Geoparks and geologically-important SSSI sites. Future population growth leading to an increase in the need for housing and related urban development infrastructure will put more pressure on protected land. This presents real challenges to meeting sustainable development objectives.

12.2 Likely Evolution of the Baseline

The increase in public awareness of the need to protect and conserve geological SSSI sites and Geoparks will undoubtedly require stricter legislation to protect such areas and lead to an increase in the number of sites earmarked for protection. For example, there are currently seven Geoparks throughout the UK with most of these receiving the status in the last ten to fifteen years. A further two sites have been identified as prospective Geoparks. These are the Shetland area in Scotland and the Geo-mon in the Isle of Anglesey. The trend is likely to be an increase in protected areas such as Geoparks and geological SSSI sites.

Several of the existing problems highlighted above are further affected by the effects of climate change. For example, an increase in rainfall intensity and duration resulting from climate change will further increase soil loss through soil erosion.

As brownfield land is developed there will be more pressure for development on green belt and greenfield land. Landfill sites have stricter regulation that will result in less waste entering landfills. This means there will be a reduction in the amount of new land being required for new or expanding landfills, which is usually greenfield or former quarries. As quarries come to the end of that end use, there is a chance that they could be utilised as a landfill or for other uses. However, without any formal consideration, there could be a lost opportunity to identify new geologically important sites.

13. Health and Well-Being

13.1 Overview of Baseline

A number (if not all) of the previous topics have implications for human health and well-being, for example air quality (considered in **Annex F** - 11), climate change (see **Annex F** - 9) and flood risk (see **Annex F** - 7). This information needs to be considered alongside baseline data contained in the Health Survey for England which are a series of published surveys which set out the health status of the population, with separate reports focussing on either different categories of the population, or different health issues. The data are available at the Information Centre for Health and Social Care[42] with the Health Survey for England 2001 focussing on respiratory disease.

Additional data can be found at the Office of National Statistics (such as the indices of multiple deprivation, see map) and from the Lung and Asthma Information Agency: www.laia.ac.uk.

Other key issues include the suitability of housing and the extent of fuel poverty (information is available from www.berr.gov.uk/whatwedo/energy/fuel%2Dpoverty). It is clear that energy price affects fuel poverty, and price (and availability) of energy is affected by national level decision on energy and energy infrastructure.

Employment also has implications for health and well-being and is covered in Section A4.

13.2 Existing Problems

At present, respiratory illness places a significant burden on the health service which is partly attributable to existing air pollution. According to Occupational Health & Safety Information Service (2006), death rates from respiratory disease are higher in the UK than both the European and EU average. The report also suggests that respiratory disease costs the NHS and society £6.6 billion. Also, fuel poverty affected 3.5 million people in the UK in 2006 (www.berr.gov.uk/whatwedo/energy/fuel%2Dpoverty/) and unemployment was rising rapidly with the latest official figures showing 6% for August to October 2008.

13.3 Likely Evolution of the Baseline

Trends in respiratory illness are downwards and are expected to continue like this, although a significant factor to be considered is that measure pollution is also affected by the weather, and hot summers in 2003 and 2006 significantly increased levels Defra (2008). Unemployment is rising, although the figures vary considerably geographically across the country.

Fuel poverty is harder to predict as it is heavily dependent on the price of fuel. The Government succeeded in bringing down the rate between 1996 and 2006 by 2.25 million from approximately 6.5 million to 2.5 million, although the rate had risen by 1 million in the year from 2005 to 2006.

More generally, global bio-productivity and changes to biological ecosystems as a result of climate change are affecting human comfort and security (www.iucn.org/where/global/index.cfm provides a source for further information).

[42] www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england

14. Equality

14.1 Overview of Baseline

The baseline is the distribution of the population with certain characteristics e.g. by age, ethnicity, disability, gender, sexual orientation, and faith or belief.

A proxy for disadvantage is the Index of Multiple Deprivation (IMD) 2007 which combines a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England, Wales and Scotland. This allows each area to be ranked relative to one another according to their level of deprivation. The IMD 2007 has been produced for small geographical areas known as Super Output Areas and very small areas, Lower Super Output Areas. See the map in previous section (Health and Well-Being) showing indices of multiple depravation in the UK.

