

# Planning For New Energy Infrastructure

Appraisal of Sustainability for the draft National Policy Statements for:

1. Overarching Energy (EN-1)
2. Fossil Fuel Electricity Generating Infrastructure (EN-2)
3. Renewable Energy Infrastructure (EN-3)
4. Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
5. Electricity Networks Infrastructure (EN-5)

**November 2009**



# Planning For New Energy Infrastructure

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

November 2009



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## Non Technical Summary

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This is the **Non-Technical Summary** of the **Appraisal of Sustainability (AoS) Report** produced as part of the appraisal undertaken to inform the **Overarching National Policy Statement (NPS)** for Energy (also referred to as EN-1).

The following sections explain what the Overarching NPS is, provide an outline of its content and describe the relationship of the Overarching NPS with the technology-specific NPSs. An outline of the AoS process and the role of the AoS Report in this process is described on page iv. The findings and recommendations arising from the AoS are presented on page xiii.

For more information on this public consultation and how to give us your views, please see the Consultation Document on the draft NPSs for energy.

## 1. What are the National Policy Statements for Energy Infrastructure?

The Planning Act 2008 changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. The IPC replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change (DECC) are responsible for preparing those related to energy infrastructure projects. These are:

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Renewable Energy Infrastructure Generation (EN-3);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- Electricity Networks Infrastructure (EN-5); and
- Nuclear Power Generation (EN-6).

Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore. This includes generation from fossil fuels, renewables and nuclear. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- Electricity lines at or above 132 Kilovolts (kV). For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act). For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds). For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.

NPSs collectively present a summary of government energy and climate policy, the national need for energy infrastructure and guidance to the IPC on how to assess the likely impacts of energy infrastructure. The Nuclear NPS is different in that it also assesses the potential suitability of sites for new nuclear stations and it is the subject of a separate AoS which has assessed those parts of the Overarching NPS which apply to nuclear stations.

## 2. What is the Overarching NPS for Energy (EN-1)?

The Overarching NPS for Energy sets out the national policy for new nationally significant energy infrastructure. In combination with additional technology-specific NPSs, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant energy infrastructure.

Developers will need to ensure that their applications for development consent are consistent with the requirements of relevant NPSs, as the IPC must decide the application in accordance with their content except in the circumstances set out in Section 104 of the Planning Act.

The Overarching NPS for Energy will be issued by the Secretary of State for DECC. It applies to decisions for nationally significant energy projects (as described in Part 1 of the NPS) in England and Wales. The Overarching NPS will remain in force in its 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 it remains appropriate for IPC decision-making.

## 3. What is an Appraisal of Sustainability (AoS)?

The Planning Act 2008 requires that 'an appraisal of the sustainability of the policy set out in the statement' is carried out. Section 5(5) of the Planning Act explains what the policy set out in statement may, in particular, contain<sup>1</sup>. It may:

- set out, in relation to energy infrastructure, the amount, type or size of development which is appropriate nationally or for a specified area [Section 5(5)(a) of the Act]
- set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for specified energy technologies [Section 5(5)(b) of the Act];
- set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- identify locations which are potentially suitable or unsuitable for specified energy technologies [Section 5(5)(d) of the Act]; and
- set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].

Section 5(5)(e) of the Planning Act states that a National Policy Statement may identify one or more statutory undertakers as appropriate persons to carry out a specified description of development. Given that energy is delivered through a liberalised market, limiting energy developers would restrict competition and contravene the market approach to energy development.

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<sup>1</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)



The AoS of the Overarching NPS for Energy has been undertaken in a manner that incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>2</sup>.

SEA is a statutory requirement following the adoption of European Community Directive 2001/42/EC which was transposed into UK legislation on the 20th July 2004 as Statutory Instrument No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004. The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

In addition to assessing the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely significant social and economic effects of implementing the NPS. Each AoS has been carried out at the same time as the development of the NPS and has therefore helped to inform that NPS. The NPS contains potential measures to mitigate significant adverse effects. All the NPSs (EN-1 to EN-6) have been subjected to an AoS<sup>3</sup>.

An overview of the key stages of the AoS process is presented below.

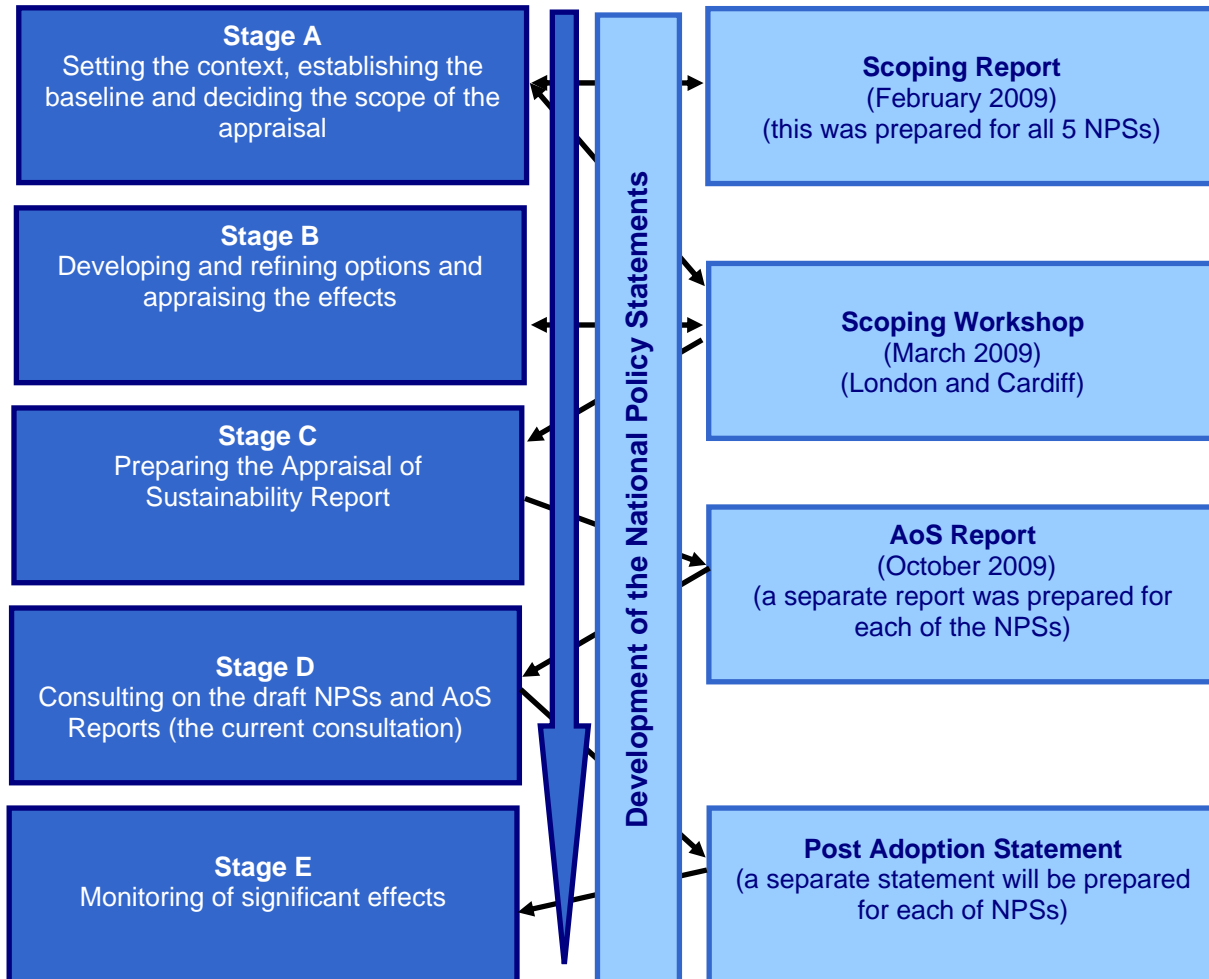
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<sup>2</sup> The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633). *Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.*

<sup>3</sup> *In addition to the work on the NPSs (including their AoS), DECC has also completed an SEA for Offshore Energy, is undertaking a feasibility study for tidal range power in the River Severn, which includes an SEA, and is beginning a feasibility study for wave and tidal projects around English and Welsh territorial waters. DECC has also published an SEA of the Framework for the development of clean coal.*

## Appraisal Process

## Key Outputs



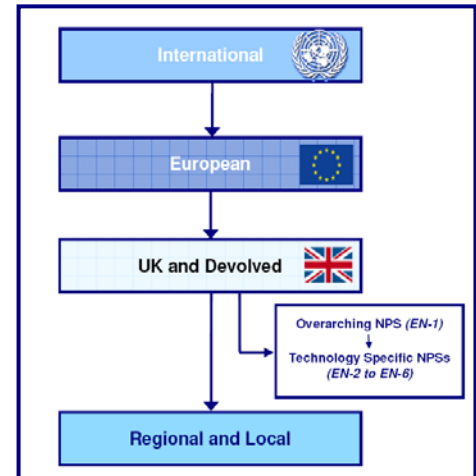
The AoS process began in early 2009 and reflects national guidance on SEA practice<sup>4</sup>. A Scoping Report (Stage A) was consulted on by statutory consultees in February and March 2009. A summary of the results of this consultation are presented in **Annex C** of the AoS Report and the consultees' responses have been considered within this AoS. From March through to September options were developed and refined and the effects of the NPSs were appraised (Stage B). The AoS Reports were prepared during this time (Stage C) before being consulted on (Stage D, the current consultation). Stage E, the final stage will involve setting the measures for monitoring significant impacts.

<sup>4</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

#### 4. What relationship does the Overarching NPS for Energy have with other policies, plans and programmes?

The AoS reviewed other relevant policies, plans, and programmes that could influence the Overarching NPS for Energy, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B**.

The Overarching NPS for Energy reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act 2008 and other government agreements on climate change being key influences on the development of the NPSs).



#### 5. Which sustainability topics has the Overarching NPS for Energy been appraised against?

The Overarching NPS has been appraised against 14 topic areas. All of the topics identified in the Scoping Report were 'scoped in' (i.e. considered to be relevant to the appraisal<sup>5</sup>). The topics are identified below and are linked with the AoS Objectives identified in **Table 2** (page xii).

1. Climate Change	6. Water Quality	11. Air Quality
2. Ecology (Flora and Fauna)	7. Traffic and Transport	12. Soil and Geology
3. Resources and Raw Materials	8. Noise	13. Health and Well-Being
4. Economy and Skills	9. Landscape, Townscape and Visual	14. Equality
5. Flood Risk	10. Archaeology and Cultural Heritage	

The baseline data and information for each of these topics has been identified and included in **Annex F**. The baseline is common to all of the non-nuclear NPSs (EN-1 to EN-5). To avoid repetition, the baseline material is presented in the Overarching AoS Report and referenced in each of the non-nuclear AoS reports (EN-2 to EN-5).

#### 6. What reasonable alternatives for implementing the Overarching NPS for Energy were identified and appraised?

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the Overarching NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment.

<sup>5</sup> Following consultation on the Scoping Report, *noise* and *landscape features* were scoped back into the appraisal (i.e. they were originally anticipated not to be relevant to a high-level appraisal but following comments this was reconsidered and they were included).

In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled (reflected in the guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; and
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The other alternatives proposed by the AoS Team are identified in **Table 1**.

**Table 1 Alternatives Identified by AoS Team**

Alternatives Proposed by the AoS Team	Response to the alternatives (provided by DECC)
<p><b>Option A: NPS sets ratio/mix of different forms of energy production:</b> Would help to ensure security by ensuring that a mix is achieved. This might also help ensure that low carbon targets are achieved.</p>	<p>It would not be appropriate for the NPS to set definitive ratios for different forms of energy production. This would go far beyond current energy policy under which the Government sets the strategic framework for the market within which private companies should come forward with specific proposals. There is no one right mix and setting inflexible ratios for each form of energy production could harm the provision of sufficient energy supply. While the renewables directive does impose targets for the proportion of our energy which should come from low carbon sources by 2020, these targets do not dictate which types of low carbon energy production should be consented to meet this target. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option B: NPS requires IPC to incorporate environmental controls beyond development consent considerations.</b></p>	<p>There are national-level environmental safeguards. Energy infrastructure operates within a strict environmental regulatory regime, e.g. Environmental Permitting Regulations 2007. It is not the place for NPSs to supersede these safeguards or duplicate the functions carried out by regulatory bodies such as the Environment Agency. In addition, emission limits for certain substances are already determined at an EU level and therefore it is not necessary to duplicate this within the NPS. For these reasons, this option is not considered a reasonable alternative. The NPS does, however, include environmental guidance appropriate to development consents.</p>
<p><b>Option C: NPS sets exclusionary criteria:</b> For instance no energy development could be permitted in National Parks, Special Protection Areas, AONBs etc.</p>	<p>NPS set out a policy framework under which energy infrastructure may be consented and explains the various measures in place in the UK and across the EU to protect designated sites. However, it is for the IPC to assess the evidence presented on each project in terms of weighing the impacts it may have against the national need for new energy infrastructure taking account of any statutory controls. Exclusionary criteria could rule out development which in the particular circumstances of the case may have been acceptable, thereby reducing the number of sites at which development is able to take place. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option D: NPS sets a ‘points system’:</b> Proposed developments would have to achieve a certain number of points (e.g. linked to the Government’s energy goals, or to sustainability before they would be assumed to be acceptable).</p>	<p>NPSs set out a policy framework under which energy infrastructure may be consented. However, it is for the IPC to weigh the evidence presented by each project against the impacts it may have and the national need for new energy infrastructure. It would not be appropriate for the NPS to predetermine the outcome of the IPC’s decisions on individual projects</p>

Alternatives Proposed by the AoS Team	Response to the alternatives (provided by DECC)
	<p>through the use of a point scoring system. Such a system would give rise to an overly formalistic and rigid structure which, given the range of infrastructures that would have to be covered, would be extremely complicated to create and administer. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option E: NPS establishes a sequence/phasing of events:</b> For instance, permission can be given for a first tranche of fossil fuel power stations, but x GW of renewable energy generation must be approved (or operational) before a second tranche can be approved.</p>	<p>This would seek to determine the energy mix in a way that is not in accordance with Government policy as explained above and could harm the provision of sufficient energy supply. It is also the case that where Government nevertheless wishes to send the market signals as to infrastructure that should be brought forward, it has mechanisms beyond the planning system it uses, e.g. the Renewables Obligation to encourage renewables. The IPC's focus should be on planning decisions within the Government's policy framework. This option assumes that there is an identifiable and preferred sequence of events and carries the risk of significant delay to nationally significant energy infrastructure if wider events do not unfold in accordance with that sequence. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option F: NPS only permits energy production up to a certain level</b> (or up to a certain amount per type of energy).</p>	<p>The NPS does set out the national need for new energy infrastructure, for example due to the enforced closures of certain power plants under the Large Combustion Plant Directive (LCPD) and the Industrial Emissions Directive (IED). Energy policy does not, however, dictate the amount of capacity considered necessary in the UK nor does it set limits on amounts which can be produced in total or from particular types of energy. It is also for industry to determine the margin needed between peak demand and total capacity. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option G: NPS considers location of proposed projects vis-à-vis location of energy demand:</b> This could help to ensure that there is no undue concentration of projects in one area, reduce the inefficiencies of long-distance transport of energy and/or encourage more local-level projects.</p>	<p>The NPS explains the need to assess the likely significant cumulative impacts of one project with others. It also explains the on-going need for large scale infrastructure alongside more localised energy generation. The IPC is only responsible for decisions on the former so it is not necessary for the NPS to cover the latter in any detail. Most large scale energy infrastructure has particular locational requirements (e.g. water or wind resource) and these factors are likely to be more significant in siting decisions than proximity to centres of demand. Constraining the provision of large scale energy infrastructure to fit the location of energy demand could result in sub-optimal locations. Furthermore, this alternative might not deliver all the benefits stated as not all energy infrastructure is mutually compatible. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option H: NPS has presumption in favour of cooperative/local energy projects:</b> Preference will be given to projects shown by referendum to be supported by the majority of the community.</p>	<p>NPS set out a policy framework under which energy infrastructure may be consented. It is for the IPC to weigh the evidence presented by each project against the impacts it may have and the national need for new energy infrastructure. It would not be appropriate for the IPC to take decisions based on the ownership of a project or taking undue account of local community views given the benefits of much energy infrastructure will be national rather than local. It is also the case that many co-operative or local energy projects may be too small to go to the IPC. For these reasons this option is not considered a reasonable alternative.</p>



## 7. What aspects of the draft NPSs were appraised?

Projects consented under the IPC/NPS process will clearly have a number of direct, indirect and cumulative effects. The AoS identifies and assesses those effects arising as a result of the NPS and this is considered against the baseline (i.e. what's happening now and what's likely to happen in the future). **In this way, the appraisal assesses the effects of the differences between the current consenting regime ('business as usual') and the IPC/NPS process.**

The likely effects of the NPSs have been considered across a range of geographic scales (including UK, regional and local). However, with the exception of the Nuclear Power Generation NPS, the Energy NPSs do not prescribe the location for new infrastructure projects and there are limitations in terms of how far appraising effects at a non-spatially specific level can be taken. This is not to exclude the possibility that the effects could be significant; rather, that it will often only be possible to judge whether such effects are significant at the project level.

It is anticipated that relevant receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory assessments.

The following assumptions have then been used to aid the understanding of the influence of the NPSs on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors;
- Will add greater certainty to the delivery of nationally significant energy infrastructure by making the guidance on decision-making clearer and more transparent;
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK's security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC's understanding of the scale of need when considering individual applications;
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand; and
- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to assess the implications of the NPS for future planning decisions. The AoS focuses on the material differences to sustainability against the existing planning system for energy infrastructure.

## 8. What approach was taken to the appraisal?

The appraisal of EN-1 to EN-5 has been undertaken using an objectives-led approach. The baseline information, the review of plans and programmes and the key issues identified were used to develop 14 AoS objectives (presented in **Table 2**). Each objective is also supported by a series of guide questions (and these are identified in

**Section 3.4** in the main AoS report). The AoS objectives cover all of the topics that the appraisal is required to include information on (as set out in the SEA Directive).

EN-1 to EN-5 have been appraised in terms of the extent to which they contribute towards achieving the AoS objective (e.g. Biodiversity) when considered against the baseline set by the existing planning environment. The 'guide questions' have been used to assist the appraisal of the potential effects in a qualitative manner, ensuring consideration is given to relevant influencing factors.

**Table 2 AoS Objectives**

AoS Objective	SEA Topic Requirement
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	Climate Change
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	Fauna, flora and biodiversity
<b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	Material assets
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	Material assets
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	Climatic factors
<b>6. Water Quality:</b> To protect and enhance surface (including costal) and groundwater quality (including distribution and flow).	Water
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	Population
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	Population
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	Landscape
<b>10. Archaeology and Cultural Heritage:</b> Protect and, where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	Cultural heritage, including architectural and archaeological heritage
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	Air
<b>12. Soil and Geology:</b> To promote the use of brownfield land, and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	Soil
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	Human health
<b>14. Equality:</b> To encourage equality and sustainable communities.	Human health



For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

In predicting and evaluating the effects of the Overarching NPS for Energy, all effects have been considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

## 9. What were the key significant effects (when considered against the existing consenting regime)?

This section presents a summary of the appraisal of the Overarching NPS for Energy against the 14 objectives. Entec provided ongoing commentary on the sustainability effects of the emerging NPSs, and, where relevant, these points were incorporated in the NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**1. Climate Change:** *Minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.*

The appraisal indicates that when compared to the current consenting regime (the 'business as usual' baseline), the additional impact of the NPS is considered to have **minor positive effects** on this objective. Current government policy is set towards the delivery of low carbon energy. The Energy NPSs/IPC intend to deliver faster and more efficient decisions within the framework of government policy. As a result, the Energy NPSs/IPC may consent low carbon energy projects at a faster rate than at present. However, the overall net number of energy projects required will remain the same (i.e. the 'supply' of energy infrastructure does not exceed the 'demand' or the need). As a result the Energy NPSs may speed up the transition to a low carbon economy. This is predicted to have a positive effect on the AoS climate change objectives because UK climate change commitments may be realised sooner than continuation under the current consenting system.

Furthermore, the Overarching NPS requires applicants to consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure (4.8.5 of EN-1). The NPS also states that 'the IPC should satisfy itself that applicants for new energy infrastructure have taken into account the potential impacts of climate change using the latest UK Climate Projections...' (4.8.8 of EN-1).

**Climate Change:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 1.1:** The UKCIP scenarios project until 2100, for proposals over a longer lifespan, the data source would need to be the IPCC Assessment Reports.

**Response 1.1:** The text now reflects that IPCC reports will be needed for longer term assessment of climate change.

**2. Ecology:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have an **uncertain effect** on this objective. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7**), that states that 'the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level'.

The NPS states that the applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests (Section 4.18.4 of EN-1). The NPS also states that the applicant is expected to have included appropriate mitigation measures as an integral part of the proposed development and to demonstrate that opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals.

**Ecology:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 2.1:** Habitat Management Plans/Nature Conservation Strategies may be requested as part of a current application. The NPS may benefit from referring explicitly to the preparation of Habitat Management Plans/Nature Conservation Strategies.

**Response 2.1:** The NPS reflects the current statutory requirements. The EIA regulations require that applicants provide in their ES "a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment". Information within the ES may inform a Habitat Management Plan (HMP) or other Environmental Management Plan (EMP). However, it is not necessary for developers to deliver all mitigation proposed pre-consent as mitigation may be delivered via planning conditions. It is not necessary for developers to prepare an HMP or EMP in every case.

**Recommendation 2.2:** Consider revising para 4.18.3 (Applicant's Assessment) to reflect that significant effects could arise in other ways (e.g. on species that are not legally protected).

**Response 2.2:** This has been revised and now includes reference to 'other species identified as being of principal importance for the conservation of biodiversity'.

**Recommendation 2.3:** Para 4.18.15 (Project affecting legally protected species) implies that the Defra species referred to are protected, but they are not. Consider adding another subsection (e.g. Projects affecting other notable species) and including BAP priority species and habitats and rare species and habitats that are not on these lists (and may not be legally protected).

**Response 2.3:** The title has been changed to 'Habitats and Other Species Protection'.

**3. Material Assets and Raw Materials:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **significant positive effects** on this objective. The Overarching NPS addresses the issue of waste management (Section 4.29 of EN-1) and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.

The NPS recognises that all large infrastructure projects are likely to generate hazardous and non-hazardous waste during the construction, operation and decommissioning phases and states that applicants should set out the arrangements that are proposed for managing any waste produced. The NPS also states that the applicant should also seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.

In general, EN-1 is considered to score positively against this objective, as the faster delivery of energy infrastructure projects will support security of supply and the delivery of affordable and low carbon energy.

**Material Assets and Raw Materials:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 3.1:** Consider adding reference to the management of wastes during the construction and demolition stages. However, we recognise that this effect may more appropriately be considered in the technology-specific NPSs. Alternatively, consider adding a cross-reference to state that waste and raw materials is covered in the technology-specific NPSs.

**Response 3.1:** The waste management impact text of the Overarching NPS now refers to the generation of waste during the construction, operation and decommissioning phases.

**4. Economy and Skills:** *To promote a strong and stable economy with opportunities for all.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **significant positive effects** on this objective. The NPS contributes positively towards improving the vitality and competitiveness of the UK energy market as it provides greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Energy NPSs/IPC intend to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

**Economy and Skills:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 4.1:** Consider requiring an economic or employment statement as part of any application.

**Response 4.1:** The NPS now covers the assessment of socio-economic impacts which could include the creation of jobs and training opportunities.

**5. Flood Risk:** *Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is

considered to have **no overall effect** on this objective. The Overarching NPS recognises that a number of energy infrastructure projects will need to be located on coastal or estuarine sites. However, the mitigation and flood risk assessment process identified in the Overarching NPS will help to ensure that potential risks with regard to flooding are identified and effective mitigation is built into the applicant's proposal.

Notwithstanding these requirements there may be exceptional instances, where an increase in flood risk elsewhere cannot be avoided or mitigated and in these circumstances, the Overarching NPS states (in Section 4.22.14) that *'the IPC may grant consent if it is satisfied that the increase in flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...'*

This represents a continuation of the approach under the current system, where some projects that will result in an increased flood risk have still been consented because of the national need for the infrastructure. Examples include a gas pipeline, part of which was installed in a flood zone and temporarily increased run-off; and a power station next to a flood defence wall which required a short term breach of the wall while the cooling water abstraction and discharge pipes were being installed, temporarily increasing flood risk to the surrounding area. Therefore, when compared to the current consenting regime, the Overarching NPS does not significantly increase or decrease flood risk.

It is also noted that the NPS specifically guides applicants to obtain advice from the Environment Agency on flood risk, where necessary.

**Flood Risk: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 5.1:** The draft introductory paragraph singles out the effects of flood risk on projects. Consider revising to reflect the need to ensure that projects don't adversely affect flood risk (i.e. don't increase run-off).

**Response 5.1:** The introductory paragraphs have been amended and reflect more widely flood risk.

**Recommendation 5.2:** Clarify what is meant by 'deal with the flood risk', for example, does this mean to negate.

**Response 5.2:** The paragraph that included this sentence has now been replaced.

**Recommendation 5.3:** The text should state clearly that whilst some energy projects may be acceptable in areas of low flood risk – they still need to manage surface water in accordance with PPS25.

**Response 5.3:** This text has been clarified and reference to Planning Policy Statement 25 (PPS25) has been included.

**6. Water Quality and Resources:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. This is because the NPS guides the IPC to give consideration to the effects on water quality and resources. The NPS specifically guides the IPC to obtain advice from the Environment Agency on the potential effects of discharges and abstractions.

Additionally, the IPC must be satisfied that development consent can be granted taking full account of environmental impacts and the NPS states that this ‘*will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies...*’. The NPS also states that the IPC will generally need to give impacts on the water environment more weight where a project would have an impact on the achievement of the environmental objectives established under the Water Framework Directive.

**Water Quality and Resources:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 6.1:** NPS should clarify that water quality refers to marine and freshwater quality and resources.

**Recommendation 6.2:** The NPS should cover the effects of proposed development on water quality.

**Recommendation 6.3:** The NPS should refer to Water Framework Directive status and the objectives/measures for waterbodies affected.

**Response 6.1:** NPS now includes reference to marine and freshwater quality and resources.

**Response 6.2:** NPS now outlines effects of proposed developments on water quality.

**Response 6.3:** The NPS now refers to the Water Framework Directive.

**7. Traffic and Transport:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

The appraisal indicates that when compared to the ‘business as usual’ baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. A key issue in transport is the effects of development on the local highways network. The NPS provides guidance on the requirements on the developer to identify any local effects and to mitigate these as part of any application. This approach is consistent with the existing national planning guidance and therefore is unlikely to result in anything other than a neutral effect against this objective.

**Traffic and Transport:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 7.1:** Consider the need for a Transport Assessment.

**Recommendation 7.2:** Reference should be made to the Department for Transport guidance on Transport Assessment.

**Recommendation 7.3:** Consider requiring a Traffic Management Plan (TMP).

**Recommendation 7.4:** A number of additional recommendations were made clarifying an appropriate methodology (e.g. transportation of abnormal loads, calculations of vehicle movements and investigation of route options).

**Response 7.1:** Reference to the requirement for a Transport Assessment is now included.

**Response 7.2:** Reference is now made to the NATA/WebTAG methodology stipulated in Department for Transport guidance.

**Response 7.3:** There is no statutory requirement for project proponents to prepare a TMP. However, the IPC or other stakeholders may, on a project by project basis, secure a TMP. If traffic impacts are considered significant, then traffic is expected to be ‘scoped in’ to any EIA. The NPS neither includes nor excludes TMPs, the scope for TMPs shall be determined as part of the consenting process.

**Response 7.4:** This text was removed and more generic information included.

**8. Noise:** *To protect both human and ecological receptors from disturbing levels of noise.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. Noise can dramatically affect the quality of the environment in which we live and work and has also been shown to have a link to health. The NPS seeks to consider the effects of noise generated by the proposals against a baseline level of noise. The NPS requires that the IPC should be satisfied that the applicants' proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible, contribute to improvements to health and quality of life through the effective management and control of noise. The approach is in keeping with current guidelines. As a consequence when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.

**Noise:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 8.1:** Within the NPS text reference to the BS4142 should read as 1997 rather than 1990. Reference to PPG24 should also cover the Welsh equivalent TAN11. With reference to construction noise BS5228:2009 should be used in calculating the noise levels while BS6472:2008 should be used when considering the effects of vibration on human health.

**Response 8.1:** The NPS now makes reference to the correct standards and planning policy. The NPS includes the AoS recommendations within the section which details what aspects should be included in a noise assessment.

**9. Landscape, Townscape and Visual:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to nationally significant energy infrastructure projects that could potentially affect landscape and visual amenity. As a result, the NPS identifies national designations as the key landscape features to protect. This is in keeping with landscape guidance and the suggested approach in the NPS is in keeping with current guidelines. As a consequence, when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.

**Landscape, Townscape and Visual:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 9.1:** The importance of highly valued landscapes outside nationally designated areas is not fully recognised by the NPS. The potential for highly valued local landscapes is recognised by the Government in paragraph 24 in PPS7 which considers the future role to be played by local landscape designations within the planning system. Whilst PPS7 advises that rigid local landscape designations should on the whole not be retained as a means of protecting local landscapes, it does provide for their retention within Local Development Documents (LDDs) when supported by robust justification.

**Response 9.1:** The draft NPS instructs the IPC to pay particular attention to local policies and designations for landscape; in addition, we would expect these to be covered in the local impact reports prepared by local authorities under the terms of the Act. However, it is appropriate that local designations do not enjoy the full protections appropriate to nationally designated landscapes; valuable though landscapes may be locally.



**10. Archaeology and Cultural Heritage:** *To protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to energy infrastructure projects that could potentially affect heritage assets. However, the NPS provides guidance to the IPC and ensures that sufficient weighting is given to designated sites and to elements of setting that enhance the significance of designated heritage assets (and non-designated assets where there is significant archaeological interest). The NPS also gives due regard to the highest level of protection (World Heritage Sites) and advises that the IPC should not accept material harm to or removal of significance in relation to a heritage asset, unless it can be demonstrated that the material harm or removal of significance is outweighed by the wider social, economic and environmental benefits that will be delivered by the proposed development. Furthermore, the IPC may request applicants to undertake desk and field based assessment prior to application as part of an Environmental Impact Assessment and, where consent is given, to maximise opportunities to advance the understanding of the historic assets.

**Archaeology and Cultural Heritage:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 10.1:** A reference to the cumulative effects of national infrastructure on Archaeology and Cultural Heritage should be included.

**Response 10.1:** The NPS requires consideration to be given to cumulative impacts.

**11. Air Quality:** *To protect and enhance air quality on local, regional, national and international scale.*

The appraisal indicates that when compared to the existing baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. Overall, the Overarching NPS for Energy is unlikely to result in a significant deterioration in air quality, as the IPC is guided by the NPS to require appropriate levels of assessment to identify potential effects. Additionally, the IPC must be satisfied that development consent can be granted taking full account of environmental impacts and the NPS states that *this 'will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies...'* (Section 4.10.7 of EN-1).

Furthermore, the NPS requires more weighting to be provided to air quality considerations where they may affect Air Quality Management Areas. In all cases, the NPS requires the IPC to take account of any legally binding air quality limits to minimise the severity of the emissions.

**12. Soil and Geology:** *To promote the use of brownfield land and, where this is not possible, to prioritise the protection of geologically important sites and agriculturally important land.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to energy infrastructure projects that could affect geological assets. However, the IPC is directed to take account of the effects that proposed energy infrastructure may have on existing, adjacent and proposed land uses, including effects on the agricultural quality of soils and on the planning significance of any affected development. The NPS also states that the environmental statement for the infrastructure project should set out the effects on international, national and locally designated sites of geological conservation and show how the project has taken advantage of

opportunities to conserve and enhance geological conservation interests. As a consequence, when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.

**Soil and Geology:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 12.1:** The NPS does not mention specific geological designations for consideration by the IPC and the proposed mitigation measures are relatively limited.

**Response 12.1:** Reference to geological designations has been added. The section on biodiversity has been expanded to include geological conservation.

**13. Health and Well-Being:** *To protect and enhance the physical and mental health of the population.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The effects of the Overarching NPS for Energy on the significant aspects of health and well being are considered to be neutral.

Furthermore, where health and well being issues relate to certain impact areas (e.g. noise, air emissions, etc) they are addressed in these sections of the NPS.

**14. Equality:** *To encourage equality and sustainable communities.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The Overarching NPS for Energy does not direct the IPC to determine the effectiveness of major energy infrastructure in reducing inequality; these are dealt with through other Government guidance and policies. As such the effects of the Overarching NPS for Energy on equality when compared to the existing baseline of planning and policy are considered to be neutral.

**Equality:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 14.1:** May wish to request an Equalities Impact Assessment (EqIA) as part of the application. This would go beyond current requirements and would be seen as positive.

**Response 14.1:** EqIA is not a statutory requirement for current energy applications. The applicability of EqIA may be considered on a case by case basis by the IPC.

**10. What are the cumulative and synergistic effects of the NPS?**

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects were considered in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (Section 4.2.4 of EN-1). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3 of EN-1).



## 11. What are the conclusions and key findings of the appraisal?

Current government policy promotes the delivery of low carbon energy. The Energy NPSs are expected to speed up the transition to a low carbon economy thus prompting a positive effect on the AoS climate change objectives because UK climate change commitments may be realised sooner than continuation under the current system.

Furthermore, the Energy NPSs contribute positively towards improving the vitality and competitiveness of the UK energy market. It provides greater clarity for developers, and so can help in terms of removing planning barriers associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Energy NPSs/IPC intend to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

The development of new energy infrastructure, at the scale and speed required to meet the current need for development, will affect ecology, particularly as development may occur on previously undeveloped land. However the significance of these effects remain uncertain at the strategic level. Beyond this there are no significant differences identified between the existing consenting requirements ('business as usual') and what will be required under the IPC/NPS system.

In light of the assumptions (set out under **Section 7**), the Overarching NPS is envisaged to have a significant positive effect at the national policy level by contributing to the delivery of a low carbon economy and security of supply.

The Energy NPSs do not include site or project specific information so the AoS does not attempt to be site or project specific. Energy proposals brought forward under the Energy NPSs are liable to require project level, Environmental Impact Assessment and Habitats Regulations Assessment.

## 12. How will any effects be monitored?

It is a requirement of the SEA Directive to describe the measures envisaged concerning how the significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>6</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

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<sup>6</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

- Positive effects on Climate Change (AoS Objective 1);
- Positive effects on Resources and Raw Material (AoS Objective 3); and
- Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the **Table 3** (these will be reviewed in light of comments on the significance of effects).

**Table 3 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 13. What are the next steps?

The AoS Report and the consultation on it fulfil the requirements of Stage C and D of the SEA process (see **Section 1.3**). This Non-Technical Summary of the AoS Report for the Overarching NPS provides a summary of the information presented in the AoS Report, which should be referred to for more detailed information.

This AoS Report will be presented for consultation alongside the draft Overarching NPS for Energy from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The Overarching NPS for Energy may be amended and revisions to the AoS may be made. A Post Adoption Statement will be produced to summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the Overarching NPS for Energy.

## 1. INTRODUCTION

### 1.1 Context

The Planning Act 2008<sup>7</sup> changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. This replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change<sup>8</sup> (DECC) are responsible for preparing those related to energy infrastructure projects. The NPSs that DECC are responsible for are:

- Overarching NPS for Energy (EN-1);
- NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2);
- NPS for Renewable Energy Infrastructure (EN-3);
- NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- NPS for Electricity Networks Infrastructure (EN-5); and
- NPS for Nuclear Power Generation (EN-6).

EN-1 sets out national policy for energy infrastructure and describes the:

- policy context for development of nationally significant energy infrastructure (in Part 2 of the NPS);
- need for new energy infrastructure (in Part 3 of the NPS);
- key principles to be applied in deciding whether a location is suitable (or potentially suitable) for a specified description of development (in Part 4 of the NPS); and
- circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of a specified description of development.

EN-1 must be read in combination with the relevant technology-specific NPS(s), which focus on additional impacts related to the specific technology. All the Energy NPSs (EN-1 to EN-6) have been subjected to an appraisal of

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<sup>7</sup> Planning Act 2008, available online at [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

<sup>8</sup> The Department of Energy and Climate Change (DECC) was formed in 2008 from the Climate Change Group, which previously sat within the Department for Environment and Rural Affairs (Defra) and the Energy Group from the Department for Business, Enterprise and Regulatory Reform (BERR).

sustainability (AoS)<sup>9</sup>. The structure of the AoS mirrors that of the NPS. The AoS report for EN-1 must be read in conjunction with the AoS of the relevant technology-specific NPS(s), which focus on additional issues. This structure avoids repetition of methodological approach, baseline and issues which ‘overarch’ across all of energy NPSs.

Due to the site specific nature of the New Nuclear NPS (EN-6), the approach taken followed a different work programme<sup>10,11</sup> to the other non-site specific NPSs (EN-1 to EN-5). Furthermore, Entec undertook the appraisals for EN-1 through to EN-5 but was not involved in undertaking the appraisal of EN-6.

The Planning Act 2008 requires that ‘an appraisal of the sustainability of the policy set out in the statement’ is carried out. Section 5(5) of the Planning Act explains what the policy set out in statement may, in particular, contain<sup>12</sup>. It may:

- set out, in relation to energy infrastructure, the amount, type or size of development which is appropriate nationally or for a specified area [Section 5(5)(a) of the Act]
- set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for specified energy technologies [Section 5(5)(b) of the Act];
- set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- identify locations which are potentially suitable or unsuitable for specified energy technologies [Section 5(5)(d) of the Act]; and
- set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].

Section 5(5)(e) of the Planning Act states that a National Policy Statement may identify one or more statutory undertakers as appropriate persons to carry out a specified description of development. Given that energy is delivered through a liberalised market, limiting energy developers would restrict competition and contravene the free market approach to energy development.

The AoS of the Energy NPSs have been undertaken in a manner that incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>13</sup>.

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<sup>9</sup> In addition to the work on the NPSs (including their AoS), DECC has also completed an SEA for Offshore Energy, is undertaking a feasibility study for tidal range power in the River Severn, which includes an SEA, and is beginning a feasibility study for wave and tidal projects around English and Welsh territorial waters. DECC has also published an SEA of the Framework for the development of clean coal.

<sup>10</sup> BERR (July, 2008) Towards a Nuclear National Policy Statement: Consultation on the Strategic Siting Assessment Process and Siting Criteria for the New Nuclear Power Stations in the UK.

<sup>11</sup> BERR (July, 2008) Towards a Nuclear National Policy Statement: Applying the proposed Strategic Siting Assessment Criteria: a study of the potential environmental and sustainability effects.

<sup>12</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)

Consultation on the scope of the appraisal with the statutory scoping consultees was undertaken in February 2009 (for EN-1 through to EN-5). This was achieved through workshops and the production of a single Scoping Report. However, a separate Scoping Report was prepared and consulted upon for EN-6. Following the consultation on the scope of the appraisal, each of the individual NPSs has been subject to a separate AoS. This report is the AoS for EN-1, the Overarching NPS for Energy.

## 1.2 Purpose of this AoS Report

The purpose of this AoS Report is to present the findings of the appraisal of the Overarching NPS for Energy against a range of social, economic, environmental, health and equality objectives. In addition, an indicative monitoring framework has been proposed with the aim of identifying the success or otherwise of the NPS against the AoS objectives.

This report has the following aims:

- to enable DECC to demonstrate that the developing NPSs comply with the AoS requirements of the Planning Act 2008, the SEA Directive and relevant regulations;
- to provide information on the Overarching NPS for Energy;
- to present a summary of relevant social, economic, environmental, health and equality information in the context of existing plans and programmes, baseline information and consultees' views;
- to outline, describe and evaluate the likely significant effects of the Overarching NPS for Energy (and its reasonable alternatives);
- to suggest measures to avoid, reduce, mitigate and/or offset any potentially significant adverse effects. Where appropriate, this report will also suggest any potential measures which could be incorporated into the Overarching NPS for Energy to positively contribute to the achievement of sustainable development;
- to outline and describe the measures envisaged concerning monitoring of any significant effects identified by the AoS; and
- to provide an opportunity for the consultation authorities and the public to offer views on the findings of the appraisal of the Overarching NPS for Energy.

The AoS process is an iterative process that evolves with and influences the development of the NPS. This AoS Report documents how the appraisal has influenced the development of the draft NPS (**see Section 4**).

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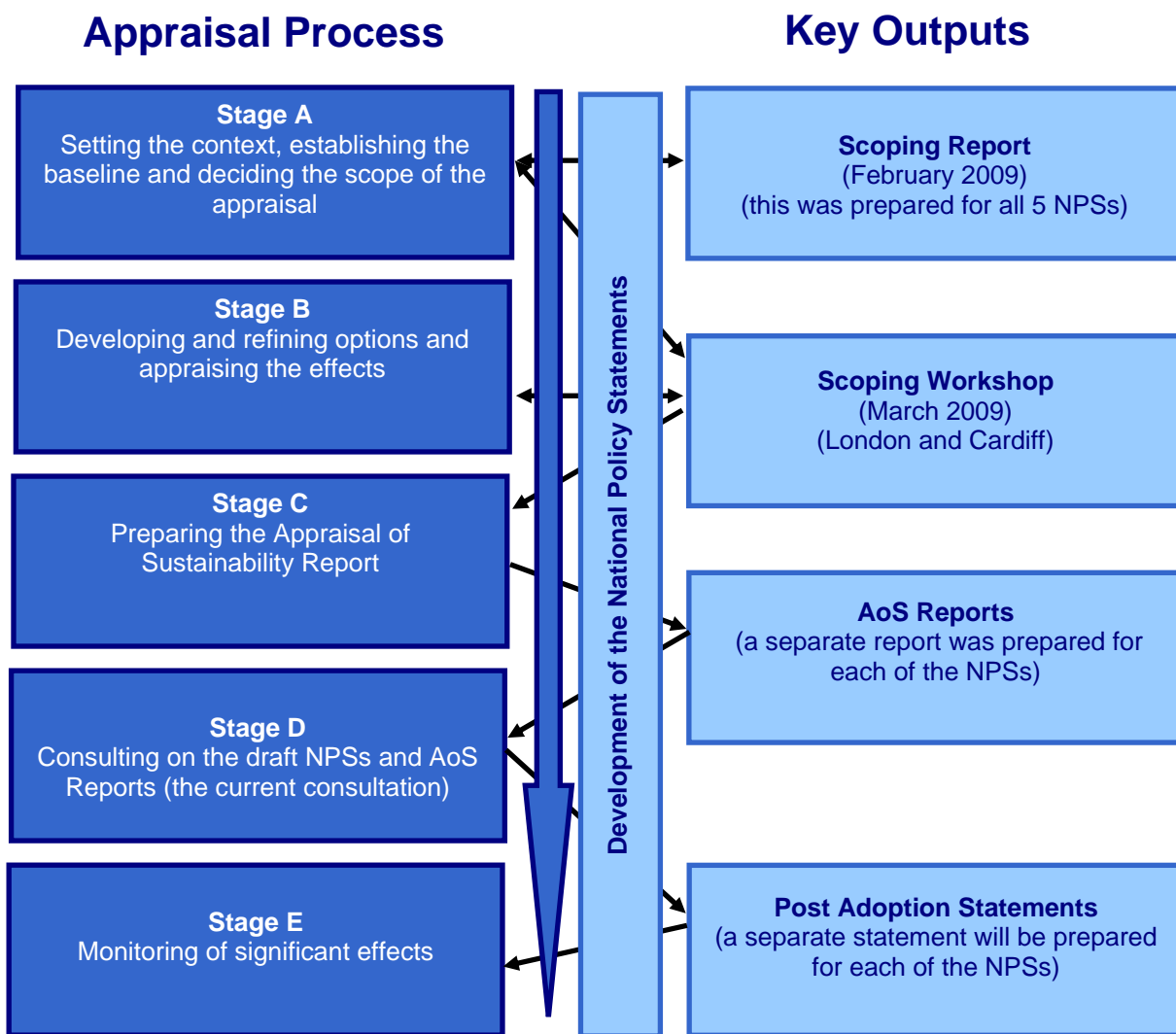
<sup>13</sup> *The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633)*. Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.

1.3 **Appraisal of Sustainability**

An overview of the appraisal process is illustrated in **Figure 1.1**. This is set out against the 5 stages of the AoS process as outlined in Government guidance on SEA practice<sup>14</sup>. The Scoping Report for this AoS Report (Stage A) was issued and consulted on by statutory consultees in February 2009.

A summary of the results of the consultation are presented in **Annex C** and the consultees' responses have been considered both in this AoS and also within the other NPSs. This AoS Report for the Overarching NPS for Energy is the output from Stages B and C. It is published alongside the draft NPS for consultation. The consultation on the AoS and NPS represents Stage D of the appraisal process outlined in **Figure 1.1**.

**Figure 1.1 Overview of the Appraisal of Sustainability Process**



<sup>14</sup> ODPM, 2005: A Practical Guide to the Strategic Environmental Assessment Directive.

### 1.3.1 Overview of Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) became a statutory requirement following the adoption of the European Directive 2001/42/EC on the assessment of the effect of certain plans and programmes on the environment. This was transposed into UK legislation on the 20<sup>th</sup> July 2004 as *Statutory Instrument No.1633 – The Environmental Assessment of Plans and Programmes Regulations 2004*.

The objective of the SEA Directive is:

*‘to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to contributing to sustainable development’.*

Throughout the course of the development of a plan or programme, 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. In addition to the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely social and economic effects of implementing the NPS.

The AoS process is an iterative one with the interactions between the Scoping Report, AoS and NPS intended to identify and manage and enhance the contribution of the NPS to a range of sustainability objectives.

## 1.4 Report Structure

This report is structured as follows:

- Section 1**      **Introduction:** An introduction to the Appraisal of Sustainability (AoS) and how to respond to the consultation.
  
- Section 2**      **Overview of the Overarching National Policy Statement for Energy:** The context of the appraisal, including the Planning Act 2008, the background to the NPSs (being prepared by DECC and the subject of this AoS). Alternatives which have been considered are also presented in this section.
  
- Section 3**      **Methodology:** The requirements and scope of the appraisal process are presented in this section. This section also details the requirements for the AoS and how this document fulfils the requirements of the SEA Directive. It also presents the AoS objectives.
  
- Section 4**      **Appraisal and Reporting:** This section presents the appraisal of the NPS.
  
- Section 5**      **Conclusions and Key Findings:** The key findings arising from the Appraisal of Sustainability are summarised and potential mitigation and monitoring is proposed.
  
- Annex A        List of Abbreviations
- Annex B        Review of Policies, Plans and Programmes
- Annex C        Response to Scoping Consultation



Annex D	Comparison of Consenting requirements
Annex E	Quality Assurance Checklist
Annex F	Baseline Information

## 1.5 Consultation and Stakeholder Engagement on the Non-Nuclear NPSs

Consultation and stakeholder engagement are fundamental to the AoS process. It reflects the principle that lies at the heart of the SEA process – that plan and programme making is better where it is transparent, inclusive and uses information that has been subject to public scrutiny. The AoS process aims to ensure that the key stakeholders, those parties who could be affected and the wider public have the opportunity to present their views on the Overarching NPS for Energy. At the scoping stage, consultation responses were sought from statutory consultees identified in the SEA regulations (as well as selected non-statutory consultees including the Department of Health (DH) and the Sustainable Development Commission (SDC)). This AoS Report will be subject to full public consultation between 9 November and 22 February 2010.

### 1.5.1 Previous Consultation

The Scoping Report produced for the five energy NPSs (EN-1 to EN-5) was subject to a five week consultation period between the 13<sup>th</sup> February and 23<sup>rd</sup> March 2009. This process included two scoping workshops, one held in Cardiff and one held in London. In total, 12 responses were received from the consultees (including statutory consultees from England, Northern Ireland, Scotland and Wales and non-statutory consultees, such as the DH and the MoD). The consultation responses have been reviewed and taken into account in the completion of this AoS. The scoping comments received both during the scoping workshop and the consultation period have been tabulated and are included in **Annex C**. The following summarises the key points raised by the consultees set out against the key consultation questions presented in the Scoping Report:

- **Do you agree with the main sustainability issues identified?** – On the whole, the consultees were generally satisfied with the sustainability issues identified within the Scoping Report. However, some comments were made relating to the need for wider consideration of some issues. For example, the Environment Agency recommended that consideration of ecology should include those issues beyond nature conservation matters driven by European and national legislation which could be achieved by adopting a wider ecosystems approach.
- **Are there additional plans, programmes and strategies which should be considered in the AoS?** – A number of consultees identified additional plans and programmes relevant to the specific topic areas or devolved administrations.
- **Do you know of any additional baseline evidence which will help to inform the AoS process?** Some useful additional baseline was suggested by a number of consultees for specific topics. Concerns were raised over the inconsistency in the level of detail for some baseline topics, especially for information relating to the devolved administrations.
- **Do you agree that the proposed AoS objectives cover the breadth of issues appropriate for appraising the five NPSs?** – Generally, the proposed objectives were considered appropriate, although some amendments were suggested to the guide questions and objective wording. It was also suggested that it would be useful to be clearer about which indicators were going to be used to monitor the achievement of the NPS towards the objective.



- **Do you have any further suggestions regarding the proposed approach to AoS?** A number of additional comments relating to various aspects of the Scoping Report were raised, such as in relation to alternatives and the interaction between NPSs and the AoSs.

#### 1.5.2 Consultation on this AoS

This AoS Report is being issued for public consultation alongside the draft of EN-1. In addition to seeking views from the public on the NPS and the appraisal of its sustainability, this AoS Report has been sent directly to a number of stakeholders. These include the statutory consultees identified under the SEA Regulations (including those of England, Northern Ireland, Scotland and Wales)<sup>15</sup> and non-statutory consultees such as SDC and the Department of Health.

For more information on this public consultation and how to give us your views, please see the Consultation Document on the draft NPSs for energy, accompanying this AoS Report.

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<sup>15</sup> *The Environment Agency, English Heritage, Natural England, Department of the Environment's Environment and Heritage Service (Northern Ireland), Historic Scotland, Scottish Natural Heritage, Scottish Environment Protection Agency, Cadw (Welsh Historic Monuments), Countryside Council for Wales, and the Environment Agency Wales.*

## 2. THE OVERARCHING NATIONAL POLICY STATEMENT FOR ENERGY – AN OVERVIEW

### 2.1 Introduction and Context

The UK's electricity generating capacity stands at approximately 83 GW. Approximately 20-25 GW needs to be replaced by 2020 as existing capacity reaches the end of its economic and operational lifespan (or in response to regulatory requirements such as the EU Large Combustion Plant Directive). As energy is an essential driver of the UK economy, fluctuations in energy price affect both businesses and individual consumers. An efficient energy market is needed to ensure that the cost of energy does not become a burden and hinder the potential development of businesses.

The development of energy generating infrastructure can be a lengthy process particularly with regards to obtaining relevant development consent as national policy and the national need for infrastructure is not in all cases clearly set out. Consequently, the Planning Act 2008 was implemented, in part, to provide an improved decision making process relating to the development of nationally significant development projects, including those relating to energy. Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- **Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore.** This includes generation from fossil fuels, renewables and nuclear. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- **Electricity lines at or above 132kV.** For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- **Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act).** For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- **Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds).** For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.

Decisions on planning applications for schemes that are deemed nationally significant will be made by the Infrastructure Planning Commission (IPC). The Overarching NPS for Energy (EN-1) sets out the national policy for new energy infrastructure. In combination with additional technology-specific NPSs, it will be used to provide the primary basis for the granting of development consent for nationally significant energy infrastructure.

The IPC and the NPSs are intended to ensure the development of infrastructure to deliver the UK's energy portfolio is undertaken in a timely and efficient manner. They will bring clarity of vision and more consistent planning decisions. This will in turn foster confidence in the market and bring forward the investments that the UK needs to ensure that the adequate provision of power plants and infrastructure is realised.

The strategic nature of the Overarching NPS and technology-specific NPSs suggests that site specific information is unlikely to be relevant as the NPSs (EN-1-EN-5) are non-location specific. In consequence, the geographical scope of the appraisal of the NPS has focused on the overall effects of the development across England, Wales and Scotland rather than local and regional effects. Site specific issues would typically be addressed through the individual development consenting process, led by the IPC (and which would include consideration of the Environmental Impact Assessment (EIA) requirements or Habitats Regulation Assessment (HRA)). In consequence, the treatment of site specific impacts, for example, noise and vibration will largely be addressed through later stages of the consenting process. However, the scope of this AoS will ensure that any relevant non-location specific key issues are identified, as appropriate, at this strategic level.

EN-1 is issued by the Secretary of State for DECC and applies to all decisions for nationally significant energy projects (as described in Part 1 of the NPS) in England and Wales (and Scotland in the case of cross border oil and gas cross-country pipelines). The NPS may also be a relevant consideration for the Scottish Executive (who will continue to make planning decisions rather than the IPC). In Northern Ireland, planning consents will continue to be made the Northern Ireland Executive rather than the IPC. The NPS will remain in force in its 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 it remains appropriate for IPC decision-making.

## 2.2 The NPS and UK Energy Strategy

In terms of energy issues, three long term challenges face the UK. Namely:

- ensuring that the UK has energy that is affordable, secure and sustainable;
- bringing about the transition to a low carbon Britain; and
- delivering an agreed international programme to combat climate change.

The Government's national strategy for climate change and energy<sup>16</sup> was developed to help address these challenges and includes the following five point plan:

- protecting the public from immediate risk of climate change;
- preparing for the future;
- limiting the severity of future climate change through a new international climate agreement;
- building a low carbon UK; and
- supporting individuals, communities and businesses to play their part.

The strategy is primarily based on the principle that independently regulated, competitive energy markets are the most cost effective and efficient way of providing energy supply and that investment is best made by the private sector. The private sector bases decisions on investment on anticipated profitability. Therefore, to ensure that the

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<sup>16</sup> HM Government (July 2009) The UK Low Carbon Transition Plan.

strategy's other objectives of reducing carbon emissions and helping to combat climate change are fully considered, the Government seeks to provide incentives to the market to promote the development of more sustainable energy generation methods. The Government has decided that its policy should not specify the exact make up of energy generation as this would be detrimental to enabling efficient investment by the private market. EN-1 does not provide guidance to the IPC on the mix of schemes that should be developed, nor does it provide guidance on the level of generating capacity, or the number of different projects that should be expected from different generating technologies. These are issues covered at a more strategic level, for example, within *The UK Low Carbon Transition Plan* and through intervention within the energy market. Instead, the NPS for Energy sets out the material planning factors that should be considered by the IPC when determining whether development consent should be granted for a proposed scheme.

## 2.3 Overarching NPS for Energy

### 2.3.1 Development of the Overarching NPS for Energy

EN-1 has been developed via an iterative process, taking account of the ongoing appraisal of the anticipated sustainability effects. As the NPS was developed, specific topic sections were reviewed by Entec and recommendations made to DECC for their consideration. A record of some of these recommendations and responses to them, highlighting how the NPS was developed is provided in **Section 4**.

### 2.3.2 The Content of Overarching NPS for Energy

EN-1 sets out the need for energy infrastructure and the need for new generating capacity recognising the need to use a diverse range of energy sources. However, the NPS does not set out a quantified mix of generating types. It removes the necessity for the IPC to consider whether the energy development applied for is necessary or of the right type or not, and will allow the IPC to concentrate on the impacts the development could have and whether the application is consentable. EN-1 will not detail any impacts that are specific to a particular technology; these will be covered in the technology-specific NPSs (EN-2 through to EN-6). The generic impacts covered within EN-1 are identified in **Box 2.1**.

#### Box 2.1 Generic Impacts detailed within EN-1

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Air emissions;</li> <li>• Biodiversity and geological conservation;</li> <li>• Civil and military aviation and defence interests;</li> <li>• Coastal change;</li> <li>• Dust, odour, artificial light, smoke and insect infestation;</li> <li>• Flood Risk;</li> <li>• Historic Environment.</li> </ul> | <ul style="list-style-type: none"> <li>• Landscape and visual impacts;</li> <li>• Land-use including open space, green infrastructure and greenbelt</li> <li>• Noise;</li> <li>• Socio-economic;</li> <li>• Traffic and transport Impacts;</li> <li>• Waste management; and</li> <li>• Water quality and resources.</li> </ul> |
|--|--|

The definition of what is a nationally significant project (and hence must be submitted to the IPC) varies from sector to sector (see **Section 2.1**). The thresholds are set out in the relevant technology-specific NPS as well as the Planning Act 2008.

## 2.4 Interaction Between the Energy NPSs

EN-1 forms the overarching policy on energy and provides a high level overview of Government's policy for the control of major energy infrastructure. There are a further 5 technology-specific NPSs for the energy sector (identified in **Figure 2.1**). The technology-specific NPSs should be read in conjunction with the Overarching NPS for Energy as they set out more detailed and additional factors, specific to the relevant technology type that the IPC will need to consider.

**Figure 2.1 Interaction Between the Energy NPSs**

<p><b>Overarching NPS for Energy (EN-1)</b></p> <ul style="list-style-type: none"> <li>– Government policy and energy infrastructure development</li> <li>– Setting out and justifying the overall need for energy infrastructure, including need for specific technologies</li> <li>– Assessment principles and generic impacts that cut across different NPSs/technologies</li> </ul>			
<p><b>NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2)</b></p> <p>Introduction</p> <p>Assessment and Technology-specific Information<sup>17</sup></p> <p>Combined Heat and Power</p> <p>Carbon Capture Readiness</p> <p>Carbon Capture Storage</p>	<p><b>NPS for Renewable Energy Infrastructure (EN-3)</b></p> <p>Introduction</p> <p>Assessment and Technology-specific Information</p> <p>Onshore Wind</p> <p>Offshore Wind<sup>18</sup></p> <p>Energy from Waste and Biomass</p>	<p><b>NPS for Nuclear Power Generation<sup>19</sup> (EN-6)</b></p> <p>Introduction</p> <p>Outputs of the Strategic Siting Assessment</p>	<p><b>NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)</b></p> <p>Introduction</p> <p>Assessment and Technology-specific Information</p> <p>a) Gas storage</p> <p>b) LNG facilities</p> <p>c) Gas reception facilities</p> <p>d) Oil and gas pipelines</p>
<p><b>NPS for Electricity Networks Infrastructure (EN-5)</b></p> <p>Introduction</p> <p>Assessment and Technology-specific Information</p>			

## 2.5 Reasonable Alternatives

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the Overarching NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or

<sup>18</sup> Offshore energy is subject of a separate SEA. Available at <http://www.offshore-sea.org.uk/site/index.php> (accessed 12/02/09)

<sup>19</sup> The Nuclear Strategic Siting Assessment is subject of a separate SEA which is currently ongoing.

what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

What ‘No NPS’ means: Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an

NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The other options, put forward by the appraisal team are identified in **Table 2.1** with reasons for them not being considered further identified by DECC.

**Table 2.1 Alternatives Proposed Forward by AoS Team**

Alternatives Proposed by the AoS Team	Response to the alternatives (provided by DECC)
<p><b>Option A: NPS sets ratio/mix of different forms of energy production:</b> Would help to ensure security by ensuring that a mix is achieved. This might also help ensure that low carbon targets are achieved.</p>	<p>It would not be appropriate for the NPS to set definitive ratios for different forms of energy production. This would go far beyond current energy policy under which the Government sets the strategic framework for the market within which private companies should come forward with specific proposals. There is no one right mix and setting inflexible ratios for each form of energy production could harm the provision of sufficient energy supply. While the renewables directive does impose targets for the proportion of our energy which should come from low carbon sources by 2020, these targets do not dictate which types of low carbon energy production should be consented to meet this target. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option B: NPS requires IPC to incorporate environmental controls beyond development consent considerations.</b></p>	<p>There are national-level environmental safeguards. Energy infrastructure operates within a strict environmental regulatory regime, e.g. Environmental Permitting Regulations 2007. It is not the place for NPSs to supersede these safeguards or duplicate the functions carried out by regulatory bodies such as the Environment Agency. In addition, emission limits for certain substances are already determined at an EU level and therefore it is not necessary to duplicate this within the NPS. For these reasons, this option is not considered a reasonable alternative. The NPS does, however, include environmental guidance appropriate to development consents.</p>
<p><b>Option C: NPS sets exclusionary criteria:</b> For instance no energy development could be permitted in National Parks, Special Protection Areas, AONBs etc.</p>	<p>NPS set out a policy framework under which energy infrastructure may be consented and explains the various measures in place in the UK and across the EU to protect designated sites. However, it is for the IPC to assess the evidence presented on each project in terms of weighing the impacts it may have against the national need for new energy infrastructure taking account of any statutory controls. Exclusionary criteria could rule out development which in the particular circumstances of the</p>



Alternatives Proposed by the AoS Team	Response to the alternatives (provided by DECC)
	<p>case may have been acceptable, thereby reducing the number of sites at which development is able to take place. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option D: NPS sets a 'points system':</b> Proposed developments would have to achieve a certain number of points (e.g. linked to the Government's energy goals, or to sustainability before they would be assumed to be acceptable).</p>	<p>NPSs set out a policy framework under which energy infrastructure may be consented. However, it is for the IPC to weigh the evidence presented by each project against the impacts it may have and the national need for new energy infrastructure. It would not be appropriate for the NPS to predetermine the outcome of the IPC's decisions on individual projects through the use of a point scoring system. Such a system would give rise to an overly formalistic and rigid structure which, given the range of infrastructures that would have to be covered, would be extremely complicated to create and administer. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option E: NPS establishes a sequence/phasing of events:</b> For instance, permission can be given for a first tranche of fossil fuel power stations, but x GW of renewable energy generation must be approved (or operational) before a second tranche can be approved.</p>	<p>This would seek to determine the energy mix in a way that is not in accordance with Government policy as explained above and could harm the provision of sufficient energy supply. It is also the case that where Government nevertheless wishes to send the market signals as to infrastructure that should be brought forward, it has mechanisms beyond the planning system it uses, e.g. the Renewables Obligation to encourage renewables. The IPC's focus should be on planning decisions within the Government's policy framework. This option assumes that there is an identifiable and preferred sequence of events and carries the risk of significant delay to nationally significant energy infrastructure if wider events do not unfold in accordance with that sequence. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option F: NPS only permits energy production up to a certain level</b> (or up to a certain amount per type of energy).</p>	<p>The NPS does set out the national need for new energy infrastructure, for example due the enforced closures of certain power plants under the Large Combustion Plant Directive (LCPD) and the Industrial Emissions Directive (IED). Energy policy does not, however, dictate the amount of capacity considered necessary in the UK nor does it set limits on amounts which can be produced in total or from particular types of energy. It is also for industry to determine the margin needed between peak demand and total capacity. For these reasons this option is not considered a reasonable alternative.</p>
<p><b>Option G: NPS considers location of proposed projects vis-à-vis location of energy demand:</b> This could help to ensure that there is no undue concentration of projects in one area, reduce the inefficiencies of long-distance transport of energy and/or encourage more local-level projects.</p>	<p>The NPS explains the need to assess the likely significant cumulative impacts of one project with others. It also explains the on-going need for large scale infrastructure alongside more localised energy generation. The IPC is only responsible for decisions on the former so it is not necessary for the NPS to cover the latter in any detail. Most large scale energy infrastructure has particular locational requirements (e.g. water or wind resource) and these factors are likely to be more significant in siting decisions than proximity to centres of demand. Constraining the provision of large scale energy infrastructure to fit the location of energy demand could result in sub-optimal locations. Furthermore, this alternative might not deliver all the benefits stated as not all energy infrastructure is mutually compatible. For these reasons this option is not considered a reasonable alternative.</p>



Alternatives Proposed by the AoS Team	Response to the alternatives (provided by DECC)
<p><b>Option H: NPS has presumption in favour of cooperative/local energy projects:</b> Preference will be given to projects shown by referendum to be supported by the majority of the community.</p>	<p>NPS set out a policy framework under which energy infrastructure may be consented. It is for the IPC to weigh the evidence presented by each project against the impacts it may have and the national need for new energy infrastructure. It would not be appropriate for the IPC to take decisions based on the ownership of a project or taking undue account of local community views given the benefits of much energy infrastructure will be national rather than local. It is also the case that many co-operative or local energy projects may be too small to go to the IPC. For these reasons this option is not considered a reasonable alternative.</p>

### 3. METHODOLOGY

#### 3.1 Overview

This AoS Report provides a qualitative assessment of the Overarching NPS for Energy and its contribution towards achieving a range of environmental, social and economic objectives. The approach adopted in this AoS is consistent with the requirements of SEA and has been expanded to include a wider range of issues normally found within a Sustainability Appraisal (SA).

This section sets out the methodology, including when the AoS was undertaken and by whom, the scope of the appraisal (**Section 3.2**), the method for collecting and presenting baseline information (**Section 3.3**), the objectives and issues addressed in this AoS (**Section 3.4**), the approach to completing the appraisal (**Section 3.5**), assumptions and technical difficulties encountered during the assessment (**Section 3.6**) and screening for appropriate assessment (**Section 3.7**).

The Overarching AoS report must be read in conjunction with the AoS reports for the relevant technology-specific NPS(s), which focus on additional issues. The Overarching AoS includes the methodology, baseline, issues and recommendation which are common across all of the non-nuclear NPSs. The relevant technology-specific NPSs (EN-2 to EN-5) focus on alternatives, issues and recommendations which are 'additional' to those already in the Overarching AoS report.

The appraisal of EN-1 was undertaken in 2009 by sustainability and technical consultants at Entec with input from DECC. The findings presented in this AoS Report will be issued to statutory consultees, non-statutory consultees and the public.

#### 3.2 Scope of the Appraisal

##### 3.2.1 Thematic Scope of the Proposed Appraisal

The thematic topics which have been included in this report have been informed by the topics identified in Annex 1 of the SEA Directive. **Table 3.1** highlights how the topics from the SEA Directive relate to the AoS objectives used within this AoS Report (and previously consulted upon in the Scoping Report). Following consultation, all of the Annex 1 issues identified in the Scoping Report have been 'scoped in' to this appraisal.

**Table 3.1 Scope of Annex I Issues and AoS Objectives**

Annex I Issues	Scope in (✓) or out (✗)	AoS Objective
Biodiversity	✓	2. Ecology (Flora and Fauna)
Population	✓	4. Economy and Skill; 7. Traffic and Transport; 8. Noise; 9. Landscape, Townscape and Visual; 13. Health and Wellbeing; 14. Equality
Human Health	✓	13. Health and Wellbeing; 14. Equality; 8. Noise; 11. Air Quality; 14. Equality
Fauna	✓	2. Ecology (Flora and Fauna); 8. Noise; 11. Air Quality
Flora	✓	2. Ecology (Flora and Fauna); 11. Air Quality
Soil	✓	12. Soil and Geology
Water	✓	1. Climate Change; 5. Flood Risk; 6. Water Quality
Air	✓	11. Air Quality
Climatic Factors	✓	1. Climate Change; 5. Flood Risk; Water Quality; 7. Traffic and Transport;
Material Assets	✓	3. Material Assets and Resource Use; 12. Soil and Geology
Cultural Heritage (including architectural and archaeological heritage)	✓	9. Landscape, Townscape and Visual; 10. Archaeology and Cultural Heritage
Landscape	✓	9. Landscape, Townscape and Visual

### 3.2.2 Geographic Scope of the Proposed Appraisal

This AoS includes any geographic area which could be affected both within the UK and internationally through the implementation of the NPS. As the NPS covers the implementation of national energy infrastructure, it is important that the focus of the appraisal captures both baseline information and the policies, plans and programmes at the appropriate level.

It should be noted that effects have been considered across a range of geographic scales (including UK, regional and local). However, as the NPS does not prescribe the location for new infrastructure projects, there are limitations in terms of appraising those effects that are site specific in nature. This is not to exclude the possibility that they could be significant; however, that such effects may only be effectively judged as significant at the project level (e.g. increases in noise or vibration levels from a new access road affecting a local housing settlement).

It is anticipated that those receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory instruments.

In consequence, the treatment of site specific impacts, for example, noise and vibration will largely be addressed through later stages of the consenting process. However, the scope of this AoS will ensure that all relevant issues are identified, as appropriate, at this strategic level.

### 3.2.3 Temporal Scope of the Appraisal

The effects of a policy, plan or programme may change over time (in the short, medium and long term) for a number of reasons. The temporal effects of the NPS have been considered in the appraisal, where this is appropriate. For the purposes of the appraisal, where used, the short term may be defined as the effects arising from implementation up to 10 years, the medium term as between 10 and 25 years and the long term as beyond 25 years.

## 3.3 Baseline

### 3.3.1 Review of Policies, Plans and Programmes

**The SEA Directive requires a report containing:**

*'an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes'.* (Annex 1(a))

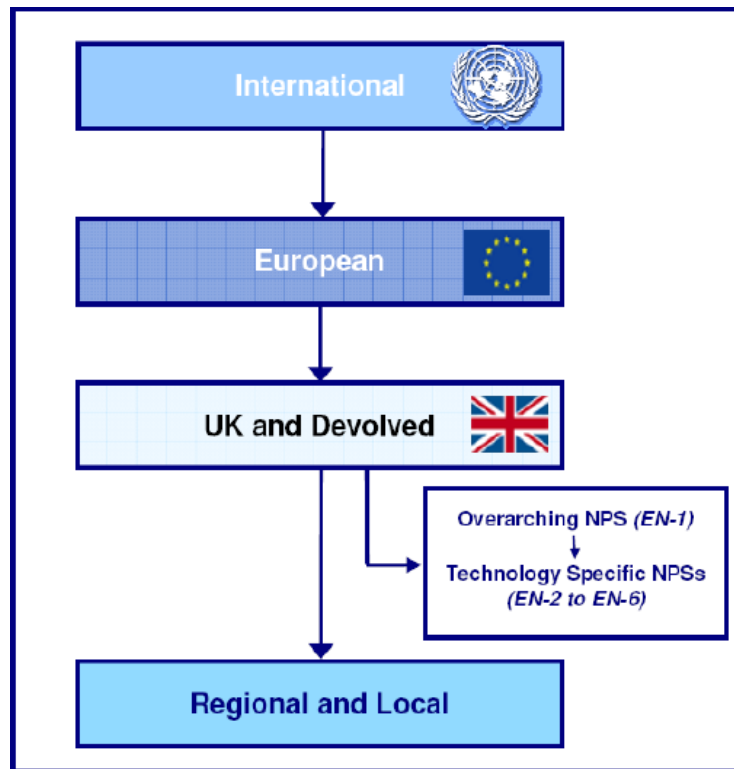
*'The environmental protection objectives, established at international, (European) Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation'.* (Annex 1(e))

The SEA Directive requires a review of the plan or programme's (i.e. the NPSs) "*relationship with other relevant plans and programmes*". **Figure 3.1** highlights how the NPSs relate within the hierarchy of plans and programmes. The Overarching NPS for Energy will have a national scope and as such is classified as national level document.

One of the first steps in undertaking the AoS is to review other relevant policies, plans, and programmes that could influence the Overarching NPS for Energy, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B**.

The Overarching NPS for Energy reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act 2008 and other government agreements on climate change being key influences on the development of the NPSs).

Figure 3.1 Relationship with Policies, Plans and Programmes



### 3.3.2 Baseline Information and Key Issues

**The SEA Directive requires identification and characterisation of:**

*‘the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme’.* (Annex 1 (b))

*‘the environmental characteristics of areas likely to be significantly affected’.* (Annex 1 (c))

*‘any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental importance, such as areas designated pursuant to Directive 79/409/EEC and 92/43/EEC’.* (Annex 1 (d))

An essential part of the AoS process is to identify the current baseline environmental conditions and their likely evolution following a ‘business as usual’ scenario. It is only with sufficient knowledge of the existing conditions that the key issues may be identified and addressed through the appraisal process. The AoS also requires that the subsequent effects of implementation of the NPS on the baseline are monitored. This is considered when determining significance, particularly with regards to baseline conditions that may already be improving or worsening.

There are 14 key issues identified and these were consulted upon in the Scoping Report. An overview of baseline conditions for each of the topic sections is presented with **Annex F**. This information has helped to inform the

appraisal (for example, by comparing the likely effects of having an NPS without the NPS). These key issues are linked with the AoS Objectives identified in **Table 3.2**.

### 3.4 Appraisal Objectives and Guide Questions

The establishment of appropriate objectives and guide questions is central to the appraisal process and provides a method to enable the consistent and systematic assessment of the effects of the NPS.

The appraisal objectives described in this section have been informed by: the examination of the baseline evidence, incorporating the identification of key issues; the review of plans and programmes; and comments received during the consultation on the Scoping Report (see **Annex C**). Their development also reflects national guidance on SEA and SA practice<sup>20</sup>.

#### What are SEA Objectives?

‘Objectives specify a desired direction for change and how they should *focus on outcomes*, not how the outcomes will be achieved (e.g. not specifying targets). They should focus on the ends rather than the means; on the state of the environment rather than the pressures on it. For instance, they should focus on “improving biodiversity” or “improving access”, rather than say establishing wildlife areas or protecting rail corridors (Therivel, R. (2005) *SEA in Action*).

Broadly, the objectives present the preferred social, economic or environmental outcome which typically involves minimising detrimental effects and enhancing positive effects where relevant.

Guide questions have been developed for each of the objectives that provide a detailed framework against which the NPS has been appraised. A general assumption that underpins the proposed objectives is that all existing legal requirements will be met, and as such, statutory compliance has not been reflected individually in the objectives or guide questions.

The objectives and detailed criteria listed in **Table 3.2** will be reviewed following the consultation period.

**Table 3.2 AoS Objectives and Guide Questions**

AoS Objective	Guide Questions	SEA Topic Requirement
<p><b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.</p>	<ul style="list-style-type: none"> <li>• Will the NPS ensure that the carbon throughput of the national portfolio of major energy infrastructure is reduced (at least in proportion to the carbon targets and budgets set under the Climate Change Act)?</li> <li>• Will the NPS significantly change the direct or indirect emissions of carbon dioxide and other greenhouse gases?</li> <li>• Will the NPS significantly change in the indirect emissions of carbon dioxide or other greenhouse gases due to changes in energy use?</li> <li>• Will the NPS promote future proofing (e.g. through good design) against the effects and risks of climate change (e.g. sea level rise and changes in weather patterns)?</li> <li>• Will the NPS promote long term adaptation to the effects of climate change?</li> <li>• Will the NPS have wider implications for the mitigation of climate risks?</li> </ul>	Climate Change

<sup>20</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

AoS Objective	Guide Questions	SEA Topic Requirement
<p><b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.</p>	<ul style="list-style-type: none"> <li>• Will the NPS help to prevent damage to and enhance species and habitats (e.g. by promoting good design)?</li> <li>• Will the NPS seek to minimise habitat fragmentation and severance of migration and commuter routes?</li> <li>• Will the NPS promote new habitat creation or restoration and linkages with existing habitats?</li> <li>• Will the NPS promote the sustainable management of natural habitats?</li> <li>• Will the NPS affect the structure and function of ecosystem processes?</li> <li>• Will the NPS limit air pollution to levels which do not damage natural systems by acidification or eutrophication?</li> </ul>	Fauna, flora and biodiversity
<p><b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.</p>	<ul style="list-style-type: none"> <li>• Will the NPS adhere to the waste management hierarchy?</li> <li>• Will the NPS help to meet the joint challenge of tackling climate change and ensuring secure, clean and affordable energy?</li> <li>• Will the NPS generate waste by products?</li> <li>• Will the NPS promote the UK's competitiveness, vitality and adaptability within the energy market?</li> <li>• Will the NPS promote security of supply in the energy market?</li> <li>• Will the NPS have wider effects on energy economics?</li> </ul>	Material assets
<p><b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.</p>	<ul style="list-style-type: none"> <li>• Will the NPS promote sustainable growth in the national economy?</li> <li>• Will the NPS improve the reliability of the national energy supply?</li> <li>• Will the NPS have wider socio-economic effects such as impact fuel poverty or have effects on specific groups?</li> <li>• Will the NPS promote investment for the long term?</li> <li>• Will the NPS promote diversification of the economy?</li> <li>• Will the NPS increase the national skills base?</li> <li>• Will the NPS avoid adverse effects on the national economy?</li> </ul>	Material assets
<p><b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.</p>	<ul style="list-style-type: none"> <li>• Will the NPS help to minimise the risk of flooding to existing properties and new energy infrastructure?</li> <li>• Will the NPS help to discourage inappropriate development in areas at risk from flooding and costal erosion?</li> <li>• Will the NPS help to manage the risks associated with costal erosion?</li> </ul>	Climatic factors
<p><b>6. Water Quality:</b> To protect and enhance surface (including costal) and groundwater quality (including distribution and flow).</p>	<ul style="list-style-type: none"> <li>• Will the NPS protect and improve ground and surface water quality in line with Water Framework Directive requirements?</li> <li>• Will the NPS avoid adverse effects on costal water and fisheries?</li> <li>• Will the NPS safeguard and enhance the UK's water resources and maintain water abstraction within carry capacity?</li> <li>• Will the NPS help to implement the Water Framework Directive?</li> </ul>	Water
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	<ul style="list-style-type: none"> <li>• Will the NPS significantly change national transport networks (e.g. a modal shift from road to rail)?</li> </ul>	Population
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	<ul style="list-style-type: none"> <li>• Will the NPS seek to minimise any adverse effects of noise?</li> </ul>	Population



AoS Objective	Guide Questions	SEA Topic Requirement
<p><b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.</p>	<ul style="list-style-type: none"> <li>• Will the NPS seek to protect and enhance the character of landscapes and townscapes (e.g. by promoting good design)?</li> <li>• Will the NPS seek to protect wilderness and areas of high landscape value?</li> <li>• Will the NPS give consideration to strategic views designated in LDFs and views from designated areas (e.g. AONBs)?</li> </ul>	Landscape
<p><b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.</p>	<ul style="list-style-type: none"> <li>• Will the NPS have any direct, indirect or cumulative effects on sites of universal cultural heritage importance (e.g. World Heritage Sites)?</li> <li>• Will the NPS have any direct, indirect or cumulative effects on other national or local designated sites (e.g. Scheduled Ancient Monuments (SAMs), listed buildings, registered battlefield sites etc)?</li> <li>• Will the NPS protect and enhance the historic environment?</li> <li>• Will the NPS have any potential impact on historic landscape character with landscapes designated as nationally important such as National Parks and AONBs as well as conservation areas?</li> </ul>	Cultural heritage, including architectural and archaeological heritage
<p><b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.</p>	<ul style="list-style-type: none"> <li>• Will the NPS maintain and enhance air quality?</li> <li>• Will existing areas of poor air quality be made worse?</li> </ul>	Air
<p><b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.</p>	<ul style="list-style-type: none"> <li>• Will the NPS promote the wise use of land?</li> <li>• Will the NPS safeguard soils and geology from potential contamination?</li> </ul>	Soil
<p><b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population</p>	<ul style="list-style-type: none"> <li>• Will the NPS affect the physical health or well-being of the population?</li> <li>• Will the NPS affect perceptions of risk?</li> <li>• Will the NPS help to reduce health inequalities?</li> <li>• Will the NPS affect recreational enjoyment of the countryside and coasts?</li> </ul> <p>There are a number of elements scoped out as they are location specific, e.g. will it encourage walking or cycling, will it affect an individual's access to health facilities and green spaces?</p>	Human health
<p><b>14. Equality:</b> To encourage equality and sustainable communities.</p>	<ul style="list-style-type: none"> <li>• Will the NPS result in changes to community services or facilities?</li> <li>• Will the NPS affect the level of people in fuel poverty?</li> <li>• Will the NPS reduce inequalities?</li> </ul>	Human health

### 3.5 Completing the Appraisal

This appraisal of the NPS has been undertaken in a topic by topic manner, with the NPS tested against the AoS objectives and guide questions (identified in **Table 3.2**). A commentary on the effects of the NPS against the objectives is presented in **Section 4**. The commentary is set out against each of the Objectives and includes:

- the nature and scale of the potential effect (what is expected to happen) and any specific reference to the potential effect on sensitive environmental aspects;
- when the effect could occur (timing);
- outline mitigation measures for potentially significant negative effects or where options for enhancement have been identified;

- assumptions and uncertainties that underpin the appraisal;
- additional information required to address uncertainties or information requirements that will be required for the next tier of appraisal; and
- cross-referencing between topic areas.

It should be noted that effects have been considered where appropriate across a range of geographic scales (including UK, regional and local). However, as the NPS is a strategic document it does not prescribe the location for new infrastructure projects and without this level of development detail there are limitations in terms assessing these effects (which are acknowledged). It is anticipated that those receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory instruments.

### 3.5.1 Prediction and Evaluation of Effects

In completing the appraisal the potential effects of the NPS against each of the objectives have been considered. In line with the ODPM (now CLG) *Practical Guide to the SEA Directive* this process seeks to *predict the significant environmental effects of the plan*<sup>21</sup>. This is done in accordance with the criteria set out in Annex II of the ODPM guidelines. In predicting effects, changes are identified to the baseline which would occur as a result of the NPS. These changes are then described (where possible) in terms of their geographic scale, the timescale over which they could occur, whether the effects would be temporary or permanent, positive or negative, likely or unlikely, frequent or rare and whether or not they are secondary, cumulative or synergistic. Quantitative information is not available to help inform the development of predictions in most cases. Where this is the case, the prediction of effects has been based on professional judgement and with reference to relevant legislation and regulations (see **Annex B** and **Annex F**).

For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

This is in line with the SEA Directive which requires the identification, description and evaluation of the likely significant effects. In predicting and evaluating the effects of the Overarching NPS for Energy, all effects have been considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

<sup>21</sup> ODPM (2005) A Practical Guide to the Strategic Environmental Assessment Directive. See Figure 5. Available online at: <http://www.communities.gov.uk/publications/planningandbuilding/practicalguidesea>

It is important to recognise the limitations of the appraisal process in order that the conclusions reached can be addressed in an appropriate and proportionate manner.

The following assumptions have then been used to aid the understanding of the influence of the NPSs on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors;
- Will add greater certainty to the delivery of nationally significant energy infrastructure by making the guidance on decision-making clearer and more transparent;
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK's security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC's understanding of the scale of need when considering individual applications;
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand; and
- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to appraise the implications of the NPS for future planning decisions and to ensure that the AoS focuses on the material differences to sustainability against the existing consenting requirements for energy infrastructure.

### 3.6 **Technical Difficulties**

The main difficulty encountered was seeking to understand what difference the NPS will have compared to the existing planning system. Once these differences were identified and agreed with DECC it became clearer what the effects at the strategic level would be and these could be identified and described.

No other technical difficulties were encountered.

### 3.7 **Habitats Regulations Assessment**

Habitats Regulations Assessment (HRA) reports have been prepared for the suite of NPSs. The HRA reports are subjected to public consultation alongside the draft NPSs. A HRA report was prepared for the five non-nuclear draft NPSs (EN-1 to EN-5) and a separate HRA report was prepared for EN-6. The HRA considers the potential effects of designating the draft NPSs on European sites.

The HRA has been applied to drafts of EN-1 to EN-5 in a manner which is consistent with their non-spatial, strategic nature. The HRA has been applied to the draft of EN-6 in a manner which is consistent with its locationally specific nature (as EN-6 lists sites that the Government has judged to be potentially suitable for the deployment of new nuclear power stations).

EN-1 to EN-5 do not identify locations to construct new nationally significant infrastructure. The HRA of the draft National Policy Statements (EN-1 to EN-5) concludes that although it cannot exclude the possibility that the integrity of one or more European sites, including sites which host priority habitats or species, could be adversely affected by new nationally significant infrastructure, either alone or in-combination with other plans and projects there is a case for Imperative Reasons of Overriding Public Interest (IROPI) in permitting new nationally significant energy infrastructure. This is because security of supply is essential for the maintenance of human health and safety. The full assessment including the examination of alternative plans and the IROPI case are set out in the main HRA.

## 4. APPRAISAL AND REPORTING

### 4.1 Appraisal of Reasonable Alternatives

The SEA Directive requires the identification, description and evaluation of the likely significant effects of reasonable alternatives, as well as the reasons for selecting such alternatives. Strategic alternatives proposed and considered by the appraisal team and reasons for not taking these forward are identified in **Section 2.5** (and **Table 2.1**).

The reasonable alternatives considered by DECC which relate to strategic choices in the development of the NPS are identified below:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

An appraisal of the likely high level (strategic) effects of these reasonable alternatives against the sustainability themes (environmental, economic, and social), which cover the 14 objectives (set out in **Section 3.4**) is presented in **Table 4.1**.

**Table 4.1 High Level Strategic Appraisal of the Reasonable Alternatives**

Sustainability Theme	Option 1: No NPS	Option 2: NPS Sets Out Government Energy Policy Only	Option 3: NPS Sets Out Government Energy Policy & Generic Criteria	Option 4: NPS Sets Out Government Energy Policy, Generic Criteria and Mitigation Measures
<b>Environmental (Objectives 1, 2, 5, 6, 8, 9, 10, 11, and 12)</b>	In the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues on the environment.	<p>An Overarching NPS setting out Government energy policy only may not provide the additional guidance required to the IPC to address environmental effects fully and adequately.</p> <p>Consequently, there is the possibility that issues which affect ecological receptors, air and water quality, etc may not be fully addressed.</p> <p>This assumes that if these impact areas were not included in the NPS that there is a risk that the IPC would not have fully considered them.</p> <p>An NPS setting out only Government Policy is unlikely to provide a high level of guidance as to the potential effects of proposed development projects.</p>	<p>An Overarching NPS setting out generic criteria for the IPC to consider, in addition to Government Policy, could have an effect on the environmental objectives. In particular, by providing the IPC with more information to guide their decision making process, more weight may be given to potentially significant effects.</p> <p>In such a way, the inclusion of generic criteria is likely to ensure that adequate consideration is given to the key issues that could affect environmental receptors.</p>	<p>An Overarching NPS setting out mitigation measures in addition to generic criteria and Government policy is more likely to ensure that the IPC have sufficient guidance available to inform the decision making process to ensure that those issues that may have a significantly adverse effect on the environment are given consideration.</p> <p>In addition, the inclusion of mitigation will ensure that the IPC can attach conditions to any consent granted requiring such generic mitigation to be included.</p> <p>Furthermore, the inclusion of mitigation measures is likely to help inform applicants as to generic measures that may be included in the design of energy infrastructure. This could result in a beneficial effect by positively contributing towards the achievement of the objectives.</p>

Sustainability Theme	Option 1: No NPS	Option 2: NPS Sets Out Government Energy Policy Only	Option 3: NPS Sets Out Government Energy Policy & Generic Criteria	Option 4: NPS Sets Out Government Energy Policy, Generic Criteria and Mitigation Measures
<b>Economic (Objectives 3, 4, and 7)</b>	Where there is no designated NPS, the IPC would act as recommending body to the Secretary of State who would have a further three months to make a decision to grant consent. Development consent would therefore be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.	The setting out of Government policy is unlikely to have a significant effect upon the achievement of economic objectives.  However, by providing more certainty in the planning process for nationally significant infrastructure this is likely to have positive effects.	The implementation of the NPS is likely to provide the IPC with more detailed guidance on the factors that need to be considered during the decision making process. It is anticipated that this would include considerations for the economic benefits of an adequate energy supply. Consequently, there may be a positive effect as a result of the implementation of the NPS.	The inclusion of mitigation measures within the NPS may help to avoid negative effects that may arise in relation to economic objectives (by identifying generic mitigation measures).  Furthermore, the use of generic criteria is likely to have a beneficial effect on the adequacy of energy supply by ensuring that consideration is given to such issues.
<b>Social (Objective 13 and 14)</b>	In the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.	The setting out of Government policy is unlikely to have a significant effect upon the achievement of social objectives.	Including generic criteria in the NPS will help provide detailed guidance to the IPC ensuring that they give consideration to issues that may result in a significant affect on social objectives. It is considered that in doing so, adverse effects may be avoided and positive effects enhanced.	Presenting the NPS with mitigation measures in addition to the generic criteria and Government energy policy is likely to result in a positive effect on society by ensuring that generic mitigation measures can be applied by the applicant and/or the IPC to help reduce any detrimental effects that may arise. Consequently it may contribute towards the achievement of the social objectives.

The preferred option is Option 4; an NPS that sets out high level Government policy and which defines issues for consideration and sets out impacts where effects could be avoided or mitigated. This option provides the most



transparent way of providing guidance to the IPC on minimising potentially detrimental effects. This option helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Options 1 and 2). Furthermore, Option 4 includes details of mitigation measures that may be adopted by the applicant or the IPC. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

## 4.2 Topic Based Approach

This section presents a summary of the appraisal of the Overarching NPS for Energy against the 14 objectives. Entec provided ongoing commentary on the sustainability effects of the emerging NPSs, and many of these points were incorporated in the NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

### **1. Climate Change:** *To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change?*

The appraisal indicates that when compared to the current consenting regime (the ‘business as usual’ baseline), the additional impact of the NPS is considered to have **minor positive effects** on this objective. Current government policy is set towards the delivery of low carbon energy. The Energy NPSs/IPC intend to deliver faster and more efficient decisions within the framework of government policy. As a result, the Energy NPSs/IPC may consent low carbon energy projects at a faster rate than at present. However, the overall net number of energy projects required will remain the same (i.e. the ‘supply’ of energy infrastructure does not exceed the ‘demand’ or the need). As a result the Energy NPSs may speed up the transition to a low carbon economy thus prompting a positive effect on the AoS climate change objectives because UK climate change commitments may be realised sooner than continuation under the current planning system.

Furthermore, the Overarching NPS requires applicants to consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure (4.8.5 of EN-1). The NPS also states that ‘the IPC should satisfy itself that applicants for new energy infrastructure have taken into account the potential impacts of climate change using the latest UK Climate Projections...’ (4.8.8 of EN-1).

#### **Climate Change:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 1.1:** The UKCIP scenarios project until 2100, for proposals over a longer lifespan, the data source would need to be the IPCC Assessment Reports.

**Response 1.1:** The text now reflects that IPCC reports will be needed for longer term assessment of climate change.

### **2. Ecology:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality?*

The appraisal indicates that when compared to the ‘business as usual’ baseline, the additional impact of the NPS is considered to have an **uncertain effect** on this objective. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7**), that states that ‘the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with

a range of potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level’.

The NPS states that the applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests (Section 4.18.4 of EN-1). The NPS also states that the applicant is expected to have included appropriate mitigation measures as an integral part of the proposed development and to demonstrate that opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals.

**Ecology: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 2.1:** Habitat Management Plans/Nature Conservation Strategies may be requested as part of a current application. The NPS may benefit from referring explicitly to the preparation of Habitat Management Plans/Nature Conservation Strategies.

**Recommendation 2.2:** Consider revising para 4.18.3 (Applicant’s Assessment) to reflect that significant effects could arise in other ways (e.g. on species that are not legally protected).

**Recommendation 2.3:** Para 4.18.15 (Project affecting legally protected species) implies that the Defra species referred to are protected, but they are not. Consider adding another subsection (e.g. Projects affecting other notable species) and including BAP priority species/habitats and rare species and habitats that are not on these lists (and may not be legally protected).

**Response 2.1:** The NPS reflects the current statutory requirements. The EIA regulations require that applicants provide in their ES “a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment”. Information within the ES may inform a Habitat Management Plan (HMP) or other Environmental Management Plan (EMP). However, it is not necessary for developers to deliver all mitigation proposed pre-consent as mitigation may be delivered via planning conditions. It is not necessary for developers to prepare an HMP or EMP in every case.

**Response 2.2:** This has been revised and now includes reference to ‘other species identified as being of principal importance for the conservation of biodiversity’.

**Response 2.3:** The title has been changed to ‘Habitats and Other Species Protection’.

**3. Material Assets and Raw Materials:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy?*

The appraisal indicates that when compared to the ‘business as usual’ baseline, the additional impact of the NPS is considered to have **significant positive effects** on this objective. The Overarching NPS addresses the issue of waste management (Section 4.29 of EN-1) and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.

The NPS recognises that all large infrastructure projects are likely to generate hazardous and non-hazardous waste during the construction, operation and decommissioning phases and states that applicants should set out the arrangements that are proposed for managing any waste produced. The NPS also states that the applicant should

also seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.

In general, EN-1 is considered to score positively against this objective as the faster delivery of energy infrastructure projects will support security of supply and the delivery of affordable and low carbon energy.

**Material Assets and Raw Materials:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 3.1:** Consider adding reference to the management of wastes during the construction and demolition stages. However, we recognise that this effect may more appropriately be considered in the technology-specific NPSs. Alternatively, consider adding a cross-reference to state that waste and raw materials is covered in the technology-specific NPSs.

**Response 3.1:** The Overarching NPS seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy. The waste management practices set out in the Overarching NPS apply to the technology-specific NPS.

**4. Economy and Skills:** *To promote a strong and stable economy with opportunities for all?*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **significant positive effects** on this objective. The NPS contributes positively towards improving the vitality and competitiveness of the UK energy market as it provides greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Energy NPSs/IPC intend to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

**Economy and Skills:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 4.1:** Consider requiring an economic or employment statement as part of any application.

**Response 4.1:** The waste management impact text of the Overarching NPS now refers to the generation of waste during the construction, operation and decommissioning phases.

**5. Flood Risk:** *Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The Overarching NPS recognises that a number of energy infrastructure projects will need to be located on coastal or estuarine sites. However, the mitigation and flood risk assessment process identified in the Overarching NPS will help to ensure that potential risks with regard to flooding are identified and effective mitigation is built into the applicant's proposal.

Notwithstanding these requirements there may be exceptional instances, where an increase in flood risk elsewhere cannot be avoided or mitigated and in these circumstances, the Overarching NPS states (in Section 4.22.14) that *'the IPC may grant consent if it is satisfied that the increase in flood risk can be mitigated to an acceptable level*

and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...’.

This represents a continuation of the approach under the current system, where some projects that will result in an increased flood risk have still been consented because of the national need for the infrastructure. Examples include a gas pipeline, part of which was installed in a flood zone and temporarily increased run-off; and a power station next to a flood defence wall which required a short term breach of the wall while the cooling water abstraction and discharge pipes were being installed, temporarily increasing flood risk to the surrounding area. Therefore, when compared to the current consenting regime, the Overarching NPS does not significantly increase or decrease flood risk.

It is also noted that the NPS specifically guides applicants to obtain advice from the Environment Agency on flood risk, where necessary.