There are also six district summary scores for each Local Authority district and for each County Council and higher tier A relative ranking of areas, according to their level of deprivation is then provided. There are also supplementary Indices measuring income deprivation amongst children and older people: the Income Deprivation Affecting Children Index (IDACI) and the Income Deprivation Affecting Older People Index (IDAOPI).

14.2 Likely Evolution of the Baseline

Changing demographics will result in the growth or decline of particular groups within the overall population, as well as a re-distribution of these groups. For example:

- The proportion of older people is set to expand greatly over the next decade and this group of people may be particularly vulnerable to fuel poverty and interruptions to the electricity supply;
- There is likely to be a greater number of disabled people and people of working age who are long-term sick, although there is a new Government strategy to help these into work and this group of people may be particularly vulnerable to fuel poverty and interruptions to the electricity supply;
- There will also be for example, an increasing number of BME groups and an expanding number in areas outside the major cities; a decline of faith-based activity amongst white people, but not amongst particular BME groups and a growing number of lesbians, gay men, bisexuals and transgender (LGBT) people may be willing to identify themselves as such. However, these groups will unlikely be disproportionately affected by the proposals.
- During the last 15 years there has been an increase in the number of households living below the poverty line, and the widest gap between rich and poor for 40 years (Daniel Dorling *et al*, Policy Press, 2007). This may get worse if unemployment increases.

15. ANNEX G: SUPPLEMENTARY DISCUSSION OF POSSIBLE ELEMENTS OF ALTERNATIVES TO THE PLANNING POLICIES IN EN-1

This Annex supplements the discussion of alternatives in the Appraisal of Sustainability for EN-1. Key elements of the development control policies set out in EN-1 are set out below in *italics* above each table. Underneath each main element of policy, a table indicates possible alternatives to it. The first column of each table briefly describes the possible alternatives. The second column indicates to which of the generic sets of alternatives described in Section 3 of AoS-1 each possible alternative belongs. The third column comments on the implications of the alternatives and indicates policy reasons for not adopting them.

1. High level principles of consenting policy set out in EN-1

1.1 The need for substantial amounts of new large-scale generating infrastructure

The NPSs need to set out development control policies that will enable developers to build new large-scale energy infrastructure on the scale envisaged by the need case set out in Part 3 of EN-1.

Alternative policy elements	Generic classification	Comments
Set development control policies based on the assumption that future demand will be able to be met without the need for investment in new large-scale infrastructure on the kind of scale envisaged in Part 3 of EN-1, by reducing demand and/or increasing imports (would enable e.g. more restrictive criteria to be set as regards the level of adverse impacts to be considered acceptable)	Alternative A3 (more emphasis on reducing CO_2 emissions) / A4 (more emphasis on reducing other environmental impacts): likely to be within A4 in any event; whether or not it also falls within A3 will depend on what assumption is made about the overall energy mix and whether the overall reduction in demand for large-scale generating infrastructure has a particular impact on demand for high-carbon forms of such infrastructure. But as it is unlikely that demand could be satisfied without significant investment in new infrastructure, this approach would be likely in practice to represent Alternative B2 (less emphasis on security of supply).	The 2050 Pathways Analysis shows that although we need to take significant steps to reduce overall energy consumption if we are to meet our 2050 goals, overall demand for electricity is likely to rise (substantially) rather than fall in the long term. To meet that demand, we will need to build significant amounts of new large-scale electricity generating infrastructure (and we will need to start doing so soon because of anticipated plant closures): although demand management, storage, imports and microgeneration can all make important contributions, for the foreseeable future, the bulk of GB demand for electricity will continue to be satisfied by the output GB commercial generating stations. It is therefore not prudent to set the development control policies in the NPSs on the assumption that we will not need to develop new large-scale generating infrastructure on the scale currently envisaged by Government: there is a risk that this approach would result in failure to achieve security of supply. Moreover, it is not clear how development control policies would be effectively modified on the assumption that less new infrastructure is needed without resorting to setting targets and quotas for particular infrastructure types in planning policy (on which see below). Since the success of this approach ultimately depends on how much progress is made in other areas (e.g. reducing demand, increasing capacity to import electricity), and demand for electricity is expected to grow over the longer term in any event as the energy sector as a whole is decarbonised, it seems better not to risk security of supply problems now and to adjust the "need case" in EN-1 downwards as appropriate if and when it should turn out that current estimates of the kinds of reductions in demand which are possible prove to be underestimates.