**Flood Risk: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 5.1:** The draft introductory paragraph singles out the effects of flood risk on projects. Consider revising to reflect the need to ensure that projects don’t adversely affect flood risk (i.e. don’t increase run-off).

**Response 5.1:** The introductory paragraphs have been amended and reflect more widely flood risk.

**Recommendation 5.2:** Clarify what is meant by ‘deal with the flood risk’, for example, does this mean to negate.

**Response 5.2:** The paragraph that included this sentence has now been replaced.

**Recommendation 5.3:** The text should state clearly that whilst some energy projects may be acceptable in areas of low flood risk – they still need to manage surface water in accordance with PPS25.

**Response 5.3:** This text has been clarified and reference to Planning Policy Statement 25 (PPS25) has been included.

**6. Water Quality and Resources:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The appraisal indicates that when compared to the ‘business as usual’ baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. This is because the NPS guides the IPC to give consideration to the effects on water quality and resources. The NPS specifically guides the IPC to obtain advice from the Environment Agency on the potential effects of discharges and abstractions.

Additionally, the IPC must be satisfied that development consent can be granted taking full account of environmental impacts and the NPS states that this ‘*will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies...*’ (Section 4.10.7 of EN-1). The NPS also states that the IPC will generally need to give impacts on the water environment more weight where a project would have an impact on the achievement of the environmental objectives established under the Water Framework Directive.

**Water Quality and Resources:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 6.1:** NPS should clarify that water quality refers to marine and freshwater quality and resources.

**Response 6.1:** NPS now includes reference to marine and freshwater quality and resources.

**Recommendation 6.2:** The NPS should cover the effects of proposed development on water quality.

**Response 6.2:** NPS now outlines effects of proposed developments on water quality.

**Recommendation 6.3:** The NPS should refer to Water Framework Directive status and the objectives/measures for waterbodies affected.

**Response 6.3:** The NPS now refers to the Water Framework Directive.

**7. Traffic and Transport:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. A key issue in transport is the effects of development on the local highways network. The NPS provides guidance on the requirements on the developer to identify any local effects and to mitigate these as part of any application. This approach is consistent with the existing national planning guidance and therefore is unlikely to result in anything other than a neutral effect against this objective.

**Traffic and Transport:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 7.1:** Consider the need for a Transport Assessment.

**Response 7.1:** Reference to the requirement for a Transport Assessment is now included.

**Recommendation 7.2:** Reference should be made to the Department for Transport guidance on Transport Assessment.

**Response 7.2:** Reference is now made to the NATA/WebTAG methodology stipulated in Department for Transport guidance.

**Recommendation 7.3:** Consider requiring a Traffic Management Plan (TMP).

**Response 7.3:** There is no statutory requirement for project proponents to prepare a TMP. However, the IPC or other stakeholders may, on a project by project basis, secure a TMP. If traffic impacts are considered significant, then traffic is expected to be 'scoped in' to any EIA. The NPS neither includes nor excludes TMPs, the scope for TMPs shall be determined as part of the consenting process.

**Recommendation 7.4:** A number of additional recommendations were made clarifying an appropriate methodology (e.g. transportation of abnormal loads, calculations of vehicle movements and investigation of route options)

**Response 7.4:** This text was removed and more generic information included.

**8. Noise:** *To protect both human and ecological receptors from disturbing levels of noise.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. Noise can dramatically affect the quality of the environment in which we live and work and has also been shown to have a link to health. The NPS seeks to consider the

effects of noise generated by the proposals against a baseline level of noise. The NPS requires that the IPC should be satisfied that the applicants' proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible, contribute to improvements to health and quality of life through the effective management and control of noise. The approach is in keeping with current guidelines. As a consequence when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.

**Noise:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 8.1:** Within the NPS text reference to the BS4142 should read as 1997 rather than 1990. Reference to PPG24 should also cover the Welsh equivalent TAN11. With reference to construction noise BS5228:2009 should be used in calculating the noise levels while BS6472:2008 should be used when considering the effects of vibration on human health.

**Response 8.1:** The NPS now makes reference to the correct standards and planning policy. The NPS includes the AoS recommendations within the section which details what aspects should be included in a noise assessment.

**9. Landscape, Townscape and Visual:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to nationally significant energy infrastructure projects that could potentially affect landscape and visual amenity. As a result, the NPS identifies national designations as the key landscape features to protect. This is in keeping with landscape guidance and the suggested approach in the NPS is in keeping with current guidelines. As a consequence, when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.

**Landscape, Townscape and Visual:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 9.1:** The importance of highly valued landscapes outside nationally designated areas is not fully recognised by the NPS. The potential for highly valued local landscapes is recognised by the Government in paragraph 24 in PPS7 which considers the future role to be played by local landscape designations within the planning system. Whilst PPS7 advises that rigid local landscape designations should on the whole not be retained as a means of protecting local landscapes, it does provide for their retention within LDDs when supported by robust justification.

**Response 9.1:** The draft NPS instructs the IPC to pay particular attention to local policies and designations for landscape; in addition, we would expect these to be covered in the local impact reports prepared by local authorities under the terms of the Act. However, it is appropriate that local designations do not enjoy the full protections appropriate to nationally designated landscapes; valuable though landscapes may be locally.

**10. Archaeology and Cultural Heritage:** *To protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.*



The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to energy infrastructure projects that could potentially affect heritage assets. However, the NPS provides guidance to the IPC and ensures that sufficient weighting is given to designated sites and to elements of setting that enhance the significance of designated heritage assets (and non-designated assets where there is significant archaeological interest). The NPS also gives due regard to the highest level of protection (World Heritage Sites) and advises that the IPC should not accept material harm to or removal of significance in relation to a heritage asset, unless it can be demonstrated that the material harm or removal of significance is outweighed by the wider social, economic and environmental benefits that will be delivered by the proposed development. Furthermore, the IPC may request applicants to undertake desk and field based assessment prior to application as part of an Environmental Impact Assessment and, where consent is given, to maximise opportunities to advance the understanding of the historic assets.

**Archaeology and Cultural Heritage: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 10.1:** A reference to the cumulative effects of national infrastructure on Archaeology and Cultural Heritage should be included.

**Response 10.1:** The NPS requires consideration to be given to cumulative impacts.

**11. Air Quality:** *To protect and enhance air quality on local, regional, national and international scale.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. Overall, the Overarching NPS for Energy is unlikely to result in a significant deterioration in air quality, as the IPC is guided by the NPS to require appropriate levels of assessment to identify potential effects. Additionally, the IPC must be satisfied that development consent can be granted taking full account of environmental impacts and the NPS states that '*this will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies...*' (Section 4.10.7).

Furthermore, the NPS requires more weighting to be provided to air quality considerations where they may affect Air Quality Management Areas. In all cases, the NPS requires the IPC to take account of any legally binding air quality limits to minimise the severity of the emissions.

**12. Soil and Geology:** *To promote the use of brownfield land and, where this is not possible, to prioritise the protection of geologically important sites and agriculturally important land.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The NPS may result in consent given to energy infrastructure projects that could affect geological assets. However, the IPC is directed to take account of the effects that proposed energy infrastructure may have on existing, adjacent and proposed land uses, including effects on the agricultural quality of soils and on the planning significance of any affected development. The NPS also states that the environmental statement for the infrastructure project should set out the effects on international, national and locally designated sites of geological conservation and show how the project has taken advantage of opportunities to conserve and enhance geological conservation interests. In consequence, when compared to the existing baseline, the additional impact of the NPS is considered to be neutral on this objective.



**Soil and Geology:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 12.1:** The NPS does not mention specific geological designations for consideration by the IPC and the proposed mitigation measures are relatively limited

**Response 12.1:** Reference to geological designations has been added. The section on biodiversity has been expanded to include geological conservation.

**13. Health and Well-Being:** *To protect and enhance the physical and mental health of the population*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have a **no overall effect** on this objective. The effects of the Overarching NPS for Energy on the significant aspects of health and well being are considered to be neutral.

Furthermore, where health and well being issues relate to certain impact areas (e.g. noise, air emissions, etc) they are addressed in these sections of the NPS.

**14. Equality:** *To encourage equality and sustainable communities.*

The appraisal indicates that when compared to the 'business as usual' baseline, the additional impact of the NPS is considered to have **no overall effect** on this objective. The Overarching NPS for Energy does not direct the IPC to determine the effectiveness of major energy infrastructure in reducing inequality; these are dealt with through other Government guidance and policies. As such the effects of the Overarching NPS for Energy on equality when compared to the existing baseline of planning and policy are considered to be neutral.

**Equality:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 14.1:** May wish to request an Equalities Impact Assessment (EqIA) as part of the application. This would go beyond current requirements and would be seen as positive.

**Response 14.1:** EqIA is not a statutory requirement for current energy applications. The applicability of EqIA may be considered on a case by case basis.

4.3 **Cumulative Effects**

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects are considered in the commentary above (where appropriate). They are defined below.

Type of Effect	Definition
Secondary (or indirect)	Effects that do not occur as a direct result of the NPSs, but occur at distance from the direct impacts or as a result of a complex pathway. An example of a secondary effect may include increased employment opportunities as a result of improved competitiveness of the UK market.

Cumulative	Effects that occur where several individual activities which each may have an insignificant effect, combine to have a significant effect. An example of cumulative effects may include the effects arising from the clustering of one or more projects (which could include the more efficient use of resources as well as more significant localised impacts).
Synergistic	Effects that interact to produce a total effect that is greater than the sum of the individual effects.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (4.2.4 of EN-1). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3 of EN-1).

#### 4.3.1 Cumulative Effects in Combination with Other NPSs

In assessing the Overarching NPS regard has been made to the technology-specific NPS (as EN-1 must be read in conjunction with the technology-specific NPS). However, the effects of the technology-specific NPSs are outlined in their accompanying AoS Reports. Nationally significant energy infrastructure projects will require consideration of EN-1 and at least one technology-specific NPS. Some energy projects may require consideration of more than two energy NPSs, for example, a large gas fired electricity generating station may require connections to both electricity networks and gas pipelines. This may require consideration of EN-1, EN-2, EN-4 and EN-5.

The effects of the NPSs in combination with one another (and other relevant plans and programmes as identified in **Annex B**) has been considered within this AoS Report and in the technology-specific AoS Reports where appropriate to do so and is summarised in the Figure below. The likely significant effects of EN-6 are identified in the AoS for EN-6. The AoS of EN-6 states that there is *'the potential for effects on communities and the environment nationally and at the regional or local level. Some effects are common to new nuclear power stations, for example, effects associated with the requirement for water for cooling are common to new nuclear power stations but the significance of such effects depends upon the detailed design together with the characteristics and sensitivities of the local communities and environment'*.

The AoS of EN-6 concluded that there are likely to be:

- positive effects on climate change;
- significant adverse effects on biodiversity;
- significant beneficial effects on employment and viability for communities;
- health benefits;
- minor significant adverse effects on cultural resources (except for one site where the effect may be more significant);
- neutral or minor negative effects on landscape (except for the sites in Cumbria where effects may be of national significance);
- neutral effects on air quality;
- neutral effects on soils and geology;
- minor negative effects on water quality and resources which may be mitigated; and

- negative effects on flood risk and of flood risk on the sites in the draft NPS (and the scale of the effects are likely to increase over time as a result of climate change).

AoS Objective	Cumulative Effects Assessment						Commentary
	EN-1 to EN-5	EN-1	EN-2	EN-3	EN-4	EN-5	
1. Climate Change	+	+	?	+	?	+	The cumulative effects of EN-1 to EN-5 are likely to be positive as the NPSs may speed up the transition to a low carbon economy.
2. Ecology (Flora and Fauna)	?	?	?	?	?	?	The cumulative effects against this objective are uncertain.
3. Material Assets and Resource Use	+	++	0	++	+/-	++	The NPSs together will be effective in helping to deliver secure, clean and affordable energy.
4. Economy and Skills	++	++	++	++	++	++	The NPSs contribute positively towards improving the vitality and competitiveness of the UK energy market.
5. Flood Risk	0	0	0	0	0	0	Cumulative effects are not anticipated.
6. Water Quality	0	0	0	0	0	0	Cumulative effects are not anticipated.
7. Traffic and Transport	0	0	0	0	0	0	Cumulative effects are not anticipated.
8. Noise	0	0	0	0	0	0	Cumulative effects are not anticipated.
9. Landscape, Townscape and Visual	0	0	0	0	0	0	Cumulative effects are not anticipated.
10. Archaeology and Cultural Heritage	0	0	0	0	0	0	Cumulative effects are not anticipated.
11. Air Quality	0	0	0	0	0	0	Cumulative effects are not anticipated.
12. Soil and Geology	0	0	0	0	0	0	Cumulative effects are not anticipated.
13. Health and Well-Being	0	0	0	0	0	0	Cumulative effects are not anticipated.
14. Equality	0	0	0	0	0	0	Cumulative effects are not anticipated.

## 5. CONCLUSION

### 5.1 Key Findings Arising From the Appraisal of Sustainability

Current government policy promotes the delivery of low carbon energy. The Energy NPSs are expected to speed up the transition to a low carbon economy thus prompting a positive effect on the AoS climate change objectives because UK climate change commitments may be realised sooner than continuation under the current planning system.

Furthermore, the Energy NPSs contribute positively towards improving the vitality and competitiveness of the UK energy market. It provides greater clarity for developers, and so can help in terms of removing planning barriers associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Energy NPSs/IPC intend to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

The development of new energy infrastructure, at the scale and speed required to meet the current need, will affect ecology as development may occur on previously undeveloped land. However, the significance of these effects remain uncertain at the strategic level. Beyond this there are no significant differences identified between the existing consenting requirements ('business as usual') and what will be required under the IPC/NPS system. The NPS does not set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements.

In light of the assumptions, (set out in **Section 7**) the Overarching NPS is envisaged to have a significant positive effect at the national policy level by contributing to the delivery of a low carbon economy and security of supply.

The Energy NPSs do not include site or project specific information so the AoS does not attempt to be site or project specific. Energy proposals brought forward under the Energy NPSs are liable to require project level, Environmental Impact Assessment and Habitats Regulations Assessment.

### 5.2 Monitoring

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>22</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

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<sup>22</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

The effects that should be monitored therefore include:

- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

- Positive effects on Climate Change (AoS Objective 1);
- Positive effects on Resources and Raw Material (AoS Objective 3); and
- Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the **Table 5.1** (these will be reviewed in light of comments on the significance of effects).

**Table 5.1 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 5.3 Quality Assurance

The Government's guidance on SEA contains a checklist to help ensure that the requirements of the SEA Directive are met. This has been completed and is presented in **Annex E**.

### 5.4 Next Steps

This AoS Report will be presented for consultation alongside the Overarching NPS for Energy from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The Overarching NPS for Energy may be amended and revisions to the AoS may be made. A Post Adoption Statement will summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the Overarching NPS for Energy.



# 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	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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<sub>2</sub> 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)</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>The United Nations Framework Convention on Climate Change (UNFCCC)</li> <li>Kyoto Protocol to the UN Framework Convention on Climate Change (1992)</li> <li>The Kyoto Protocol, (1997)</li> <li>EU Emission Trading Scheme (EU ETS)</li> </ul>	<ul style="list-style-type: none"> <li>EU Green Paper "adaptation to climate change in Europe – options for EU action"</li> <li>European Climate Change Programme</li> <li>EU Sixth Environmental Action Plan (2002 – 2012)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>UK Climate Change Act 2008</li> <li>UK Low Carbon Transition Plan: National Strategy for Climate &amp; Energy (2009)</li> <li>Climate Change – The UK Programme 2006: Tomorrow's Climate Today's Challenge (HM Government, March 2006)</li> <li>Policy Planning Statement 1 Delivering Sustainable Development (2005)</li> <li>Committee on Climate Change (2008) Building a low-carbon economy</li> <li>UK Climate Projections (UK CIP '09)</li> </ul>	<ul style="list-style-type: none"> <li>Health Effects of Climate Change in the UK 2008 – An update of the Department of Health Report 2001/2002</li> <li>Stern Review of the Economics of Climate Change (2009)</li> <li>Environment Agency Climate Change Adaptation Strategy (2008-11)</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>Planning Policy Statement: Planning and Climate Change Supplement to PPS1 (2007)</li> </ul>	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Wales Changing Climate: Challenging Choices: the Impact of Climate Changes in Wales 2020 – 2080</li> <li>Sustainable Development Scheme WAG (emerging)</li> <li>Green Jobs Strategy WAG (2008)</li> </ul>	<ul style="list-style-type: none"> <li>Renewable Energy Route Map WAG (2008)</li> <li>Wales: a Vibrant Economy WAG (2005)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scottish Executive 'Changing Our Ways' Scotland's Climate Change Programme (2006)</li> <li>Scottish Government's Climate Change Adaptation Framework (under development)</li> </ul>	<ul style="list-style-type: none"> <li>Climate Change (Scotland) Act (2009)</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>Preparing for Climate Change in Northern Ireland (2007)</li> </ul>	
<b>Relevant methodological guidance</b>	
<ul style="list-style-type: none"> <li>Fourth Assessment Report of the Intergovernmental Panel on Climate Change.</li> <li>Strategic Environmental Assessment (Levett-Therivel et al, June 2007)</li> </ul>	<ul style="list-style-type: none"> <li>UK Climate Impacts Programme (<a href="http://www.ukcip.org.uk">www.ukcip.org.uk</a>)</li> </ul>

2. Ecology (flora and fauna)	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p> <p>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)).</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>• The EC Habitats Directive (Directive 92/43/EEC)</li> <li>• The EC Birds Directive (Directive 79/409/EEC)</li> <li>• Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)</li> <li>• Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)</li> <li>• Directive on the Conservation of European Wild Birds (79/406/EEC)</li> <li>• Directive on the Conservation of European Wildlife and of Wild Fauna and Flora (92/43/EEC)</li> <li>• Environmental Liability Directive 2004/35/EC</li> </ul>	<ul style="list-style-type: none"> <li>• 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)</li> <li>• OSPAR Biological Diversity and Ecosystems Strategy</li> <li>• Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971)</li> <li>• UN Convention on Biological Diversity</li> <li>• EU Biodiversity Strategy (1998)</li> <li>• Water Framework Directive (WFD) (2000/60/EC)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>• The Offshore Marine Conservation (Natural Habitats, &amp;c.) Regulations 2007</li> <li>• The National Parks and Access to the Countryside Act 1949</li> <li>• The Wildlife and Countryside Act 1981</li> <li>• CROW Act 2000</li> <li>• The Natural Environment and Rural Communities (NERC) Act 2006</li> <li>• The Protection of Badgers Act 1992</li> <li>• Conservation (Natural Habitats, &amp;c.) Regulations 1994</li> <li>• Countryside and Rights of Way Act (2000)</li> </ul>	<ul style="list-style-type: none"> <li>• UK Biodiversity Action Plan (BAP) species and habitats. (1994)</li> <li>• UK Red Data Book</li> <li>• Nationally Scarce species</li> <li>• Birds of Conservation Concern red list (Gregory et al. 2002)</li> <li>• Conserving Biodiversity – The UK Approach (2007)</li> <li>• Marine and Coastal Access Bill (2008)</li> <li>• The Food &amp; Environmental Protection Act (FEPA) (1985)</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>• A Strategy for England's Trees, Woodlands and Forests (2007)</li> <li>• Working with the Grain of Nature: A Biodiversity Strategy for England (2002)</li> <li>• Norfolk and Suffolk Broads Act (1988)</li> </ul>	<ul style="list-style-type: none"> <li>• PPS9 Biodiversity and Geological Conservation (2005)</li> <li>• Securing a healthy natural environment: An action plan for embedding an ecosystems approach' (Defra, 2007).</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>• Planning Policy Wales (PPW) published in March 2002</li> <li>• Wales Environment Strategy (2006)</li> </ul>	<ul style="list-style-type: none"> <li>• TAN 5: Nature Conservation and Planning (1996)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>• The Scottish Planning Policy (SPP) and National Planning Policy Guidance (NPPG)</li> <li>• NPPG 14: Natural Heritage (1999)</li> <li>• Planning Advice Note 60, Natural Heritage (2000)</li> <li>• Scottish Biodiversity Strategy (2004)</li> </ul>	<ul style="list-style-type: none"> <li>• Scottish Executive (2000) Planning Advice Note 60: Planning for Natural Heritage</li> <li>• Nature Conservation (Scotland) Act 2004</li> <li>• Scottish Executive (2004) Scotland's Biodiversity: It's in Your Hands – A strategy for the conservation and enhancement of biodiversity in Scotland</li> </ul>

<b>2. Ecology (flora and fauna)</b>	
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>• Environment Northern Ireland - A Vision for the Future</li> <li>• Natural Heritage Strategic Plan (2003)</li> </ul>	<ul style="list-style-type: none"> <li>• PPS 2 – Planning and Nature Conservation (1997)</li> <li>• The Northern Ireland Biodiversity Strategy (DOE) 2002</li> </ul>
<b>Relevant methodological guidance</b>	
<ul style="list-style-type: none"> <li>• <i>Guidelines for Ecological Impact Assessment in the United Kingdom (version 7 July 2006)</i></li> </ul>	

<b>3. Material Assets and Resource Use</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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))</p> <p>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))</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>EU Directive on Waste 75/442/EEC (as replaced by Directive 2006/12/EC)</li> <li>Directive on the Landfill of Waste (99/31/EC)</li> <li>Environmental Liability Directive 2004/35/EC</li> <li>Offshore Petroleum Activities (Conservation of Habitats) Regulations '01</li> <li>Directive 2009/28/EC on the Promotion and Use of Energy from Renewable Sources</li> <li>Waste Framework Directive (2008/98/EC)</li> </ul>	<ul style="list-style-type: none"> <li>EU Thematic Strategy on the Prevention and Recycling of Waste</li> <li>European Sustainable Development Strategy (2006)</li> <li>World Summit on Sustainable Development, Johannesburg, September 2002</li> <li>Directive to Promote Electricity from Renewable Energy (2001/77/EC)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>UK Renewable Energy Strategy (2009)</li> <li>Planning for a Sustainable Future: White Paper (2007)</li> <li>Energy Act 2008</li> <li>Energy White Paper: Meeting the Energy Challenge (2007)</li> <li>Electricity Act 1989</li> </ul>	<ul style="list-style-type: none"> <li>UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)</li> <li>The Energy Challenge – Energy Review Report (2006)</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>Securing the Regions' Futures – Strengthening the Delivery of Sustainable Development in the English Regions (2006)</li> <li>Waste Strategy for England (2007)</li> <li>Water Resources for the Future: Strategy for England and Wales (2001)</li> <li>Environment Agency - Waste information 2007</li> </ul>	<ul style="list-style-type: none"> <li>PPS1: Delivering Sustainable Development (2005)</li> <li>PPS10 Planning for Sustainable Waste Management (2005)</li> <li>PPS22 Renewable Energy (2004)</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Water Resources for the Future: A Strategy for England and Wales (2001)</li> <li>Minerals Planning Policy Wales 2000</li> <li>Environment Agency - Waste information 2007</li> </ul>	<ul style="list-style-type: none"> <li>Wise about Waste The National Waste Strategy for Wales (2002)</li> <li>Ministerial Interim Planning Policy Statement 01/2005 – Planning for Renewable Energy</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scotland's National Waste Strategy SEPA (1999)</li> <li>Scotland's National Waste Plan (2003)</li> <li>SPP6 Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>NPPG 10 Planning and Waste Management</li> <li>Determining and Delivering Scotland's Energy Future</li> <li>New National Waste Management Plan (under development)</li> </ul>

3. Material Assets and Resource Use	
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>A Positive Step – Northern Ireland - A Sustainable Development Implementation Plan (2006)</li> <li>Northern Ireland Waste Management Strategy 2006-2020</li> </ul>	<ul style="list-style-type: none"> <li>Energy: A Strategic Framework for Northern Ireland 2004</li> <li>Strategic Energy Framework (2004)</li> </ul>

<b>4. Economy and Skill</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>The European Spatial Development Perspective (ESDP) (1999)</li> </ul>	<ul style="list-style-type: none"> <li>EU European Employment Strategy – EES (2005)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)</li> </ul>	<ul style="list-style-type: none"> <li>UK Climate Change Committee (2008) Building a low-carbon economy</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000)</li> <li>Review of the Rural White Paper – Our Countryside: the Future (2004)</li> <li>Rural Strategy (2004)</li> <li>Sustainable Communities: Building for the Future (2003)</li> </ul>	<ul style="list-style-type: none"> <li>The Egan Review: Skills for Sustainable Communities</li> <li>PPG2: Green Belts (1995, amended 2001)</li> <li>PPS7 Sustainable Development in Rural Areas (2004)</li> <li>Good Practice Guide on Planning for Tourism which should be used instead of PPG 21 (July 2007)</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>The Sustainable Development Action Plan 2004 – 2007 (2004)</li> <li>A Winning Wales – The National Economic Development Strategy of the Welsh Assembly Government (2001 &amp; 2004)</li> <li>European Structural Funds In Wales (2000-2006)</li> </ul>	<ul style="list-style-type: none"> <li>Achieving Our Potential 2006-2013: Tourism Strategy for Wales Mid-Term Review (2006)</li> <li>Wales: A Vibrant Economy (2005) - emerging new strategy</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scottish Executive People and Place Regeneration Policy Statement (2006)</li> <li>Scottish Executive (2004) Framework for Economic Development in Scotland</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Planning Policy SPP2 Economic Development 2002</li> <li>SPP15 Planning for Rural Development</li> <li>SPP21 Green Belts</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>A Positive Step – Northern Ireland - A Sustainable Development Implementation Plan (2006)</li> <li>PPS 4 – Industrial Development (1997)</li> <li>PPS 4 – (Draft) Industry, Business and Distribution (2003)</li> <li>National Development Plan : Transforming Ireland – a Better Quality of Life for All (2007)</li> </ul>	<ul style="list-style-type: none"> <li>National Spatial Strategy for the Republic of Ireland 2002 – 2020: People, Places and Potential</li> <li>The Northern Ireland Sustainable Development Strategy (DOE 2006)</li> <li>2015 Economic Vision for the Northern Ireland Economy (2005)</li> <li>Draft Northern Ireland Regional Economic Strategy (2007) (OFMDFM)</li> </ul>
<b>Relevant Methodological Guidelines</b>	
<ul style="list-style-type: none"> <li>HM Treasury (2003), The Green Book: Appraisal and evaluation in Central Government</li> </ul>	<ul style="list-style-type: none"> <li>DCLG (2003), Assessing the Impact of Spatial Intervention: Regeneration, Renewal and Regional Development – Main Guidance</li> </ul>



5. Flood Risk	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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 Member 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)</p> <p>There are no specific targets or indicators of relevance.</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>Directive on the Assessment and Management of Flood Risks (2007/60/EC)</li> </ul>	<ul style="list-style-type: none"> <li>EU Floods Directive (2007/60/EC)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>Future Water, the Government's Water Strategy for England (Feb 08)</li> <li>The National Flood Risk Assessment, National Flood and Coastal Defence Database</li> </ul>	
<b>England</b>	
<ul style="list-style-type: none"> <li>Planning Policy Statement 25 (PPS25): Development and Flood Risk (under revision)</li> <li>Floods and Water Bill [currently being prepared]</li> <li>Local Development Documents (LDDs)</li> <li>Flood and Coastal Defence Appraisal Guidance FCDPAG3 Supplementary Note to Operating Authorities – Climate Change Impacts October 2003</li> </ul>	<ul style="list-style-type: none"> <li>Making Space for Water: Taking Forward a New Government Strategy for Flood and Coastal Erosion Risk Management (2005)</li> <li>Policy and Practice for the Protection of Floodplains (1996)</li> <li>Planning Policy Statement: Planning and Climate Change – Supplement to PPS1 (2007)</li> <li>PPG20 Coastal Planning (1992)</li> <li>PPS25 Development and Flood Risk (2006)</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Technical Advice Note 15 (TAN15): Development and Flood Risk (2005)</li> </ul>	<ul style="list-style-type: none"> <li>TAN14 – Coastal Planning (1998)</li> <li>TAN 15: Development and Flood Risk (2004)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scottish Planning Policy 7 (SPP7): Planning and Flooding</li> <li>Flood Risk Management (Scotland) Bill (2008)</li> <li>Marine Strategy for Scotland's Coast and Marine Environment (2004)</li> <li>NPPG 13 Coastal Developments (1997)</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Environment Protection Agency Policy No 22 Flood Risk Assessment Strategy (1997)</li> <li>SPP7 Planning and Flooding (2004)</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>Northern Ireland River Conservation Strategy. (2001)</li> </ul>	<ul style="list-style-type: none"> <li>PPS 15 – Planning and Flood Risk (2006)</li> </ul>
<b>Relevant Methodological Guidelines</b>	
<ul style="list-style-type: none"> <li>CLG 'Improving the flood performance of new buildings (2007)</li> </ul>	<ul style="list-style-type: none"> <li>CIRIA 'Designing for exceedance in urban drainage – good practice (c635) (2008)</li> </ul>

6. Water Quality	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p> <p>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;</p> <ul style="list-style-type: none"> <li>• achieve good environmental status of the EU's marine waters by 2021 (Marine Strategy Framework Directive (2008/56/EC))</li> <li>• reach good chemical and ecological status in inland and coastal waters by 2015 (Water Framework Directive (2000/60/EC))</li> </ul>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>• Drinking Water Directive (98/83/EC)</li> <li>• Directive 2006/7/EC concerning the management of bathing water quality and repealing Council Directive 76/160/EEC</li> <li>• EU Marine Strategy</li> <li>• Groundwater Directive (80/68/EEC)</li> <li>• Proposed priority substances Directive (Directive 2008/105/EC)</li> <li>• Fresh Water Fish Directive (78/659/EEC)</li> </ul>	<ul style="list-style-type: none"> <li>• Urban Waste Water Treatment Directive (91/271/EEC).</li> <li>• Water Framework Directive (2000/60/EC)</li> <li>• Shellfish Waters (79/923/EEC)</li> <li>• Surface Water Abstraction Directive (75/440/EEC)</li> <li>• Water Framework Directive (2000/60/EC)</li> <li>• Dangerous Substances Directive (76/464/EEC)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>• Future Water, the Government's Water Strategy for England (2008)</li> </ul>	
<b>England</b>	
<ul style="list-style-type: none"> <li>• Floods and Water Bill [currently being prepared] (2008)</li> <li>• Surface Water Management Plans (SWMPs)</li> <li>• Water Cycle Studies (WCSs)</li> <li>• River Basin Management Plans (submitted to Ministers)</li> </ul>	<ul style="list-style-type: none"> <li>• Planning Policy Statement: Planning and Climate Change – Supplement to PPS1 (2007)</li> <li>• Water Resources for the Future: A summary of the strategy for Wales (2001)</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>• TAN 5: Nature Conservation and Planning (2006)</li> </ul>	
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>• Scottish Water Delivery Plan May (2006)</li> <li>• The Water Environment (Controlled Activities) (Scotland) Regulations (2005)</li> </ul>	<ul style="list-style-type: none"> <li>• Scottish Environment Protection Agency 19 Groundwater Protection Policy for Scotland (2003)</li> <li>• Draft River Management Plan for the Scotland River Basin District.</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>• Northern Ireland River Conservation Strategy. (2001)</li> </ul>	

7. Traffic and Transport	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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: <i>A Time to Decide</i>, 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.</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>European Transport Policy for 2010: A Time to Decide</li> </ul>	
<b>National</b>	
<ul style="list-style-type: none"> <li>Government/Department for Transport (DfT) 10 Year Transport Plan (2000)</li> </ul>	<ul style="list-style-type: none"> <li>The Future of Transport White Paper – A Network for 2030 (2004)</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>PPG13 Transport (2001)</li> </ul>	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Draft Wales Freight Strategy – Connecting Wales</li> <li>TAN 18 Transport (2007)</li> </ul>	<ul style="list-style-type: none"> <li>Wales Transport Strategy April (2008)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scotland's National Transport Strategy (2006)</li> <li>Natural Planning Framework (under development)</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Planning Policy SPP 17 Planning for Transport (2005)</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>PPS 3 – Access, Movement and Parking (2005)</li> <li>PPS 13 – Transportation and Land Use (2005)</li> <li>Regional Transportation Strategy (2002-2012)</li> </ul>	<ul style="list-style-type: none"> <li>NI Accessible Transport Strategy 2015 (DRDNI) (2005)</li> <li>Northern Ireland Regional Strategic Transport Network Plan (DRDNI) 2002</li> </ul>
<b>Relevant Methodological Guidelines</b>	
<ul style="list-style-type: none"> <li>'Guidance on Transport Assessment' – Department for Community and Local Government and Department for Transport (DCLG/DfT), 2007</li> </ul>	<ul style="list-style-type: none"> <li>'Guidelines for the Environmental Assessment of Road Traffic' - Institute of Environmental Assessment (IEA<sup>23</sup>), 1993.</li> </ul>

<sup>23</sup> Now the Institute of Environmental Management and Assessment (IEMA)

<b>8. Noise</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p> <p>There are no specific targets or indicators of relevance.</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>The Environmental Noise Directive 2002/49/EC</li> </ul>	
<b>National</b>	
<ul style="list-style-type: none"> <li>Environmental Protection Act 1990, Part III; as amended by the Noise and Statutory Nuisance Act 1993</li> <li>The Control of Pollution Act 1974 (as amended)</li> <li>British Standard (planning and Noise)</li> </ul>	
<b>England</b>	
<ul style="list-style-type: none"> <li>The Environmental Noise (England) Regulations (2007)</li> <li>PPG24 Planning and Noise (1994)</li> </ul>	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>The Environmental Noise (Wales) Regulations (2006)</li> <li>TAN 11: Noise (1997)</li> </ul>	
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>The Environmental Noise (Scotland) Regulations (2006)</li> </ul>	
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>Environmental Noise Regulations (Northern Ireland) (2006)</li> </ul>	

<b>9. Landscape, Townscape and Visual</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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 &amp; regional authorities; and to integrate landscape into regional &amp; town planning policies and its cultural, environmental, agricultural, social &amp; 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.</p> <p>There are no specific targets or indicators of relevance.</p>	
<b>List of Policies, Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>The World Heritage Committee's 'Operational Guidelines for the Implementation of the World Heritage Convention'</li> </ul>	<ul style="list-style-type: none"> <li>European Landscape Convention (2000)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>Planning Policy Statement 7: Sustainable Development in Rural Areas</li> <li>National Park Management Plans</li> <li>AONB Management Plans</li> <li>Registered Historic Parks and Gardens</li> <li>The 1981 Wildlife &amp; Countryside Act;</li> <li>1990 Environmental Protection Act;</li> <li>2004 Planning &amp; Compulsory Purchase Order Act</li> </ul>	<ul style="list-style-type: none"> <li>National Parks and Access to the Countryside Acts 1949;</li> <li>Norfolk &amp; Suffolk Broads Act 1988.</li> <li>Countryside and Rights of Way Act 2000.</li> <li>Natural Environment and Rural Communities Act (NERC) 2006</li> <li>Historic Landscapes Register in Wales</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>1949 National Parks and Access to the Countryside Act</li> <li>1967 Forestry Act (as amended 1999)</li> <li>1968 Countryside Act</li> <li>1983 National Heritage Act (amended 2002)</li> <li>1986 Agriculture Act</li> <li>1990 Planning (Listed Buildings and Conservation Areas) Act</li> </ul>	<ul style="list-style-type: none"> <li>1995 Environment Act</li> <li>1995 British Waterways Act</li> <li>2000 Countryside and Rights of Way Act</li> <li>2006 Natural Environment and Rural Communities Act</li> <li>Commons Act 2006</li> <li>PPG 16 (1990)</li> <li>PPS22 (2004)</li> <li>Joint Character Areas and Countryside Quality Counts</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>LANDMAP data for Wales</li> <li>The Historic Landscape Characterisation programme</li> </ul>	<ul style="list-style-type: none"> <li>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)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>National Trust for Scotland Landscape Policy (2005)</li> <li>The National Parks and Access to the Countryside Act 1949</li> <li>Natural Heritage (Scotland) Act 1999</li> <li>NPPG 14 Natural Heritage (1999)</li> <li>Natural Heritage Futures (2008)</li> <li>The Landscape Character Assessment</li> </ul>	<ul style="list-style-type: none"> <li>SPP11 Open Space and Physical Activity (2006)</li> <li>The Countryside (Scotland) Act 1967</li> <li>The Town and Country Planning (Scotland) Act 1997</li> <li>National Parks (Scotland) Act 2000</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>PPS 14 (Draft) – Sustainable Development in the Countryside (2006)</li> <li>Shared Horizons - Statement of Policy on Protected Landscapes (February 2003)</li> </ul>	<ul style="list-style-type: none"> <li>Policy on Architecture and the Built Environment for Northern Ireland (DCAL) (2006)</li> </ul>
<b>Relevant methodological guidelines</b>	

## 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	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
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.	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>European Convention on the Protection of the Archaeological Heritage 1992</li> <li>European Landscape Convention of 2000</li> </ul>	<ul style="list-style-type: none"> <li>UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>Draft Heritage Protection Bill (2008)</li> <li>PPG15 Planning and Historic Environment (1994)</li> </ul>	<ul style="list-style-type: none"> <li>PPG16 Archaeology and Planning (1990)</li> </ul>
<b>England</b>	
<ul style="list-style-type: none"> <li>Ancient Monuments and Archaeological Areas Act (1979)</li> <li>Planning (Listed Buildings and Conservation Areas) Act (1990)</li> <li>Protection of Wrecks Act (1973)</li> <li>Protection of Military Remains Act (1986)</li> <li>The Hedgerows Regulations (1997)</li> <li>Countryside Commission/English Nature/English Heritage The Character of England Map (1996)</li> <li>English Heritage: Wind Energy and the Historic Environment (guidance paper 2005)</li> <li>National Parks and Access to the Countryside Act 1949</li> </ul>	<ul style="list-style-type: none"> <li>English Heritage: Biomass Energy and the Historic Environment (guidance paper 2006)</li> <li>English Heritage: Climate Change and the Historic Environment (paper 2008)</li> <li>English Heritage: Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008)</li> <li>Historic Environment: A Force For the Future (2001)</li> <li>Power of Place – The Future of the Historic Environment (2000)</li> <li>Norfolk and Suffolk Broads Act (1988)</li> </ul>
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Ancient Monuments and Archaeological Areas Act 1979</li> <li>Planning (Listed Buildings and Conservation Areas) Act 1990</li> <li>Protection of Wrecks Act 1973</li> <li>Protection of Military Remains Act 1986</li> <li>Treasure Act 1996</li> <li>The Hedgerows Regulations 1997</li> <li>Welsh Office Circular 60/96 Planning and the Historic Environment: Archaeology</li> <li>Welsh Office Circulars 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas</li> </ul>	<ul style="list-style-type: none"> <li>Cadw, International Council of Monuments and Sites (ICOMOS UK) and CCW Register of Landscapes of Outstanding Historic Interest in Wales (1998)</li> <li>Cadw, International Council of Monuments and Sites (ICOMOS UK) and CCW Register of Landscapes of Special Historic Interest in Wales (2001)</li> <li>DCMS, Welsh Assembly Government (2007) Heritage Protection for the 21st Century 2007</li> <li>The Research Framework for the Archaeology of Wales</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Ancient Monuments and Archaeological Areas Act (1979)</li> <li>Planning (Listed Buildings and Conservation Areas (Scotland)) Act (1997) as amended</li> <li>Scottish Planning Policy 23: Planning and the Historic Environment (SPP 23) Consultation Draft SPP23</li> <li>Planning Advice Note 42 (PAN42): Archaeology in the Planning Process and Scheduled Monument Procedures (1994)</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Historic Environment Policy 1 Scotland's Historic Environment (2008)</li> <li>Scottish Historic Environment Policy 2. Scheduling: protecting Scotland's nationally important monuments (2008)</li> </ul>
<b>Northern Ireland</b>	
PPS 6 – Planning, Archaeology and the Built Heritage (1999)	
<b>Relevant Methodological Guidance</b>	
<ul style="list-style-type: none"> <li>English Heritage: Conservation Principles, Policies and Guidance for</li> </ul>	<ul style="list-style-type: none"> <li>Institute for Archaeology: Standard and Guidance for</li> </ul>



#### 10. Archaeology and Cultural Heritage

- the Sustainable Management of the Historic Environment (2008);
- Historic Scotland: Environmental Impact Assessment (Scoping). 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
- Desk-based Assessment (2008).
- Cadw: Guide to Good Practice on using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (2007).

<b>11. Air Quality</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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.</p> <p>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)).</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>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)</li> <li>EU Thematic Strategy on Air Quality (2005)</li> <li>EC National Emissions Ceilings Directive (2001/81/EC)</li> </ul>	<ul style="list-style-type: none"> <li>National Emissions Ceiling Directive (2001/81/EC)</li> <li>Clean Air Act for Europe (Café (2001))</li> <li>Convention on Long Range Transboundary Air Pollution</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)</li> <li>UK Air Quality Strategy 2007</li> <li>Gothenburg Protocol (2005)</li> </ul>	
<b>England</b>	
<ul style="list-style-type: none"> <li>Air Quality Impacts - PPS 23 (2004)</li> <li>Greater London Authority Air Quality Strategy</li> </ul>	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Air Pollution in Wales (2004)</li> </ul>	
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scottish Executive (2006) Changing Our Ways – Scotland's Climate Change Programme</li> </ul>	
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>PPS18: Renewable Energy</li> </ul>	
<b>Relevant Methodological Guidance</b>	
<ul style="list-style-type: none"> <li>ODPM et al (2005) A Practical Guide to the SEA Directive.</li> </ul>	

## 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 of 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	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>The plans and policies relating to health set out and seek to 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.</p> <p>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.</p> <p>There are no specific targets or indicators of relevance.</p>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>Children’s Environment and Health Action Plan for Europe (CEHAPE) 2004</li> <li>The European Environment and Health Action Plan 2004 – 2010</li> <li>Together for Health: A Strategic Approach for the EU 2008 - 2013</li> <li>Canadian Lalonde Report 1974</li> <li>World Health Organization, 1986</li> <li>‘Together for Health – A Strategic Approach for the EU 2008-2013’.</li> <li>EU Health Strategy: White Paper Together for Health: A Strategic Approach for the EU 2008-2013</li> <li>Transport, Health and the Environment - Pan-European Programme (THE-PEP)</li> </ul>	<ul style="list-style-type: none"> <li>World Health Organization European Centre for Environment and Health (2001), Health impact assessment in strategic environmental assessment (World Health Organization, Rome)</li> <li>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",</li> <li>The (current) Bathing Water Directive (76/160/EEC) As revised by Bathing Water Directive (2006/7/EC)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>Saving Lives: Our Healthier Nation White Paper (July 1999)</li> <li>A New Commitment to Neighbourhood Renewal National Strategy Action Plan (2001)</li> <li>Tackling Health Inequalities: a programme for action (2003)</li> <li>Securing good health for the whole population Report to the Treasury (Wanless, 2004)</li> <li>Choosing Health: making healthier choices easier (November 2004)</li> <li>Our health, our care, our say White Paper (2006)</li> <li>Health is Global; a UK Global health strategy 2008-13</li> </ul>	<ul style="list-style-type: none"> <li>Strong and prosperous communities Local Government White Paper (2006)</li> <li>A stronger local voice: A framework for creating a stronger local voice in the development of health and social care services (July 2006)</li> <li>High quality care for all: NHS Next Stage Review final report. (Darzi, 2008)</li> <li>Strategy for Workplace Health and Safety in Great Britain to 2010 and beyond</li> <li>Working for a Healthier Tomorrow – Dame Carol Black’s Review of the health of Britain’s working age population (2008)</li> </ul>
<b>England</b>	
NA	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>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)</li> </ul>	<ul style="list-style-type: none"> <li>Ministerial Interim Planning Policy Statement (Draft) – Planning, Health and Well Being</li> <li>Well Being in Wales (2002)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>Scottish Executive (2003) Partnership for Care: Scotland’s Health White Paper</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Executive (2003) Improving Health in Scotland – The Challenge</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>PPS 8 – Open Space, Sport and Outdoor Recreation (2004) Ireland</li> </ul>	<ul style="list-style-type: none"> <li>Investing in Health: A Public Health Strategy for Northern Ireland</li> </ul>

<b>14. Equality</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
<p>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</p> <p>Targets include:</p> <ul style="list-style-type: none"> <li>• 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))</li> <li>• 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))</li> <li>• 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))</li> </ul>	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>• The UN Millennium Declaration and Millennium Development Goals (2002)</li> </ul>	
<b>National</b>	
<ul style="list-style-type: none"> <li>• The Equality Act (2006)</li> <li>• Communities and Local Government (2007), "Fairness and Freedom: the Final Report of the Equalities Review"</li> <li>• The Sex Discrimination Act (1975)</li> <li>• The Race Relations Act (1976)</li> <li>• The Race Relations (Amendment) Act (2000)</li> </ul>	<ul style="list-style-type: none"> <li>• The Disability Discrimination Act 1995 and 2005</li> <li>• The Human Rights Act (1998)</li> <li>• The Equality Act (2006)</li> <li>• Tackling Health Inequalities – A Programme for Action 2003 (Including the 2007 Status Report on the Programme for Action)</li> </ul>
<b>England</b>	
NA	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>• Race Equality Scheme 2005-2008 (2005)</li> </ul>	<ul style="list-style-type: none"> <li>• A Fair Future for our Children (2005)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>• Disability Equality Scheme 2008-2011</li> </ul>	<ul style="list-style-type: none"> <li>• Gender Equality Scheme 2008-2011</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>• Lifetime Opportunities: Government's Anti-poverty and Social Inclusion Strategy for Northern Ireland (OFMDFM)</li> </ul>	

<b>General</b>	
<b>Objectives and Targets Identified in the Policies, Plans &amp; Programmes</b>	
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.	
<b>List of Policies, Plans &amp; Programmes</b>	
<b>International</b>	
<ul style="list-style-type: none"> <li>Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters) (1998)</li> </ul>	<ul style="list-style-type: none"> <li>Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991)</li> </ul>
<b>National</b>	
<ul style="list-style-type: none"> <li>UK Government Sustainable Development Strategy: Securing the Future (2005) and the UK's Shared Framework for Sustainable Development, One Future – Different Paths (2005)</li> </ul>	
<b>England</b>	
<ul style="list-style-type: none"> <li>Planning Policy Statement 1: Delivering Sustainable Development (2005)</li> </ul>	
<b>Wales</b>	
<ul style="list-style-type: none"> <li>Environment Strategy for Wales (2006)</li> <li>Making the Most of Wales's Coast – the Integrated Coastal Zone Management Strategy for Wales</li> <li>People, Places, Futures – Wales Spatial Plan (WSP) (2004)</li> <li>People, Places, Futures : Wales Spatial Plan Update 2008 (Consultation)</li> </ul>	<ul style="list-style-type: none"> <li>Planning Policy Wales (2002)</li> <li>Rural Development Plan 2007-2013</li> <li>The Sustainable Development Action Plan Starting to Live Differently (2004 – 2007)</li> <li>Wales A Better Country – The Strategic Agenda of the Welsh Assembly Government (2003)</li> </ul>
<b>Scotland</b>	
<ul style="list-style-type: none"> <li>'Choosing our Future' Scotland's Sustainable Development Strategy (2005)</li> <li>Meeting the Needs...Priorities, Actions and Targets for Sustainable Development in Scotland (2002)</li> <li>Scottish Biodiversity Strategy (2004)</li> </ul>	<ul style="list-style-type: none"> <li>Scottish Environment Protection Agency Policy Priorities Relevant to the Scottish Environment Protection Agency (Paper 2004/13)</li> <li>NPPG13 Coastal Planning (1997)</li> <li>Parts one and two of three elements of the new Scottish Government Planning Policy (2008)</li> </ul>
<b>Northern Ireland</b>	
<ul style="list-style-type: none"> <li>Planning Policy Statements (PPS) 1 – General Principles (1998)</li> <li>Programme for Government (OFMDFM) (2007)</li> </ul>	<ul style="list-style-type: none"> <li>The Northern Ireland Sustainable Development Strategy (DOE 2006)</li> </ul>

# 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**

Response	Action/Comments
<b>CADW (23/03/2009)</b>	
<b>Key Messages</b>	
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.
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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.archaeolog.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
<b>English Heritage (20/03/2009)</b>	
<b>Key Messages</b>	
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.
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.

Response	Action/Comments
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
<b>Designations</b>	
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.
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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
<b>Guide Questions</b>	
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.
<b>Reporting &amp; Scope of Appraisal</b>	
26. AoS should clarify the role of these policy statements in Scotland further.	Clarified in Section 1 (but also in the NPSs themselves).
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
<b>Environment Agency (03/2009)</b>	
<b>Key Messages</b>	

Response	Action/Comments
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.
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).
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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

Response	Action/Comments
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, <a href="http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc">http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc</a> A2	Noted.
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).
<b>Scope of Appraisal</b>	
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.

Response	Action/Comments
<p>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?"</p> <p>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</p>	<p>Incorporated.</p> <p>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.</p>
<p>61. We suggest including an additional question on resources and raw materials: "Will the NPS maintain water abstraction within carrying capacity?"</p>	<p>This has been addressed.</p>
<p>62. We recommend including an additional question on water quality: "Will the NPS protect and improve water bodies [replacing ground &amp; surface water quality] in line with Water Framework Directive requirements?"</p>	<p>Amended.</p>
<p>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).</p>	<p>The guide questions include for the consideration of all ecological resources and this is reflected in the AoSs.</p>
<p>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.</p>	<p>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.</p>
<p>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".</p>	<p>Added</p>
<p>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".</p>	<p>Amended.</p>
<p>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.</p>	<p>Amended</p>
<p>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</p>	<p>Amended.</p>
<p>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</p>	<p>Reference is made to <i>Building a low carbon economy</i> (Committee on Climate Change, 2008). Future advice has not been referenced.</p>
<p>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</p>	<p>Decarbonisation of the UK energy market is discussed in the alternatives section of the Overarching NPS (Section 3.4.2).</p>
<p>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'.</p>	<p>This section has been moved in the AoS</p>
<p>72. 'UKCIP08' should now read 'UKCP09'.</p>	<p>Amended.</p>

Response	Action/Comments
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: <ul style="list-style-type: none"> <li>• It is very likely that we will need to adopt a more demanding target for 2030 at some point before that time;</li> <li>• 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;</li> <li>• 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.</li> </ul> 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.
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 <ul style="list-style-type: none"> <li>(a) high level Government energy policy,</li> <li>(b) defines areas which are or are not suitable for energy developments,</li> <li>(c) sets out approaches to avoid or mitigate impacts on the environment, particularly the historic environment.</li> </ul>	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.



Response	Action/Comments
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 than CO <sub>2</sub> . 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-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	These issues are addressed in the AoS and are considered under the guide questions. Reference to the noted documents has been 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, <a href="http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc">http://www.espo.be/downloads/archive/ae0362be-40c7-4de6-bc9e-3880b975fed6.doc</a> 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.
<b>Further Comments</b>	
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).



Response	Action/Comments
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 made clear in the scoping report.	This is made clear through the guide questions and objectives feedback has been provided on the 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

Response	Action/Comments
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
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

Response	Action/Comments
<p>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 discuss 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:</p> <ul style="list-style-type: none"> <li>• A comparative assessment of flood risk on other reasonable alternative sites.</li> </ul> <p>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.</p> <p>The appraisal should consider all sources of flooding. The first bullet point in section A5.3.2 should read:</p> <ul style="list-style-type: none"> <li>• "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.</li> </ul> <p>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.</p>	<p>PPS 25 has been included as a plan and policy and has been considered as part of the AoS.</p>
<p>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..."</p>	<p>Amended</p>
<p>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</p>	<p>Noted</p>
<p>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</p>	<p>Section Removed and point noted.</p>
<p>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</p>	<p>Noted and considered in assessment.</p>
<p>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</p>	<p>Removed.</p>
<p>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</p>	<p>Noted.</p>
<p>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</p>	<p>Noted</p>
<p>132. It should be noted that tanked oil storage can take up large sites and result in significant loss of floodplain. A5.7.5</p>	<p>Noted</p>
<p>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</p>	<p>Noted</p>
<p>134. The NPSs needs to consider traffic and transport as major sources of greenhouse gases and thus their impact on greenhouse emission targets. A7</p>	<p>This has been considered in the AoS.</p>
<p><b>Historic Scotland (20/03/2009)</b></p>	
<p><b>Key Messages</b></p>	
<p>135. Welcome that the historic environment has been scoped into the assessment.</p>	<p>Acknowledged</p>
<p><b>Designations</b></p>	

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.
<b>Guide Questions</b>	
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 or cumulative effect on the historic environment?	Amended
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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 <a href="http://www.historicscotland.gov.uk/index/heritage/policy/memorandumofguidance.htm">http://www.historicscotland.gov.uk/index/heritage/policy/memorandumofguidance.htm</a>	Amended
<b>Scope of Appraisal</b>	
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 to 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.
<b>Joint Nature Conservation Committee (23/03/2009)</b>	
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
<b>Scope of Appraisal</b>	
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
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.

Response	Action/Comments
<p>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 oil and gas. Clarity on addressing marine topics should facilitate integration with regulatory development such as the Marine and Coastal Access Bill.)</p>	Noted.
<p>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).)</p>	The guide questions include reference to the importance of ecosystems.
<p>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.</p>	Considered through the combined climate change and ecology sections.
<p>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.</p>	Included in the Plans and Programmes and considered through the AoS process.
<b>Ministry of Defence (20/03/2009)</b>	
<b>Key Messages</b>	
<p>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</p>	Acknowledged
<b>Further Comments</b>	
<p>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.</p>	N/A to Overarching AoS
<p>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?</p>	N/A to Overarching AoS
<b>Natural England (20/03/2009)</b>	
<b>Key Messages</b>	
<p>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.</p>	Acknowledged
<p>156. We welcome, in most respects, the proposed scope and level of detail of the AoS.</p>	Acknowledged
<p>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.</p>	Entec to further consider balance of twin energy policy objectives



Response	Action/Comments
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
<b>Overview</b>	
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
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.

Response	Action/Comments
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.
<b>Scope of Appraisal</b>	
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
<b>Cumulative effects</b>	
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
<b>Guide questions for AoS objectives</b>	
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.
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.
<b>Plans &amp; Programmes, Policies &amp; Baselines and Topic Based Comments</b>	
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.

Response	Action/Comments
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
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.



Response	Action/Comments
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) <a href="http://www.landscapecharacter.org.uk/files/pdfs/LCA-Topic-Paper-6.pdf">http://www.landscapecharacter.org.uk/files/pdfs/LCA-Topic-Paper-6.pdf</a> 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
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: <a href="http://www.naturalengland.org.uk/ourwork/landscape/englands/character/default.aspx">http://www.naturalengland.org.uk/ourwork/landscape/englands/character/default.aspx</a> 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
<b>Northern Ireland Environment Agency (23/03/2009)</b>	
<b>Key Messages</b>	
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
<b>Plans, Programmes, Policy &amp; Baselines</b>	

Response	Action/Comments
<p>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</p>	<p>Amended - see Plans and Programmes</p>
<p>212. PPS 15: Planning and flood risk (NI) (Appendix A5).</p>	<p>Added</p>
<p>213. PPS 18: Renewable Energy (Appendix 11)</p>	<p>Added</p>
<p>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.</p>	<p>Included under Plans and Programmes - Water Quality</p>
<p>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))</p>	<p>Assessment in line with UKCP09</p>
<p><b>Topic Based Comments</b></p>	
<p>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'.</p>	<p>Noted</p>
<p>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'.</p>	<p>Amended</p>
<p>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).</p>	<p>Noted</p>
<p>219. Defence Heritage features should be added to the range of heritage categories which could be affected (A10.1)</p>	<p>Noted</p>
<p>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.</p>	<p>Amended</p>
<p>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.</p>	<p>Noted</p>
<p>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.</p>	<p>Noted</p>
<p>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.</p>	<p>Noted</p>
<p>224. In section A3 Material Assets and Resource Use Page 11 of 10 we consider that the Habitats Directive could be considered here.</p>	<p>Noted</p>
<p>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.</p>	<p>Noted</p>

Response	Action/Comments
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
<b>Scottish Government (19/03/2009)</b>	
<b>Key Messages</b>	
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)
<b>Appraisal Scope</b>	
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
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

Response	Action/Comments
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
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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
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 <a href="http://www.sepa.org.uk/waste/waste_data_1/waste_data_digest.aspx">http://www.sepa.org.uk/waste/waste_data_1/waste_data_digest.aspx</a> and <a href="http://www.sepa.org.uk/waste/waste_data/municipal_waste/municipal_waste_reporting.aspx">http://www.sepa.org.uk/waste/waste_data/municipal_waste/municipal_waste_reporting.aspx</a>	Noted
Water quality A6. 253. Draft River Management Plan for the Scotland River Basin District <a href="http://www.sepa.org.uk/water/riverbasinplanning.aspx">http://www.sepa.org.uk/water/riverbasinplanning.aspx</a> , 254. Draft River Basin Management Plan for the Solway Tweed River Basin District <a href="http://www.sepa.org.uk/water/river_basin_planning/solway_tweed.aspx">http://www.sepa.org.uk/water/river_basin_planning/solway_tweed.aspx</a>	Added
Soil and geology A12. 255. Further information about the carbon reservoir of peat-lands in Scotland	Considered in the Renewables AoS.
<b>Topic Based Comments</b>	
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.
<b>Scottish Natural Heritage (18/03/2009)</b>	
<b>Key Messages</b>	
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

Response	Action/Comments
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
<b>Appraisal Scope</b>	
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
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.
<b>Plans, Programmes, Policy &amp; Baselines</b>	
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

Response	Action/Comments
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
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.
<b>Topic Based Comments</b>	
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.	Noted
290.	



Response	Action/Comments
<b>Welsh Assembly Government (27/03/2009)</b>	
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
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.
<b>Department of Health (23/03/2009)</b>	
<b>Key Messages</b>	
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. <a href="http://www.dh.gov.uk/en/PublicHealth/HealthProtection/DH_4089500">http://www.dh.gov.uk/en/PublicHealth/HealthProtection/DH_4089500</a>	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. <a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007935">http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007935</a> )	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. <a href="http://www.apho.org.uk/resource/item.aspx?RID=53281">http://www.apho.org.uk/resource/item.aspx?RID=53281</a>	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. <a href="http://www.uea.ac.uk/dev/faculty/Few/hazardshealth/Health&amp;FloodRisk">http://www.uea.ac.uk/dev/faculty/Few/hazardshealth/Health&amp;FloodRisk</a> )	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, <a href="http://www.euro.who.int/document/e72015.pdf">www.euro.who.int/document/e72015.pdf</a> and a recent report by South East Public Health Observatory on Road Transport and Health in the South East Region <a href="http://www.sepho.org.uk/viewResource.aspx?id=11621">http://www.sepho.org.uk/viewResource.aspx?id=11621</a>	Noted
310. The NPS on Transport Networks which is currently being produced should be referred to.	Noted
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 <a href="http://www.defra.gov.uk/ENVIRONMENT/airquality/publications/stratreviewanalysis/">http://www.defra.gov.uk/ENVIRONMENT/airquality/publications/stratreviewanalysis/</a>	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



Response	Action/Comments
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 <a href="http://www.workingforhealth.gov.uk/">http://www.workingforhealth.gov.uk/</a>	Noted
320. Health and Safety <a href="http://www.hse.gov.uk/">http://www.hse.gov.uk/</a>	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 <a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_093465">http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_093465</a>	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 <a href="http://www.who.int/social_determinants/final_report/en/">http://www.who.int/social_determinants/final_report/en/</a>	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) <sup>24</sup>
1. Climate Change	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on climatic effects<sup>25</sup></li> <li>• Sustainability Appraisal (outlining the sustainability credentials of the application)</li> <li>• Sustainability Statement (detailing the sustainability measures incorporated into application).</li> <li>• Energy Efficiency Statement</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
2. Ecology (Flora and Fauna)	<p>May include (but not limited to) preparation of:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The Environmental Statement (under the EIA Regulations) will include a consideration of alternative sites.</li> <li>• Species (birds, bats, reptiles) and habitat surveys.</li> <li>• Habitats Regulations Assessments (HRA) (Appropriate Assessment) for the site.</li> <li>• Ecological Constraints and Opportunities Report</li> <li>• Habitat Management Plan/Nature Conservation Strategy</li> <li>• Tree/Arboricultural Survey</li> <li>• Biodiversity Report</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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).</li> <li>• Habitats Regulations Assessments (HRA) for the site (4.3.1).</li> </ul>
3. Resources and Raw Materials	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Site Waste Management Plan</li> <li>• 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 may be provided as part of the Environmental Statement.</li> </ul>	<ul style="list-style-type: none"> <li>• The NPS contains information on the consideration of "good design" for energy infrastructure (4.5).</li> </ul>

<sup>24</sup> 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.

<sup>25</sup> 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) <sup>24</sup>
4. Economy and Skills	May include preparation of: <ul style="list-style-type: none"> <li>Economic Statement</li> </ul>	Includes: <ul style="list-style-type: none"> <li>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).</li> </ul>
5. Flood Risk	May include preparation of: <ul style="list-style-type: none"> <li>Flood Risk Assessment <sup>26</sup></li> <li>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.</li> </ul>	Includes: <ul style="list-style-type: none"> <li>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).</li> <li>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).</li> <li>Identifies the three elements of the exceptions test that will have to be passed for development to be consented.</li> </ul>
6. Water Quality	May include preparation of: <ul style="list-style-type: none"> <li>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.</li> <li>Foul Sewage and Utilities Assessment</li> </ul>	Includes: <ul style="list-style-type: none"> <li>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.</li> <li>The NPS states that <i>'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)'</i>. The NPS also identified what the ES should describe (e.g. existing quality of water, existing water resources, etc).</li> <li>The NPS also provides guidance to the IPC on the Water Framework Directive and River Basin Management Plans.</li> </ul>
7. Traffic and Transport	Must Include preparation of: <ul style="list-style-type: none"> <li>Design &amp; Access Statement</li> </ul> May include preparation of: <ul style="list-style-type: none"> <li>Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects of the development on local roads and transport.</li> <li>Transport Assessment<sup>27</sup></li> <li>Travel Plan</li> </ul>	Includes <ul style="list-style-type: none"> <li>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 methodology.</li> </ul>

<sup>26</sup> 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) <sup>24</sup>
8. Noise	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of effects on levels and effects of noise from the development.</li> <li>• Noise Assessment</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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</li> </ul>
9. Landscape, Townscape and Visual	<p>Must Include preparation of:</p> <ul style="list-style-type: none"> <li>• Design &amp; Access Statement</li> </ul> <p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the visual effects of the development on the surrounding area and landscape.</li> <li>• Open Space Assessment</li> <li>• Landscaping details</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
10. Archaeology and Cultural Heritage	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Heritage Statement</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
11. Air Quality	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the levels and effects of emissions from the development during normal operation.</li> <li>• Air Quality Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• 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).</li> <li>• 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</li> </ul>
12. Soil and Geology	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Environmental Statement (under Environmental Impact Assessment Regulations) including the assessment of the effects of the development on geological, palaeontological and physiographic features, change in local topography, effect of earth-moving on stability, soil erosion, etc.</li> <li>• Land contamination assessment</li> </ul>	<p>Includes:</p> <ul style="list-style-type: none"> <li>• Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and 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</li> </ul>

<sup>27</sup> *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) <small>24</small>
13. Health and Well-Being	<p>Must include preparation of:</p> <ul style="list-style-type: none"> <li>• Statement of Community Involvement</li> </ul> <p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• 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</li> </ul>	<ul style="list-style-type: none"> <li>• The Local Impact Assessment provided by the Local Authority will also cover health impacts where they are relevant.</li> </ul>
14. Equality	<p>May include preparation of:</p> <ul style="list-style-type: none"> <li>• Affordable Housing Statement</li> <li>• Equalities Impact Assessment</li> <li>• Design and Access Statement</li> </ul>	

# Annex E

## Quality Assurance Checklist

The Government's Guidance on SEA<sup>28</sup> 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	
<b>Objectives and Context</b>	
The plan's purpose and objectives are made clear.	<b>Section 2.</b>
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in <b>Annex B.</b>
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	<b>Section 3.4</b> presents the AoS Objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	<b>Annex B</b> identifies a number of relevant plans and programmes.
<b>Scoping</b>	
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 13 <sup>th</sup> February 2009 to 23 <sup>rd</sup> 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 are identified in <b>Section 3.5</b> and <b>Annex F.</b>
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the <b>Scoping Report</b> where appropriate, and are presented in <b>Section 3.7</b> of this AoS Report.
Reasons are given for eliminating issues from further consideration.	These are stated in the <b>Scoping Report</b> as appropriate.
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in <b>Section 2.5.</b>
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in <b>Section 2.5.</b>
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to <b>Section 4.1.</b>
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to <b>Section 4.1</b> and the review of policies, plans and programmes in <b>Annex B.</b>
Reasons are given for selection or elimination of alternatives.	These are presented in <b>Section 2.5.</b>

<sup>28</sup> 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 and in <b>Section 3.7</b> .

**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 <b>Section 4</b> .
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 <b>Section 4</b> .
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to <b>Section 4</b> .
Inter-relationships between effects are considered where practicable.	Refer to <b>Section 4</b> .
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in <b>Section 4</b> .
Methods used to evaluate the effects are described.	These are described in <b>Section 3.6</b> .

**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 <b>Section 4</b> .
Issues to be taken into account in project consents are identified.	These are considered in <b>Section 5</b> .

**Environmental Report**

Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in <b>Section 1</b> .
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in <b>Annex A</b> 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 <b>Section 3</b> .
Explains who was consulted and what methods of consultation were used.	This is covered in <b>Section 1.5</b> .
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in <b>Section 3, Section 4</b> and <b>Annex F</b> .
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 at the front of the AoS Report.

**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
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**Quality Assurance Checklist**

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 5.2**.

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 5.2**.

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 5.2**.

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<sup>29</sup>) 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 °C since the late 19th century, and have been rising at about 0.2 °C/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 °C. 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 than the previous year<sup>30</sup>. Carbon dioxide (CO<sub>2</sub>) as the main GHG constitutes around 85% of total UK GHG emissions<sup>31</sup>.

<sup>29</sup> 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>.

<sup>30</sup> <http://www.defra.gov.uk/ENVIRONMENT/climatechange/index.htm>

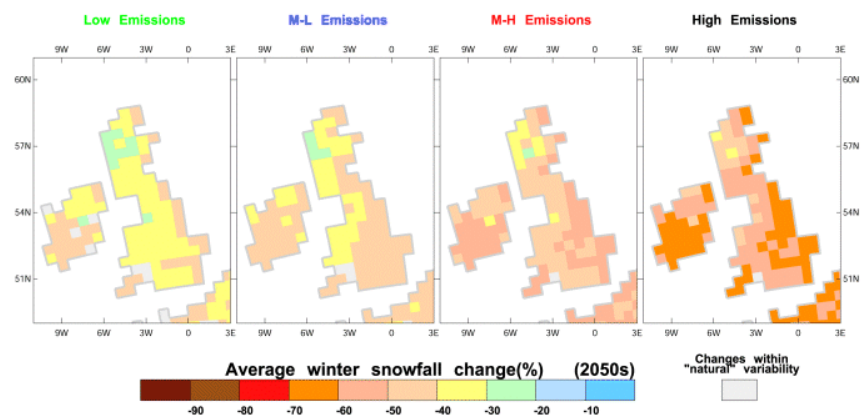
### 1.1.1 Existing Problems

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<sup>32</sup>. 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/](http://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<sup>33</sup>. 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

<sup>31</sup> The breakdown of different emissions in 1990 and 1999 can be viewed here: [www.defra.gov.uk/sustainable/government/progress/national/climate-change.htm](http://www.defra.gov.uk/sustainable/government/progress/national/climate-change.htm)

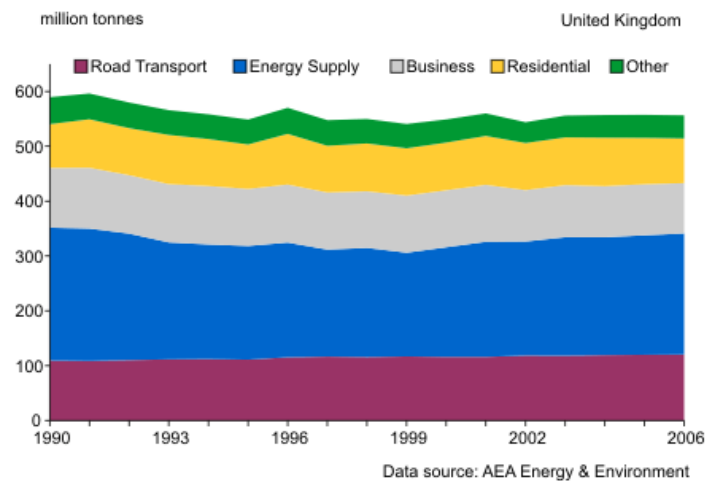
<sup>32</sup> Nature 432, (2 December 2004) Human contribution to the European heatwave of 2003. pp610-614

<sup>33</sup> 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.

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 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<sup>34</sup>.

The UK contributes about 2% to global man-made emissions and CO<sub>2</sub> accounted for about 85% of the UK's man-made greenhouse gas emissions in 2006. 40% of these CO<sub>2</sub> 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).

Carbon dioxide emissions by source: 1990-2006



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<sub>2</sub> emissions (as well as a large proportion of the non CO<sub>2</sub> emissions).

<sup>34</sup> 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*".

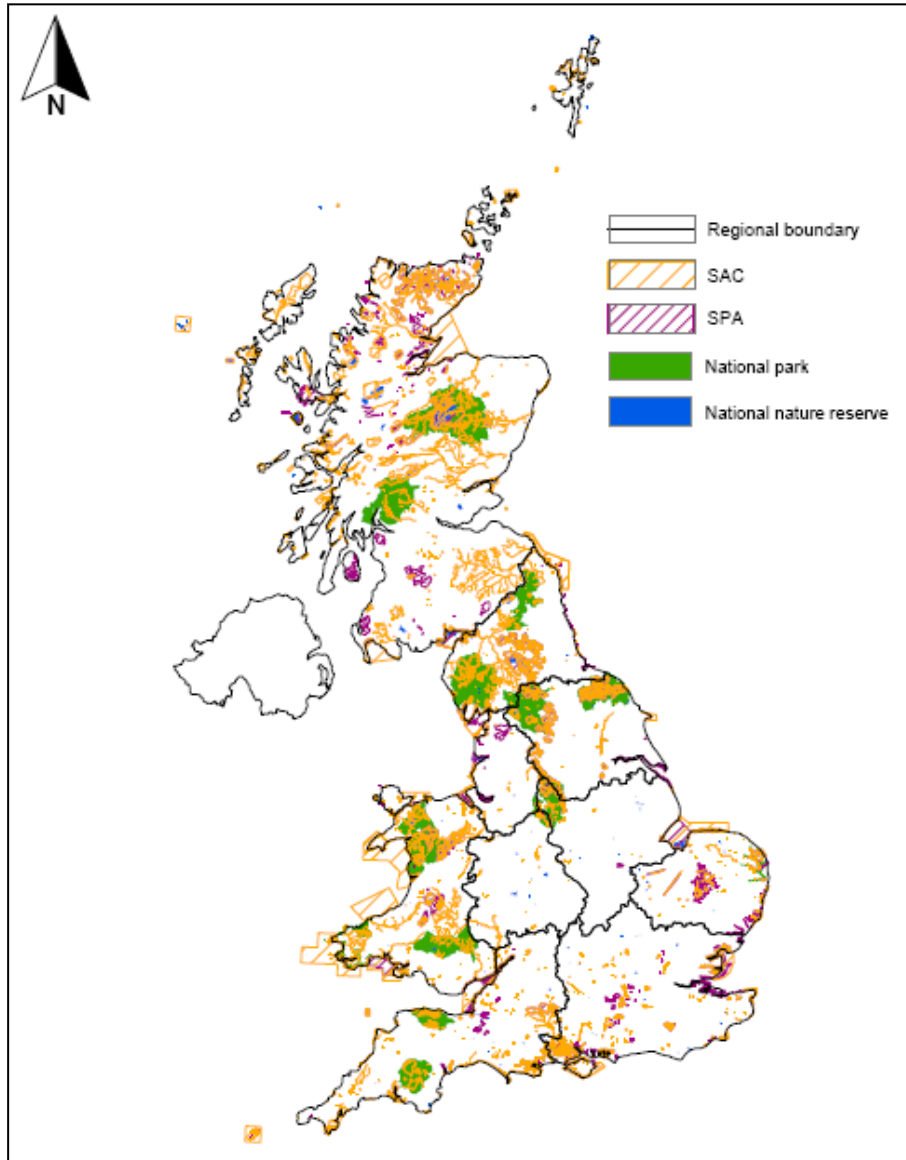
Sites designated at a national level are called Sites of Special Scientific interest (SSSI). SSSIs form the best of the UK's wildlife and geological sites.

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.

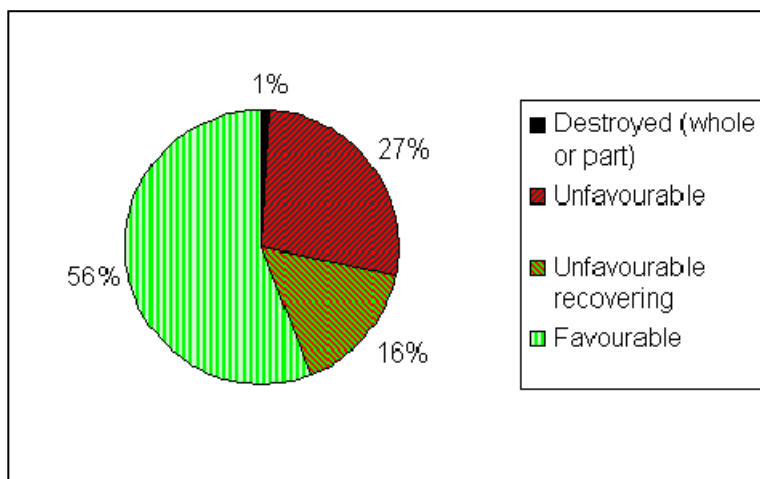




### 2.1.1 Existing Problems

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<sup>35</sup> 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<sup>36</sup>.

**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.

<sup>35</sup> Joint Nature Conservation Committee (2006) *Common Standards Monitoring for Designated Sites: First Six Year Report*, <http://www.jncc.gov.uk/page-3520>.

<sup>36</sup> *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<sup>37</sup>.

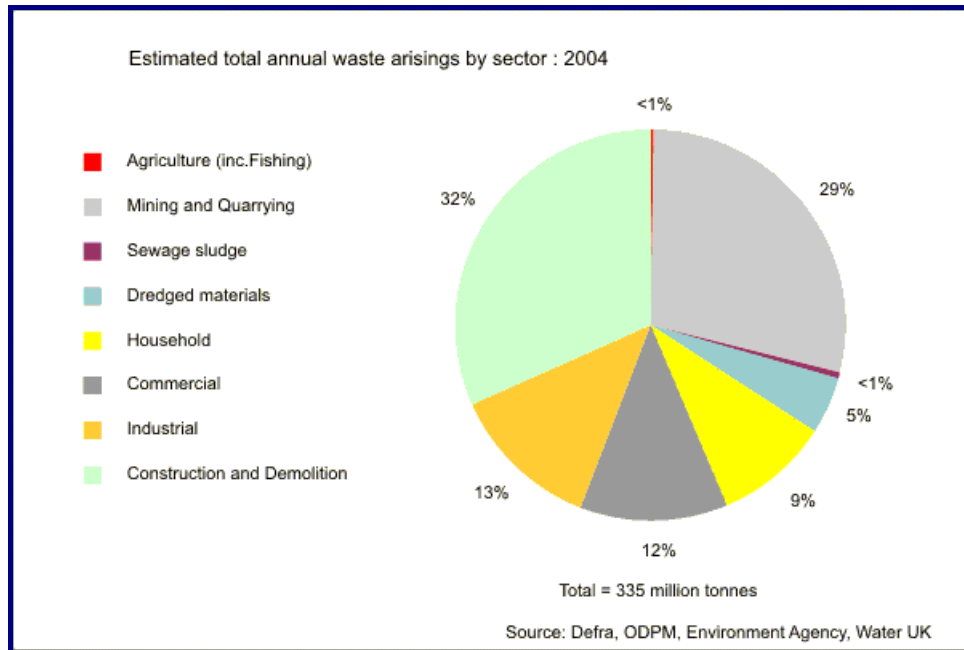
## Waste

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<sup>38</sup>.

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<sup>37</sup> Source: Dept of Energy and Climate Change, *UK Energy Sector Indicators 2008*.

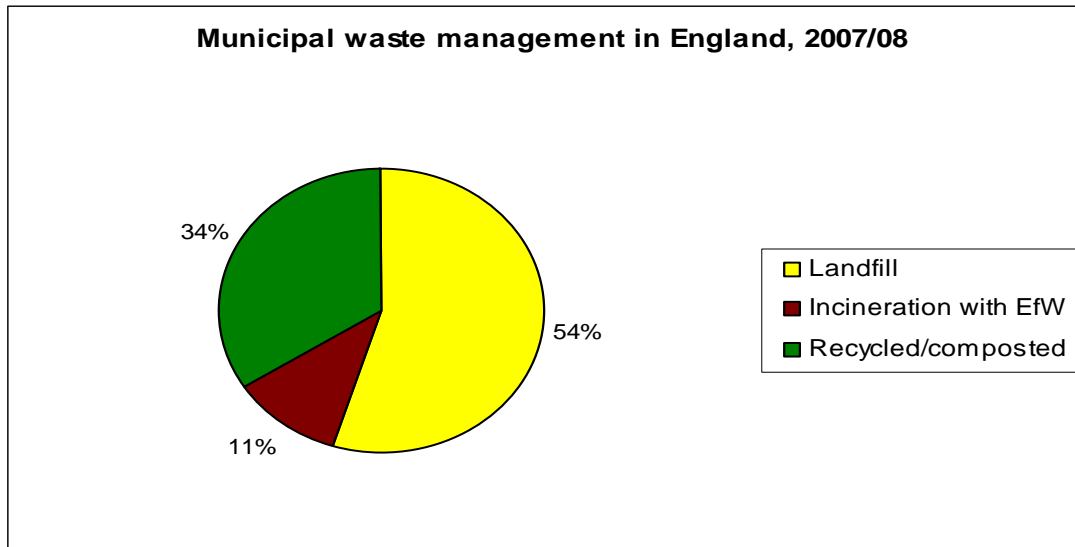
<sup>38</sup> Source: [www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm](http://www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm).



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<sup>39</sup>.

- 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.

<sup>39</sup> Source: [www.defra.gov.uk/environment/statistics/wastats/bulletin08.htm](http://www.defra.gov.uk/environment/statistics/wastats/bulletin08.htm)



(Source: [www.defra.gov.uk/Environment/statistics/wastats/archive/mwb200708.xls](http://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.

### Minerals and Aggregates

Each year, every person in the UK uses about 10 tonnes of minerals and aggregates<sup>40</sup>. 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).

<sup>40</sup> Source: <http://www.bgs.ac.uk/mineralsuk/mineralsyou/use.html>

### 3.1.1 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<sup>41</sup> and the UK Energy Sector Indicators 2008<sup>42</sup> 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 is 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).

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<sup>41</sup> BERR (2003), *Meeting the Energy Challenge: A White Paper on Energy*

<sup>42</sup> 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**

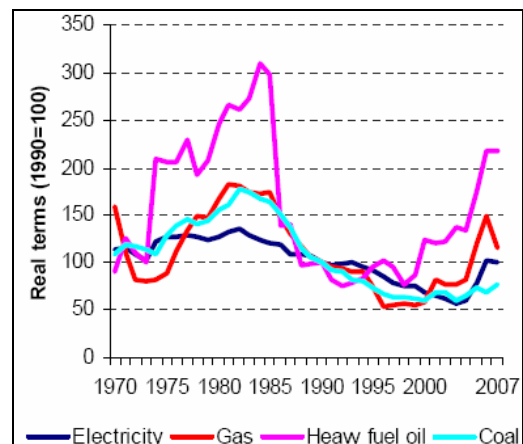
There are implications for businesses (and the UK economy) if they cannot afford the energy they need to produce goods and services

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**

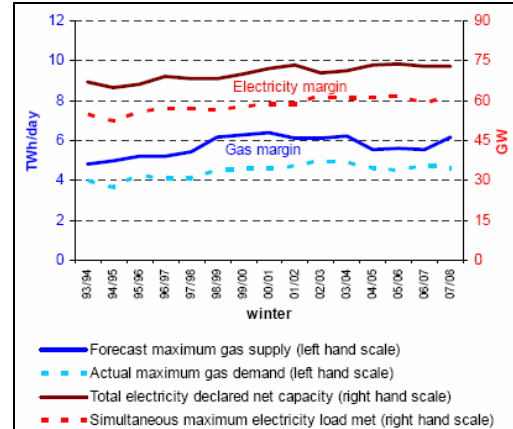
**Gas and Electricity Capacity Margins**

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

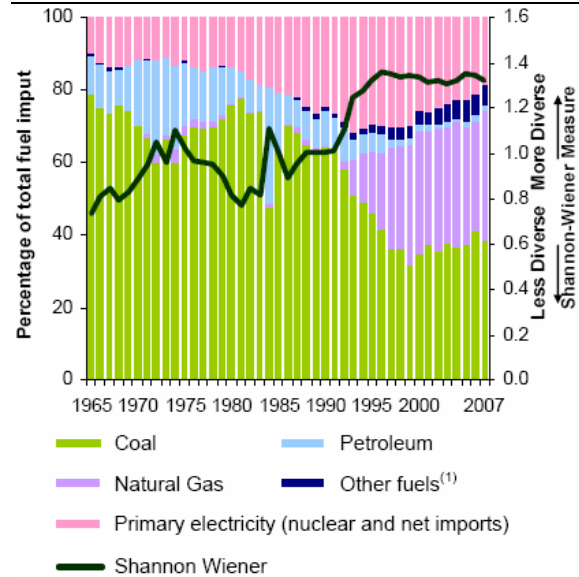
**Diversity of supply for primary users**

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

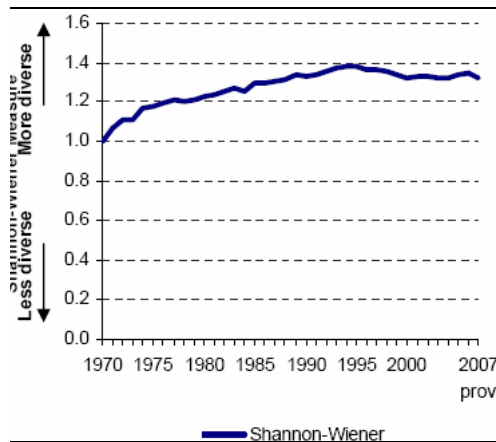
In the late 1990's there was a steady decline in diversity due to the growth of gas supply and decline in the use of other fuels

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).



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



**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**

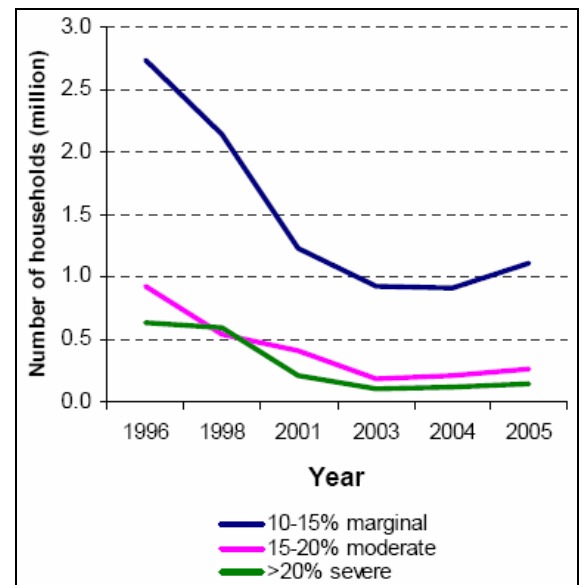
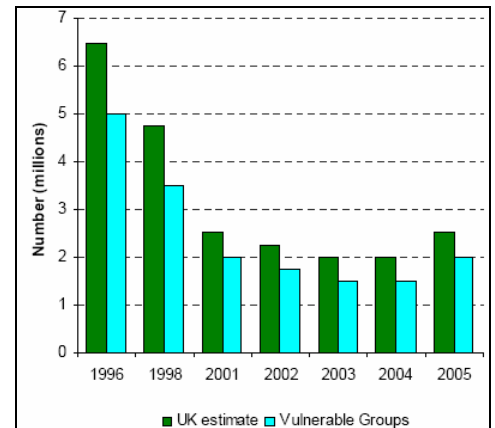
A fuel poor household is one that needs to spend more than 10% of its income on fuel to maintain a satisfactory heating regime. Vulnerable households are defined as those containing children or those who are elderly, sick or disabled

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](http://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](http://www.berr.gov.uk/energy/fuel-poverty/index.html))



**Fuel price indices for the domestic sector**

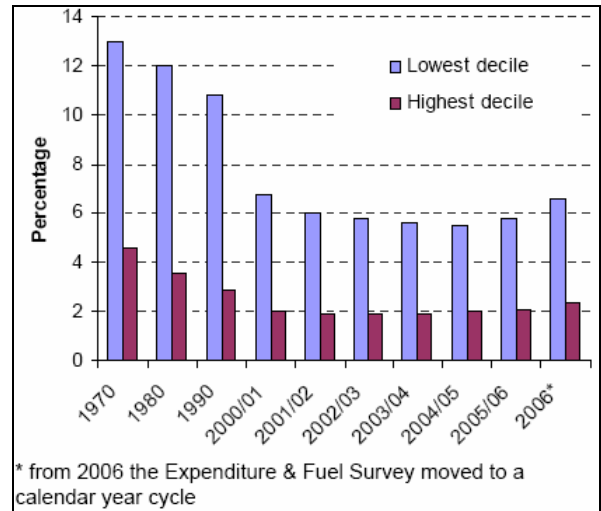
Between 1997 and 2007, annual average domestic prices in real terms including VAT rose by 12% for electricity, 23% for coal and smokeless fuels, 42% for gas, and 74% for heating oils

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 20<sup>th</sup> 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.<sup>43</sup>

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.

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<sup>43</sup> 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 led 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'<sup>44</sup> 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%<sup>45</sup>. 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<sup>46</sup>. 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<sup>47</sup>.

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<sup>48</sup>.

### 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.

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<sup>44</sup> Department for Transport (2006) *The Eddington Transport Study (Section 2)*. Available online at: <http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/>

<sup>45</sup> Economic and Social Research Council (2004) *Transport fact sheet*. Available online at: <http://www.esrcsocietytoday.ac.uk>

<sup>46</sup> *Transport statistics Great Britain (2008)* Department for Transport, pp127. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)

<sup>47</sup> *Transport statistics Great Britain (2008)* Department for Transport, pp176. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)

<sup>48</sup> *Transport statistics Great Britain (2008)* Department for Transport, pp131. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://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<sup>49</sup>. 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<sup>50</sup>. 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<sup>51</sup>.

## 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<sup>52</sup>.

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<sup>49</sup> *Transport statistics Great Britain (2008) Department for Transport, pp108. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)*

<sup>50</sup> *Transport statistics Great Britain (2008) Department for Transport, pp66. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)*

<sup>51</sup> *Transport statistics Great Britain (2008) Department for Transport, pp39-46. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)*

<sup>52</sup> *Transport statistics Great Britain (2008) Department for Transport, pp66. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://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<sup>53</sup>.

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<sup>54</sup>.

### 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<sup>55</sup>. 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<sup>56</sup>.

### 7.7 Likely Evolution of the Baseline

According to the Eddington Transport Study (2006)<sup>57</sup> 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:

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<sup>53</sup> *Transport statistics Great Britain (2008) Department for Transport, pp80. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)*

<sup>54</sup> *Transport statistics Great Britain (2008) Department for Transport, pp88. Available online at: [www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf](http://www.dft.gov.uk/162259/162469/221412/217792/421224/transportstatisticgreatbrit.pdf)*

<sup>55</sup> *Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: [www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/](http://www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/)*

<sup>56</sup> *Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: [www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/](http://www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/)*

<sup>57</sup> *Department for Transport (2006) The Eddington Transport Study (Section 2). Available online at: <http://www.dft.gov.uk/about/strategy/transportstrategy/eddingonstudy/>*

- 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.
- 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<sup>58</sup> 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.

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<sup>58</sup> 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<sup>59</sup>.
- 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<sup>60</sup>. 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<sup>61</sup> also suggests that assumptions about vehicle emissions should add 15% to Euro

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<sup>59</sup> <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>

<sup>60</sup> 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](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](http://www.airquality.co.uk/archive/reports/cat17/0707171116_newbaselineandadditionalmeasuresreport_v6.pdf) (accessed 14 May 2008).

<sup>61</sup> Defra (2007). Passenger transport emissions factors: Methodology paper [online] available at: <http://www.defra.gov.uk/environment/business/envrpd/passenger-transport.pdf> (accessed 14 May 2008).



emission standards to take account of real-world effects such as poor maintenance, low tyre pressure, poor driving, 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 to 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<sup>62</sup>. 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<sup>63</sup>. 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.

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<sup>62</sup> *The European Geoparks Network*

<sup>63</sup> *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 species 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).

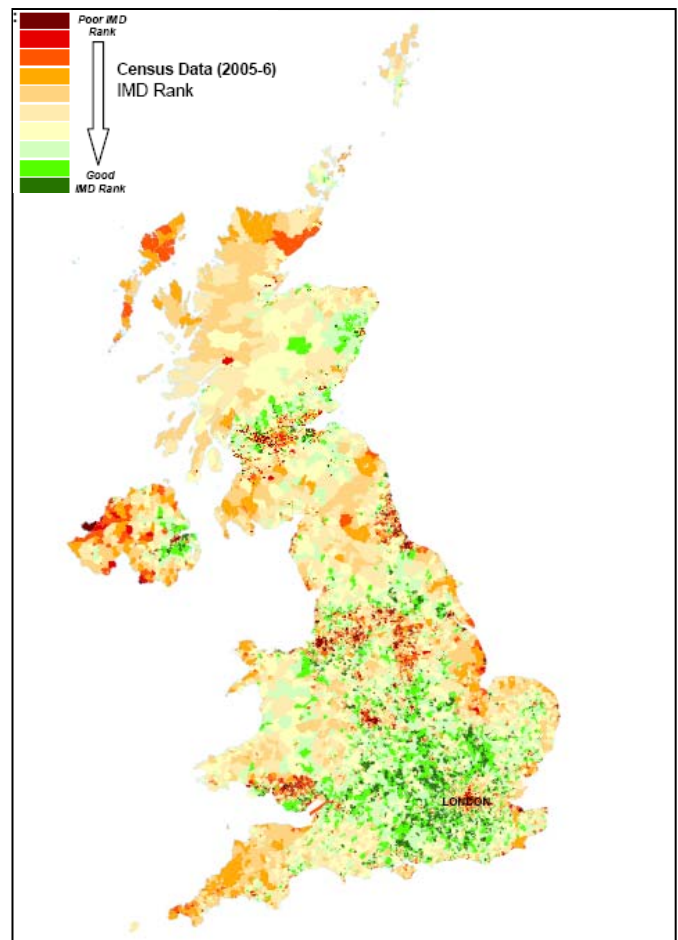
This information needs to be considered alongside baseline data contained in the Health Survey for England which are a series of published surveys which set out the health status of the population, with separate reports focussing on either different categories of the population, or different health issues. The data are available at the Information Centre for Health and Social Care<sup>64</sup> 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](http://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/](http://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/](http://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.



<sup>64</sup> [www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england](http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england)

### 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](http://www.iucn.org/where/global/index.cfm) provides a source for further information).

## 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 deprivation 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.

# Planning For New Energy Infrastructure

Appraisal of Sustainability for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure





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This document is the **Non-Technical Summary** of the **Appraisal of Sustainability (AoS)** Report produced as part of the appraisal undertaken to inform the **National Policy Statement (NPS) for Fossil Fuel Electricity Generating Infrastructure** (also referred to as EN-2).

The following sections explain what the NPS for Fossil Fuel Electricity Generating Infrastructure is, provide an outline of its content and describes the relationship of the NPS to the Overarching NPS and to the other technology-specific NPSs. An outline of the AoS process and the role of the AoS Report in this process is described on page 4. The findings and recommendations arising from the AoS are presented on page 13.

For more information on this public consultation and how to give us your views, please see the Consultation Document on the draft NPSs for energy.

## 1. What are the National Policy Statements for Energy Infrastructure?

The Planning Act 2008 changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. The IPC replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change (DECC) are responsible for preparing those related to energy infrastructure projects. These are:

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Renewable Energy Infrastructure (EN-3);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- Electricity Network Infrastructure (EN-5); and
- Nuclear Power Generation (EN-6).

Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore. This includes electricity generation from fossil fuels, renewables and nuclear power stations. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- Electricity lines at or above 132kV. For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act). For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds). For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.

NPSs collectively present a summary of government energy and climate policy, the national need for energy infrastructure and guidance to the IPC on how to assess the likely impacts of energy infrastructure. The Nuclear NPS is different in that it also assesses the potential suitability of sites for new nuclear stations and it is the subject of a separate AoS which has assessed those parts of the Overarching NPS which apply to nuclear stations.

## **2. What is the NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2)?**

The NPS for Fossil Fuel Electricity Generating Infrastructure sets out the national policy for new fossil fuel electricity generating infrastructure. In combination with the Overarching NPS, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant energy infrastructure.

Developers will need to ensure that their applications for development consent are consistent with the requirements of relevant NPSs, as the IPC must decide the application in accordance with their content except in the circumstances set out in Section 104 of the Planning Act 2008.

The NPS for Fossil Fuel Electricity Generating Infrastructure will be issued by the Secretary of State for DECC. It applies to decisions for nationally significant energy projects (as described in Part 1 of the NPS) in England and Wales (and Scotland in the case of cross border oil and gas cross-country pipelines). The NPS for Fossil Fuel Electricity Generating Infrastructure will remain in force in its 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 it remains appropriate for IPC decision making.

## **3. What is an Appraisal of Sustainability (AoS)?**

The Planning Act 2008 requires that ‘an appraisal of the sustainability of the policy set out in the statement’ is carried out. Section 5(5) of the Planning Act explains what the policy set out in statement may, in particular, contain<sup>65</sup>. It may:

- Set out, in relation to energy infrastructure, the amount, type or size of development which is appropriate nationally or for a specified area [Section 5(5)(a) of the Act]
- Set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for specified energy technologies [Section 5(5)(b) of the Act];
- Set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- Identify locations which are potentially suitable or unsuitable for specified energy technologies [Section 5(5)(d) of the Act]; and
- Set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].