Alternative policy elements	Generic classification	Comments
Set development control policies so as to result in consenting of a predetermined amount of generating capacity, with a view to satisfying a particular estimate of overall demand	Alternative A2 (more emphasis on security of supply / A1 (more emphasis on reducing costs of supply): could fall within both A1 and A2 depending on the level of capacity set, its relationship to anticipated demand, and the costs of the different technologies.	Almost impossible to achieve this through planning policy alone. But if targets and quotas for particular types of new infrastructure are to be set, there is no need to change the planning system as a result – and indeed, changing the planning policies set out in the NPSs is probably not a very efficient vehicle for such an approach, because, under the Planning Act, they can only influence what is consented, not what is built: projects which are consented are not necessarily built, and there would be a risk, once any notional "cap" (e.g. on MW of new generating capacity) had been reached, of projects consented but not proceeded with blocking new proposals. Government policy assumes that in a market-based energy system, the operation of market forces will provide the most efficient mechanism for providing the necessary overall energy infrastructure capacity, as long as (i) the development consent regime does not impose unjustified constraints on development; and (ii) no specific market failures require to be addressed by measures outside the development control regime (this will be reviewed as part of the forthcoming Electricity Market Reform consultation). So if wider energy policy were to impose targets or limits, the planning policies set out in the NPSs would still provide an effective mechanism for filtering out, from among the various development proposals put forward by industry within the strategic framework set by Government whose adverse impacts are unacceptable, those whose adverse impacts are unacceptable. Equally, if Government were to take the view that development of a particular technology beyond a certain point was undesirable, it would keep the amount of that technology consented under review and, as and when appropriate amend the relevant NPSs to ensure that no further projects for technology of that type were consented. Setting in advance a maximum figure for the amount of that technology which can be consented would be unlikely to be a better way of regulating how much of particular types of infrastructure is built than it would be of controlling overall quantities of new infrastructure (see above).

1.2 The need for a mix of generating technologies

The NPSs need to set out development control policies that will ensure that developers of large-scale generating infrastructure are able to take forward projects which result in the UK generating mix being in line with Government energy policy. This means that, without setting targets or quotas for particular types of generating station, the consenting regime should ensure (as far it can) that:

- *as much electricity demand as is reasonably practicable is satisfied by electricity generated from low carbon sources;*

- *renewable forms of electricity generation should play a very significant role in the energy mix, with the UK meeting its Renewables Directive targets of 15% of energy from renewable sources by 2020 by generating 30% of its electricity from renewable sources by that date;*
- *these renewable goals are achieved mostly through the development of wind power, both onshore and offshore ("with smaller amounts of bio-energy, although more of the latter is possible and desirable");*
- *significant amounts of new nuclear plant are developed by 2025 (without subsidy);*
- *the commercial generating mix includes some fossil fuel plant for the foreseeable future, but no wholly unabated new coal plants;*
- *among the high-carbon generating projects consented, there are some CCS demonstration plants – in particular, no opportunity should be lost to demonstrate CCS on coal at commercial scale.*