The AoS of the NPS for Fossil Fuel Electricity Generating Infrastructure has been undertaken in a manner that

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<sup>65</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)

incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>66</sup>.

SEA is a statutory requirement following the adoption of European Community Directive 2001/42/EC which was transposed into UK legislation on the 20th July 2004 as Statutory Instrument No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004. The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

In addition to assessing the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely significant social and economic effects of implementing the NPS. Each AoS has been carried out at the same time as the development of the NPS and has therefore helped to inform that NPS. The NPS contains potential measures to mitigate significant adverse effects. All the NPSs (EN-1 to EN-6) have been subjected to an AoS<sup>67</sup>.

An overview of the key stages of the AoS process is presented below.

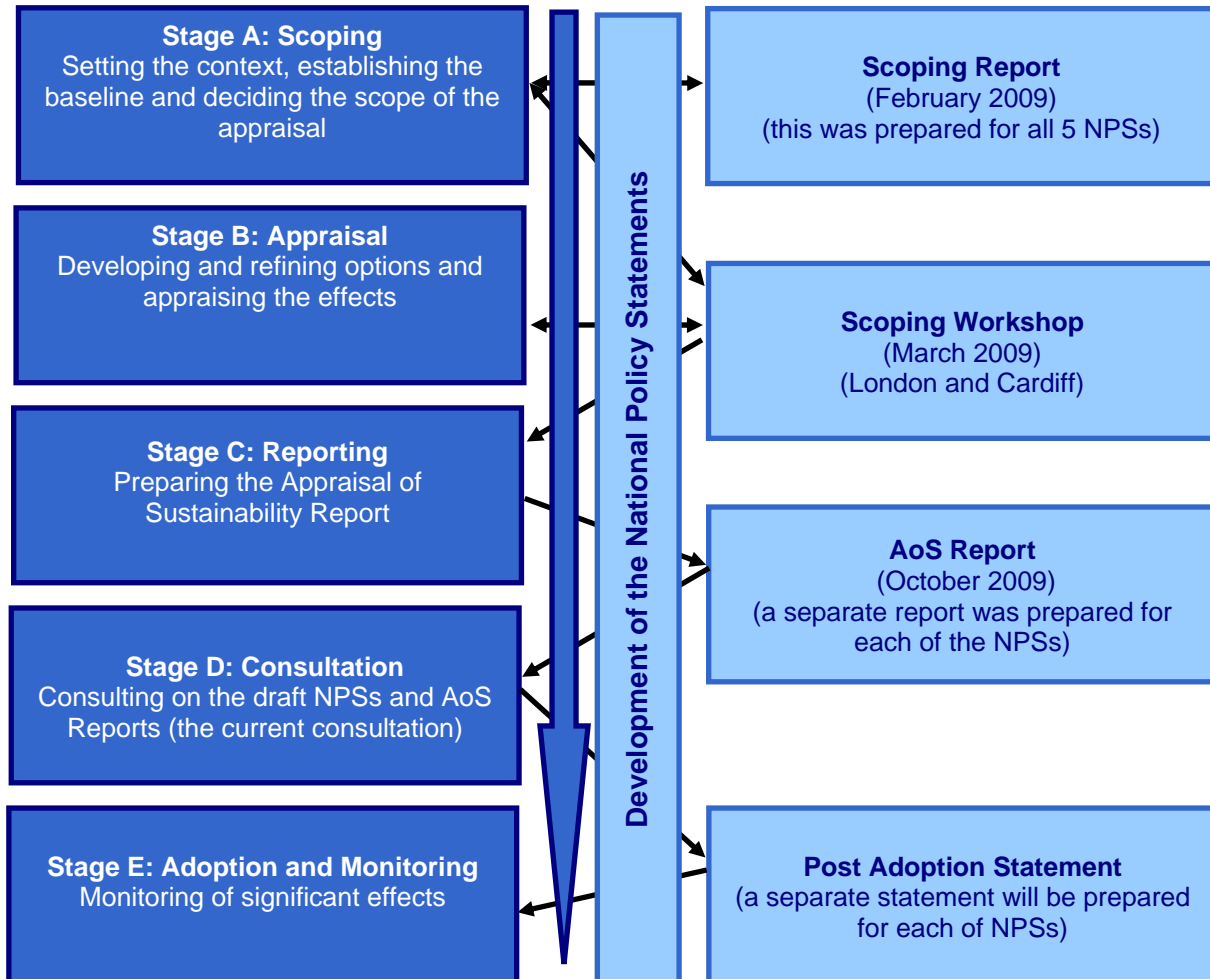
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<sup>66</sup> *The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633). Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.*

<sup>67</sup> *In addition to the work on the NPSs (including their AoS), DECC has also completed an SEA for Offshore Energy, is undertaking a feasibility study for tidal range power in the River Severn, which includes an SEA, and is beginning a feasibility study for wave and tidal projects around English and Welsh territorial waters.*

## Appraisal Process

## Key Outputs



The AoS process began in early 2009 and reflects national guidance on SEA practice<sup>68</sup>. A Scoping Report (Stage A) was consulted on by statutory consultees in February and March 2009. A summary of the results of this consultation are presented in **Annex C** of the Overarching Energy AoS Report and the consultees' responses have been considered within that AoS and also within the AoS for the NPS for Fossil Fuel Electricity Generating Infrastructure. From March through to September options were developed and refined and the effects of the NPSs were appraised (Stage B). The AoS Reports were prepared during this time (Stage C) before being consulted on (Stage D, the current consultation). Stage E, the final stage will involve setting the measures for monitoring significant impacts.

<sup>68</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.



#### 4. What relationship does the NPS for Fossil Fuel Electricity Generating Infrastructure have with other policies plans and programmes?

The AoS reviewed other relevant policies, plans, and programmes that could influence the NPS for Fossil Fuel Electricity Generating Infrastructure, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B** of the Overarching Energy AoS Report.

The NPS for Fossil Fuel Electricity Generating Infrastructure reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act and other government agreements on climate change being key influences on the development of the NPSs).

#### 5. Which sustainability topics has the NPS for Fossil Fuel Electricity Generating Infrastructure been appraised against?

EN-2 has been appraised against 14 topic areas. All of the topics identified in the Scoping Report were ‘scoped in’ (i.e. considered to be relevant to the appraisal<sup>69</sup>). The topics are identified below and are linked with the AoS Objectives identified in **Table 1** (page xi).

1. Climate Change	6. Water Quality & Resources	11. Air Quality
2. Ecology (Flora and Fauna)	7. Traffic and Transport	12. Soil and Geology
3. Resources and Raw Materials	8. Noise	13. Health and Well-Being
4. Economy and Skills	9. Landscape, Townscape and Visual	14. Equality
5. Flood Risk	10. Archaeology and Cultural Heritage	

The baseline is common to all of the non-nuclear NPSs (EN-1 –EN-5). To avoid repetition, the baseline material is presented in **Annex F** of the Overarching AoS Report and referenced in each of the non-nuclear AoS reports (EN-2 to EN-5).

#### 6. What reasonable alternatives for implementing the NPS for Fossil Fuel Electricity Generating Infrastructure were identified and appraised?

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

<sup>69</sup> Following consultation on the Scoping Report, *noise* and *landscape features* were scoped back into the appraisal (i.e. they were originally anticipated not to be relevant to a high-level appraisal but following comments this was reconsidered and they were included).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled (reflected in the guidance on the key issues that the IPC should take into account in its decision making). Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level reasonable alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1** with reasons for them not being included with the NPS identified by DECC.

**Table 1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p>The NPS should specify sites for new fossil fuel stations, in particular to facilitate the development of CCS clusters around the UK.</p>	<p>Carbon Capture and Storage (CCS) has yet to be demonstrated on a commercial scale so it would be premature to determine regional capacity for CCS without further understanding the technical and economic viability of CCS and demand for CCS clusters.</p> <p>CCS clusters could develop, in time, around large carbon emitting plants (not just those listed in EN-2) with captured emissions from several plants being transported and stored using a network of common infrastructure. However, the commercial viability of such clusters would not be a matter for the IPC to consider. It would not be reasonable, therefore, for the NPS to specify the sites where development should take place.</p>

## 7. What aspects of the draft NPSs were appraised?

Projects consented under the IPC/NPS process will clearly have a number of direct, indirect and cumulative effects. The AoS identifies and assesses those effects arising as a result of the NPS and this is considered against the baseline (i.e. what’s happening now and what’s likely to happen in the future). **In this way the appraisal assesses the effects of the differences between the current consenting regime (‘business as usual’) and the IPC/NPS process.**

The likely effects of the NPS have been considered across a range of geographic scales (including UK, regional and local). However, with the exception of the Nuclear Power Generation NPS, the Energy NPSs do not prescribe the location for new infrastructure projects and there are limitations in terms of how far appraising effects at a non-spatially specific level can be taken. This is not to exclude the possibility that the effects could be significant; rather, that it will often only be possible to judge whether such effects are significant at the project level.

It is anticipated that relevant receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory assessments.

The following assumptions have then been used to aid the understanding of the influence of the NPS on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors.
- Will add greater certainty to the delivery of nationally significant energy infrastructure by making the guidance on decision-making clearer and more transparent.
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK’s security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC’s understanding of the scale of need when considering individual applications.
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision

making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand.

- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to assess the implications of the NPS for future planning decisions. The AoS focuses on the material differences to sustainability against the existing planning system for energy infrastructure.

## 8. What approach was taken to the appraisal?

The appraisal of the NPS for Fossil Fuel Electricity Generating Infrastructure has been undertaken using an objectives-led approach. The baseline information, the review of plans and programmes and the key issues identified were used to develop 14 AoS objectives (presented in **Table 2**). Each objective is supported by a series of guide questions (and these are identified in **Section 3.4** of the AoS for EN-1). The AoS objectives cover all of the topics that the appraisal is required to include information on (as set out in the SEA Directive).

The NPS for Fossil Fuel Electricity Generating Infrastructure has then been appraised in terms of the extent to which it contributes towards achieving the AoS objective (e.g. Biodiversity) when considered against the baseline set by the existing planning environment. The 'guide questions' have been used to assist the appraisal of the potential effects in a qualitative manner, ensuring consideration is given to relevant influencing factors.

**Table 2 AoS Objectives**

AoS Objective	SEA Topic Requirement
1. <b>Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	Climate Change
2. <b>Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	Fauna, flora and biodiversity
3. <b>Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	Material assets
4. <b>Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	Material assets
5. <b>Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	Climatic factors
6. <b>Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).	Water
7. <b>Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	Population
8. <b>Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	Population
9. <b>Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	Landscape
10. <b>Archaeology and Cultural Heritage:</b> Protect and, where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	Cultural heritage, including architectural and archaeological heritage
11. <b>Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	Air
12. <b>Soil and Geology:</b> To promote the use of brownfield land, and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	Soil
13. <b>Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	Human health
14. <b>Equality:</b> To encourage equality and sustainable communities.	Human health

For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

This is in line with the SEA Directive which requires the identification, description and evaluation of the likely significant effects. In predicting and evaluating the effects of the NPS for Fossil Fuel Electricity Generating

Infrastructure, all effects have been considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

## 9. What were the key significant effects (when considered against the existing consenting regime)?

This section presents a summary of the appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS against the 14 objectives (which were identified in the Scoping Report). The appraisal compared the existing 'business as usual' scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

Entec provided on-going commentary on the sustainability effects of the emerging NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

### Summary of Appraisal

**Table 3** summarises the appraisal of the EN-2.

**Table 3 Summary of the appraisal of EN-2**

AoS Objective	Assessment	Comment
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	?	Whilst EN-2 (in conjunction with EN-1) does not introduce new policy in relation to CHP, CCR and CCS, the NPSs intend to deliver faster and more transparent decisions on current government policy. However, its effect is dependent on CCS being demonstrated as a proven technology which remains uncertain at this stage.
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	?	In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC), the effects on ecology from EN-5 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for low carbon energy infrastructure is likely to necessitate development on previously undeveloped areas.
<b>3. Material Assets and Resource Use:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to material assets and resource use, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not to be significant against this objective.
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	+ +	There are significant positive economic benefits associated with the implementation of proven CCS technologies, which the implementation of EN-2 could expedite.
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be



AoS Objective	Assessment	Comment
		significant against this objective.
<p><b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape townscape and visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to archaeology and cultural heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<p><b>14. Equality:</b> To encourage equality and sustainable communities.</p>	<b>0</b>	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to equality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be



AoS Objective		Assessment	Comment	
			significant against this objective.	
Score Key:	Significant (Major) Positive ++	Significant (major) negative --	no overall effects <b>0</b>	Uncertain <b>?</b>
	Minor Positive +	Minor Negative -		

The following provides more detailed information on the findings of the assessment.

## Climate Change

**Objective:** *To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** There are existing legislative requirements (Section 36 of the Electricity Act (1989)) relating to the incorporation of CHP technology in the design of new thermal combustion generating stations. EN-2 does not alter this requirement but does re-iterate the need for applicants to demonstrate that CHP has been considered (as described in EN-1). EN-2 also re-iterates the requirement that all applications for combustion plants at or over 300 MW must be CCR (as described in EN-1). Once CCS is proven, then CCS will be retrofitted to those plants which are CCR. As Government policy, this will happen regardless of EN-2, which does not itself enforce new policy.

EN-2 therefore echoes EN-1 in specifying that it shall be a condition of development consent for any new coal fired power station that construction may not begin until the IPC is satisfied that the requirements (which are described in EN-1) for operating with CCS have been fully met

Whilst EN-2 (in conjunction with EN-1) does not introduce new policy in relation to CHP, CCR and CCS, the NPSs intend to deliver faster and more transparent decisions on current government policy. As a result, the IPC may consent new fossil fuel, CCR electricity generating stations at a faster rate than at present under the existing planning system (although the net number of new fossil fuel power stations will remain the same).

It is assumed that over the coming years there will be significant closure of existing generating capacity, particularly to 2020, as a result of tightening environmental regulation and aging power stations. However, there will be a need to build new fossil fuel power stations in order to continue to meet peak demand which is predicted to remain at around 60GW by 2020. Depending on how soon CCS can be proven to be economically and technically viable, this may make the achievement of this objective more likely by resulting in significant carbon reductions as CCS has the potential to capture upto 90% of carbon emissions from coal power stations.

*The appraisal has indicated that the effects of EN-2 on this objective are **uncertain**, but that there is the potential for a significant positive effect.*

## Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** The generic guidance contained within EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-1 states that the applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests. It also states that the applicant is expected to have included appropriate mitigation measures as an integral part of the proposed development and to demonstrate opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within site landscaping proposals.

EN-2 does not provide any additional guidance to the IPC on impacts associated with ecology in relation to the construction of new fossil fuel electricity generating stations. However, it is considered that there are likely to be specific biodiversity effects, due to the likelihood that new power stations will be built in coastal or estuarial locations and have a large footprint. Coastal and estuarial sites are more likely to provide niche habitats for example sand dunes, salt marshes and mudflats, which support highly specialised species which are particularly vulnerable to any loss of habitat or disturbance. There may also effects on ecology resulting from the requirement to abstract and discharge large volumes of cooling water and the thermal emissions in cooling water may have adverse ecological effects, particularly in enclosed estuary areas.

The effects of the adoption of CCS will include CO<sub>2</sub> pipeline routes and there will be a need for the IPC and applicant to give consideration to the ecological sensitivity of any proposed location due weight in the site-selection and design process. In particular, pipelines to marine CO<sub>2</sub> storage areas will cross the coastal zone, which may include protected wildlife habitats that are designated at national or international level. Construction will need to include measures to mitigate adverse effects during construction and to restore habitats afterwards. In the case of European wildlife sites, Habitats Regulations Assessment will be required and measures will need to be taken to avoid or compensate for adverse effects on site integrity. Installation methods such as horizontal directional drilling can minimise negative effects on wildlife by avoiding sensitive sites.

In the long-term the introduction of CCS has the potential to reduce carbon dioxide emissions which in turn will help to reduce the effects of climate change on ecology. Thus, providing adverse ecological effects at a project level are avoided or fully mitigated or compensated, the ecological objective will be met.

If a fossil fuel plant is consented, even with CCS, the emission of nitrogen oxides (NO<sub>x</sub>), which are released as part of the process are a significant contributor to eutrophication and acidification of the environment.

The above potential effects could occur (depending on the nature of the plant proposed); and would also be captured by the generic requirements of EN-1. EN-2 (in conjunction with EN-1) does not set out any specific additional requirements or identify any specific impacts relating to ecology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not significant against this objective.

However, it is also considered that there will be uncertain effects on ecology as a result of EN-2 in conjunction with EN-1, as the need for fossil fuel generating infrastructure set out by the NPSs is likely to necessitate development on previously undeveloped sites. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7** of the AoS for EN-1), that states that ‘the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with a range of

potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level’.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

## Material Assets and Resource Use

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** Material assets and resource use issues are not directly covered in EN-1. However, EN-1 does address the issue of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.

As set out above, whilst EN-2 does not introduce new policy in relation to requirement for CCS, it will be one of the key means of ensuring that new coal fired power stations will operate with CCS in the future and there are likely to be associated increases in resources and raw materials used for CCS.

CCS technology requires more coal per MW of electricity generated because the process of stripping CO<sub>2</sub> from combustion gasses in itself requires energy (estimated to be 10-40% of what would otherwise be distributed). This process therefore uses more resources compared to conventional fossil fuel electricity generation (although it will help to deliver clean energy). It is not considered that this will have a significant adverse effect on this objective when compared to the current system, as CCS will be a requirement irrespective of EN-2 and even if new fossil fuel power stations are constructed sooner as a result of the NPSs, the resources and raw materials required to construct and operate CCS will not change over the lifetime of the project.

EN-2 also sets out residue management effects specific to fossil fuel technology including the removal and disposal of furnace bottom ash and fine pulverised ash and specifies that the applicant should demonstrate how the waste management hierarchy has been applied to consideration of residue management.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to material assets and resource use, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all?*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-2 does not set out any specific requirements or identify any specific impacts relating to the economy and skills, therefore requirements in relation to and mitigation of any effects on the economy and skills are as addressed in EN-1.

As set out above, although EN-2 does not introduce new policy in relation to CCS, it will be one of the key means of realising this requirement in the future. There are likely to be significant economic benefits associated with the requirement for CCS. It is expected that there will be significant capacity beneath the North Sea to store carbon emissions and predictions are that an industry offering carbon storage to the mainland could create as many jobs as North Sea oil and contribute £5bn a year to the UK economy<sup>70</sup>. Developers are encouraged to bring forward applications earlier than they otherwise would (and/or apply from more schemes, depending on commercial decisions) owing to clarity and definite timescales.

Whilst EN-2 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater than in a period of high employment.

*The appraisal indicated that there will be **significant positive effects** on this objective.*

## Flood Risk

**Objective:** *Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-2 does not set out any specific requirements or identify any specific impacts relating to flood risk although it is recognised that fossil fuel generating stations are likely to be proposed for coastal or estuarine sites and therefore applicants should in particular set out how the proposal would be resilient<sup>71</sup> to increased risk from storm surge. Generic guidance on flood risk is contained within EN-1 which sets out that the approach the IPC will take to assessing whether any application that comes forward is permissible in terms of flood risk and will be in accordance with the principles of Planning Policy Statement (PPS) 25: Development and Flood Risk. This will seek to ensure that proposed development does not result in increased flood risk, that it would be safe from flooding given the prevailing flood risk and where possible reduces flood risk overall.

Notwithstanding these requirements, there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.24) that ‘the IPC may grant consent if it is satisfied that the increase in flood risk is acceptable and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...’. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been

<sup>70</sup> <http://www.guardian.co.uk/science/2009/sep/08/carbon-capture-north-sea>

<sup>71</sup> *Flood-resilient buildings are designed to reduce the consequences of flooding and facilitate recovery from the effects of flooding sooner than conventional buildings. This may be achieved through the use of water-resistant materials for floors, walls and fixtures and the siting of electrical controls, cables and appliances at a higher than normal level. If the lowest floor level is raised above the predicted flood level, consideration must be given to providing access for those with restricted mobility. In considering appropriate resilience measures, it will be necessary to plan for specific circumstances and have a clear understanding of the mechanisms that lead to flooding and the nature of the flood risk by undertaking a FRA. (PPS:25 Annex G, G8).*

consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Water Quality

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic water quality effects, guidance and requirements set out in EN-1, EN-2 presents water quality (and resources) effects specific to fossil fuel technology on aquatic flora and fauna and specifically fish, which may result from discharging water at a higher temperature, reducing flow in water courses due to abstraction and the chemical anti-fouling treatment of water for use in cooling systems. Suggested mitigation measures (in addition to measures set out in EN-1) are that the design of the cooling system should include intake and outfall locations to avoid or minimise adverse impacts, and that specific measures should be taken to minimise fish impingement and/or entrainment and excessive heat from discharges to receiving waters.

However, the IPC would only consider the effects identified above as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific water quality impacts, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Traffic and Transport

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to traffic and transport. EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Noise

**Objective:** *To protect both human and ecological receptors from disturbing levels of noise.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic noise effects, guidance and requirements set out in EN-1, EN-2 presents noise (and vibration) effects specific to fossil fuel technology, which may result from, for example, the milling of coal, delivery of fuel and materials to the site and the operation of gas/steam turbines and externally sited air-cooled condensers.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific noise impacts, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Landscape, Townscape and Visual

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic landscape and visual impacts, guidance and requirements. EN-2 presents landscape and visual effects specific to fossil fuel technology, which are likely to result from the need for large structures such as turbine and boiler halls, exhaust gas stacks, storage facilities, cooling towers and water processing plant. There is also mention of the need for night time lighting which may affect visual amenity and rural tranquillity.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific landscape and visual impacts, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Archaeology and Cultural Heritage

**Objective:** *Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to archaeology and cultural heritage. EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to archaeology and cultural heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*



## Air Quality

**Objective:** *To protect and enhance air quality on local, regional, national and international scale.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic air quality effects, guidance and requirements set out in EN-1, EN-2 presents air quality effects specific to fossil fuel technology, relating to the likely emission of nitrogen oxides and sulphur oxides. Suggested mitigation measures (dependant on the type and design of generating station) are flue gas desulphurisation and Selective Catalytic Reduction to reduce nitrogen oxides, however it is recognised that these will have additional adverse noise and dust effects. It also sets out how the release of dust may result from the transport and handling of fuel, materials and waste. A range of mitigation measures for dust effects include enclosed storage and conveyors, landscaping to reduce wind blown dust, dust suppression systems and the control of vehicle and plant movements to reduce grinding of materials into fine dust.

The IPC should therefore be satisfied that any adverse effects of mitigation measures have been considered in the Environmental Statement.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Soil and Geology

**Objective:** *To promote the use of brownfield land and, where this is not possible, to prioritise the protection of geologically important sites and agriculturally important land.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to geological conservation and recognises existing regional and local designations for protecting important geological sites. The IPC is also directed to take account of the potential effects any proposed energy infrastructure may have on existing, adjacent and proposed land uses, which is anticipated to include consideration of the agricultural quality of soils.

EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts on soil and geology in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population*



**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 recognises that energy production has the potential to impact on the health and well-being of the population. However, EN-1 also sets out that existing safety and environmental regulatory mechanisms e.g. relating to noise and air emissions will limit the environmental exposure of the population. Where health and well-being issues relate to certain impact areas (i.e. noise, dust and air emissions) these are addressed in these sections of EN-1.

EN-2 does not set out any specific requirements or identify any specific impacts relating to health and well-being but also addresses health and well-being issues relating to certain impact areas in the relevant sections.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and well-being, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Equality

**Objective:** *To encourage equality and sustainable communities.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** Neither EN-1 or EN-2 set out any specific requirements or identify any specific impacts relating to equality. As such, the IPC are not directed to take equality issues into account in determining applications for new fossil fuel electricity generating power stations and the NPSs do not set out any specific additional requirements or identify any specific impacts relating to equality, above those which are already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## 10. What are the cumulative and synergistic effects of the NPS?

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects were considered in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (para 4.2.4). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3).

## 11. What are the conclusions and key findings of the appraisal?

The NPS, in conjunction with EN-1, is likely to improve business and investor confidence in fossil fuel generating infrastructure projects. However, beyond this there are no significant differences identified between existing

consenting requirements and what will be required under the IPC/NPS system. EN-2 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, the NPS is not considered to result in any significant effects at the national policy level when compared to the existing consenting controls. However, at the individual project level there is the potential for significant effects depending on the nature of the infrastructure development that comes forward for determination by the IPC.

## 12. How will any effects be monitored?

It is a requirement of the SEA Directive to describe how the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>72</sup> (ODPM, 2005) notes, *'it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects'*.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

1. Uncertain effects on Climate Change (AoS Objective 1);
2. Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

3. Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the Table 3 (these will be reviewed in light of comments on the significance of effects).

**Table 3 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/ukxa/energy/sa20090827.htm">http://stats.berr.gov.uk/ukxa/energy/sa20090827.htm</a> )

<sup>72</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

### 13. What are the next steps?

The AoS Report and the consultation on it fulfil the requirements of Stage C and D of the SEA process (see **Section 1.3**). This Non-Technical Summary of the Appraisal of Sustainability (AoS) Report for EN-2 provides a summary of the information presented in the AoS Report, which should be referred to for more detailed information.

This AoS Report will be presented for consultation alongside the draft NPS for Fossil Fuel Electricity Generating Infrastructure from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The NPS for Fossil Fuel Electricity Generating Infrastructure may be amended and revisions to the AoS may be made. A Post Adoption Statement will be produced to summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the NPS for Fossil Fuel Electricity Generating Infrastructure.

## 1 INTRODUCTION

### 1.1 Purpose of this Report

This Appraisal of Sustainability (AoS) Report for the **Fossil Fuel Electricity Generating Infrastructure NPS** provides information on the:

- Fuel Electricity Generating Infrastructure NPS (**Section 1.2**);
- alternatives (**Section 1.3**);
- findings of the AoS (**Section 2**); and
- proposed measures for monitoring significant effects (**Section 3**).

This report should be read in conjunction with the AoS Report for the Overarching Energy NPS which provides information on the:

- suite of NPSs being prepared by DECC (**Section 2**);
- methodology (including when the AoS was undertaken and by whom) (**Section 3**);
- scope of the appraisal (**Section 3.3**);
- method for collecting and presenting baseline information (**Section 3.4**); and
- approach to completing the appraisal (including the AoS objectives), assumptions and technical difficulties encountered during the appraisal (**Section 3.5 - 3.7**).

This AoS Report alongside the AoS for the Overarching NPS allow DECC to demonstrate compliance with the AoS requirements of the Planning Act 2008, the SEA Directive and relevant regulations.

### 1.2 The NPS for Fossil Fuel Electricity Generating Infrastructure

The NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) in conjunction with the Overarching NPS for Energy (EN-1) sets out the material planning factors that should be considered by the Infrastructure Planning Commission (IPC) when determining whether development consent should be granted for a proposed project.

#### 1.2.1 The Content of the NPS for Fossil Fuel Electricity Generating Infrastructure

The definition of what is a nationally significant energy infrastructure project (and hence must be submitted to the IPC) as defined in the Planning Act 2008, varies between technologies. Nationally significant fossil fuel electricity generating infrastructure covered stations with over 50MW electricity generating capacity.

Fossil fuel generation comprises 4 technologies:

- coal fired;

- gas-fired;
- integrated coal gasification combined cycle; and
- oil-fired.

EN-1 identifies the need for new energy generation capacity and a diverse mix of fuels and technologies to ensure security of supply and to meet carbon reduction and low carbon energy targets. Fossil fuel generating stations contribute to the stability of generating capacity because they use fuel from a range of sources, depending on supply and market conditions, which can be stockpiled in anticipation of future energy demands. However, fossil fuel electricity generating stations are also associated with the emission of significant quantities of carbon dioxide (CO<sub>2</sub>), the most significant greenhouse gas. Carbon Capture and Storage (CCS) technology (described below) also has the potential to reduce carbon emissions and to support the transition to a low carbon economy.

EN-1 removes the necessity for the IPC to consider whether there is a need for new energy infrastructure development (including fossil fuel power stations). The IPC's role is therefore to consider the impacts that a proposed new fossil fuel development could have and whether a particular application should be granted consent.

Certain impacts may result from the development of new energy infrastructure regardless of the specific generating method. EN-1 identifies the potential impacts of new energy infrastructure at the generic level, and directs the IPC's decision making with respect to each impact topic (see **Box 1.1**) but does not cover impacts that would be specific to a particular energy technology (see **Box 1.2**).

**Box 1.1: Generic Impacts detailed within the Overarching NPS for Energy**

- |   |                                 |
|---|---------------------------------|
| • Air emissions                                     | • Landscape and visual impacts  |
| • Biodiversity and geological conservation          | • Land-use                      |
| • Civil and military aviation and defence interests | • Noise                         |
| • Coastal change                                    | • Socio economic                |
| • Dust, odour and other nuisances                   | • Traffic and transport Impacts |
| • Flood Risk  | • Waste management              |
| • Historic Environment.                             | • Water quality and resources   |

The main impact topics where fossil fuel generating stations may result in technology-specific impacts additional to those set out in EN-1 are:

**Box 1.2: Generic Impacts detailed within the NPS for Fossil Fuel Electricity Generation Infrastructure**

- |                        |   |
|------------------------|---|
| • Air emissions        | • Release of dust by Coal-fired Generating Stations     |
| • Landscape and visual | • Residue management for Coal-fired Generating Stations |
| • Noise and vibration  | • Water quality and resources                           |

EN-2 sets out the requirements for certain Government policy criteria to be met before consent can be given by the IPC, which include requirements for Combined Heat and Power (CHP), Carbon Capture Readiness (CCR) and Carbon Capture and Storage (CCS).

**Combined Heat and Power (CHP):** CHP is a fuel efficient energy technology that, unlike conventional forms of power generation, makes extensive use of the heat produced during the electricity generation process (that is normally wasted to the environment). A CHP station may either supply steam direct to customers or capture waste heat for low-pressure steam, hot water and space heating purposes after it has been used to drive electricity generating turbines. Supplying steam direct to industrial customers or using waste heat for district heating, can reduce the overall amount of fuel needed to meet the equivalent energy requirements. CHP can increase fuel efficiency by more than 75% (compared to around 38% and 48% for coal and gas fired power stations respectively). To be viable as a CHP plant, a thermal combustion generating station needs to be located close to industrial or domestic customers with heat demands.

As set out in EN-1, the current situation is that any application to develop a thermal combustion generating station under Section 36 of the Electricity Act 1989 which is not CHP, must contain evidence that the possibilities for CHP have been fully explored. Developers should consider the opportunities for CHP from the very earliest point. Applicants should have consulted potential customers as well as bodies such as the Homes and Communities Agency, Regional Development Agencies and Local Authorities to obtain their advice on opportunities for CHP; and considered relevant information in regional and local energy and heat demand mapping. EN-1 specifies that substantial weight should be given by the IPC to applications for thermal combustion generating stations that incorporate CHP.

**Carbon Capture Readiness (CCR):** CCR relates to new Government regulations (effective following the publication of the Government's response to the "Towards Carbon Capture and Storage" consultation between April and June to ensure that there are no known barriers to the retrofit of CCS to any new combustion generating stations in England and Wales with a generating capacity at or over 300MW and of a type covered by the large combustion plant directive, should the CCS process be proven commercially viable. To achieve CCR, requirements include that applicants must demonstrate at the consent stage that there is sufficient space available for the necessary CCS equipment in the future; that there is suitable deep geological storage offshore and that there are technically and economically feasible options for the retrofit of CCS equipment and the transport of CO<sub>2</sub> from the site for storage.

**Carbon Capture and Storage (CCS):** CCS is the generic name for a group of technologies which together reduce carbon dioxide (CO<sub>2</sub>) emissions to the atmosphere by extracting CO<sub>2</sub> from combustion processes, compressing it and transporting it as dense carbon phase carbon dioxide for permanent storage to safe geological sites such as deep saline formations or depleted oil and gas fields (the Government has made its view clear that at present only offshore storage is to be considered). CCS has the potential to reduce emissions from power stations by up to 90% and is seen as a key technology for enabling transition to a low carbon economy.

The specific requirements with regards to CHP, CCR and CCS set out in EN-2 are summarised as follows:

- **CHP:** If an application does not demonstrate that CHP has been considered, as described in EN-1, the IPC should seek further information from the applicant. The IPC should not give development consent unless it is satisfied that the applicant has provided appropriate evidence that opportunities for CHP have been properly explored.
- **CCR:** If an application does not demonstrate that CCR has been assessed according to these requirements, the IPC should seek further information from the applicant. The IPC should not give development consent unless it is satisfied that the proposed development meets all the criteria and is, therefore, CCR. If it cannot be satisfied that the proposal meets the criteria, consent should be refused.
- **CCS:** As set out in EN-1, new coal-fired generating stations in England or Wales are required to have CCS on at least 300MW net of the proposed generating capacity. The applicant should provide evidence to show that the proposed generating station will incorporate a capture unit able to capture carbon dioxide (CO<sub>2</sub>), emitted from at least 300MW net of its capacity, together with transport and storage. Coal-fired generating stations of less than 300MW capacity are required to show that the proposed generating station will be able to capture CO<sub>2</sub> from at least half their capacity. In such cases,

the quantity of CO<sub>2</sub> to be stored will need to be determined before construction commences according to the technical specifications of the proposed generating capacity.

### 1.3 Reasonable Alternatives

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.



Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1.1** with reasons for them not being included with the NPS identified by DECC.

**Table 1.1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p>The NPS should specify sites for new fossil fuel stations, in particular to facilitate the development of CCS clusters around the UK.</p>	<p>Carbon Capture and Storage (CCS) has yet to be demonstrated on a commercial scale so it would be premature to determine regional capacity for CCS without further understanding the technical and economic viability of CCS and demand for CCS clusters.</p> <p>CCS clusters could develop, in time, around large carbon emitting plants (not just those listed in EN-2) with captured emissions from several plants being transported and stored using a network of common infrastructure. However, the commercial viability of such clusters would not be a matter for the IPC to consider. It would not be reasonable, therefore, for the NPS to specify the sites where development should take place.</p>

## 2. APPRAISAL AND REPORTING

### 2.1 Topic Based Approach

This section presents a summary of the appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS against the 14 objectives (which were identified in the Scoping Report). The appraisal compared the existing 'business as usual' scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

Entec provided on-going commentary on the sustainability effects of the emerging NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### 2.1.1 Summary of Appraisal

**Table 2.1** summarises the appraisal of the EN-2.

**Table 2.1 Summary of the Appraisal of EN-2**

AoS Objective	Assessment	Comment
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	?	Whilst EN-2 (in conjunction with EN-1) does not introduce new policy in relation to CHP, CCR and CCS, the NPSs intend to deliver faster and more transparent decisions on current government policy. However, its effect is dependent on CCS being demonstrated as a proven technology which remains uncertain at this stage.
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	?	In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC), the effects on ecology from EN-5 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for low carbon energy infrastructure is likely to necessitate development on previously undeveloped areas.
<b>3. Material Assets and Resource Use:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to material assets and resource use, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not to be significant against this objective.
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	++	There are significant positive economic benefits associated with the implementation of proven CCS technologies, which the implementation of EN-2 could expedite.
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.
<b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality, above those already considered through the

AoS Objective	Assessment	Comment		
		planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape townscape and visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to archaeology and cultural heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>14. Equality:</b> To encourage equality and sustainable communities.	0	EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to equality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 is considered not to be significant against this objective.		
<b>Score Key:</b>	Significant (Major) Positive ++	Significant (major) negative --	no overall effects 0	Uncertain ?
	Minor Positive +	Minor Negative -		

The following provides more detailed information on the findings of the appraisal.

### 2.1.2 Climate Change

**Objective:** *Does the NPS minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change?*

#### **Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:**

There are existing legislative requirements (Section 36 of the Electricity Act (1989)) relating to the incorporation of CHP technology in the design of new thermal combustion generating stations. EN-2 does not alter this requirement but does re-iterate the need for applicants to demonstrate that CHP has been considered (as described in EN-1). EN-2 also re-iterates the requirement that all applications for combustion plants at or over 300 MW must be CCR (as described in EN-1). Once CCS is proven, then CCS will be retrofitted to those plants which are CCR. As Government policy, this will happen regardless of EN-2, which does not itself enforce new policy.

EN-2 therefore echoes EN-1 in specifying that it shall be a condition of development consent for any new coal fired power station that construction may not begin until the IPC is satisfied that the requirements (which are described in EN-1) for operating with CCS have been fully met

Whilst EN-2 (in conjunction with EN-1) does not introduce new policy in relation to CHP, CCR and CCS, the NPSs intend to deliver faster and more transparent decisions on current government policy. As a result, the IPC may consent new fossil fuel, CCR electricity generating stations at a faster rate than at present under the existing planning system (although the net number of new fossil fuel power stations will remain the same).

It is assumed that over the coming years there will be significant closure of existing generating capacity, particularly to 2020, as a result of tightening environmental regulation and aging power stations. However, there will be a need to build new fossil fuel power stations in order to continue to meet peak demand which is predicted to remain at around 60GW by 2020. Depending on how soon CCS can be proven to be economically and technically viable, this may make the achievement of this objective more likely by resulting in significant carbon reductions as CCS has the potential to capture up to 90% of carbon emissions from coal power stations.

*The appraisal has indicated that the effects of EN-2 on this objective are **uncertain**, but that there is the potential for a significant positive effect.*

### 2.1.3 Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality?*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** The generic guidance contained within EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-1 states that the applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests. It also states that the applicant is expected to have included appropriate mitigation measures as an integral part of

the proposed development and to demonstrate opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within site landscaping proposals.

EN-2 does not provide any additional guidance to the IPC on impacts associated with ecology in relation to the construction of new fossil fuel electricity generating stations. However, it is considered that there are likely to be specific biodiversity effects, due to the likelihood that new power stations will be built in coastal or estuarial locations and have a large footprint. Coastal and estuarial sites are more likely to provide niche habitats for example sand dunes, salt marshes and mudflats, which support highly specialised species which are particularly vulnerable to any loss of habitat or disturbance. There may also effects on ecology resulting from the requirement to abstract and discharge large volumes of cooling water and the thermal emissions in cooling water may have adverse ecological effects, particularly in enclosed estuary areas.

The effects of the adoption of CCS will include CO<sub>2</sub> pipeline routes and there will be a need for the IPC and applicant to give consideration to the ecological sensitivity of any proposed location due weight in the site-selection and design process. In particular, pipelines to marine CO<sub>2</sub> storage areas will cross the coastal zone, which may include protected wildlife habitats that are designated at national or international level. Construction will need to include measures to mitigate adverse effects during construction and to restore habitats afterwards. In the case of European wildlife sites, Habitats Regulations Assessment will be required and measures will need to be taken to avoid or compensate for adverse effects on site integrity. Installation methods such as horizontal directional drilling can minimise negative effects on wildlife by avoiding sensitive sites.

In the long-term the introduction of CCS has the potential to reduce carbon dioxide emissions which in turn will help to reduce the effects of climate change on ecology. Thus, providing adverse ecological effects at a project level are avoided or fully mitigated or compensated, the ecological objective will be met.

If a fossil fuel plant is consented, even with CCS, the emission of nitrogen oxides (NO<sub>x</sub>), which are released as part of the process are a significant contributor to eutrophication and acidification of the environment.

The above potential effects could occur (depending on the nature of the plant proposed); and would also be captured by the generic requirements of EN-1. EN-2 (in conjunction with EN-1) does not set out any specific additional requirements or identify any specific impacts relating to ecology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not significant against this objective.

However, it is also considered that there will be uncertain effects on ecology as a result of EN-2 in conjunction with EN-1, as the need for fossil fuel generating infrastructure set out by the NPSs is likely to necessitate development on previously undeveloped sites. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7** of the AoS for EN-1), that states that 'the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level'.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Ecology:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 2.1:** The likely locations of fossil fuel power stations (coastal/estuary) may result in ecological effects on migratory fish, benthic invertebrates, etc. Consider adding an ecology section which would reference appropriate mitigation measures (or cross-referencing EN-1).

**Response 2.1:** Separate impact on water quality and resources now references effect on fish.

**Recommendation 2.2:** Consider adding a reference to the Marine Bill which will enable a network of marine protected areas.

**Response 2.2:** MMO is referenced in EN-1. Repetition in EN-2 not considered appropriate.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

2.1.4 **Material Assets and Resource Use**

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy?*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** Material assets and resource use issues are not directly covered in EN-1. However, EN-1 does address the issue of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.

As set out above, whilst EN-2 does not introduce new policy in relation to requirement for CCS, it will be one of the key means of ensuring that new coal fired power stations will operate with CCS in the future and there are likely to be associated increases in resources and raw materials used for CCS.

CCS technology requires more coal per MW of electricity generated because the process of stripping CO<sub>2</sub> from combustion gasses in itself requires energy (estimated to be 10-40% of what would otherwise be distributed). This process therefore uses more resources compared to conventional fossil fuel electricity generation (although it will help to deliver clean energy). It is not considered that this will have a significant adverse effect on this objective when compared to the current system, as CCS will be a requirement irrespective of EN-2 and even if new fossil fuel power stations are constructed sooner as a result of the NPSs, the resources and raw materials required to construct and operate CCS will not change over the lifetime of the project.

EN-2 also sets out residue management effects specific to fossil fuel technology including the removal and disposal of furnace bottom ash and fine pulverised ash and specifies that the applicant should demonstrate how the waste management hierarchy has been applied to consideration of residue management.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to material assets and resource use, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not significant against this objective.



The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Material Assets and Resource Use:** Key recommendation(s) emerging from the appraisal and how DECC responded

<p><b>Recommendation 3.1:</b> Waste management is covered in the Environmental Permit for operation of a fossil fuel generating station. However, it may be appropriate to refer to the waste management hierarchy and the Waste Framework Directive</p>	<p><b>Response 3.1:</b> Waste management hierarchy set out in EN-1.</p>
<p><b>Recommendation 3.2:</b> Consider setting out what a Residue Management Plan is expected to contain</p>	<p><b>Recommendation 3.2:</b> This would be more appropriate for each applicant, as it will be different for each and falls within EA permitting.</p>

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to material assets and resource use, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of EN-2 could be considered not significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

### 2.1.5 Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all?*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-2 does not set out any specific requirements or identify any specific impacts relating to the economy and skills, therefore requirements in relation to and mitigation of any effects on the economy and skills are as addressed in EN-1.

As set out above, although EN-2 does not introduce new policy in relation to CCS, it will be one of the key means of realising this requirement in the future. There are likely to be significant economic benefits associated with the requirement for CCS. It is expected that there will be significant capacity beneath the North Sea to store carbon emissions and predictions are that an industry offering carbon storage to the mainland could create as many jobs as North Sea oil and contribute £5bn a year to the UK economy<sup>73</sup>. Developers are encouraged to bring forward applications earlier than they otherwise would (and/or apply from more schemes, depending on commercial decisions) owing to clarity and definite timescales.

Whilst EN-2 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater than in a period of high employment.

<sup>73</sup> <http://www.guardian.co.uk/science/2009/sep/08/carbon-capture-north-sea>

The appraisal indicated that there will be **significant positive effects** on this objective.

### 2.1.6 Flood Risk

**Objective:** Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-2 does not set out any specific requirements or identify any specific impacts relating to flood risk although it is recognised that fossil fuel generating stations are likely to be proposed for coastal or estuarine sites and therefore applicants should in particular set out how the proposal would be resilient<sup>74</sup> to increased risk from storm surge. Generic guidance on flood risk is contained within EN-1 which sets out that the approach the IPC will take to assessing whether any application that comes forward is permissible in terms of flood risk and will be in accordance with the principles of Planning Policy Statement (PPS) 25: Development and Flood Risk. This will seek to ensure that proposed development does not result in increased flood risk, that it would be safe from flooding given the prevailing flood risk and where possible reduces flood risk overall.

Notwithstanding these requirements, there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.24) that ‘the IPC may grant consent if it is satisfied that the increase in flood risk is acceptable and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...’. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### Flood Risk: Key recommendation(s) emerging from the appraisal and how DECC responded

<p><b>Recommendation 5.1:</b> Flood risk should be covered in a specific impacts section because, owing to the high water demand, the preferred locations are stated to be coastal,</p>	<p><b>Response 5.1:</b> There is no additional information that could be included in EN-2 that is not in EN-1.</p>
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<sup>74</sup> Flood-resilient buildings are designed to reduce the consequences of flooding and facilitate recovery from the effects of flooding sooner than conventional buildings. This may be achieved through the use of water-resistant materials for floors, walls and fixtures and the siting of electrical controls, cables and appliances at a higher than normal level. If the lowest floor level is raised above the predicted flood level, consideration must be given to providing access for those with restricted mobility. In considering appropriate resilience measures, it will be necessary to plan for specific circumstances and have a clear understanding of the mechanisms that lead to flooding and the nature of the flood risk by undertaking a FRA. (PPS:25 Annex G, G8).

**Flood Risk:** Key recommendation(s) emerging from the appraisal and how DECC responded

estuaries or alongside large rivers - which are effectively in the floodplain. This essentially means that the development is going to be in an area of flood risk and could be affected by flooding. It could also affect flood risk through the loss of floodplain storage and interference with flood defences.

It is important that flood defences are not jeopardised and as not all flood defences are owned and maintained by the Environment Agency or are included in the NFCDD, there is a risk that these might be altered without knowing their flood defence purpose.

Consequently, as it is of particular relevance to the fossil fuels NPS (due to the potential locations), it is considered important to ensure the IPC give consideration to these specific issues.

*The appraisal indicated that there are **no overall effects** on this objective.*

2.1.7 **Water Quality**

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic water quality effects, guidance and requirements set out in EN-1, EN-2 presents water quality (and resources) effects specific to fossil fuel technology on aquatic flora and fauna and specifically fish, which may result from discharging water at a higher temperature, reducing flow in water courses due to abstraction and the chemical anti-fouling treatment of water for use in cooling systems. Suggested mitigation measures (in addition to measures set out in EN-1) are that the design of the cooling system should include intake and outfall locations to avoid or minimise adverse impacts, and that specific measures should be taken to minimise fish impingement and/or entrainment and excessive heat from discharges to receiving waters.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC

**Water Quality and Resources:** Key recommendation(s) emerging from the appraisal and how DECC responded -

**Recommendation 6.1:** Specific reference is needed to Section 4.13.7 of EN-1. It is acknowledged that the Overarching NPS does a good job of highlighting the generic key issues and that the Fossil Fuels NPS briefly touches on water resources as a technical siting constraint in Section 2.2.3.

**Response 6.1:** Water quality and resources impact added since Entec's draft was prepared.

**Recommendation 6.2:** However, due to the specific issues that have relevance to the water environment given the likely location of the sites, the demand for water, significant

**Response 6.2:** Water quality and resources impact added since Entec's draft was prepared.

**Water Quality and Resources: Key recommendation(s) emerging from the appraisal and how DECC responded -**

discharges and potential for pollution from the significant infrastructure involved, it is recommended that a specific section be included on water quality to ensure that the correct issues for this type of infrastructure are considered by the IPC separate from those covered in the Overarching NPS.

**Recommendation 6.3:** No reference is made in EN-2 to the Water Framework Directive or in EN-1 or EN-2 to the potential need for Appropriate Assessment under the Habitats Regulations.

**Response 6.3:** Water quality and resources impact added.

The IPC would only consider the effects identified above as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific water quality impacts, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

**2.1.8 Traffic and Transport**

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to traffic and transport. EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Traffic and Transport: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 7.1:** There is likely to be an increase in traffic associated with fossil fuel power stations as recognised in Section 2.2.2. Consider included the information in this section within the 'impact section' in 2.4.

**Response 7.1:** Need for separate traffic and transport impact in EN-2 considered. Transport section of EN-1 covers increased traffic impacts in detail, so determined that unnecessary to repeat again in EN-2, having noted increase in Section 2.2.2..

*The appraisal indicated that there are **no overall effects** on this objective.*

### 2.1.9 Noise

**Objective:** *To protect both human and ecological receptors from disturbing levels of noise.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic noise effects, guidance and requirements set out in EN-1, EN-2 presents noise (and vibration) effects specific to fossil fuel technology, which may result from, for example, the milling of coal, delivery of fuel and materials to the site and the operation of gas/steam turbines and externally sited air-cooled condensers.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific noise impacts, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### **Noise:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 8.1:** The delivery of coal to and residual waste materials from site will also add to noise effects from HGVs/traffic – consider referring to this under Section 2.4.3.1.

**Response 8.1:** Noise and nuisance impacts substantially revised in EN-1 and EN-2. Texts now aligned with these recommendations

**Recommendation 8.2:** Sleep disturbance is an example of an effect of noise but no more valid than other effects. Therefore, consider re-phrasing EN-2 2.4.3.2 to include other potential effects as in EN-1.

**Response 8.2:** Noise and nuisance impacts substantially revised in EN-1 and EN-2. Texts now aligned with these recommendations

*The appraisal indicated that there are **no overall effects** on this objective.*

### 2.1.10 Landscape, Townscape and Visual

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic landscape and visual impacts, guidance and requirements. EN-2 presents landscape and visual effects specific to fossil fuel technology, which are likely to result from the need for large structures such as turbine and boiler halls, exhaust gas stacks, storage facilities, cooling towers and water processing plant. There is also mention of the need for night time lighting which may affect visual amenity and rural tranquillity.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific landscape and visual impacts, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Landscape, Townscape and Visual Effects:** Key recommendation(s) emerging from the appraisal and how DECC responded

<p><b>Recommendation 9.1:</b> EN-1 does not appear to reference Green Belt under the Landscape and Visual Impact Section as stated.</p>	<p><b>Response 9.1:</b> Titles of sections revised in line with EN-1.</p>
<p><b>Recommendation 9.2:</b> There is no mention in EN-1 or EN-2 of Heritage Coast, National Parks or Conservation Areas as landscape designations.</p>	<p><b>Response 9.2:</b> EN-1 section 4.23 on Historic Environment lists the designated conservation areas. National Parks and visual impacts on coastal areas are covered in EN-1 section 4.24. Section 2.6 of EN-2 requires IPC to have regard to EN-1.</p>
<p><b>Recommendation 9.3:</b> Consider cross-referencing the coastal geomorphology Section of EN-1.</p>	<p><b>Response 9.3:</b> This is a question for EN-1, not EN-2. Designations are discussed fully in the relevant Section of EN-1 (now “Coastal Changes”, Section 4.20) and cross-referenced from EN-2.</p>
<p><b>Recommendation 9.4:</b> Consider including the reference to PPG2 Green Belt under a separate Land Use section (as it’s not considered to be a Landscape or Visual effect).</p>	<p><b>Response 9.4:</b> Details of Land Use impacts, including consideration of Green Belts and “green infrastructure” are set out in EN-1 Section 4.25, which is cross-referenced from EN-2.</p>
<p><b>Recommendation 9.5:</b> Evidence is needed that local landscape has been considered with reference to locally important areas of landscape character.</p>	<p><b>Response 9.5:</b> The Landscape and Visual and Land Use sections of EN-1 require the IPC to take into account local amenity and effects on local landscape. These sections are cross-referenced from EN-2 and there are not additional impacts that would require specific discussion in EN-2.</p>

The appraisal indicated that there are **no overall effects** on this objective.

2.1.11 Archaeology and Cultural Heritage

**Objective:** *Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to archaeology and cultural heritage. EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to archaeology and cultural heritage, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.



**Archaeology and Cultural Heritage:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 10.1:** It is possible that there will be cultural heritage/archaeological effects, especially given the potential for sites to be located in estuaries. It is therefore recommended that this issue is specifically addressed in EN-2. There may be specific cross references with landscape effects that should be explained.

**Response 10.1:** As for flood risk, it is difficult to see what additional information might be given that is not already in EN-1. Current text in Section 2.4 of EN-2 advises that the impacts discussed are additional to EN-1, not replacements, and both must be read.

*The appraisal indicated that there are **no overall effects** on this objective.*

2.1.12 Air Quality

**Objective:** *To protect and enhance air quality on local, regional, national and international scale.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** In addition to the generic air quality effects, guidance and requirements set out in EN-1, EN-2 presents air quality effects specific to fossil fuel technology, relating to the likely emission of nitrogen oxides and sulphur oxides. Suggested mitigation measures (dependant on the type and design of generating station) are flue gas desulphurisation and Selective Catalytic Reduction to reduce nitrogen oxides, however it is recognised that these will have additional adverse noise and dust effects. It also sets out how the release of dust may result from the transport and handling of fuel, materials and waste. A range of mitigation measures for dust effects include enclosed storage and conveyors, landscaping to reduce wind blown dust, dust suppression systems and the control of vehicle and plant movements to reduce grinding of materials into fine dust.

The IPC should therefore be satisfied that any adverse effects of mitigation measures have been considered in the Environmental Statement.

However, the IPC would only consider these effects as part of determining a planning application for a specific project. EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Air Quality:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 11.1:** On the whole, the NPS covers the key issues for air quality. However, under dust, (Section 2.4.5) consider adding reference to PM2.5 which is emerging as the particle size of concern to human health.

**Response 11.1:** Air Quality & Emissions regulation is on PM10 (i.e. up to an including particulate matter with a diameter of 10 microns). So consideration of all particulate emissions of concern regarding human health will be caught by the impact in EN-1. Seems a bit strange to single out in an NPS a specific particulate diameter that is not described in regulation (even where there may be a regulatory time-lag.)



The appraisal indicated that there are **no overall effects** on this objective.

### 2.1.13 Soil and Geology

**Objective:** *To promote the use of brownfield land and, where this is not possible, to prioritise the protection of geologically important sites and agriculturally important land.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 sets out generic impacts, guidance and requirements in relation to geological conservation and recognises existing regional and local designations for protecting important geological sites. The IPC is also directed to take account of the potential effects any proposed energy infrastructure may have on existing, adjacent and proposed land uses, which is anticipated to include consideration of the agricultural quality of soils.

EN-2 does not provide any additional guidance, set out any specific requirements or identify any specific impacts on soil and geology in relation to the construction of new fossil fuel electricity generating stations. Furthermore, EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Soil and Geology: Key recommendation(s) emerging from the appraisal and how DECC responded**

<p><b>Recommendation 12.1:</b> There is the potential for effects on soil and geology given the size of the sites and the potential need for significant excavation. There may be contaminated land issues to be addressed.</p>	<p><b>Response 12.1:</b> While this is true, the potential effects are not sufficiently distinct from other types of infrastructure to warrant a separate impact in EN-2, which could only repeat text from EN-1.</p>
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The appraisal indicated that there are **no overall effects** on this objective.

### 2.1.14 Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** EN-1 recognises that energy production has the potential to impact on the health and well-being of the population. However, EN-1 also sets out that existing safety and environmental regulatory mechanisms e.g. relating to noise and air emissions will limit the environmental exposure of the population. Where health and well-being issues relate to certain impact areas (i.e. noise, dust and air emissions) these are addressed in these sections of EN-1.

EN-2 does not set out any specific requirements or identify any specific impacts relating to health and well-being but also addresses health and well-being issues relating to certain impact areas in the relevant sections.

EN-2 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and well-being, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.15 Equality

**Objective:** *To encourage equality and sustainable communities.*

**Appraisal of the Fossil Fuel Electricity Generating Infrastructure NPS:** Neither EN-1 or EN-2 set out any specific requirements or identify any specific impacts relating to equality. As such, the IPC are not directed to take equality issues into account in determining applications for new fossil fuel electricity generating power stations and the NPSs do not set out any specific additional requirements or identify any specific impacts relating to equality, above those which are already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## 2.2 Cumulative Effects

The SEA Directive, and its implementing regulations in the UK, requires the consideration of cumulative and synergistic effects as part of the appraisal. Cumulative effects were considered (where appropriate) in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that ‘the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place’ (para 4.2.4). To support this, the NPS states that ‘the Environmental Statement should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)’ (para 4.2.3).

## 2.3 Mitigation Measures

Mitigation measures were considered during and the iterative process of developing the NPS. Examples of how these were avoided or mitigated are identified in the recommendations (identified in Section 2.1). Entec considers that the generic mitigation measures identified in the NPS are appropriate to the generic impacts identified.

### 3. CONCLUSIONS

#### 3.1 Key Findings Arising From the Appraisal of Sustainability

The NPS, in conjunction with EN-1, is likely to improve business and investor confidence in fossil fuel generating infrastructure projects. However, beyond this there are no significant differences between existing planning requirements and what will be required under the IPC/NPS system. EN-2 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, the NPS is not considered to result in any significant effects at the national policy level when compared to the existing planning controls. However, at the individual project level there is the potential for significant effects depending on the nature of the infrastructure development that comes forward for determination by the IPC.

#### 3.2 Monitoring

It is a requirement of the SEA Directive to describe how the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>75</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

1. Uncertain effects on Climate Change (AoS Objective 1);
2. Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

3. Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the **Table 3.1** (these will be reviewed in light of comments on the significance of effects).

<sup>75</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

**Table 3.1 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition of designated sites Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 3.3 Quality Assurance

The Government's guidance on SEA contains checklist to help ensure that the requirements of the SEA Directive are met. This has been completed and is presented in **Annex A**.

# Annex A

## Quality Assurance Checklist

The Government's Guidance on SEA<sup>76</sup> 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	
<b>Objectives and Context</b>	
The plan's purpose and objectives are made clear.	<b>Section 1</b> of this AoS Report and <b>Section 2</b> of the AoS Report for EN-1.
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in <b>Annex B</b> and <b>Annex F</b> .
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	<b>Section 3.4</b> of the AoS Report for EN-1 presents the AoS objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	<b>Annex F</b> identifies a number of relevant plans and programmes.
<b>Scoping</b>	
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 13 <sup>th</sup> February 2009 to 23 <sup>rd</sup> 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 <b>Annex F</b> .
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the <b>Scoping Report</b> where appropriate, and are presented in <b>Section 3.7</b> and <b>Section 3.8</b> of the AoS Report for EN-1.
Reasons are given for eliminating issues from further consideration.	These are stated in the <b>Scoping Report</b> as appropriate and in <b>Section 2.5</b> .
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in <b>Section 2.5</b> of the AoS Report for EN-1. Technology-specific alternatives are presented in <b>Section 1.3</b> of this AoS Report.
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in <b>Section 1.3</b> of this AoS Report.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to <b>Section 2.5</b> .

<sup>76</sup> ODPM, *Scottish Executive, Welsh Assembly Government, DoENI (2005) A Practical Guide to the Strategic Environmental Assessment Directive*, ODPM, London.

Quality Assurance Checklist	
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to <b>Section 2.5</b> and the review of policies, plans and programmes in <b>Annex F</b> .
Reasons are given for selection or elimination of alternatives.	These are presented in <b>Section 2.5</b> .
Baseline Information	
Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	This is set out in <b>Annex F</b> .
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.	Refer to <b>Annex F</b> .
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 <b>Annex F</b> and <b>Section 2.2</b> of this AoS Report.
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 <b>Section 2.2</b> of this AoS Report and in <b>Annex F</b> .
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to <b>Section 2.3</b> of this AoS Report.
Inter-relationships between effects are considered where practicable.	Refer to <b>Section 2.2</b> of this AoS Report.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in <b>Annex F</b> .
Methods used to evaluate the effects are described.	These are described in <b>Section 3.6</b> of the AoS Report of EN-1.
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 <b>Section 2.2</b> .
Issues to be taken into account in project consents are identified.	These are considered in <b>Section 2.2</b> .
Environmental Report	
Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in <b>Section 1</b> .
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in <b>Annex A</b> 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 <b>Section 3</b> of the AoS Report of EN-1.
Explains who was consulted and what methods of consultation were used.	This is covered in <b>Section 1.5</b> of the AoS Report of EN-1.

<b>Quality Assurance Checklist</b>	
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in <b>Section 3, Section 4</b> and <b>Annex F</b> of the AoS Report of EN-1.
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 at the front of the AoS Report.
<b>Consultation</b>	
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.
<b>Decision-making and Information on the Decision</b>	
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).
<b>Monitoring Measures</b>	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect).	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
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).





# Planning For New Energy Infrastructure

Appraisal of Sustainability for the draft National Policy Statement for Renewable Energy Infrastructure



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## Non Technical Summary

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This document is the **Non-Technical Summary** of the **Appraisal of Sustainability** (AoS) Report produced as part of the appraisal undertaken to inform the **National Policy Statement (NPS) for Renewable Energy Infrastructure** (also referred to as EN-3).

The following sections explain what the Renewable Energy Infrastructure NPS is, provide an outline of its content and describes the relationship of the NPS to the Overarching NPS and to the other technology-specific NPSs. An outline of the AoS process and the role of the AoS Report in this process is described on page iii. The findings and recommendations arising from the AoS are presented on page xi.

For more information on this public consultation and how to give us your views, please see the Consultation Document.

## 1. What are the National Policy Statements for Energy Infrastructure?

The Planning Act 2008 changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. The IPC replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change (DECC) are responsible for preparing those related to energy infrastructure projects. These are:

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Renewable Energy Infrastructure (EN-3);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- Electricity Networks Infrastructure (EN-5); and
- Nuclear Power Generation (EN-6).

Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore. This includes generation of electricity from fossil fuels, renewable and nuclear power stations. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- Electricity lines at, or above, 132kV. For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act). For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds). For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.

NPSs collectively present a summary of government energy and climate policy, the national need for energy infrastructure and guidance to the IPC on how to assess the likely impacts of energy infrastructure. The Nuclear NPS is different in that it also assesses the suitability of sites for new nuclear stations and it is the subject of a separate AoS which has assessed those parts of the Overarching NPS which apply to nuclear stations.

## 2. What is the NPS for Renewable Energy Infrastructure (EN-3)?

The NPS for Renewable Energy Infrastructure sets out the national policy for new renewable energy infrastructure. In combination with the Overarching NPS, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant renewable energy infrastructure for the generation of electricity from wind, biomass and waste.

Developers will need to ensure that their applications for development consent are consistent with the requirements of relevant NPSs, as the IPC must decide the application in accordance with their content except in the circumstances set out in Section 104 of the Planning Act (2008).

The NPS for Renewable Energy Infrastructure will be issued by the Secretary of State for DECC. It applies to decisions for nationally significant renewable energy infrastructure projects (as described in Part 1 of the NPS) in England and Wales. The NPS for Renewable Energy Infrastructure will remain in force in its 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 it remains appropriate for IPC decision making.

## 3. What is an Appraisal of Sustainability (AoS)?

The Planning Act 2008 requires that ‘an appraisal of the sustainability of the policy set out in the statement’ is carried out. Section 5(5) of the Planning Act explains what the policy set out in statement may, in particular, contain<sup>77</sup>. It may:

- Set out, in relation to energy infrastructure, the amount, type or size of development which is appropriate nationally for a specified area [Section 5(5)(a) of the Act]
- Set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for a specified energy technology [Section 5(5)(b) of the Act];
- Set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- Identify locations which are potentially suitable or unsuitable for specified energy technologies [Section 5(5)(d) of the Act]; and
- Set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].

Section 5(5)(e) of the Planning Act states that a National Policy Statement may identify one or more statutory undertakers as appropriate persons to carry out a specified description of development. Given that energy is delivered through a liberalised market, limiting energy developers would restrict competition and contravene the free market approach to energy development.

<sup>77</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)



The AoS of the NPS for Renewable Energy Infrastructure has been undertaken in a manner that incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>78</sup>.

SEA is a statutory requirement following the adoption of European Community Directive 2001/42/EC which was transposed into UK legislation on the 20th July 2004 as Statutory Instrument No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004. The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

In addition to assessing the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely significant social and economic effects of implementing the NPS. Each AoS has been carried out at the same time as the development of the NPS and has therefore helped to inform that NPS. The NPS contains potential measures to mitigate significant adverse effects. All the NPSs (EN-1 to EN-6) have been subjected to an AoS<sup>79</sup>.

An overview of the key stages of the AoS process is presented below.

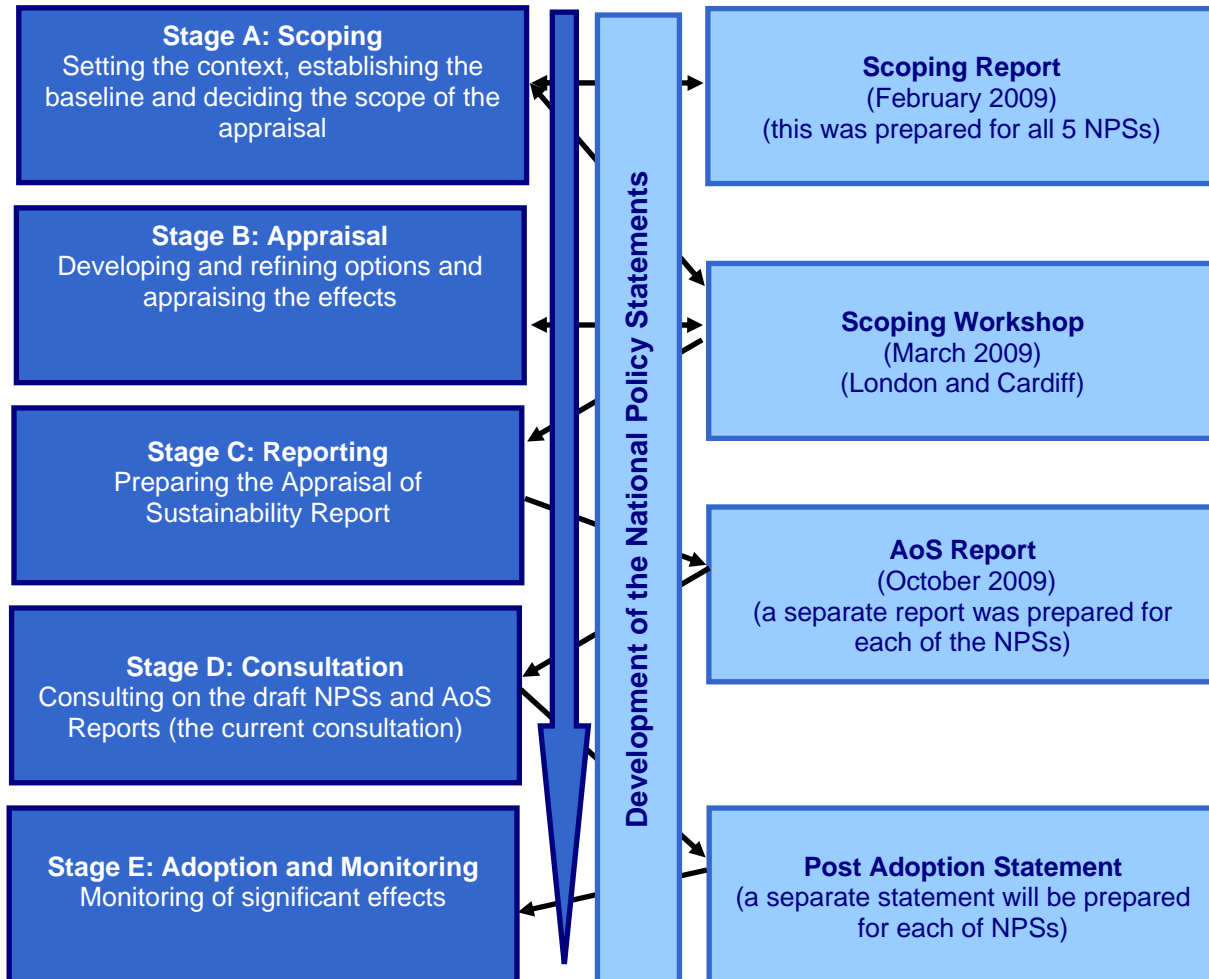
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<sup>78</sup> *The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633). Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.*

<sup>79</sup> *In addition to the work on the NPSs (including their AoS), DECC has also completed an SEA for Offshore Energy, is undertaking a feasibility study for tidal range power in the River Severn, which includes an SEA, and is beginning a feasibility study for wave and tidal projects around English and Welsh territorial waters.*

## Appraisal Process

## Key Outputs



The AoS process began in early 2009 and reflects national guidance on SEA practice<sup>80</sup>. A Scoping Report (Stage A) was consulted on by statutory consultees in February and March 2009. A summary of the results of this consultation are presented in **Annex C** of the Overarching AoS Report and the consultees' responses have been considered within that AoS and also within the AoS for the NPS for Renewable Energy Infrastructure. From March through to September options were developed and refined and the effects of the NPSs were appraised (Stage B). The AoS Reports were prepared during this time (Stage C) before being consulted on (Stage D, the current consultation). Stage E, the final stage will involve setting the measures for monitoring significant impacts.

#### 4. What relationship does the NPS for Renewable Energy Infrastructure have with other policies, plans and programmes?

<sup>80</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

The AoS reviewed other relevant policies, plans, and programmes that could influence the NPS for Renewable Energy Infrastructure, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B** of the Overarching AoS Report.

The NPS for Renewable Energy Infrastructure reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act and other government agreements on climate change being key influences on the development of the NPSs).

## 5. Which sustainability topics has the NPS for Renewable Energy Infrastructure been appraised against?

The NPS for Renewable Energy Infrastructure has been appraised against 14 topic areas. All of the topics identified in the Scoping Report were ‘scoped in’ (i.e. considered to be relevant to the appraisal<sup>81</sup>). The topics are identified below and are linked with the AoS Objectives identified in **Table 2** (page xi of this NTS).

1. Climate Change	6. Water Quality & Resources	11. Air Quality
2. Ecology (Flora and Fauna)	7. Traffic and Transport	12. Soil and Geology
3. Resources and Raw Materials	8. Noise	13. Health and Well-Being
4. Economy and Skills	9. Landscape, Townscape and Visual	14. Equality
5. Flood Risk	10. Archaeology and Cultural Heritage	

The baseline is common to all of the non-nuclear NPSs (EN-1 to EN-5). To avoid repetition, the baseline material is presented in **Annex F** of the Overarching AoS Report and referenced in each of the non-nuclear AoS reports (EN-2- EN-5).

## 6. What reasonable alternatives for implementing the NPS for Renewable Energy Infrastructure were identified and appraised?

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the

<sup>81</sup> Following consultation on the Scoping Report, *noise* and *landscape features* were scoped back into the appraisal (i.e. they were originally anticipated not to be relevant to a high-level appraisal but following comments this was reconsidered and they were included).

non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled (reflected in the guidance on the key issues that the IPC should take into account in its decision making). Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the

applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1** with reasons for them not being included with the NPS identified by DECC.

**Table 1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p><b>Biomass:</b> The NPS should specify sites for new biomass projects, in particular in areas which are capable of sourcing fuel locally, such as agricultural areas or forests.</p>	<p>Biomass such as wood pellets and wood chip are globally traded commodities; large biomass plants may therefore take advantage of port locations for ease of import of biomass. UK biomass operators are encouraged to build local supply chains but this may take several years to develop the required capacity. DECC is researching the feasibility of growing short rotation forestry and what new types of energy crops might be suitable for the UK climate in the future. The Forestry Commission will be publishing their Woodfuel Strategy Implementation Plan next year, setting out how the FC will deliver increased sourcing of wood residues from existing woodland for the energy industry.</p> <p>However, these initiatives will take several years to develop and will be subject to the free market choices of farmers and woodland owners. It is therefore unreasonable to specify sites for biomass electricity generating stations.</p>
<p><b>Energy from Waste:</b> The NPS should specify sites for new energy from waste projects.</p>	<p>The siting of energy from waste plant is determined by a number of different factors, including, to a certain extent, regional waste management plans which may have identified broad areas for new plants to deal with local and regional waste. Waste management solutions may therefore contain more than one technology on more than one site for which EfW would form only part of an overall solution. Government policy is to encourage joint working between local authorities to gain benefits from economies of scale. Further, EfW is a highly fragmented sector with a large number of potential sites. It is therefore unreasonable for the NPS to specify sites for EfW that could hamper local authorities' joint working on waste management strategies and lose the economies of scale that should derive from such joint working.</p>

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p><b>Offshore Wind:</b> The NPS should specify sites for offshore wind farm projects.</p>	<p>DECC is responsible for the policy and framework regarding offshore renewable development. The Crown Estate is responsible for determining which areas of the sea they wish to offer for wind farm development in UK waters and for awarding site leases and licences for wind development. However, the Crown Estate works within the Government policy framework and the Government's strategic environmental assessment process to do so. Such an approach enables a more strategic focus which is essential to optimise the exploitation of the potential wind resource in a responsible way.</p> <p>It would therefore be unreasonable for the NPS duplicate this process or to fetter the Crown Estates' discretion on identification of areas for offshore wind development.</p>
<p><b>Onshore Wind:</b> The NPS should specify sites for onshore wind farms.</p>	<p>The NPS makes it clear that nationally significant energy projects (including wind farms) should be located in appropriate places and that the national and local benefits of a proposal should be weighed against the local harm when the application is determined. Government recognises the need to ensure that all renewable energy developments take place within the formal planning procedure, which allows all relevant stakeholders, including members of the public, to put forward their views on the likely impact of any proposal on the environment and the local community.</p> <p>In future, in England, the new integrated Regional Strategies developed by the RDAs and local authorities should include specific plans for carbon reduction and renewable energy, some of which may include identification of broad areas which it may consider suitable for certain types of renewable energy generation. Applicants will not be bound by such identified areas, but they will be an important consideration for applicants when selecting sites. Such work will therefore be undertaken at a local and regional level. Strategic Search Areas, potentially suitable for onshore wind farms in Wales have been identified by TAN8 by the Welsh Assembly Government. Again, such search areas are important for applicants when identifying new sites. For search areas in both England and Wales, applicants may have selected sites that are outside of identified areas. Where this is the case, it is for the applicant to explain the reasons for such a departure from either regional or Welsh policy.</p> <p>It is therefore not considered a reasonable alternative for the NPS to specify the sites at which development on onshore wind farm projects should take place.</p>

## 7. What aspects of the draft NPSs were appraised?

Projects consented under the IPC/NPS process will clearly have a number of direct, indirect and cumulative effects. The AoS identifies and assesses those effects arising as a result of the NPS and this is considered against the baseline (i.e. what's happening now and what's likely to happen in the future). In this way the appraisal assesses the effects of the differences between the current consenting regime ('business as usual') and the IPC/NPS process.

The likely effects of the NPSs have been considered across a range of geographic scales (including UK, regional and local). However, with the exception of the Nuclear Power Generation NPS, the Energy NPSs do not prescribe the location for new infrastructure projects and there are limitations in terms of how far appraising effects at a non-spatially specific level can be taken. This is not to exclude the possibility that the effects could be significant; rather, that it will often only be possible to judge whether such effects are significant at the project level.

It is anticipated that relevant receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory assessments.

The following assumptions have then been used to aid the understanding of the influence of the NPSs on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors.
- Will add greater certainty to the delivery of nationally significant renewable energy infrastructure by making the guidance on decision-making clearer and more transparent.
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK's security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC's understanding of the scale of need when considering individual applications.
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand.
- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to assess the implications of the NPS for future planning decisions. The AoS focuses on the material differences to sustainability against the existing planning system for renewable energy infrastructure.

## 8. What approach was taken to the appraisal?

The appraisal of the NPS for Renewable Energy Infrastructure has been undertaken using an objectives-led approach. The baseline information, the review of plans and programmes and the key issues identified were used to develop 14 AoS objectives (presented in **Table 2**). Each objective is supported by a series of guide questions (and these are identified in **Section 3.4** of the AoS for EN-1). The AoS objectives cover all of the topics that the appraisal is required to include information on (as set out in the SEA Directive).

The NPS for Renewable Energy Infrastructure has then been appraised in terms of the extent to which it contributes towards achieving the AoS objective (e.g. Biodiversity) when considered against the baseline set by the existing planning environment. The 'guide questions' have been used to assist the appraisal of the potential effects in a qualitative manner, ensuring consideration is given to relevant influencing factors.



**Table 2 AoS Objectives**

AoS Objective	SEA Topic Requirement
1. <b>Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	Climate Change
2. <b>Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	Fauna, flora and biodiversity
3. <b>Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	Material assets
4. <b>Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	Material assets
5. <b>Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	Climatic factors
6. <b>Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).	Water
7. <b>Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	Population
8. <b>Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	Population
9. <b>Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	Landscape
10. <b>Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	Cultural heritage, including architectural and archaeological heritage
11. <b>Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	Air
12. <b>Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	Soil
13. <b>Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	Human health
14. <b>Equality:</b> To encourage equality and sustainable communities.	Human health

For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

In predicting and evaluating the effects of the NPS for Renewable Energy Infrastructure, all effects have been considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

## 9. What were the key significant effects (when considered against the existing consenting regime)?

This section presents a summary of the appraisal of the Renewable Energy Infrastructure NPS against the 14 objectives. The appraisal compared the existing 'business as usual' scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

**Table 3 Summary of the appraisal of EN-3**

AoS Objective	Assessment	Comment
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	+	EN-3 in combination with EN-1 will significantly improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As a consequence, EN-3 is considered to have a minor positive effect on the climate change objective.
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	?	In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC) the effects on ecology from EN-3 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for renewable energy infrastructure is likely to necessitate development on previously undeveloped areas.
<b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	++	EN-3 recognises that waste and biomass combustion plants result in positive and negative effects on sustainability, however the use of low carbon technologies such as these not only reduce the amount of primary resources used and encourages the use of more sustainable materials, but also fundamentally reduces the amount of waste sent to landfill and the creation of greenhouse gasses, as a result it is considered to result in a positive benefit overall.
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	++	Whilst EN-3 is not intended to alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater.
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Flood Risk, above those already considered through the consenting process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Water Quality

AoS Objective	Assessment	Comment
(including distribution and flow).		and Resources, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Traffic and Transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape, townscape and Visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and Cultural Heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>14. Equality:</b> To encourage equality and sustainable communities.	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>Score Key:</b>		
Significant (major) Positive ++	Significant (major) negative --	no overall effects 0
		Uncertain ?

AoS Objective	Assessment	Comment	
Minor Positive +	Minor negative -		

Entec provided ongoing commentary on the sustainability effects of the emerging NPSs, and where relevant these points were incorporated in the NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

### Climate Change

**Objective:** *To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.*

EN-1 details the requirements in relation to and mitigation of any effects on, climate change.

EN-3 focuses specifically on renewable energy infrastructure, which comprises technologies which will significantly help to meet the governments low carbon objectives. While the benefits of this are acknowledged, the NPS is not intended to alter the volume of projects coming forward (compared to the present), but is likely to speed up the determination process (the impact assessment references an improvement in application times), as a result there is likely to be a positive benefit in aiding the realisation of low carbon energy targets (15% of energy from renewable energy by 2020).

EN-3 may also be a relevant consideration for the new Marine Management Organisation (MMO)(to be established under the Marine and Coastal Access Bill) when determining applications for offshore development (that do not exceed the thresholds detailed in the Planning Act 2008). The IPC are also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

Electricity generation from tidal range, tidal stream and wave power could be an important source of electricity for the UK in the future. As technologies develop, schemes are likely exceed the 100MW threshold for being categorised as a Nationally Significant Infrastructure Project (NSIP). However, energy from wave and tidal is outside the scope of this current EN-3 but the Government intends to include wave and tidal in an NPS in due course.

If NPS do come forward for tidal range, these will be subject to an AoS, in line with the requirements of the Planning Act 2008. The current SEA of the tidal range proposals in the Severn Estuary may be informative for any future NPS that includes tidal range.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion** – EN-3 does require biomass plants to be equipped for Carbon Capture Readiness, all thermal generating stations (including biomass and Energy from Waste) are also required to explore the potential for CHP. This would also mitigate climate change in line with the requirements of EN-1. The requirements in relation to, and mitigation of, any effects on climate change are mainly addressed in EN-1 and not in EN-3. The NPS in combination with the Overarching NPS will significantly improve the speed of the application determination process and as such will

result in low carbon energy infrastructure being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As a consequence, EN-3 is considered to have a significant positive effect on the climate change objective.

*The appraisal indicated that there will be **minor positive effects** on this objective.*

## Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-3 provides specific additional guidance on impacts associated with biodiversity (for onshore wind) and for specific aspects of biodiversity for offshore wind. The range of impacts identified and mitigation measures proposed in EN-1 and EN-3 do not differ from the existing consenting system. As a consequence, the contribution of EN-3 over and above the existing consenting system to the achievement of this objective is marginal. The specific impacts of the differing forms of renewable energy generation are set out below.

**Summary of Appraisal: Onshore Wind Farms** – In addition to the issues set out in EN-1, the IPC is directed by the NPS to give specific consideration of issues such as bird/bat strike and the lay-out of wind farms on peat land.

The NPS recognises that whilst there is considerable knowledge on the effects of onshore wind farms on specific species of birds and a more limited knowledge on bats, the IPC should seek to validate collision risk modelling, by requiring relevant monitoring during the construction and operational phases. The IPC is directed to determine the application in accordance with the guidance given within EN-1

**Summary of Appraisal: Offshore Wind Farms** – There is a potential for the construction and operation of offshore wind farms to have an effect on ecological receptors, such as through the loss of seabed habitat and bird strikes. In addition to those issues set out in EN-1, the NPS requires that early consultation must be undertaken with relevant organisations on assessment methodologies.

The NPS recognises that owing to the relatively new and complex nature of offshore wind development, the IPC should consider requiring monitoring prior to and during construction and operation.

An SEA on Offshore Energy was produced earlier this year (January 2009) and concluded that in general, marine mammals show the highest sensitivity to acoustic disturbance by noise generated by offshore wind farms and the physical presence of offshore infrastructure and support activities may potentially cause behavioural responses in fish, birds and marine mammals, through a range of different mechanisms. The assessment concluded that there are no overriding environmental considerations to prevent offshore wind farms, albeit with a number of mitigation measures to prevent, reduce and offset significant adverse impacts on the environment and other users of the sea.

**Summary of Appraisal: Waste/Biomass Combustion:** While EN-3 provides information on impacts arising from onshore/offshore wind farms; it does not make specific additional comments on effects on ecology/biodiversity

arising from waste/biomass. It does not identify any specific impacts arising from these plants above those referenced in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Ecology: Key recommendation(s) emerging from the appraisal and how DECC responded**

<p><b>Recommendation 2.1:</b> Consider specifying how the Coast Protection Act 1949 (CPA) and Food and Environment Protection Act 1985 (a FEPA licence) requirements will be reported to the IPC.</p>	<p><b>Response 2.1:</b> Text has been added to specify CPA and FEPA licence requirements (para 2.6.6 - 2.6.14).</p>
<p><b>Recommendation 2.2:</b> The favoured methodologies for addressing bird collision risk for onshore turbines birds are based on calculating theoretical risk, and they are likely to be revised radically as post-construction monitoring builds up the evidence base. Therefore, consider just stating that this is recognised as an issue of concern that should be addressed in consultation with the Statutory Consultation Organisation (SCO). For bats, it has yet to be established that this is an issue at all in the UK, and it may be unnecessarily restrictive to go beyond a general acknowledgement that this is a potential issue that needs to be addressed in consultation with the SCOs.</p>	<p><b>Response 2.2:</b> Text has been revised within paragraphs 2.7.35 – 2.7.46.</p>

EN-3 identifies specific effects in relation to onshore and offshore wind farms; however, no additional effects are identified for waste and biomass plants other than those considered within EN-1. In light of the outcome of the HRA carried out in line with the Habitat’s Directive (92/43/ECC) the effects on ecology from EN-3 are considered to be uncertain. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7**), that states that ‘the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level’. This is also the case for ecology on sites outside the Natura 2000 network as the need for renewable energy infrastructure is likely to also necessitate development on previously undeveloped areas. Applicants will be required to appropriately mitigate and, where practical, create new habitats of value in accordance with advice given within EN-1 and EN-3.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

**Material Assets and Resource Use**

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

EN-1 addresses the generic issues of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.



EN-3 recognises that waste/biomass plants have a direct effect on materials and resource use; however, identifies no specific effects for onshore or offshore wind farms. While EN-3 does not set out any other specific requirements or identify any specific impacts relating to climate change, it does make specific reference for biomass plants to be equipped for Carbon Capture Readiness (which is covered within EN-1). While waste/biomass combustion offers significant benefits, thermal combustion is classified by the Environment Agency as a disposal operation for waste. In some Energy from Waste plants, there's the potential for a significant proportion of material to be non-renewable such as plastics.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms** – EN-3 does not set out any specific requirements or identify any specific impacts relating to material assets and raw materials. The requirements in relation to and mitigation of any effects on, material assets and raw materials are addressed in EN-1.

**Summary of Appraisal: Waste/Biomass Combustion** – The NPS recognises that waste/biomass plants have a direct effect on materials and resource use. The NPS requires the IPC to consider the waste hierarchy. The NPS requires the IPC to be satisfied, with reference to the relevant waste strategies and plans, that the proposed waste combustion plan is of an appropriate type and scale so as not to prejudice the achievement of local, regional or national waste management targets. Where there are concerns in terms of a possible conflict, the NPS requires evidence to be provided to the IPC by the applicant as to why this is not the case or why a deviation from the relevant waste strategy or plan is nonetheless appropriate and in accordance with the waste hierarchy. Additionally, in terms of residue by-products, the IPC should attribute limited weight to impacts from residue management where it had no reason to doubt that relevant Environmental Permit(s) would be issued by the Environment Agency. Furthermore, it should give substantial positive weight to applications that have a realistic prospect of recovering residue materials.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Material Assets and Resource Use: Key recommendation(s) emerging from the appraisal and how DECC responded**

<p><b>Recommendation 3.1:</b> Consider adding reference to the management of residue wastes, in particular with regards to the waste management hierarchy. The requirement for a waste management plan to be developed would also be a useful addition.</p>	<p><b>Response 3.1:</b> This is covered in the Waste Management text in EN-1.</p>
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EN-3 identifies specific effects in relation to waste and biomass plants; however, onshore and offshore wind farms are not identified as having any additional effects other than those considered within EN-1. While it is noted that waste and biomass combustion plants result in positive and negative effects on sustainability, the use of renewable technologies such as these not only reduce the amount of primary resources used and encourages the use of more sustainable materials, but also fundamentally reduces the amount of waste sent to landfill and the creation of greenhouse gasses. Whilst EN-3 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process which will result in renewable energy infrastructure being implemented in a faster timescale which is considered to result in a positive benefit overall.

*The appraisal indicated that there will be **significant positive effects** on this objective.*



## Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all.*

The documents contribute positively towards improving the vitality and competitiveness of the UK energy market, by providing greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Planning Act is intended to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

EN-3 recognises that offshore wind farms may have a direct effect on commercial fisheries and fishing and navigation and shipping industries, however identifies no specific effects for onshore wind farms or waste and biomass plants. EN-3 may also be a relevant consideration for the new Marine Management Organisation (MMO) (to be established under the Marine and Coastal Access Bill) when determining applications for offshore development (that do not exceed the thresholds detailed in the Planning Act 2008). The IPC is also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

**Summary of Appraisal: Offshore Wind Farms** –The scale and location of potential future offshore wind development around England and Wales results in a potential for development to be proposed in offshore areas where other offshore infrastructure is located, such as telecommunication cables or oil and gas pipelines. EN-3 also recognises that offshore wind farms may also affect fishing industry as well as navigation and shipping industry. Furthermore, there are other future technologies that may interact with future offshore wind farms, including other marine renewable energy generation, such as tidal range and the infrastructure required for the transportation and storage of carbon, associated with capture from combustion power stations.

The UK is heavily reliant on shipping for the import and export of goods. Most vessels typically take direct routes from place to place and new obstructions causing large route deviations would increase transit times and fuel usage. Fishing in the UK has a long history and is also of major economic and cultural importance. The EU has been monitoring the routes of fishing vessels since 2003 and has highlighted that the greatest density of fishing effort takes place in coastal waters, for both static (such as pots, traps or gillnets) and mobile gears (such as trawls and dredges). The SEA on Offshore (2009) concluded that wind farm siting should be outside areas important for navigation and avoid the waters near the coast and certain especially important fishing areas.

The NPS requires the IPC to be satisfied that the site selection process has been undertaken to reasonably minimise adverse effects on fish stocks, fishing, navigation and shipping activities, and that the proposal has been designed in consultation with the relevant fishing or shipping industry. EN-3 directs the IPC to not grant development consent in relation to the construction or extension of an offshore wind farm if it considers that interference with the use of recognised sea lanes essential to international navigation is likely to be caused by the development. The IPC are also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

**Summary of Appraisal: Onshore Wind Farms Waste/Biomass Combustion** EN-3 does not set out any specific requirements or identify any specific impacts relating to economy and skills for waste/biomass combustion plants. The requirements in relation to and mitigation of any effects on, traffic and transport are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Economy and Skills:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 4.1:** Suggest addition text paragraph 2.6.120 Dredging-..., typically for scallops or towing a dredge with a suction system for various shellfish. **Response 4.1:** Text added.

The UK Renewable Energy Strategy identifies business and employment opportunities within the renewable field and the range of measures that the Government are pursuing. It is estimated that by 2020, UK employment in renewable sector could increase by 500,000<sup>82</sup>. Whilst EN-3 is not expected to alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater.

*The appraisal indicated that there will be a **significant positive effect** on this objective.*

## Flood Risk

**Objective:** To avoid an increase in flood risk (including coastal flood risk) and to avoid siting flood sensitive infrastructure in areas of high flood risk.

EN-1 identifies the generic effects of the energy NPS on Flood Risk and recognises that a number of energy infrastructure projects will need to be located on coastal or estuarine sites. EN-1 directs the IPC to ensure that the potential risks regarding flooding are identified and effective mitigation is built in to the applicants' proposal. EN-3 does not identify any specific effects on flood risk from renewable energy infrastructure.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Flood Risk:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 5.1:** Consider stating more explicitly that flood risk impacts are likely to be relatively minor and relatively easily mitigated. Where the applicant can demonstrate this, flood risk isn't likely to be a significant factor in determination. Conversely, if risks are not managed, ensure that it is clear that **Response 5.1:** It is considered that there is no particular reason to have a separate Hydrogeology, Hydrology and Flood Risk chapter in the Onshore Wind section of EN-3.

<sup>82</sup> The Department of Energy and Climate Change. The UK Renewable Energy Strategy (2009).

**Flood Risk:** Key recommendation(s) emerging from the appraisal and how DECC responded

flood risk could be material to the IPC's decision to reject an application (perhaps worth referring to the process required in EN-1 to manage the flood risk).

**Recommendation 5.2:** Consider whether the implications for flood risk from the impact on flood defences from the connection from onshore plant to offshore plant has been given adequate reference.

**Response 5.2:** There is no onshore or offshore wind-specific flood risk text in the Renewable Energy NPS. The generic Flood Risk text in EN-1 refers to effects on flood defences.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion – EN-3** does not set out any specific requirements or identify any specific impacts relating to flood risk. The requirements in relation to and mitigation of any effects on, flood risk are addressed in EN-1.

EN-1 sets out the generic impacts and mitigating measures that relate to flood risk. Given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing consenting system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The NPS states that the IPC should satisfy itself that a proposal has regard to the River Basin Management Plans and the requirements of the Water Framework Directive. Additionally it requires the IPC to consider whether appropriate conditions should be attached to any development consent or planning obligations entered into to mitigate adverse effects on the water environment. The NPS states that where there may be indirect effects (such as on marine ecology) the IPC should refer to relevant guidance within other sections of the NPS (section 2.6.2).

**Summary of Appraisal: Onshore Wind Farms/Wast/Biomass Combustion:** EN-3 does not set out any specific requirements or identify any specific impacts relating to water quality and resources. The requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1. The development of onshore wind farms and waste/biomass combustion plants are generally unlikely to have a significant effect on water resources or water quality. However during their construction, water quality may be affected through sediment mobilisation/disruption during site establishment, earthworks, truck movements and construction. Groundwater could also be affected if excavation works intrude into an aquifer or confining layer which may affect water resources, water quality or the groundwater hydrology.

**Summary of Appraisal: Offshore Wind Farms:** The construction of offshore wind farms may also result in effects as any drainage from the construction process that contains contaminants, sediment will alter marine water quality. Dispersion and dilution to safe levels in the receiving waters will depend on the discharge and receiving water properties, coastal layout (e.g. estuary, bay, straight coastline, headland) and currents.

However the SEA on Offshore Energy (January 2009) concluded that in light of the offshore locations, water depths and current regimes prevalent in areas of likely wind farm development, significant contamination or ecological effects of drilling discharges are not expected. Other operational discharges are subject to regulatory controls, and are not considered to have significant environmental risk. UK regional and national monitoring programme results indicate that water column contamination and associated biological effects are not significant issues.

**Water Quality and Resources: Key recommendation(s) emerging from the appraisal and how DECC responded**

<b>Recommendation 6.1:</b> Consider including information on surface water quality that links with the Overarching NPS	<b>Response 6.1:</b> It is considered that there is no particular reason to have a separate Hydrogeology, Hydrology and Flood Risk chapter in the Onshore Wind section of EN-3.
<b>Recommendation 6.2:</b> The EA regulates discharges from land-based structures only, not anything put into the sea from vessels.	<b>Response 6.2:</b> Generic text in EN-1 is considered to be adequate.
<b>Recommendation 6.3:</b> Consider materials, for example, access tracks should be permeable	<b>Response 6.3:</b> Generic text in EN-1 is considered to be adequate.

EN-1 sets out the generic impacts and mitigating measures that relate to water quality. EN-3 does not set out any additional specific requirements on the impacts on water quality from onshore wind, waste or biomass combustion. Given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### Traffic and Transport

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

EN-1 provides generic effects arising on traffic and transport and highlights that the key issue of the effects are on the local highways network. EN-3 identifies specific effects of onshore and offshore wind farms on traffic and transport however identifies no specific effects for waste/biomass combustion plants.

**Summary of Appraisal: Onshore Wind Farms** – Many wind farms are likely to be located in relatively remote areas served predominantly by minor road networks. Currently a number of components for turbines need to be brought in one piece and can be large (weighing in excess of 100 tonnes or up to 45m length for blades). This can result in localised disruptions to nationally significant volumes of traffic. In addition, to the generic transport effects identified in EN-1, EN-3 requires the IPC to satisfy itself, taking into account views of the relevant highways authority, that abnormal loads may be safely transported with the least inconvenience caused to other road users.