Alternative policy elements	Generic classification	Comments
Set development control policies on the assumption that UK can do without / make do with substantially less of one or more of the types of generation that the plan / programme should be in the mix (would allow, for example, prohibition of, or setting of more restrictive criteria for permitting development of, one or more technology types)	Alternative A3 (more emphasis on reducing CO_2 emissions / A4 (more emphasis on reducing other environmental impacts) / A1 (more emphasis on reducing costs of supply), depending on which technology is given less emphasis, what it costs relative to the others, and whether its adverse environmental impacts include greenhouse gas emissions.	In view of our 2050 emissions reductions targets, it makes no sense to rely less on low carbon generating technologies as a group. Considering them individually, at present, wind power, biomass and nuclear are the only such technologies capable of generating at the necessary scale, with the prospect of fossil fuels with CCS joining them once that technology has been successfully demonstrated at commercial scale. (Any other technologies which emerge as commercially viable above 50MW will be integrated into the NPS suite as appropriate.) Given the level of need for new generation capacity and the fact that Government considers these technologies safe and capable of being developed on the necessary scale without unacceptable environmental impacts, it makes no sense to try to do without or substantially reduce our reliance on any of these low carbon technologies individually. In addition, aiming to rely less on renewable sources would be incompatible with our EU law obligations. In theory, a policy could be adopted of aiming to achieve the renewable targets but without either onshore or offshore wind (in order to reduce adverse landscape and visual effects or adverse impacts on the marine environment, respectively), but in practice this would be likely to result either in failure to reach the targets (because there are simply not enough available sites with good wind resource if one excludes all those onshore or offshore) or in unacceptable levels of adverse effects in whichever area (onshore or offshore) had not been excluded. Given the likely rate of old plant closures and development of new low carbon capacity, it is reasonable to continue to consent fossil fuel plant which is not fitted (or, in the case of coal-fired plant, not fully fitted) with CCS, since there is reason to expect that CCS will begin to be successfully demonstrated at commercial scale within the next 10 years or so. This would put all fossil fuel plant developed in accordance with CCR criteria (i.e. all new fossil fuel plant consented in accordance with the energy NPSs) within reach of being low-carbon. If CCS were not to prove successful or readily deployable on wider scale soon enough, any need to curb emissions from such plant in future (or to discourage further

Alternative policy elements	Generic classification	Comments
		projects) which is not met by the EU-ETS regime could be adequately addressed by other measures, such as a future emissions performance standard. See also EN-1, Part 3 and EN-6, with the nuclear AoS.
Set development control policies on the assumption that UK energy policy should place significantly more reliance on one or more types of generation than the plan / programme assumes (would allow development control policies to be framed in a way which was more restrictive on the less favoured types of infrastructure – e.g. a more restrictive planning policy on unabated fossil fuel if it is thought possible to rely to a greater extent, sooner, on existing low carbon sources)	Alternative A3 (more emphasis on reducing CO_2 emissions / A4 (more emphasis on reducing other environmental impacts) / A1 (more emphasis on reducing costs of supply, depending on which technology is given more emphasis, what it costs relative to the others, and whether its adverse environmental impacts include greenhouse gas emissions	The Committee on Climate Change has advised that it would not be appropriate at this stage to aim to develop more renewable capacity than our current 2020 targets assume. Current NPS development policies are in line with the scale of development of the various technologies which it is currently expected that the market will bring forward. Relying on one technology more means relying on others less, and, as noted above, there is no compelling reason to do this.

1.3 The need for electricity network infrastructure

The NPSs need to set out development control policies that will enable developers to build electricity transmission and distribution infrastructure which is able to deal with changing patterns of supply and demand in an effective and efficient way.

Alternative policy elements	Generic classification	Comments
Do not allow generating stations to be built in areas where there is no existing transmission / distribution infrastructure	Alternative A4 (more emphasis on reducing other environmental impacts)	The best sites for wind power are in areas where there is no existing transmission / distribution infrastructure. Even where there is existing transmission infrastructure (for example, on or near to some of the sites proposed for new nuclear power stations), it would often not be able to deal with the output of the new generating stations. Limiting the areas where new generating stations could be built to those served by existing transmission infrastructure would risk either failure to satisfy future demand for electricity or at least failure to satisfy our renewables obligations / low carbon energy objectives. Sufficient protection against the development of unnecessary amounts of new transmission and distribution infrastructure is provided by the statutory duties on network companies.

Set development control policies on the assumption that greater development of smaller scale localised networks could eliminate or minimise the need for new large-scale network infrastructure (i.e. broadly more restrictive environmental criteria for consenting any large-scale generating infrastructure)	Alternative A4 (more emphasis on reducing other environmental impacts)	As the best sites for low carbon generation are not close to major centres of demand, it would probably only be possible to avoid new national transmission infrastructure by moving to a largely fossil-fuel based generation mix, which would compromise achievement of our renewables obligations / low carbon energy objectives.

1.4 The need for oil and gas supply infrastructure

The NPSs need to set out development control policies that will enable developers to build the necessary gas supply infrastructure and gas and oil pipelines.