**Summary of Appraisal: Offshore Wind Farms** – The NPS states that the IPC cannot grant permission to a development where construction or operation activities cause interference with the use of a recognised sea lane essential to international navigation. The NPS also identifies that a risk assessment will be required. Where conflicts arise between the applicant and the shipping industry, it is for the IPC to judge the merits of the arguments taking advice from the Maritime and Coastguard Agency (MCA) where necessary.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts relating to traffic and transport for waste/biomass combustion plants. The requirements in relation to and mitigation of any effects on, traffic and transport are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Traffic and Transport: Key recommendation(s) emerging from the appraisal and how DECC responded**

<p><b>Recommendation 7.1:</b> Consider referencing the Government’s “water preferred” policy of using water for the transport of abnormal indivisible loads - where these can be transported by water (by coastal shipping or inland waterways), subject to certain tests, this will be required, as the Highways Agency will not issue the relevant Special Orders to allow road use.</p>	<p><b>Response 7.1:</b> General government policy such as this is relevant to all infrastructure and is included in the generic Traffic and Transport text in EN-1.</p>
<p><b>Recommendation 7.2:</b> Government policy supports modal shift from road to rail and/or water. However, the statement about multimodal transport could be clarified - ideally transport should be single mode but not road.</p>	<p><b>Response 7.2:</b> General government policy such as this is relevant to all infrastructure and is reflected in the generic Traffic and Transport text in EN-1, which does not however go into this level of detail.</p>
<p><b>Recommendation 7.3:</b> Suggest the possibility of conducting a dry run to assess issues for wide loads.</p>	<p><b>Response 7.3:</b> Reference to “dry run” added to mitigation.</p>

EN-1 sets out the generic impacts and mitigating measures that relate to traffic and transport. EN-3 does not set out any additional specific requirements for Waste/Biomass Combustion Plants however identifies that there may be specific impacts on onshore wind farms on the local highway network and on navigation and shipping routes from offshore wind farms. However given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

**Noise**

**Objective:** *To protect both humans and ecological receptors from disturbing levels of noise.*

EN-1 directs the IPC to consider the effects of noise generated by the proposals against a baseline level of noise and ensure that they are satisfied that the applicants’ proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible; contribute to improvements to health and quality of life by effective management and control of noise.

Short term effects on noise during construction and decommissioning activities are also covered in EN-1.

**Summary of Appraisal: Onshore Wind Farms** – EN-3 also recognises that there may be increases in noise levels from onshore wind farms. The NPS recommends that the IPC should satisfy itself that the proposed development complies with noise limits set out in ‘*The Assessment and Rating of Noise from Wind Farms*’. Where compliance cannot be demonstrated, the IPC will need to consider refusing the application.

**Summary of Appraisal: Offshore Wind Farms** - EN-3 does not set out any specific requirements or identify any specific impacts in relation to offshore wind farms. The requirements in relation to and mitigation of any effects are addressed in EN-1.

EN-1 sets out the generic impacts and mitigating measures that relate to noise. EN-3 sets out specific additional requirements concerning the impacts on noise of onshore wind farms. However, EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### Landscape, Townscape and Visual Effects

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

EN-1 identifies national designations as the key landscape features to protect, in accordance with current landscape guidance.

**Summary of Appraisal: Onshore Wind Farms** – In addition to the requirements of EN-1, EN-3 recognises that there are specific issues relating to onshore wind farm developments. EN-3 requires that pre-application consultation is undertaken by the applicant and that the arrangement of wind turbines within a site is carefully designed to minimise effects so far as is possible. EN-3 recognises that mitigation in the form of reducing the scale or number of individual wind turbines may not be feasible without unduly affecting generating capacity of the site; however, EN-3 also notes that ‘wind turbines should be carefully designed within a site to minimise effects on the landscape’.

**Summary of Appraisal: Offshore Wind Farms** – In addition to the guidance set out in EN-1, EN-3 requires an assessment of the effects on landscape, seascape and visual effects unless the wind farm is not visible from the shore. Viewpoints must be consulted upon with the statutory consultees at the EIA stage and where appropriate must include the cumulative effects from other developments. EN-3 recognises that mitigation in the form of reducing in the scale or number of individual wind turbines is unlikely to be feasible; however, EN-3 notes that ‘wind turbines should be carefully designed within a site to minimise effects on the landscape’.

**Summary of Appraisal: Waste/Biomass Combustion** – In addition to the requirements set out in EN-1, EN-3 states that the IPC should be satisfied that the design of the proposed plant is of appropriate quality and minimises adverse effects on the landscape character and quality. This may include the design, scale and layout of the plant and other buildings, and includes the colour and materials used. Additionally, the IPC should expect applicants to seek to landscape combustion plant to reduce adverse effects through the use of the earth bunds, mounds and tree screening. Assessments of the landscape and visual effects must be undertaken by the applicant and should have regard to the building size, stack height, and plume visibility, which the IPC will consider in the decision making process having due regard to technical and legislative restrictions on the design.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.



**Landscape, Townscape and Visual Effects:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 9.1:** Consider the visual impact of access tracks.

**Response 9.1:** The EIA Regs and generic EN-1 landscape and visual text require all landscape and visual effects to be considered, and thus would include any effects from access tracks.

EN-1 sets out the generic impacts and mitigation measures that relate to landscape. EN-3 sets out specific additional requirements concerning the impacts on landscape from all the technologies considered. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this effect. As the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Archaeology and Cultural Heritage

**Objective:** *Protect and where possible enhance the historic environment including heritage resources, historic buildings and archaeological features.*

EN-1 recognises that development consents granted to energy infrastructure projects by the IPC could potentially affect heritage assets. However, EN-1 gives guidance and seeks to ensure that sufficient weighting is given to the effects on the objectives for designation as well as to elements of setting that enhance the significance of designated heritage assets (and non-designated assets where there is significant archaeological interest).

**Summary of Appraisal: Onshore Wind Farms** – There are significant archaeology and cultural heritage effects that could arise from the development of onshore wind farms. The IPC may request visualisations to demonstrate the effects of onshore wind farms against the setting of historical features and, where necessary, may request a cumulative assessment of the impacts on the setting. In addition to specifying mitigating measures such as trial trenching or a watching brief, the IPC are also directed to consider granting consents which require micro-siting within a specified tolerance, of elements of the permitted infrastructure so that precise locations can be amended during construction stage, where previously unknown artefacts of archaeological interest are uncovered during construction.

EN-3 advises the IPC that onshore wind farms are not considered permanent features in the landscape as the applicants can specify the length of time they wish the consent to be granted for (usually 25 years) and upon its expiration, the wind farm may be decommissioned and dismantled. The period of time that the wind farm is on the site is likely therefore to inform the IPC in their consideration of the significance of the effects.

**Summary of Appraisal: Offshore Wind Farms** – EN-3 sets out further specific considerations relevant to offshore wind farms. In particular, it recognises that there could be effects on seabed archaeology (submerged settlements or wreck sites) as well as onshore features of significant maritime importance. The NPS requires applicants to consult relevant bodies, and the IPC to gain advice from statutory advisers (e.g. English Heritage, Cadw).



Furthermore, the NPS requires that the IPC should be satisfied that the offshore wind farms and associated infrastructure have been designed sensitively.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts in relation to waste or biomass combustion plants. The requirements in relation to and mitigation of any effects are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Archaeology and Cultural Heritage: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 10.1:** Palaeo-archaeology is also considered important. Note there is lots of guidance on offshore archaeology that has been developed in relation to the offshore aggregates dredging industry.

**Response 10.1:** It is considered that the text adequately covers all relevant archaeology.

**Recommendation 10.2:** Raise specific concern with stating that wind farms are not permanent structures as this can have severe implications on the culture and heritage assets. Consider revising.

**Response 10.2:** On the “non-permanent nature” of wind farms point, the concern is not shared. The text is telling the IPC that the time-limited and non-permanent nature of onshore wind farms may be a relevant consideration. The IPC can determine for themselves the weight to which they give to this. They may consider that even turbines being there for 25 years is too long and the effect is too great and they could still refuse to grant consent for a scheme.

EN-1 sets out the generic impacts and mitigating measures that relate to archaeology and cultural heritage. EN-3 sets out additional specific requirements for onshore wind farms/offshore winds farms but does not identify any for waste/biomass combustion plants. The temporal characteristic of wind farms is of particular relevance to the historic environment. Although this is considered to provide limited benefits to the protection of the effects on the historic environment this aspect is recognised within current planning policy guidance, along side measures which seek to ensure the environment is preserved and enhanced and any impacts are fully mitigated. It is therefore conclude that as the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system (which for the purpose of this AoS considered the consultation draft of PPS15 as part of the baseline), the contribution of EN-3 over and above the existing planning system to the achievement of this objective is therefore not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Air Quality

**Objective:** *To Protect and enhance air quality on local, regional, national and international scale.*

EN-1 directs the IPC to work closely with the Environment Agency and/or the pollution control authority, and other relevant bodies and require appropriate levels of assessment to identify potential effects. The IPC must be satisfied that development consent can be granted taking full account of environmental impacts.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms** - EN-3 does not set out any specific requirements or identify any specific impacts in relation to onshore or offshore wind farms. The requirements in relation to and mitigation of any effects are addressed in EN-1).

**Summary of Appraisal: Waste/Biomass Combustion** – There may well be an increase in emissions of pollutants such as NO<sub>x</sub>, SO<sub>x</sub>, Carbon Monoxide and particulates from the combustion of waste and biomass. In addition, the emission of heavy metals, dioxins and furans from the combustion of waste are also of relevance. These could affect sensitive receptors such as human health and ecological habitats/species. However, EN-3 states that plant meeting the requirements of the Waste Incineration Directive and which do not exceed local air quality standards should not be considered by the IPC as being detrimental to health (2.5.39).

EN-1 sets out the generic impacts and mitigating measures that relate to Air Quality. EN-3 sets out additional specific requirements for waste/biomass combustion plants but does not identify any for onshore wind farms/offshore wind farms.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Soil and Geology

**Objective:** *To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.*

EN-1 directs the IPC to consider the potential effects any proposed energy infrastructure may have on existing, adjacent and proposed land uses, which is anticipated to include consideration of the agricultural quality of soils as well as the planning significance of any development that may be affected.

**Summary of Appraisal: Onshore Wind Farms** – There may be a potentially detrimental effect from the construction and operation of access roads and the excavation of ground for turbine foundations and other ancillary equipment, although it is recognised that the footprint of individual turbines is relatively compact. The significance of any potential effect is unknown at this stage as it depends on site specific data. Such effects would be captured within EIA. EN-3 does not set out any explicit requirement for the IPC to consider the effect on geological SSSI or geoparks but refers to these within EN-1.

**Summary of Appraisal: Offshore Wind Farms** – Again it is recognised that there may be a potentially detrimental effect from the construction, excavation of the sea bed for turbine foundations and other ancillary equipment, although the footprint of individual turbines is relatively compact. The significance of any potential effect is unknown at this stage as it depends on site specific data.

An SEA on Offshore Energy was produced earlier this year (January 2009). This advised that seabed mapping undertaken in advance of operations would allow the identification and hence avoidance of valued seabed features. Contamination of sediments may occur from discharges of drilling wastes and spills. The composition of construction discharges from wind farm operations is regulated, with increasingly stringent controls applied in

recent years. Monitoring results indicate that sediment contamination is not considered a significant issue in offshore wind farm developments.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts. The requirements in relation to and mitigation of any effects are addressed in EN-1

EN-1 sets out the generic impacts and mitigating measures that relate to soil and geology. EN-3 sets out additional specific requirements for onshore wind farms/offshore wind farms.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population and enhance the physical and mental health of the population.*

Commercial wind farms do not exceed a shadowing effect of more than 1 hertz, whilst epileptic sufferers are not known to be affected by frequencies below 2.5 hertz.

Atmospheric emissions from combustion activities may result in a number of health effects such as inflaming respiratory conditions. EN-3 considers the effects of emissions in sections on air which require the IPC to be satisfied that there is no good reason to believe that relevant permits would not be granted by the Environment Agency and that any plant would not meet the requirements of the Waste Incineration Directive and Large Combustion Plant Directive.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Equality

**Objective:** *To encourage equality and sustainable communities.*

The NPS does not direct the IPC to determine the effectiveness of energy infrastructure in reducing inequality, as these are dealt with through other government policies and plans.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts.

EN-3 does not set out any additional specific requirements for onshore wind farms/offshore wind farms or waste/biomass combustion plants. The contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

The appraisal indicated that there will be **no overall effect** on this objective.

## 10. What are the cumulative and synergistic effects of the NPS?

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects were considered in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS EN-1 which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (para 4.2.4). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3).

## 11. What are the conclusions and key findings of the appraisal?

The NPS is likely to improve business and investor confidence in low carbon infrastructure projects. The NPS is also likely to improve the speed of the application process and as such will result in these projects being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon targets and progress towards a low carbon economy. However, beyond this there are no significant differences identified between existing consenting requirements and what will be required under the IPC/NPS system. EN-3 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, and in light of the assumptions (set out in **Section 4.6**) the NPS EN-3 is not envisaged to have any significant effects at the national policy level when compared to the existing consenting controls.

## 12. How will any effects be monitored?

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>83</sup> (ODPM, 2005) notes, *'it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects'*.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

<sup>83</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

- Positive effects on Climate Change (AoS Objective 1);
- Positive effects on Resources and Raw Material (AoS Objective 3); and
- Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the Table 2 (these will be reviewed in light of comments on the significance of effects).

**Table 2 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 13. What are the next steps?

The AoS Report and the consultation on it fulfil the requirements of Stage C and D of the SEA process (see **Section 1.3**). This Non-Technical Summary of the AoS Report for the Renewable Energy Infrastructure NPS provides a summary of the information presented in the AoS Report, which should be referred to for more detailed information.

This AoS Report will be presented for consultation alongside the draft NPS for Renewable Energy Infrastructure from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The NPS Renewable Energy Infrastructure may be amended and revisions to the AoS may be made. A Post Adoption Statement will be produced to summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the Renewable Energy Infrastructure NPS.

## 1. INTRODUCTION

### 1.1 Purpose of this Report

This AoS Report for the **Renewable Energy Infrastructure NPS** provides information on the:

- Renewable Energy Infrastructure NPS (**Section 1.2**);
- alternatives (**Section 1.3**);
- findings of the Appraisal of Sustainability (AoS) (**Section 2**); and
- proposed measures for monitoring significant effects (**Section 3**).

This report should be read in conjunction with the AoS Report for the Overarching Energy NPS which provides information on the:

- suite of NPSs being prepared by DECC (**Section 2**);
- methodology (including when the AoS was undertaken and by whom) (**Section 3**);
- scope of the appraisal (**Section 3.3**);
- method for collecting and presenting baseline information (**Section 3.4**);
- approach to completing the appraisal (including the AoS objectives), assumptions and technical difficulties encountered during the appraisal (**Section 3.5 – 3.7**).

This AoS Report alongside the AoS for the Overarching NPS allow DECC to demonstrate compliance with the AoS requirements of the Planning Act 2008, the SEA Directive and relevant regulations.

### 1.2 The NPS for Renewable Energy Infrastructure

The NPS for Renewable Energy Infrastructure sets out the national policy for new Renewable Energy infrastructure. In combination with the Overarching NPS for Energy Infrastructure, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant renewable energy infrastructure. Renewable energy includes electricity generated from wind power, wave power, tidal power, hydropower, solar power, biomass combustion and combustion of waste which is deemed renewable.

Electricity generation from tidal range power will be an important source of renewable electricity for the UK in the future, whether as barrages across an estuary or a lagoon within an estuary.

Such schemes are very likely to exceed the 100MW threshold for being categorised as a Nationally Significant Infrastructure Project (NSIP). However, tidal and wave energy are outside the scope of EN-3 and the Government expect that NPSs will be brought forward for tidal energy in due course. In the meantime, the IPC will advise the Secretary of State on any planning applications that are made according to the principles set out in EN-1.

### 1.2.1 The Content of the NPS for Renewable Energy Infrastructure

The NPS covers the following:

- >100MW Offshore wind
- >50MW Onshore wind
- >50MW Energy from biomass and/or waste combustion

The Overarching NPS for Energy (EN-1) identifies the need for new electricity generation capacity and a diverse mix of fuels and technologies to ensure security of supply and to meet carbon reduction and low carbon energy targets. Renewable electricity generation infrastructure contributes to low carbon energy targets; however, wind is not a constant source of energy, due to its intermittent and unpredictable nature and as such cannot be considered as a source of energy to meet UK base load requirements. Waste and biomass plants can provide a more reliable and predictable sources of energy.

EN-1 removes the necessity for the IPC to consider whether there is a need for new energy infrastructure development (including wind farms and biomass waste combustion plants). The IPC's role is therefore to consider the impacts that proposed new renewable energy infrastructure could have and whether a particular application should be granted consent.

Certain impacts may result from the development of new energy infrastructure regardless of the specific generating method. EN-1 identifies the potential impacts of new energy infrastructure at the generic level, and directs the IPC's decision making with respect to each impact topic (see **Box 1.1**); but does not cover impacts that would be specific to a particular energy technology (see **Box 1.2**).

#### **Box 1.1 Generic Impacts detailed within the Overarching NPS EN-1 for Energy**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Air emissions;</li> <li>• Biodiversity and geological conservation;</li> <li>• Civil and military aviation and defence interests;</li> <li>• Coastal change;</li> <li>• Dust, odour, artificial light, smoke and insect infestation;</li> <li>• Flood Risk;</li> <li>• Historic Environment.</li> </ul> | <ul style="list-style-type: none"> <li>• Landscape and visual impacts;</li> <li>• Land-use including open space, green infrastructure and greenbelt</li> <li>• Noise;</li> <li>• Socio-economic;</li> <li>• Traffic and transport Impacts;</li> <li>• Waste management; and</li> <li>• Water quality and resources.</li> </ul> |
|--|--|

The main impact topics where the NPS for renewable energy infrastructure identified effects in addition to the generic effects (above) set out in the Overarching NPS for Energy are as follows.



**Box 1.2 Impacts detailed within EN-3**

Onshore Wind Farms:	Offshore Wind Farms:	Biomass and Waste Combustion:
<ul style="list-style-type: none"> <li>• Biodiversity and geological conservation;</li> <li>• Historic environment;</li> <li>• Landscape and visual;</li> <li>• Noise;</li> <li>• Shadow flicker; and</li> <li>• Traffic and transport.</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity;               <ul style="list-style-type: none"> <li>▪ Fish</li> <li>▪ Intertidal</li> <li>▪ Marine Mammals</li> <li>▪ Ornithology</li> <li>▪ Sub tidal</li> </ul> </li> <li>• Commercial fisheries and fishing;</li> <li>• Historic environment;</li> <li>• Interaction with other offshore infrastructure;</li> <li>• Navigation and shipping;</li> <li>• Physical environment;</li> <li>• Seascape and visual effect.</li> </ul>	<ul style="list-style-type: none"> <li>• Air quality and emissions;</li> <li>• Landscape and visual;</li> <li>• Local and regional waste management;</li> <li>• Residue management.</li> </ul>

**1.3 Reasonable Alternatives**

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or

4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What 'No NPS' means:** Government does not draft or designate an NPS for energy infrastructure. This is the "business as usual" scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1.1** with reasons for them not being included with the NPS identified by DECC.

**Table 1.1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p><b>Biomass:</b> The NPS should specify sites for new biomass projects, in particular in areas which are capable of sourcing fuel locally, such as agricultural areas or forests.</p>	<p>Biomass such as wood pellets and wood chip are globally traded commodities; large biomass plants may therefore take advantage of port locations for ease of import of biomass. UK biomass operators are encouraged to build local supply chains but this may take several years to develop the required capacity. DECC is researching the feasibility of growing short rotation forestry and what new types of energy crops might be suitable for the UK climate in the future. The Forestry Commission will be publishing their Woodfuel Strategy Implementation Plan next year, setting out how the FC will deliver increased sourcing of wood residues from existing woodland for the energy industry.</p> <p>However, these initiatives will take several years to develop and will be subject to the free market choices of farmers and woodland owners. It is therefore unreasonable to specify sites for biomass electricity generating stations.</p>
<p><b>Energy from Waste:</b> The NPS should specify sites for new energy from waste projects.</p>	<p>The siting of energy from waste plant is determined by a number of different factors, including, to a certain extent, regional waste management plans which may have identified broad areas for new plants to deal with local and regional waste. Waste management solutions may therefore contain more than one technology on more than one site for which EfW would form only part of an overall solution. Government policy is to encourage joint working between local authorities to gain benefits from economies of scale. Further, EfW is a highly fragmented sector with a large number of potential sites. It is therefore unreasonable for the NPS to specify sites for EfW that could hamper local authorities' joint working on waste management strategies and lose the economies of scale that should derive from such joint working.</p>
<p><b>Offshore Wind:</b> The NPS should specify sites for offshore wind farm projects.</p>	<p>DECC is responsible for the policy and framework regarding offshore renewable development. The Crown Estate is responsible for determining which areas of the sea they wish to offer for wind farm development in UK waters and for awarding site leases and licences for wind development. However, the Crown Estate works within the Government policy framework and the Government's strategic environmental assessment process to do so. Such an approach enables a more strategic focus which is essential to optimise the exploitation of the potential wind resource in a responsible way.</p> <p>It would therefore be unreasonable for the NPS duplicate this process or to fetter the Crown Estates' discretion on identification of areas for offshore wind development.</p>
<p><b>Onshore Wind:</b> The NPS should specify sites for onshore wind farms.</p>	<p>The NPS makes it clear that nationally significant energy projects (including wind farms) should be located in appropriate places and that the national and local benefits of a proposal should be weighed against the local harm when the application is determined. Government recognises the need to ensure that all renewable energy developments take place within the formal planning procedure, which allows all relevant stakeholders, including members of the public, to put forward their views on the likely impact of any proposal on the environment and the local community.</p> <p>In future, in England, the new integrated Regional Strategies developed by the RDAs and local authorities should include specific plans for carbon reduction and renewable energy, some of which may include identification of broad areas which it may consider suitable for certain types of renewable energy generation. Applicants will not be bound by such</p>

<b>Alternative Approaches to Implement the NPS</b>	<b>Response to the alternatives (provided by DECC)</b>
	<p>identified areas, but they will be an important consideration for applicants when selecting sites. Such work will therefore be undertaken at a local and regional level. Strategic Search Areas, potentially suitable for onshore wind farms in Wales have been identified by TAN8 by the Welsh Assembly Government. Again, such search areas are important for applicants when identifying new sites. For search areas in both England and Wales, applicants may have selected sites that are outside of identified areas. Where this is the case, it is for the applicant to explain the reasons for such a departure from either regional or Welsh policy.</p> <p>It is therefore not considered a reasonable alternative for the NPS to specify the sites at which development on onshore wind farm projects should take place.</p>

## 2. APPRAISAL AND REPORTING

### 2.1 Topic Based Approach

This section presents a summary of the appraisal of the Renewable Energy Infrastructure NPS against the 14 objectives. The appraisal compared the existing ‘business as usual’ scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

Entec provided on-going commentary on the sustainability effects of the emerging NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### 2.1.1 Summary of Appraisal

**Table 2.1** summarises the appraisal of EN-3

**Table 2.1 Summary of the appraisal of EN-3**

AoS Objective	Assessment	Comment
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	+	EN-3 in combination with EN-1 will significantly improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government’s low carbon energy targets and progress towards a low carbon economy. As a consequence, EN-3 is considered to have a minor positive effect on the climate change objective.
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	?	In light of the outcome of the HRA carried out in line with the Habitat’s Directive (92/43/ECC) the effects on ecology from EN-3 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for renewable energy infrastructure is likely to necessitate development on previously undeveloped areas.
<b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	++	EN-3 recognises that waste and biomass combustion plants result in positive and negative effects on sustainability, however the use of low carbon technologies such as these not only reduce the amount of primary resources used and encourages the use of more sustainable materials, but also fundamentally reduces the amount of waste sent to landfill and the creation of greenhouse gasses, as a result it is considered to result in a positive benefit overall.
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	++	Whilst EN-3 is not intended to alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater.

AoS Objective	Assessment	Comment
<p><b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Flood Risk, above those already considered through the consenting process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>6. Water Quality:</b> To protect and enhance surface (including costal) and groundwater quality (including distribution and flow).</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Water Quality and Resources, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Traffic and Transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape, townscape and Visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and Cultural Heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<p><b>14. Equality:</b> To encourage equality and sustainable communities.</p>	0	EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and



AoS Objective	Assessment	Comment
		wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-3 is considered not to be significant against this objective.
<b>Score Key:</b>		
Significant (major) Positive ++	Significant (major) negative --	no overall effects 0
Minor Positive +	Minor negative -	

The following provides more detailed information on the findings of the assessment.

### 2.1.2 Climate Change

**Objective:** *To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.*

EN-1 details the requirements in relation to and mitigation of any effects on, climate change.

EN-3 focuses specifically on renewable energy infrastructure, which comprises technologies which will significantly help to meet the governments low carbon objectives. While the benefits of this are acknowledged, the NPS is not intended to alter the volume of projects coming forward (compared to the present), but is likely to speed up the determination process (the impact assessment references an improvement in application times), as a result there is likely to be a positive benefit in aiding the realisation of low carbon energy targets (15% of energy from renewable energy by 2020).

EN-3 may also be a relevant consideration for the new Marine Management Organisation (MMO)(to be established under the Marine and Coastal Access Bill) when determining applications for offshore development (that do not exceed the thresholds detailed in the Planning Act 2008). The IPC are also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

Electricity generation from tidal range, tidal stream and wave power could be an important source of electricity for the UK in the future. As technologies develop, schemes are likely exceed the 100MW threshold for being categorised as a Nationally Significant Infrastructure Project (NSIP). However, energy from wave and tidal is outside the scope of this current EN3 but the Government intends to include wave and tidal in an NPS in due course.

If NPS do come forward for tidal range, these will be subject to an AoS, in line with the requirements of the Planning Act 2008. The current SEA of the tidal range proposals in the Severn Estuary may be informative for any future NPS that includes tidal range.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion** – EN-3 does require biomass plants to be equipped for Carbon Capture Readiness, all thermal generating stations (including biomass and Energy from Waste) are also required to explore the potential for CHP. This would also



mitigate climate change in line with the requirements of EN-1. The requirements in relation to, and mitigation of, any effects on climate change are mainly addressed in EN-1 and not in EN-3. The NPS in combination with the Overarching NPS, will significantly improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As a consequence, EN-3 is considered to have a minor positive effect on the climate change objective.

*The appraisal indicated that there will be **minor positive effects** on this objective.*

### 2.1.3 Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-3 provides specific additional guidance on impacts associated with biodiversity (for onshore wind) and for specific aspects of biodiversity for offshore wind. The range of impacts identified and mitigation measures proposed in EN-1 and EN-3 do not differ from the existing consenting system. As a consequence, the contribution of EN-3 over and above the existing consenting system to the achievement of this objective is marginal. The specific impacts of the differing forms of renewable energy generation are set out below.

**Summary of Appraisal: Onshore Wind Farms** – In addition to the issues set out in EN-1, the IPC is directed by the NPS to give specific consideration of issues such as bird/bat strike and the lay-out of wind farms on peat land.

The NPS recognises that whilst there is considerable knowledge on the effects of onshore wind farms on specific species of birds and a more limited knowledge on bats, the IPC should seek to validate collision risk modelling, by requiring relevant monitoring during the construction and operational phases. The IPC is directed to determine the application in accordance with the guidance given within EN-1

**Summary of Appraisal: Offshore Wind Farms** – There is a potential for the construction and operation of offshore wind farms to have an effect on ecological receptors, such as through the loss of seabed habitat and bird strikes. In addition to those issues set out in EN-1, the NPS requires that early consultation must be undertaken with relevant organisations on assessment methodologies.

The NPS recognises that owing to the relatively new and complex nature of offshore wind development, the IPC should consider requiring monitoring prior to and during construction and operation.

An SEA on Offshore Energy was produced earlier this year (January 2009) and concluded that in general, marine mammals show the highest sensitivity to acoustic disturbance by noise generated by offshore wind farms and the physical presence of offshore infrastructure and support activities may potentially cause behavioural responses in fish, birds and marine mammals, through a range of different mechanisms. The assessment concluded that there are no overriding environmental considerations to prevent offshore wind farms, albeit with a number of mitigation measures to prevent, reduce and offset significant adverse impacts on the environment and other users of the sea.

**Summary of Appraisal: Waste/Biomass Combustion:** While EN-3 provides information on impacts arising from onshore/offshore wind farms; it does not make specific additional comments on effects on ecology/biodiversity arising from waste/biomass. It does not identify any specific impacts arising from these plants above those referenced in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC. In this case both recommendations were integrated within the NPS during its production.

**Ecology: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 2.1:** Consider specifying how the Coast Protection Act 1949 (CPA) and Food and Environment Protection Act 1985 (a FEPA licence) requirements will be reported to the IPC.

**Response 2.1:** Text has been added to specify CPA and FEPA licence requirements (paragraphs 2.6.6 – 2.6.14).

**Recommendation 2.2:** The favoured methodologies for addressing bird collision risk for onshore turbines birds are based on calculating theoretical risk, and they are likely to be revised radically as post-construction monitoring builds up the evidence base. Therefore, consider just stating that this is recognised as an issue of concern that should be addressed in consultation with the Statutory Consultation Organisation (SCO). For bats, it has yet to be established that this is an issue at all in the UK, and it may be unnecessarily restrictive to go beyond a general acknowledgement that this is a potential issue that needs to be addressed in consultation with the SCOs.

**Response 2.2:** Text has been revised within paragraphs 2.7.35 - 2.7.46.

EN-3 identifies specific effects in relation to onshore and offshore wind farms; however, no additional effects are identified for waste and biomass plants other than those considered within EN-1. In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC) the effects on ecology from EN-3 are considered to be uncertain. This is consistent with the findings of the assessment against the requirements of Article 6 of the Habitats Directive (92/43/EEC) (see **Section 3.7**), that states that 'the guidance contained within EN-1 recognises international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures, however, the possibility of significant effects upon one or more European sites from future nationally significant energy infrastructure cannot be excluded at the NPS level'. This is also the case for ecology on sites outside the Natura 2000 network as the need for renewable energy infrastructure is likely to also necessitate development on previously undeveloped areas. Applicants will be required to appropriately mitigate and, where practical, create new habitats of value in accordance with advice given within EN-1 and EN-3.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

**2.1.4 Material Assets and Resource Use**

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

EN-1 addresses the generic issues of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy.

EN-3 recognises that waste/biomass plants have a direct effect on materials and resource use; however, identifies no specific effects for onshore or offshore wind farms. While EN-3 does not set out any other specific requirements or identify any specific impacts relating to climate change, it does make specific reference for biomass plants to be equipped for Carbon Capture Readiness (which is covered within EN-1). While waste/biomass combustion offers significant benefits, thermal combustion is classified by the Environment Agency as a disposal operation for waste. In some Energy from Waste plants, there's the potential for a significant proportion of material to be non-renewable such as plastics.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms** – EN-3 does not set out any specific requirements or identify any specific impacts relating to material assets and raw materials. The requirements in relation to and mitigation of any effects on, material assets and raw materials are addressed in EN-1.

**Summary of Appraisal: Waste/Biomass Combustion** – The NPS recognises that waste/biomass plants have a direct effect on materials and resource use. The NPS requires the IPC to consider the waste hierarchy. The NPS requires the IPC to be satisfied, with reference to the relevant waste strategies and plans, that the proposed waste combustion plan is of an appropriate type and scale so as not to prejudice the achievement of local, regional or national waste management targets. Where there are concerns in terms of a possible conflict, the NPS requires evidence to be provided to the IPC by the applicant as to why this is not the case or why a deviation from the relevant waste strategy or plan is nonetheless appropriate and in accordance with the waste hierarchy. Additionally, in terms of residue by-products, the IPC should attribute limited weight to impacts from residue management where it had no reason to doubt that relevant Environmental Permit(s) would be issued by the Environment Agency. Furthermore, it should favourably consider applications that have a realistic prospect of recovering residue materials.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

<b>Material Assets and Resource Use: Key recommendation(s) emerging from the appraisal and how DECC responded</b>	
<b>Recommendation 3.1:</b> Consider adding reference to the management of residue wastes, in particular with regards to the waste management hierarchy. The requirement for a waste management plan to be developed would also be a useful addition.	<b>Response 3.1:</b> This is covered in the Waste Management text in EN-1.

EN-3 identifies specific effects in relation to waste and biomass plants; however, onshore and offshore wind farms are not identified as having any additional effects other than those considered within EN-1. While it is noted that waste and biomass combustion plants result in positive and negative effects on sustainability, the use of renewable technologies such as these not only reduce the amount of primary resources used and encourages the use of more sustainable materials, but also fundamentally reduces the amount of waste sent to landfill and the creation of greenhouse gasses. Whilst EN-3 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process which will result in renewable energy infrastructure being implemented in a faster timescale which is considered to result in a positive benefit overall.

The appraisal indicated that there will be **significant positive effects** on this objective.

#### 2.1.5 Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all.*

The documents contribute positively towards improving the vitality and competitiveness of the UK energy market, by providing greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The Planning Act is intended to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

EN-3 recognises that offshore wind farms may have a direct effect on commercial fisheries and fishing and navigation and shipping industries, however identifies no specific effects for onshore wind farms or waste and biomass plants. EN-3 may also be a relevant consideration for the new Marine Management Organisation (MMO) (to be established under the Marine and Coastal Access Bill) when determining applications for offshore development (that do not exceed the thresholds detailed in the Planning Act 2008). The IPC is also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

**Summary of Appraisal: Offshore Wind Farms** –The scale and location of potential future offshore wind development around England and Wales results in a potential for development to be proposed in offshore areas where other offshore infrastructure is located, such as telecommunication cables or oil and gas pipelines. EN-3 also recognises that offshore wind farms may also affect fishing industry as well as navigation and shipping industry. Furthermore, there are other future technologies that may interact with future offshore wind farms, including other marine renewable energy generation, such as tidal range and the infrastructure required for the transportation and storage of carbon, associated with capture from combustion power stations.

The UK is heavily reliant on shipping for the import and export of goods. Most vessels typically take direct routes from place to place and new obstructions causing large route deviations would increase transit times and fuel usage. Fishing in the UK has a long history and is also of major economic and cultural importance. The EU has been monitoring the routes of fishing vessels since 2003 and has highlighted that the greatest density of fishing effort takes place in coastal waters, for both static (such as pots, traps or gillnets) and mobile gears (such as trawls and dredges). The SEA on Offshore (2009) concluded that wind farm siting should be outside areas important for navigation and avoid the waters near the coast and certain especially important fishing areas.

The NPS requires the IPC to be satisfied that the site selection process has been undertaken to reasonably minimise adverse effects on fish stocks, fishing, navigation and shipping activities, and that the proposal has been designed in consultation with the relevant fishing or shipping industry. EN-3 directs the IPC to not grant development consent in relation to the construction or extension of an offshore wind farm if it considers that interference with the use of recognised sea lanes essential to international navigation is likely to be caused by the development. The IPC are also directed to closely liaise with the MMO on the proposed terms of any consent under the Coast Protection Act 1949, or licence under the Food and Environment Protection Act 1985 for marine operations.

**Summary of Appraisal: Onshore Wind Farms Waste/Biomass Combustion** EN-3 does not set out any specific requirements or identify any specific impacts relating to economy and skills for waste/biomass combustion plants. The requirements in relation to and mitigation of any effects on, traffic and transport are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Economy and Skills:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 4.1:** Suggest addition text paragraph 2.6.120 Dredging-..., typically for scallops or towing a dredge with a suction system for various shellfish. **Response 4.1:** Text added.

The UK Renewable Energy Strategy identifies business and employment opportunities within the renewable field and the range of measures that the Government are pursuing. It is estimated that by 2020, UK employment in renewable sector could increase by 500,000<sup>84</sup>. Whilst EN-3 is not expected to alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times) – so whilst there is no net change in the employment opportunities created (when compared to the current situation), the assumption that it will expedite determination, means that these employment opportunities are likely to be created when the economy most needs it – i.e. during the years when it is emerging from a recession. As a result, the significance of such effects and their value to society will be greater.

*The appraisal indicated that there will be a **significant positive effect** on this objective.*

2.1.6 Flood Risk

**Objective:** *To avoid an increase in flood risk (including coastal flood risk) and to avoid siting flood sensitive infrastructure in areas of high flood risk.*

EN-1 identifies the generic effects of the energy NPS on Flood Risk and recognises that a number of energy infrastructure projects will need to be located on coastal or estuarine sites. EN-1 directs the IPC to ensure that the potential risks regarding flooding are identified and effective mitigation is built in to the applicants’ proposal. EN-3 does not identify any specific effects on flood risk from renewable energy infrastructure.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Flood Risk:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 5.1:** Consider stating more explicitly that flood risk impacts are likely to be relatively minor and relatively easily mitigated. Where the applicant can demonstrate this, flood risk isn’t likely to be a significant factor in determination. **Response 5.1:** It is considered that there is no particular reason to have a separate Hydrogeology, Hydrology and Flood Risk chapter in the Onshore Wind section of EN-3.

<sup>84</sup> The Department of Energy and Climate Change. The UK Renewable Energy Strategy (2009).

**Flood Risk:** Key recommendation(s) emerging from the appraisal and how DECC responded

Conversely, if risks are not managed, ensure that it is clear that flood risk could be material to the IPC's decision to reject an application (perhaps worth referring to the process required in EN-1 to manage the flood risk).

**Recommendation 5.2:** Consider whether the implications for flood risk from the impact on flood defences from the connection from onshore plant to offshore plant has been given adequate reference.

**Response 5.2:** There is no onshore or offshore wind-specific flood risk text in the Renewable Energy NPS. The generic Flood Risk text in EN-1 refers to effects on flood defences.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion – EN-3** does not set out any specific requirements or identify any specific impacts relating to flood risk. The requirements in relation to and mitigation of any effects on, flood risk are addressed in EN-1.

EN-1 sets out the generic impacts and mitigating measures that relate to flood risk. Given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing consenting system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### 2.1.7 Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The NPS states that the IPC should satisfy itself that a proposal has regard to the River Basin Management Plans and the requirements of the Water Framework Directive. Additionally it requires the IPC to consider whether appropriate conditions should be attached to any development consent or planning obligations entered into to mitigate adverse effects on the water environment. The NPS states that where there may be indirect effects (such as on marine ecology) the IPC should refer to relevant guidance within other sections of the NPS (section 2.6.2).

**Summary of Appraisal: Onshore Wind Farms/Waste/Biomass Combustion – EN-3** does not set out any specific requirements or identify any specific impacts relating to water quality and resources. The requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1. The development of onshore wind farms and waste/biomass combustion plants are generally unlikely to have a significant effect on water resources or water quality. However during their construction, water quality may be affected through sediment mobilisation/disruption during site establishment, earthworks, truck movements and construction. Groundwater could also be affected if excavation works intrude into an aquifer or confining layer which may affect water resources, water quality or the groundwater hydrology.

**Summary of Appraisal: Offshore Wind Farms:** The construction of offshore wind farms may also result in effects as any drainage from the construction process that contains contaminants, sediment will alter marine water quality.



Dispersion and dilution to safe levels in the receiving waters will depend on the discharge and receiving water properties, coastal layout (e.g. estuary, bay, straight coastline, headland) and currents.

However, the SEA on Offshore Energy (January 2009) concluded that in light of the offshore locations, water depths and current regimes prevalent in areas of likely wind farm development, significant contamination or ecological effects of drilling discharges are not expected. Other operational discharges are subject to regulatory controls, and are not considered to have significant environmental risk. UK regional and national monitoring programme results indicate that water column contamination and associated biological effects are not significant issues.

#### Water Quality and Resources: Key recommendation(s) emerging from the appraisal and how DECC responded

<b>Recommendation 6.1:</b> Consider including information on surface water quality that links with the Overarching NPS	<b>Response 6.1:</b> It is considered that there is no particular reason to have a separate Hydrogeology, Hydrology and Flood Risk chapter in the Onshore Wind section of EN-3.
<b>Recommendation 6.2:</b> The EA regulates discharges from land-based structures only, not anything put into the sea from vessels.	<b>Response 6.2:</b> Generic text in EN-1 is considered to be adequate.
<b>Recommendation 6.3:</b> Consider materials, for example, access tracks should be permeable	<b>Response 6.3:</b> Generic text in EN-1 is considered to be adequate.

EN-1 sets out the generic impacts and mitigating measures that relate to water quality. EN-3 does not set out any additional specific requirements on the impacts on water quality from onshore wind, waste or biomass combustion. Given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.8 Traffic and Transport

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

EN-1 provides generic effects arising on traffic and transport and highlights that the key issue of the effects are on the local highways network. EN-3 identifies specific effects of onshore and offshore wind farms on traffic and transport however identifies no specific effects for waste/biomass combustion plants.

**Summary of Appraisal: Onshore Wind Farms** – Many wind farms are likely to be located in relatively remote areas served predominantly by minor road networks. Currently a number of components for turbines need to be brought in one piece and can be large (weighing in excess of 100 tonnes or up to 45m length for blades). This can result in localised disruptions to nationally significant volumes of traffic. In addition, to the generic transport effects identified in EN-1, EN-3 requires the IPC to satisfy itself, taking into account views of the relevant highways authority, that abnormal loads may be safely transported with the least inconvenience caused to other road users.



**Summary of Appraisal: Offshore Wind Farms** – The NPS states that the IPC cannot grant permission to a development where construction or operation activities cause interference with the use of a recognised sea lane essential to international navigation. The NPS also identifies that a risk assessment will be required. Where conflicts arise between the applicant and the shipping industry, it is for the IPC to judge the merits of the arguments taking advice from the Maritime and Coastguard Agency (MCA) where necessary.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts relating to traffic and transport for waste/biomass combustion plants. The requirements in relation to and mitigation of any effects on, traffic and transport are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Traffic and Transport: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 7.1:** Consider referencing the Government’s “water preferred” policy of using water for the transport of abnormal indivisible loads - where these can be transported by water (by coastal shipping or inland waterways), subject to certain tests, this will be required, as the Highways Agency will not issue the relevant Special Orders to allow road use.

**Response 7.1:** General government policy such as this is relevant to all infrastructure and is included in the generic Traffic and Transport text in EN-1.

**Recommendation 7.2:** Government policy supports modal shift from road to rail and/or water. However, the statement about multimodal transport could be clarified - ideally transport should be single mode but not road.

**Response 7.2:** General government policy such as this is relevant to all infrastructure and is reflected in the generic Traffic and Transport text in EN-1, which does not however go into this level of detail.

**Recommendation 7.3:** Suggest the possibility of conducting a dry run to assess issues for wide loads.

**Response 7.3:** Reference to “dry run” added to mitigation.

EN-1 sets out the generic impacts and mitigating measures that relate to traffic and transport. EN-3 does not set out any additional specific requirements for Waste/Biomass Combustion Plants however identifies that there may be specific impacts on onshore wind farms on the local highway network and on navigation and shipping routes from offshore wind farms. However given that the range of impacts identified and mitigation measures proposed (and their means of implementation) do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

2.1.9 Noise

**Objective:** *To protect both humans and ecological receptors from disturbing levels of noise.*

EN-1 directs the IPC to consider the effects of noise generated by the proposals against a baseline level of noise and ensure that they are satisfied that the applicants’ proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible; contribute to improvements to health and quality of life by effective management and control of noise.

Short term effects on noise during construction and decommissioning activities are also covered in EN-1.

**Summary of Appraisal: Onshore Wind Farms** – EN-3 also recognises that there may be increases in noise levels from onshore wind farms. The NPS recommends that the IPC should satisfy itself that the proposed development complies with noise limits set out in ‘*The Assessment and Rating of Noise from Wind Farms*’. Where compliance cannot be demonstrated, the IPC will need to consider refusing the application.

**Summary of Appraisal: Offshore Wind Farms** - EN-3 does not set out any specific requirements or identify any specific impacts in relation to offshore wind farms. The requirements in relation to and mitigation of any effects are addressed in EN-1.

EN-1 sets out the generic impacts and mitigating measures that relate to noise. EN-3 sets out specific additional requirements concerning the impacts on noise of onshore wind farms. However, EN-3 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.10 Landscape, Townscape and Visual Effects

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

EN-1 identifies national designations as the key landscape features to protect, in accordance with current landscape guidance.

**Summary of Appraisal: Onshore Wind Farms** — In addition to the requirements of EN-1, EN-3 recognises that there are specific issues relating to onshore wind farm developments. EN-3 requires that pre-application consultation is undertaken by the applicant and that the arrangement of wind turbines within a site is carefully designed to minimise effects so far as is possible. EN-3 recognises that mitigation in the form of reducing the scale or number of individual wind turbines may not be feasible without unduly affecting generating capacity of the site; however, EN-3 also notes that ‘wind turbines should be carefully designed within a site to minimise effects on the landscape’.

**Summary of Appraisal: Offshore Wind Farms** – In addition to the guidance set out in EN-1, EN-3 requires an assessment of the effects on landscape, seascape and visual effects unless the wind farm is not visible from the shore. Viewpoints must be consulted upon with the statutory consultees at the EIA stage and where appropriate must include the cumulative effects from other developments. EN-3 recognises that mitigation in the form of reducing in the scale or number of individual wind turbines is unlikely to be feasible; however, EN-3 notes that ‘wind turbines should be carefully designed within a site to minimise effects on the landscape’.

**Summary of Appraisal: Waste/Biomass Combustion** – In addition to the requirements set out in EN-1, EN-3 states that the IPC should be satisfied that the design of the proposed plant is of appropriate quality and minimises adverse effects on the landscape character and quality. This may include the design, scale and layout of the plant and other buildings, and includes the colour and materials used. Additionally, the IPC should expect applicants to

seek to landscape combustion plant to reduce adverse effects through the use of the earth bunds, mounds and tree screening. Assessments of the landscape and visual effects must be undertaken by the applicant and should have regard to the building size, stack height, and plume visibility, which the IPC will consider in the decision making process having due regard to technical and legislative restrictions on the design.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Landscape, Townscape and Visual Effects: Key recommendation(s) emerging from the appraisal and how DECC responded**

<p><b>Recommendation 9.1:</b> Consider the visual impact of access tracks.</p>	<p><b>Response 9.1:</b> The EIA Regs and generic EN-1 landscape and visual text require all landscape and visual effects to be considered, and thus would include any effects from access tracks.</p>
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EN-1 sets out the generic impacts and mitigation measures that relate to landscape. EN-3 sets out specific additional requirements concerning the impacts on landscape from all the technologies considered. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this effect. As the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

**2.1.11 Archaeology and Cultural Heritage**

**Objective:** *Protect and where possible enhance the historic environment including heritage resources, historic buildings and archaeological features.*

EN-1 recognises that development consents granted to energy infrastructure projects by the IPC could potentially affect heritage assets. However, EN-1 gives guidance and seeks to ensure that sufficient weighting is given to the effects on the objectives for designation as well as to elements of setting that enhance the significance of designated heritage assets (and non-designated assets where there is significant archaeological interest).

**Summary of Appraisal: Onshore Wind Farms** – There are significant archaeology and cultural heritage effects that could arise from the development of onshore wind farms. The IPC may request visualisations to demonstrate the effects of onshore wind farms against the setting of historical features and, where necessary, may request a cumulative assessment of the impacts on the setting. In addition to specifying mitigating measures such as trial trenching or a watching brief, the IPC are also directed to consider granting consents which require micro-siting within a specified tolerance, of elements of the permitted infrastructure so that precise locations can be amended during construction stage, where previously unknown artefacts of archaeological interest are uncovered during construction.