Alternative policy elements	Generic classification	Comments
Set development control policies on the assumption that there is no need to meet / continue to meet existing / anticipated demand for new oil and gas supply infrastructure (this would mean that more environmentally demanding criteria could be set for consenting these forms of infrastructure)	Alternative A3 (more emphasis on reducing CO_2 emissions / A4 (more emphasis on reducing other environmental impacts). This could also represent alternative B2 (less emphasis on security of supply).	If supply does not match demand, the market will become tight and some sections (industrial users) will be priced out of it; industry / factory closures would have social and economic impacts. Failure to secure investment in a range of gas storage could result in gas not being supplied quickly enough to meet demand, for technical reasons; industrial users would find their supplies interrupted more often; greater reliance would be placed (in the case of oil) on transport by road.
Set development control policies on the assumption that it will be possible to meet future gas needs by increasing gas import infrastructure without increasing storage infrastructure (this would mean that more environmentally demanding criteria could be set for consenting these forms of infrastructure)	Alternative A3 (more emphasis on reducing CO_2 emissions / A4 (more emphasis on reducing other environmental impacts). This could also represent alternative B2 (less emphasis on security of supply).	To some extent gas import infrastructure can substitute for the swing fields of the UKCS. But the more direct substitute for the close-to-market supply flexibility provided by the swing fields is close-to-market gas storage. This helps to meet high winter demand. It also helps to respond to short-term market volatility – to short term peaks in demand caused by severe weather, to short term disruptions in supply, and to short-term price spikes. Close-to-market storage is particularly well-placed to do this, because (unlike electricity) gas travels through import pipe-lines slowly, while LNG tankers may be too far from GB to respond quickly to a sudden market need. See also the sections on gas storage infrastructure in Part 3 of EN-1.
Set development control policies on the assumption that demand for oil / gas (and therefore for oil and gas supply infrastructure) can be reduced or	Alternative A3 (more emphasis on reducing CO_2 emissions / A4 (more emphasis on reducing other environmental impacts). This could also	On the continuing need for gas-fired power stations, see above (under the need for a mixture of generating technologies). While the substitution of gas and oil by other forms of energy is desirable in those non-power station applications where the greenhouse gas emissions of gas cannot be mitigated by CCS (such as domestic heating and transport), it is not expected to

eliminated by substituting other forms of energy in the contexts where they are used (renewable heat, electric cars etc and through energy efficiency measures): this would mean that more environmentally demanding criteria could be set for consenting forms of infrastructure such as pipelines.	represent alternative B2 (less emphasis on security of supply).	happen in the next decade or so to an extent sufficient to remove the need for additional gas infrastructure.

2. Overarching assessment principles set out in EN-1

2.1 Overall approach

Adverse impacts of proposed developments should be avoided, mitigated as far as reasonable, or compensated for. As a general rule, proposals which comply with the relevant NPS in procedural terms should be consented unless consent would be unlawful or the proposal's adverse impacts (taking account of any mitigation proposed) outweigh the benefits it would bring (including the contribution it would make to satisfying the need for new infrastructure).

Alternative policy elements	Generic classification	Comments
Adopt a policy that consent should be refused if there are potential alternative locations for a development where it is reasonable to expect that the adverse impacts would be less significant (i.e. a requirement to consider any alternative site seriously proposed by objectors in all cases, including those where there is no specific policy requirement to do so in the revised draft NPSs and no legal requirement to do so e.g. under the Habitats Directive – and to adopt the alternative / justify its non-adoption if it adopting it have less significant adverse environmental impacts)	Alternative A4 (more emphasis on reducing other environmental impacts)	The nature of large-scale energy infrastructure is such that wherever it is located it will have the potential to give rise to significant adverse effects. However, it is also true that in most cases most of these effects can generally be removed, mitigated or compensated for in a satisfactory way. Any adverse effects which cannot be fully dealt with in this way can then be set against the benefits of proposed development and a view can be reached as to whether or not they outweigh the residual adverse effects. It is one thing to encourage developers to look at different ways of configuring or designing proposed infrastructure on a site so as to reduce adverse impacts (and the NPS policies, for example on good design and noise do this). It is something quite different to require developers to consider all possible alternative sites nationally for any development for which development consent is sought – or at least for all those where there are some residual adverse effects. In the case of nuclear plants, this would result in pointless duplication of work already done by Government. But in general, a planning system which would respond to an application to build in one location (without unacceptable residual adverse impacts) by granting consent to build in a completely different location, which is the logical conclusion of this alternative, would not be compatible with a market-based approach to the development of large-scale energy infrastructure. In any event, the fact that consent should be easier to obtain and plant easier to design and cheaper to build where there are fewer significant adverse effects, coupled with statutory duties to minimise adverse impacts (e.g. Electricity Act 1989, Schedule 9), and existing EN-1 policies on such matters as flood risk and land use, already provides an incentive to developers to choose areas where the adverse effects will be relatively low wherever possible. Where the residual adverse effects are unacceptable, the policy set out in EN-1 provides a basis for refusal of consent.

Alternative policy elements	Generic classification	Comments
Adopt a policy that consent should be granted wherever it is not unlawful to do so (i.e. regardless of adverse impacts)	Alternative A2 (more emphasis on security of supply) / A4 (more emphasis on reducing cost of supply) / B4 (less emphasis on reducing other environmental impacts)	This would be going too far in the opposite direction to the previous alternative, and is incompatible with the principles of sustainable development, which are central to all of the Government's planning policy, including the NPSs.

2.2 Location

Although the NPSs do not (with the exception of EN-6) either say where infrastructure should be built or completely rule out particular locations, particular conditions need to be satisfied before certain areas are used for large-scale energy infrastructure:

- *Development should take place in AONBs only if the Silkin test is met (4.24.7).*
- *Agricultural land of grades 1-3a should be avoided unless this is inconsistent with other sustainability considerations.*
- *Inappropriate development should not take place in the Green Belt / Welsh green wedges unless justified by very special circumstances.*
- *Flood risk: paragraphs 4.22.8 to 4.22.16 of EN-1 permit energy infrastructure to be developed in areas where other forms of development would not be permitted.*

Proposals should take account the potential impacts of climate change according to UK Climate Projections over the lifetime of the infrastructure and include any necessary adaptation measures, with a high emissions scenario being applied in respect of any safety critical elements.

Proposed development should be resilient to coastal erosion and deposition, taking account of climate change. Consent for projects in areas of dynamic shorelines where proposal could inhibit sedimental flow or impact adversely on coastal processes elsewhere should only be consented if benefits (including need outweigh adverse impacts).

Alternative policy elements	Generic classification	Comments
Adopt policies which are more prescriptive about where particular types of infrastructure should be located	Alternative A4 (more emphasis on reducing other environmental impacts)	See the discussion of Alternative A4 in Part 3 of AoS-1. A loosening of environmental criteria for consenting large-scale energy infrastructure would only be justified if it was clear that the need for new infrastructure could not be met if consenting was based on the existing criteria. This is not the case. Equally, given the policies on mitigation of adverse effects and assessment of applications set out above and at more length in EN-1, the Government does not consider that consenting in accordance with the current environmental criteria will result in unacceptable degradation of any aspect of the environment.
Adopt more stringent or more permissive policies on consenting in designated area	Alternative A4 (more emphasis on reducing other environmental impacts) or Alternative A2 (more emphasis on security of supply) / Alternative A1 (more emphasis on reducing the cost of supply) / Alternative B4 (less emphasis on reducing other environmental impacts)	
Adopt more stringent or more permissive policies on climate	Alternative A4 (more emphasis on reducing other environmental	

change / flood risk impacts	impacts) or Alternative A2 (more emphasis on security of supply) / Alternative A1 (more emphasis on reducing the cost of supply) / Alternative B4 (less emphasis on reducing other environmental impacts)	

It is acceptable to give consent for a development without every detail of its design, or how it will be connected to relevant electricity or gas networks, having been finalised.

Alternative policy elements	Generic classification	Comments
Only consent infrastructure if all details of design and relevant network connections have been finalised.	Alternative A4 (more emphasis on reducing other environmental impacts)	EN-1 expresses a preference for schemes where the applications for e.g. the generating station and the transmission line are filed together, but recognises that this will not always be possible. As long as any potential cumulative impacts are properly dealt with in each case (which is a legal requirement under the EIA regime in any event), there is no public interest detriment to allowing applicants the additional flexibility this policy gives them. It is not essential to know all the details of infrastructure design in order to assess its impacts: it is sufficient to indicate the maximum expected extent of development, and to show that there is no reason to suppose that there are insurmountable obstacles to constructing necessary network links such as transmission lines or pipelines. Limits on overall size etc can be imposed in conditions, and if necessary, points of detail can be made subject to a requirement for subsequent approval before construction begins. The alternative risks unduly inhibiting developers' commercial operations to no useful purpose.

3. Development policies applicable to particular types of infrastructure set out in EN-1

3.1 Thermal generating stations

New thermal generating stations should comply with the 2006 DTI guidelines on CHP – i.e. either include good quality CHP or explain why this is not practicable. Non-CHP stations may also be required to be CHP-ready.

Alternative policy elements	Generic classification	Comments
Only consent new thermal power stations if they provide good quality CHP or are "CHP ready" (by analogy with carbon capture readiness or "CCR", so that plant is ready to have CHP retrofitted when an appropriate opportunity arises)	Alternative A3 (more emphasis on reducing CO_2 emissions)	The isolated location of nuclear plants makes it unlikely that they would ever be in a position to offer good quality CHP. CHP readiness conditions can be imposed on a case by case basis where the existence of potential demand for CHP shows that it is justified, but should not be imposed otherwise. Good quality CHP depends to a significant extent on the proximity of the demand for heat to the power station. Requiring such schemes to be in place would be likely to constrain unduly the choice of sites for thermal power stations given their need also to be located close to plentiful sources of water and good transport links for fuel and the fact that just because potential heat customers are located close to a potential power station site, it does not follow that they will want to take the heat it produces (and they cannot be forced to do so as part of the consenting process or otherwise).

3.2 Combustion plants

Combustion plants (other than energy from waste plants) with a capacity of 300MW or more will only be consented if (i) the technical and economic assessment required by the CCS Directive shows that it will be feasible to retrofit CCS on that plant at some point in their lifetime; and (ii) the applicant sets aside sufficient land for a future CO_2 capture plant.

Alternative policy elements	Generic classification	Comments
Do not go beyond requirements of the CCS Directive (Directive permits large combustion plant to be constructed if there is no prospect of it being technically or economically feasible to fit or retrofit CCS to it during its lifetime: Government policy is that consent should only be granted to relevant plant where the results of the feasibility study	Alternative A2 (more emphasis on security of supply) / Alternative A1 (more emphasis on reducing costs of supply)	A policy which allows the construction of fossil fuel plant which is not CCR runs too high a risk that that plant will contribute to subsequent high carbon lock-in.

required by the Directive are positive)		
Apply stricter criteria for the determining carbon capture readiness (with particular reference to the "economic assessment" of retrofit feasibility: for example by applying conservative estimates of future carbon prices, which reduces the chances of its being economically feasible to retrofit any given plant with CCS)	Alternative A3 (more emphasis on reducing CO_2 emissions)	See the AoS for EN-2: rejected as potentially counter-productive.

3.3 Coal-fired plants

New coal-fired power stations will only be consented if they have CCS fitted on at least 300 MW of capacity.

Alternative policy elements	Generic classification	Comments
Allow new coal-fired power stations to be consented without any CCS fitted at the outset	Alternative A2 (more emphasis on security of supply) / A1 (more emphasis on reducing costs of supply) / B3 (less emphasis on reducing CO_2 emissions)	Possibly a rational policy choice (impose no CCS requirements until it is proven); a variant (possibly superior) would be to suspend the consenting of coal-fired plant pending the outcome of CCS demonstration projects, which would necessarily be taking place elsewhere (if at all), but it could lead to delay in successfully demonstrating CCS at commercial scale. This would be unhelpful both from an energy policy point of view, given the Government's ambitions to decarbonise electricity supply, and it would reduce UK opportunities to develop a significant CCS industry sector which could bring significant economic benefits.
Adopt a stricter approach to CCS than is set out in EN-1 and EN-2	Alternative A3 (more emphasis on reducing CO_2 emissions)	See the AoS for EN-2: there may be a justification for setting more ambitious requirements for CCS, at least over the lifetime of new plant, but these, if adopted, should form part of a separate emissions performance standards regime (which can cover existing plant as well) and stand alongside other Electricity Market Reform measures (see forthcoming EMR consultation).

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