EN-3 advises the IPC that onshore wind farms are not considered permanent features in the landscape as the applicants can specify the length of time they wish the consent to be granted for (usually 25 years) and upon its expiration, the wind farm may be decommissioned and dismantled. The period of time that the wind farm is on the site is likely therefore to inform the IPC in their consideration of the significance of the effects.

**Summary of Appraisal: Offshore Wind Farms** – EN-3 sets out further specific considerations relevant to offshore wind farms. In particular, it recognises that there could be affects on seabed archaeology (submerged settlements or wreck sites) as well as onshore features of significant maritime importance. The NPS requires applicants to consult relevant bodies, and the IPC to gain advice from statutory advisers (e.g. English Heritage, Cadw). Furthermore, the NPS requires that the IPC should be satisfied that the offshore wind farms and associated infrastructure have been designed sensitively.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts in relation to waste or biomass combustion plants. The requirements in relation to and mitigation of any effects are addressed in EN-1.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Archaeology and Cultural Heritage: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 10.1:** Palaeo-archaeology is also considered important. Note there is lots of guidance on offshore archaeology that has been developed in relation to the offshore aggregates dredging industry.

**Response 10.1:** It is considered that the text adequately covers all relevant archaeology.

**Recommendation 10.2:** Raise specific concern with stating that wind farms are not permanent structures as this can have severe implications on the culture and heritage assets. Consider revising.

**Response 10.2:** On the “non-permanent nature” of wind farms point, the concern is not shared. The text is telling the IPC that the time-limited and non-permanent nature of onshore wind farms may be a relevant consideration. The IPC can determine for themselves the weight to which they give to this. They may consider that even turbines being there for 25 years is too long and the effect is too great and they could still refuse to grant consent for a scheme.

EN-1 sets out the generic impacts and mitigating measures that relate to archaeology and cultural heritage. EN-3 sets out additional specific requirements for onshore wind farms/offshore winds farms but does not identify any for waste/biomass combustion plants. The temporal characteristic of wind farms is of particular relevance to the historic environment. Although this is considered to provide limited benefits to the protection of the effects on the historic environment this aspect is recognised within current planning policy guidance, along side measures which seek to ensure the environment is preserved and enhanced and any impacts are fully mitigated. It is therefore conclude that as the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system (which for the purpose of this AoS considered the consultation draft of PPS15 as part of the baseline), the contribution of EN-3 over and above the existing planning system to the achievement of this objective is therefore not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.12 Air Quality

**Objective:** *To Protect and enhance air quality on local, regional, national and international scale.*

EN-1 directs the IPC to work closely with the Environment Agency and/or the pollution control authority, and other relevant bodies and require appropriate levels of assessment to identify potential effects. The IPC must be satisfied that development consent can be granted taking full account of environmental impacts.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms** - EN-3 does not set out any specific requirements or identify any specific impacts in relation to onshore or offshore wind farms. The requirements in relation to and mitigation of any effects are addressed in EN-1).

**Summary of Appraisal: Waste/Biomass Combustion** – There may well be an increase in emissions of pollutants such as NO<sub>x</sub>, SO<sub>x</sub>, Carbon Monoxide and particulates from the combustion of waste and biomass. In addition, the emission of heavy metals, dioxins and furans from the combustion of waste are also of relevance. These could affect sensitive receptors such as human health and ecological habitats/species. However, EN-3 states that plant meeting the requirements of the Waste Incineration Directive and which do not exceed local air quality standards should not be considered by the IPC as being detrimental to health (2.5.39).

EN-1 sets out the generic impacts and mitigating measures that relate to Air Quality. EN-3 sets out additional specific requirements for waste/biomass combustion plants but does not identify any for onshore wind farms/offshore winds farms.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.13 Soil and Geology

**Objective:** *To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.*

EN-1 directs the IPC to consider the potential effects any proposed energy infrastructure may have on existing, adjacent and proposed land uses, which is anticipated to include consideration of the agricultural quality of soils as well as the planning significance of any development that may be affected.

**Summary of Appraisal: Onshore Wind Farms** – There may be a potentially detrimental effect from the construction and operation of access roads and the excavation of ground for turbine foundations and other ancillary equipment, although it is recognised that the footprint of individual turbines is relatively compact. The significance of any potential effect is unknown at this stage as it depends on site specific data. Such effects would be captured

within EIA. EN-3 does not set out any explicit requirement for the IPC to consider the effect on geological SSSI or geoparks but refers to these within EN-1.

**Summary of Appraisal: Offshore Wind Farms** – Again it is recognised that there may be a potentially detrimental effect from the construction, excavation of the sea bed for turbine foundations and other ancillary equipment, although the footprint of individual turbines is relatively compact. The significance of any potential effect is unknown at this stage as it depends on site specific data.

An SEA on Offshore Energy was produced earlier this year (January 2009). This advised that seabed mapping undertaken in advance of operations would allow the identification and hence avoidance of valued seabed features. Contamination of sediments may occur from discharges of drilling wastes and spills. The composition of construction discharges from wind farm operations is regulated, with increasingly stringent controls applied in recent years. Monitoring results indicate that sediment contamination is not considered a significant issue in offshore wind farm developments.

**Summary of Appraisal: Waste/Biomass Combustion** – EN-3 does not set out any specific requirements or identify any specific impacts. The requirements in relation to and mitigation of any effects are addressed in EN-1

EN-1 sets out the generic impacts and mitigating measures that relate to soil and geology. EN-3 sets out additional specific requirements for onshore wind farms/offshore wind farms.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.14 Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population and enhance the physical and mental health of the population.*

Commercial wind farms do not exceed a shadowing effect of more than 1 hertz, whilst epileptic sufferers are not known to be affected by frequencies below 2.5 hertz.

Atmospheric emissions from combustion activities may result in a number of health effects such as inflaming respiratory conditions. EN-3 considers the effects of emissions in sections on air which require the IPC to be satisfied that there is no good reason to believe that relevant permits would not be granted by the Environment Agency and that any plant would not meet the requirements of the Waste Incineration Directive and Large Combustion Plant Directive.

The range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-3 do not differ from the existing planning system, the contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.



*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.15 Equality

**Objective:** *To encourage equality and sustainable communities.*

The NPS does not direct the IPC to determine the effectiveness of energy infrastructure in reducing inequality, as these are dealt with through other government policies and plans.

**Summary of Appraisal: Onshore Wind Farms/Offshore Wind Farms/Waste/Biomass Combustion – EN-3** does not set out any specific requirements or identify any specific impacts.

EN-3 does not set out any additional specific requirements for onshore wind farms/offshore wind farms or waste/biomass combustion plants. The contribution of EN-3 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## 2.2 Cumulative Effects

The SEA Directive, and its implementing regulations in the UK, requires the consideration of cumulative and synergistic effects as part of the appraisal. Cumulative effects were considered (where appropriate) in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that ‘the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place’ (para 4.2.4). To support this, the NPS states that ‘the Environmental Statement should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)’ (para 4.2.3).

## 2.3 Mitigation Measures

Mitigation measures were considered during and the iterative process of developing the NPS. Examples of how these were avoided or mitigated are identified in the recommendations (identified in **Section 2.1**). Entec considers that the generic mitigation measures identified in the NPS are appropriate to the generic impacts identified.



### 3. CONCLUSION

#### 3.1 Key Findings Arising From the Appraisal of Sustainability

The NPS is likely to improve business and investor confidence in low carbon infrastructure projects. The NPS is also likely to improve the speed of the application process and as such will result in these projects being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon targets and progress towards a low carbon economy. However, beyond this there are no significant differences identified between existing consenting requirements and what will be required under the IPC/NPS system. EN-3 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, and in light of the assumptions (set out in **Section 4.6**) the NPS EN-3 is not envisaged to have any significant effects at the national policy level when compared to the existing consenting controls.

#### 3.2 Monitoring

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>85</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

- Positive effects on Climate Change (AoS Objective 1);
- Positive effects on Resources and Raw Material (AoS Objective 3); and
- Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the **Table 3.1** (these will be reviewed in light of comments on the significance of effects).

<sup>85</sup> ODPM (September 2005) Practical Guide to the Strategic Environmental Assessment Directive.

**Table 3.1 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globatmos">www.defra.gov.uk/environment/statistics/globatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste  Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> )  National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 3.3 Quality Assurance

The Government’s guidance on SEA contains a quality assurance checklist to help ensure that the requirements of the SEA Directive are met. This has been completed and is presented in **Annex A**.

# Annex A

## Quality Assurance Checklist

The Government's Guidance on SEA<sup>86</sup> 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	
<b>Objectives and Context</b>	
The plan's purpose and objectives are made clear.	<b>Section 1</b> of this AoS Report and <b>Section 2</b> of the AoS Report for EN-1.
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in <b>Annex B</b> and <b>Annex F</b> .
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	<b>Section 3.4</b> of the AoS Report for EN-1 presents the AoS objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	<b>Annex F</b> identifies a number of relevant plans and programmes.
<b>Scoping</b>	
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 13 <sup>th</sup> February 2009 to 23 <sup>rd</sup> 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 <b>Annex F</b> .
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the <b>Scoping Report</b> where appropriate, and are presented in <b>Section 3.7</b> and <b>Section 3.8</b> of the AoS Report for EN-1.
Reasons are given for eliminating issues from further consideration.	These are stated in the <b>Scoping Report</b> as appropriate and in <b>Section 2.5</b> .
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in <b>Section 2.5</b> of the AoS Report for EN-1. Technology-specific alternatives are presented in <b>Section 1.3</b> of this AoS Report.
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in <b>Section 1.3</b> of this AoS Report.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to <b>Section 2.5</b> .

<sup>86</sup> ODPM, Scottish Executive, Welsh Assembly Government, DoENI (2005) A Practical Guide to the Strategic Environmental Assessment Directive, ODPM, London.

<b>Quality Assurance Checklist</b>	
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to <b>Section 2.5</b> and the review of policies, plans and programmes in <b>Annex F</b> .
Reasons are given for selection or elimination of alternatives.	These are presented in <b>Section 2.5</b> .
<b>Baseline Information</b>	
Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	This is set out in <b>Annex F</b> .
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.	Refer to <b>Annex F</b> .
Difficulties such as deficiencies in information or methods are explained.	These are stated throughout the report where appropriate.
<b>Prediction and Evaluation of Significant Environmental Effects</b>	
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 <b>Annex F</b> and <b>Section 2.2</b> of this AoS Report.
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 <b>Section 2.2</b> of this AoS Report and in <b>Annex F</b> .
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to <b>Section 2.3</b> of this AoS Report.
Inter-relationships between effects are considered where practicable.	Refer to <b>Section 2.2</b> of this AoS Report.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in <b>Annex F</b> .
Methods used to evaluate the effects are described.	These are described in <b>Section 3.6</b> of the AoS Report of EN-1.
<b>Mitigation Measures</b>	
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.	This is presented in <b>Section 2.2</b> .
Issues to be taken into account in project consents are identified.	These are considered in <b>Section 2.2</b> .
<b>Environmental Report</b>	
Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in <b>Section 1</b> .
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in <b>Annex A</b> 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 <b>Section 3</b> of the AoS Report of EN-1.
Explains who was consulted and what methods of consultation were used.	This is covered in <b>Section 1.5</b> of the AoS Report of EN-1.
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in <b>Section 3</b> , <b>Section 4</b> and <b>Annex F</b> of the AoS Report of EN-1.

**Quality Assurance Checklist**

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 at the front of the AoS Report.
<b>Consultation</b>	
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.
<b>Decision-making and Information on the Decision</b>	
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).
<b>Monitoring Measures</b>	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect).	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
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).

# Planning For New Energy Infrastructure

Appraisal of Sustainability for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines

November 2009





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## Non Technical Summary

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This document is the **Non-Technical Summary** of the **Appraisal of Sustainability (AoS)** Report produced as part of the appraisal undertaken to inform the **National Policy Statement (NPS) for Gas Supply Infrastructure and Gas and Oil Pipelines** (also referred to as EN-4).

The following sections explain what the Gas Supply Infrastructure and Gas and Oil Pipelines NPS is, provide an outline of its content and describes the relationship of the NPS to the Overarching NPS and to the other technology-specific NPSs. An outline of the AoS process and the role of the AoS Report in this process is described on page iii. The findings and recommendations arising from the AoS are presented on page xi.

For more information on this public consultation and how to give us your views, please see the Consultation Document on the draft NPSs for energy.

## 1. What are the National Policy Statements for Energy?

The Planning Act 2008 changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. The IPC replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change (DECC) are responsible for preparing those related to energy infrastructure projects. These are:

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Renewable Energy Infrastructure (EN-3);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- Electricity Networks Infrastructure (EN-5); and
- Nuclear Power Generation (EN-6).

Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore. This includes generation from fossil fuels, renewables and nuclear. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- Electricity lines at or above 132kV. For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act). For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds). For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.

NPSs collectively present a summary of government energy and climate policy, the national need for energy infrastructure and guidance to the IPC on how to assess the likely impacts of energy infrastructure. The Nuclear NPS is different in that it also assesses the potential suitability of sites for new nuclear stations and it is the subject of a separate AoS which has assessed those parts of the Overarching NPS which apply to nuclear stations.

## 2. What is the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines sets out the national policy for new gas supply infrastructure and gas and oil pipelines. In combination with the Overarching NPS, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant gas supply infrastructure and gas and oil pipelines.

Developers will need to ensure that their applications for development consent are consistent with the requirements of relevant NPSs, as the IPC must decide the application in accordance with their content except in the circumstances set out in Section 104 of the Planning Act (2008).

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines will be issued by the Secretary of State for DECC. It applies to decisions for nationally significant gas supply infrastructure and gas and oil pipeline projects (as described in Part 1 of the NPS) in England and Wales (and Scotland in the case of cross border oil and gas cross-country pipelines). The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines will remain in force in its 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 it remains appropriate for IPC decision making.

## 3. What is an Appraisal of Sustainability (AoS)?

The Planning Act 2008 requires that ‘an appraisal of the sustainability of the policy set out in the statement’ is carried out. Section 5(5) of the Planning Act explains what the policy set out in statement may, in particular contain<sup>87</sup>. It may:

- Set out, in relation to energy, the need for energy infrastructure which is appropriate nationally [Section 5(5)(a) of the Act]
- Set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for a specified energy technology [Section 5(5)(b) of the Act];
- Set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- Identify locations which are potentially unsuitable for development [Section 5(5)(d) of the Act]; and
- Set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].
- Section 5(5)(e) of the Planning Act states that a National Policy Statement may identify one or more statutory undertakers as appropriate persons to carry out a specified description of development. Given that energy is delivered through a liberalised market, limiting energy developers would restrict competition and contravene the free market approach to energy development.

The AoS of the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines has been undertaken in a manner

<sup>87</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)

that incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>88</sup>.

SEA is a statutory requirement following the adoption of European Union Directive 2001/42/EC which was transposed into UK legislation on the 20th July 2004 as Statutory Instrument No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004. The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

In addition to assessing the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely social and economic effects of implementing the NPS. Each AoS has been carried out at the same time as the development of the NPS and has therefore helped to inform that NPS. The NPS contains potential measures to mitigate significant adverse effects. All the NPSs (EN-1 to EN-6) have been subjected to an AoS.

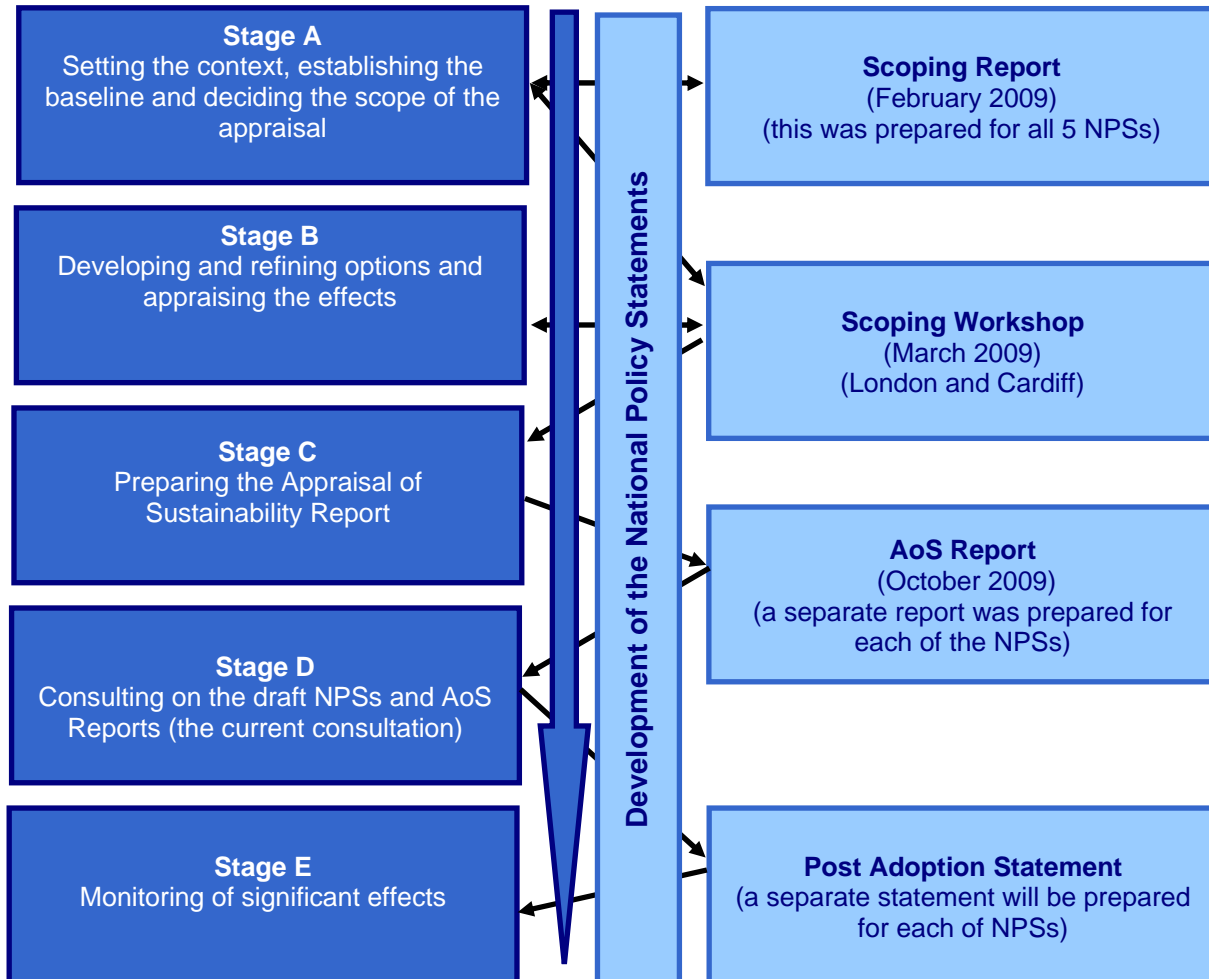
An overview of the key stages of the AoS process is presented below.

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<sup>88</sup> *The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633). Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.*

## Appraisal Process

## Key Outputs



The AoS process began in early 2009 and reflects national guidance on SEA practice<sup>89</sup>. A Scoping Report (Stage A) was consulted on by statutory consultees in February and March 2009. A summary of the results of this consultation are presented in **Annex C** of the Overarching AoS Report and the consultees' responses have been considered in this AoS. From March through to September options were developed and refined and the effects of the NPSs were appraised (Stage B). The AoS Reports were prepared during this time (Stage C) before being consulted on (Stage D, the current consultation). Stage E, the final stage will involve setting the measures for monitoring significant impacts.

<sup>89</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

#### 4. What relationship does the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines have with other policies, plans and programmes?

The AoS reviewed other relevant policies, plans, and programmes that could influence the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B** of the full Overarching AoS Report.

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act and other government agreements on climate change being key influences on the development of the NPSs).

#### 5. Which sustainability topics has the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines been appraised against?

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines has been appraised against 14 topic areas. All of the topics identified in the Scoping Report were ‘scoped in’ (i.e. considered to be relevant to the appraisal<sup>90</sup>). The topics are identified below and are linked with the AoS Objectives identified in **Table 1** (page xi).

1. Climate Change	6. Water Quality & Resources	11. Air Quality
2. Ecology (Flora and Fauna)	7. Traffic and Transport	12. Soil and Geology
3. Resources and Raw Materials	8. Noise	13. Health and Well-Being
4. Economy and Skills	9. Landscape, Townscape and Visual	14. Equality
5. Flood Risk	10. Archaeology and Cultural Heritage	

The baseline is common to all of the non-nuclear NPSs (EN-1 –EN-5). To avoid repetition, the baseline material is presented in **Annex F** of the Overarching AoS Report and referenced in each of the non-nuclear AoS reports (EN-2- EN-5).

#### 6. What reasonable alternatives for implementing the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines were identified and appraised?

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

<sup>90</sup> Following consultation on the Scoping Report, *noise* and *landscape features* were scoped back into the appraisal (i.e. they were originally anticipated not to be relevant to a high-level appraisal but following comments this was reconsidered and they were included).



The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1** with reasons for them not being included with the NPS identified by DECC.

**Table 1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p><b>Gas Supply Infrastructure:</b> The NPS should specify exact locations where gas supply infrastructure should be sited.</p>	<p>The NPS makes clear that there is a need for increased import and storage of natural gas. It does not, however, aim to calculate the precise volumes needed or the proportion and mix of storage and import infrastructure which will need to be deployed. There are a number of ways in which the market could deploy existing and evolving technology to meet the need for gas and sites for the infrastructure will need to be tested and explored. A combination of short range and medium range underground storage options are likely to be needed as well as long range storage options which could provide endurance. Industry is in the best place to explore the feasibility of these options. As a more diverse gas supply market becomes established, further options will need to be continuously reassessed.</p> <p>It is therefore unreasonable for the NPS to specify exact locations where gas supply infrastructure should be sited.</p>
<p><b>Pipelines:</b> The NPS should specify exact location where pipelines should be sited.</p>	<p>The case for new gas and oil pipelines will be linked to the need to connect up new infrastructure, or to reinforce transmission pipelines to reflect changing requirements for the flow of gas or oil due to new import and storage arrangements. It would not be feasible to set out these requirements in advance of the siting of new infrastructure. The aim should be to ensure that the siting of new gas pipelines should be designed in to new infrastructure</p>

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
	<p>plans as early as possible so that full consideration can be given to the routeing rather than the siting of gas and oil pipelines</p> <p>It would be unreasonable therefore to specify pipeline routes that would necessarily constrain development of gas and oil infrastructure.</p>

## 7. What aspects of the draft NPSs were appraised?

Projects consented under the IPC/NPS process will clearly have a number of direct, indirect and cumulative effects. The AoS identifies and assesses those effects arising as a result of the NPS and this is considered against the baseline (i.e. what's happening now and what's likely to happen in the future). In this way the appraisal assesses the effects of the differences between the current consenting regime ('business as usual') and the IPC/NPS process.

The likely effects of the NPSs have been considered across a range of geographic scales (including UK, regional and local). However, with the exception of the Nuclear Power Generation NPS, the Energy NPSs do not prescribe the location for new infrastructure projects and there are limitations in terms of how far appraising effects at a non-spatially specific level can be taken. This is not to exclude the possibility that the effects could be significant; rather, that it will often only be possible to judge whether such effects are significant at the project level.

It is anticipated that relevant receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory assessments.

The following assumptions have then been used to aid the understanding of the influence of the NPSs on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors;
- Will add greater certainty to the delivery of nationally significant energy infrastructure by making the guidance on decision-making clearer and more transparent;
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK's security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC's understanding of the scale of need when considering individual applications;
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand; and
- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to assess the implications of the NPS for future planning decisions. The AoS focuses on the material differences to sustainability against the existing planning system for energy infrastructure.

## 8. What approach was taken to the appraisal?

The appraisal of the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines has been undertaken using an objectives-led approach. The baseline information, the review of plans and programmes and the key issues identified were used to develop 14 AoS objectives (presented in **Table 2**). Each objective is supported by a series of guide questions (and these are identified in **Section 3.4** of the AoS for EN-1). The AoS objectives cover all of the topics that the appraisal is required to include information on (as set out in the SEA Directive).

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines has been appraised in terms of the extent to which it contributes towards achieving the AoS objective (e.g. Biodiversity) when considered against the baseline set by the existing planning environment. The 'guide questions' have been used to assist the appraisal of the potential effects in a qualitative manner, ensuring consideration is given to relevant influencing factors.

**Table 2** AoS Objectives

AoS Objective	SEA Topic Requirement
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	Climate Change
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	Fauna, flora and biodiversity
<b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	Material assets
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	Material assets
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	Climatic factors
<b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).	Water
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	Population
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	Population
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	Landscape
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	Cultural heritage, including architectural and archaeological heritage
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	Air
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	Soil
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the	Human health

AoS Objective	SEA Topic Requirement
population	
<b>14. Equality:</b> To encourage equality and sustainable communities.	Human health

For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

In predicting and evaluating the effects of the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines, all effects have been considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

## 9. What were the key significant effects (when considered against the existing consenting regime)?

This section presents a summary of the appraisal of the Gas and Oil NPS against the 14 objectives (which were identified in the Scoping Report). The appraisal compared the existing 'business as usual' scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

Entec provided on-going commentary on the sustainability effects of the emerging NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

Summary of Appraisal

**Table 3 Summary of the appraisal of EN-4**

AoS Objective	Assessment	Comment
<p><b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.</p>	?	<p>EN-4 sets out specific detail on resilience to climate change on top of the generic mitigation outlined in EN-1 which will result in a significant positive score against climate change resilience. The NPS in combination with Overarching NPS EN-1 will significantly improve the speed of the application determination process and as such will result in gas and oil infrastructure coming forward more quickly. However, it is not clear the effect that this will have against the climate change objective. As a consequence, the overall effect of improving storage and infrastructure for their delivery is assessed as uncertain.</p>
<p><b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.</p>	?	<p>There is the potential for projects consented under by the IPC to have ecological effects; however, at the strategic level the effects on ecology from the energy infrastructure are uncertain due to the lack of specificity of sites and potential locations of proposed plant.</p>
<p><b>3. Material Assets and Resources Use:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy</p>	+ / -	<p>The speeding up of the delivery of gas and oil infrastructure could be considered to have a positive effect against the delivery of secure and affordable energy part of the objective. However, speeding up the construction of import and storage facilities as fossil fuel use would not score positively against the promotion of sustainable use of resources and natural assets. It is therefore considered that there will be both positive and negative effects against this objective.</p>
<p><b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.</p>	+	<p>This NPS is anticipated to have short term positive effects against local economies due to the added requirements on goods and services. The security provided by a swifter planning system will have a positive effect on both energy suppliers and industry users.</p>
<p><b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.</p>	0	<p>EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.</p>
<p><b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).</p>	0	<p>EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.</p>
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	0	<p>EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.</p>
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	0	<p>EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning</p>



AoS Objective	Assessment	Comment		
		process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape townscape and visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and cultural heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Soil and Geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
<b>14. Equality:</b> To encourage equality and sustainable communities.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to equality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.		
Score Key	Significant (Major) Positive ++	Significant (major) negative --	no overall effects 0	Uncertain ?
	Minor Positive +	Minor Negative -		

The following provides more detailed information on the findings of the assessment.

## Climate Change

**Objective:** To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.

Climate change resilience is an important consideration for the LNG facilities and gas reception facilities as this infrastructure will be marine or coastal in location where the anticipated effects of climate change will be most



keenly felt. As such, EN-4 provides guidance for applicants with proposals relevant to the infrastructure covered by EN-4 such as increase in the risk of flooding, damage from the effects of wind, higher temperatures and earth movement or subsidence. The importance of considering the effects of climate change in relation to this infrastructure is important in maximising resilience to climate change. Ensuring that these issues are robustly addressed at the planning stage helps EN-4 to score positively against climate change.

The NPS in combination with Overarching NPS EN-1 will significantly improve the speed of the application determination process and as such will result in gas and oil supply infrastructure coming forward more quickly. It is unclear what the effects of this will be against the climate change objective as a secure supply of gas and oil could be seen to promote cleaner gas power stations over more polluting coal power stations. However, it could also be seen to promote supply of aviation fuel, road vehicle fuel and domestic fuel, all of which contribute significantly to national greenhouse gas levels.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities/Gas and Oil Pipelines** – In addition to the mitigation measures outlined in EN-1, EN-4 requires applicants to set out specific detail on resilience to climate change which will result in a significant positive score against climate change resilience. The IPC/NPS system will result in the speeding up of applications. However, it is not clear the effect that this will have against the climate change objective. As a consequence, the overall effect of improving storage and infrastructure for their delivery is assessed as uncertain.

*The appraisal indicated that the effects will be **uncertain** on this objective.*

## Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures which will apply to the ecological effects of infrastructure outlined in EN-4. EN-4 presents the guidance for the IPC in appraising applications for gas supply infrastructure and gas and oil pipelines. Only LNG import facilities are recognised as having the potential for specific ecological effects which are not addressed by EN-1.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities** – As LNG facilities will often be in coastal and estuarine locations which will often require dredging, EN-4 includes detail on how this should consider effects on local marine and estuarine environments. EN-4 goes on to suggest that applicants propose mitigation measures to address the effects of dredging. It is not clear that this will ensure that there will be no overall effects on marine ecosystems though the NPS does require the application of best practice for all applications.

The effects related to the disposal of brine from salt cavern gas storage facilities on ecological receptors is not explored in the 2.10.3 'Disposal of brine' impacts section; however, reference is made to the requirement for environmental permits and discharge consents from the Environment Agency which should ensure that effects are no different from those experienced under the current system.

**Summary of Appraisal: Gas and Oil Pipelines** No specific effects associated with pipelines are set out in the NPS, and the IPC is directed to the generic issues set out in EN-1 with regard to the potential effect on ecology of the proposed energy infrastructure. It is felt that the inclusion of details such as those provided on landscape features could be useful here; the fragmentation of habitat by linear features, even in a temporary sense could result in significant effects on ecological resources. For example the removal of hedgerow for several miles is thought to fragment the habitat of dormice and some bat species; this could be mitigated through the inclusion of appropriate mitigation<sup>91,92</sup> techniques.

In accordance with the requirements of Article 6 of the Habitats Directive (92/43/EEC) in which a plan or project is likely to have a significant impact on a protected site, DECC have completed a screening assessment of the effects of the NPSs on European designated sites. The conclusion of the assessment was that the effects on ecology from the energy infrastructure are uncertain. Given the conclusion of the screening assessment, it is also considered that there will be uncertain effects on ecology as a result of EN-4 in conjunction with EN-1.

*The appraisal indicated that effects against this objective are **uncertain**.*

### Material Assets and Resource Use

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

EN-4 does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since the infrastructure outlined in EN- 4 are not anticipated to generate notable volumes of waste. The exception to this is the disposal of brine in the creation of new underground gas storage facilities in salt caverns. Here a clear waste hierarchy is detailed which will help to mitigate the effects associated with the disposal of brine.

The speeding up of the delivery of gas and oil infrastructure could be considered to have a positive effect against the delivery of secure and affordable energy part of the objective. However, both gas and oil are fossil fuels and because gas is considered to be *cleaner* than oil and even cleaner than coal speeding up the delivery of gas supply infrastructure will allow the UK to take advantage of the best and cleanest fossil fuel whilst cleaner and low carbon technologies are being developed. Speeding up the construction of import and storage facilities as fossil fuel use would not score positively against the promotion of sustainable use of resources and natural assets. It is therefore considered that there will be both positive and negative effects against this objective.

*The appraisal indicated that effects against this objective are **both positive and negative**.*

### Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all.*

EN-4 provides guidance for the IPC in reaching a planning decision for gas supply infrastructure and gas and oil pipelines. It is anticipated that the introduction of the new planning system for major infrastructure, which is outlined in the NPSs, will speed up the planning process. It is anticipated that increasing the speed of delivery of

<sup>91</sup> *Natural England (1996) Dormouse conservation handbook.*

<sup>92</sup> *National Grid (2007) Barton Stacey to Lockerly ES.*

these projects will have localised positive effects against employment, and subsequently the economy particularly in areas where new LNG facilities and gas reception facilities are proposed.

The additional security provided by projects being completed faster will have direct positive effects on energy and industry. More certainty about the delivery of Gas and Oil will allow more accurate long term planning.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, gas receptions facilities and Gas and Oil pipelines** – This NPS is anticipated to have short term positive effects against local economies due to the added requirements on goods and services. The security provided by a swifter planning system will have a positive effect on both energy suppliers and industry users.

*The appraisal indicated that there will be **significant positive effects** on this objective.*

## Flood Risk

**Objective:** *To avoid an increase in flood risk (including coastal flood risk) and to avoid siting flood sensitive infrastructure in areas of high flood risk.*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable impact on flood risk.

EN-4 does not set out any specific requirements or identify any specific impacts relating to flood risk although it is recognised that LNG and gas reception facilities are likely to be proposed for coastal or estuarine sites. Generic guidance on flood risk is contained within EN-1 which sets out that the approach the IPC will take to assessing whether any application that comes forward is permissible in terms of flood risk will be in accordance with the principles of *Planning Policy Statement (PPS) 25: Development and Flood Risk*. This will seek to ensure that proposed development does not result in increased flood risk, that it would be safe from flooding given the prevailing flood risk and where possible reduces flood risk overall.

Notwithstanding these requirements there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.22) that *'the IPC may grant consent if it is satisfied that the increase in flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...'*. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas receptions facilities*** – In addition to the generic effects considered within EN-1, EN-4 considers effects from the construction of an underground gas storage facility in a salt dome which has high demand on water and will also result a requirement to dispose of brine.

**Mitigation:** The NPS recommends measures to control the abstraction of water, given in abstraction licences and environmental permits through the Environment Agency. Similarly, for the disposal of brine water EN-4 requires that the IPC should refuse consent if it has good reason to believe that the Environment Agency will not approve the disposal arrangements. Consequently, the NPS is not considered to have a significant effect.

**Summary of Appraisal: *Gas and Oil Pipelines***. EN-4 considers the addition effects arising from the construction of pipelines, which create corridors of surface clearance and excavation with potential effects on water courses. Aquifers, water abstraction, discharge points and areas prone to flooding.

**Mitigation:** EN-4 recommends that the IPC secure appropriate mitigation measures (such as working methods to prevent spillage of fuels, as well as achieve acceptable residual impacts on water quality and resources using techniques for crossing rivers, managing surface water after construction, including restoring vegetation in order to control run off) be included in the planning application. In combination with the generic guidance included in EN-1 it is not considered that the NPS will have any significant effect.

EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality, above those already considered through the planning process and those detailed above. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Traffic and Transport

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

Generic traffic and transport effects are explored in EN-1. Specific safety considerations associated with the transport of Gas and Oil are regulated by the Control of Major Accident Hazards (COMAH) Regulations 1999 and are enforced jointly through the HSE and Environment Agency. Detail on the applicant's assessment of these effects is discussed in more detail under the health and well-being objective.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas receptions facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore gas storage and reception facilities are not anticipated to create a notable impact on traffic and transport. However, it is felt, with reference to LNG facilities shipping issues should be adequately addressed within EN-4.

**Summary of Appraisal: Gas and Oil Pipelines** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable impact on traffic and transport, particularly post construction.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Traffic and Transport:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation: 7.1:** With reference to LNG facilities, DECC to consider effects of increased tanker shipments on marine transport, with particular reference to safety.

**Response: 7.1:** DECC agrees that the safety of shipping and navigation is an important issue for all shipping, especially LNG tanker shipments. The existing legal framework and its enforcement will ensure that LNG tanker shipments are safely regulated. The Safety of Life at Sea Convention (SOLAS) governs the requirements for safe navigation between ports. Chapters 4 and 5 cover the carriage requirements of navigation and communications equipment, nautical charts and publications, and the planning and execution of the passage, port to port. The carriage requirements vary between ship sizes and classes, but for all intents and purposes LNG ships (because of their size) will face the strictest carriage requirements of any cargo ship. These are variously inspected, surveyed and certified by the Flag Maritime Administration or a Recognised Organisation acting on their behalf. A proportion of foreign Flag vessels entering UK ports are subject to Port State Control.

At sea, LNG tankers have to obey all the normal traffic reporting and routing rules and procedures as well as COLREGs (collision regulations).

There are special rules regarding port operations for LNG vessels, with detailed procedures set out port by port in each Port Safety Management System.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Noise

**Objective:** *To protect both humans and ecological receptors from disturbing levels of noise.*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas reception facilities** – EN-4 recognises that the construction of underground gas storage facilities including the drilling of new boreholes and operational noise from the compressors and drivers can potentially give rise to high noise levels. Gas Reception Facilities also may have noise impacts from operation of motors, compressors and equipments such as heaters and inter-stage coolers. LNG Reception Facilities also have noise from their process plant, compressors and LNG pumps.

**Mitigation:** To minimise the noise, the NPS recommends the use of typical noise mitigation measures such as high performance acoustic cladding for buildings, the use of sound attenuators on ventilation systems, acoustic lagging on pipe work. With this mitigation in place, it is anticipated that there will be no overall effects against this objective for underground gas storage, LNG facilities and gas reception facilities.

**Summary of Appraisal: Gas and Oil Pipelines** - EN-4 recognises that the construction and routing of pipelines is likely to create some noise impacts.

**Mitigation:** To minimise the impacts, the NPS requires the IPC to ensure pipelines avoid areas of human habitation or other noise sensitive sites, and identify all noise sensitive sites within a 300m corridor either side of the pipeline. Mitigation is proposed for the effects of construction noise; though given the temporary nature of construction it is not anticipated that there would be any significant effects.

EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Landscape, Townscape and Visual Effects

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities** In addition to the requirements of EN-1, the NPS recognises that there are specific issues relating to LNG import facilities.

**Mitigation** The NPS suggests that LNG facilities can be reduced in scale or counter sunk or use squat tanks to minimise visual impacts so far as is possible. It is not clear that the proposed mitigation will be practical in all events but it is anticipated that the consideration of methods to reduce the visual impacts of LNG facilities could help to reduce the residual landscape effects of development.

**Summary of Appraisal: Gas and Oil Pipelines** – In addition to the requirements set out in EN-1, the NPS recognises that pipelines have potential to have a temporary and permanent impact on landscape.

**Mitigation:** The proposed route should avoid any impact on protected landscapes such as AONBs or National Parks except in exceptional circumstances. The mitigation outlined in EN-4 relating to pipelines is currently applied to pipelines in areas of sensitive landscape and as such its inclusion in EN-4 is welcome.

EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Archaeology and Cultural Heritage

**Objective:** *Protect and where possible enhance the historic environment including heritage resources, historic buildings and archaeological features.*



Increasing the speed at which planning applications are processed such that projects are consented on average 12 months sooner than under the current system is not anticipated to alter the effects of gas and oil infrastructure on archaeology and cultural heritage resources. No specific guidance on the assessment, appraisal or mitigation of effects on archaeology and cultural heritage within EN-4 other than the inclusion of detail about the protection of hedgerows under the landscape effects of pipelines (the Hedgerow regulations consider a hedgerow 'important' based on a number of criteria one of which are 'ancient'). This is considered to be current best practice and is not anticipated to result in any significant effects against this objective.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas receptions facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1.

**Summary of Appraisal: *Gas and Oil Pipelines*** - The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Air Quality

**Objective:** *To Protect and enhance air quality on local, regional, national and international scale.*

Increasing the speed at which applications are processed by a year on average is anticipated to speed up the delivery of gas and oil infrastructure projects. It is hoped that this will mean that there will be a more secure supply of gas and oil in the UK. As such there could be an increase in gas power stations coming forward which, depending on market conditions could be in place of more or less polluting alternatives.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas receptions facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable impact on air quality.

**Summary of Appraisal: *Gas and Oil Pipelines*** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable impact on air quality.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Soil and Geology

**Objective:** *To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.*

The effects of speeding up the delivery of gas and oil infrastructure projects by a year is not anticipated to result in significant effects against this objective.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas receptions facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable effect on soil and geology.



**Summary of Appraisal: Gas and Oil Pipelines:** In addition to the requirements set out in EN-1, the NPS recognises that pipelines can be installed within a variety of geological conditions.

*The appraisal indicated that there are **no overall effects** on this objective.*

## Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population and enhance the physical and mental health of the population.*

Gas infrastructure is governed by the Control of Major Accident Hazards (COMAH) Regulations 1999, section 2.4 of EN-4 addresses the requirements for applicants and the IPC to consult with the HSE and Environment Agency in relation to COMAH. As such it is anticipated that there will be no overall effects against this objective.

Speeding up the planning process for gas and oil infrastructure is also not anticipated to result in effects against this objective. The appraisal indicated that there are **no overall effects** on this objective.

## Equality

**Objective:** *To encourage equality and sustainable communities.*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas reception facilities** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable effect on equality.

**Summary of Appraisal: Gas and Oil Pipelines** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable effect on equality.

*The appraisal indicated that there are **no overall effects** on this objective.*

## 10. What are the cumulative and synergistic effects of the NPS?

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects were considered in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS EN-1 which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (para 4.2.4). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3).

## 11. What are the conclusions and key findings of the appraisal?

The Energy NPSs contribute positively towards improving the vitality and competitiveness of the UK energy market. It provides greater clarity for developers, and so can help in terms of removing planning barriers associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy

infrastructure creating opportunities for skilled workers. The Energy NPSs/IPC intend to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

The development of new energy infrastructure, at the scale and speed required to meet the current need, will affect ecology as development may occur on previously undeveloped land. However the significance of these effects remain uncertain at the strategic level. Beyond this there are no significant differences identified between the existing consenting requirements ('business as usual') and what will be required under the this NPS. This NPS does not set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements.

In light of the assumptions (set out on page ix) the NPS is envisaged to have a significant positive effect at the national policy level by contributing to security of supply. The Energy NPSs do not include site or project specific information so the AoS does not attempt to be site or project specific. Energy proposals brought forward under the Energy NPSs are liable to require project level, Environmental Impact Assessment and Habitats Regulations Assessment.

## 12. How will any effects be monitored?

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>93</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Climate Change (AoS Objective 1);
- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

- Positive effects on Economy and Skills (AoS Objective 4).

And the

- Positive and negative effects on Resources and Raw Material (AoS Objective 3); and

The measures are identified in the **Table 2** (these will be reviewed in light of comments on the significance of effects).

<sup>93</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

**Table 2 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 13. What are the next steps?

The AoS Report and the consultation on it fulfil the requirements of Stage C and D of the SEA process (see **Section 1.3**). This Non-Technical Summary of the AoS Report for the Overarching NPS provides a summary of the information presented in the AoS Report, which should be referred to for more detailed information.

This AoS Report will be presented for consultation alongside the draft NPS for Gas Supply Infrastructure and Gas and Oil Pipelines from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines may be amended and revisions to the AoS may be made. A Post Adoption Statement will be produced to summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines.

## 1. INTRODUCTION

### 1.1 Purpose of this Report

This AoS Report for the **National Policy Statement (NPS) for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)** provides information on the:

- Gas Supply Infrastructure and Pipelines NPS (**Section 1.2**);
- alternatives (**Section 1.3**);
- findings of the Appraisal of Sustainability (AoS) (**Section 2**); and
- proposed measures for monitoring significant effects (**Section 3**).

This report should be read in conjunction with the AoS Report for the Overarching Energy NPS (EN-1) which provides information on the:

- suite of NPSs being prepared by DECC (**Section 2**);
- methodology (including when the AoS was undertaken and by whom) (**Section 3**);
- scope of the appraisal (**Section 3.3**); and
- approach to completing the appraisal (including the AoS objectives), assumptions and technical difficulties encountered during the appraisal (**Section 3.7**).

This AoS Report alongside the AoS for the Overarching NPS allow DECC to demonstrate compliance with the AoS requirements of the Planning Act 2008, the SEA Directive and relevant regulations.

### 1.2 The NPS for Gas Supply Infrastructure and Pipelines

The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines sets out the national policy for new Gas and Oil supply infrastructure. In combination with the Overarching NPS for Energy Infrastructure, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant gas supply infrastructure and Gas and Oil pipelines.

The Gas Supply Infrastructure and Gas and Oil Pipelines NPS has been developed via an iterative process, taking account of the ongoing appraisal of the anticipated sustainability effects. As the NPS was developed, specific topic sections were reviewed by technical specialists and recommendations made to DECC for their consideration. A record of some of these recommendations and responses to them, highlighting how the NPS was developed is provided under the topic headings in **Section 2**.

#### 1.2.1 The Content of the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines

The definition of what is a nationally significant energy infrastructure project (and hence must be submitted to the IPC) as defined in the Planning Act 2008, varies between technologies. For Gas and Oil infrastructure; nationally

significant gas supply infrastructure consists of underground gas storage facilities, LNG (liquefied natural gas) facilities, gas reception facilities and gas and oil pipelines.

The infrastructure covered by the Gas Supply Infrastructure and Gas and Oil Pipelines NPS is the nationally significant infrastructure caught by the relevant Planning Act thresholds, as follows:

- (i) Underground gas storage and LNG facilities which meet one of the following two tests:
- the storage or working capacity test: a project would pass this test if the storage design capacity on completion of the proposal is equivalent to 43 million standard cubic metres (Mcm) of gas or higher; or
  - the maximum flow rate test: a project would pass this test if it has a projected delivery flow rate capacity equivalent to 4.5 million standard cubic metres of gas per day (Mcm/d) or higher.

An alteration to underground gas storage or an LNG facility will be for the IPC to consider if it increases the working capacity or the maximum flow rate of the facility by the above volumes. Applications under this category will cover: underground gas storage in natural porous strata (depleted hydrocarbon fields, aquifers); underground gas storage in salt caverns; and, new Liquefied Natural Gas (LNG) facilities capable of receiving, storing and re-gasifying LNG.

- (ii) Gas Reception facilities with a projected maximum flow rate capacity equivalent to 4.5 million standard cubic metres of gas per day (Mcm/d) or higher (there is no capacity test).

An alteration to a Gas Reception facility will be for the IPC to consider if it increases the maximum flow rate by the above volume. Applications under this category will include gas reception facilities where gas is received in gaseous form from outside England, Scotland and Wales.

- (iii) Two categories of pipeline:
- Gas Transporter Pipelines requiring an Environmental Impact Assessment (EIA) consent either because they meet the EIA threshold or because they have a significant effect on the environment and where the design operating pressure is more than 7 bar gauge. The pipeline must convey gas for supply to at least 50,000 customers or potential customers of one or more gas supplier. Gas Transporter has the same meaning as in Part I of the Gas Act 1986 (see section 7 (1)).
  - Pipelines over 16.093 km [10 miles] long which would otherwise require consent under s.1 of the Pipe-lines Act 1962 together with diversions to nationally significant pipelines regardless of length. These pipelines are referred to in this NPS as cross-country pipelines. They could be carrying gas or oil or a chemical.

Responsibility for decision making on this infrastructure will not all fall to the IPC but will vary across England, Wales and Scotland and also between onshore and offshore. In England, the IPC will decide all applications falling under categories (i), (ii) and (iii). In Wales, the IPC will decide only applications for:

- under category (i), underground gas storage in natural porous strata by Gas Transporters; and
- under category (iii), pipe-lines over 16.093km [10 miles] long currently requiring consent under s.1 of the Pipe-lines Act 1962 together with diversions to nationally significant pipe-lines regardless of

length. The IPC will only decide the English section of a Gas Transporter pipeline which crosses into Wales.

In Scotland, under category (iii) the IPC will decide cross border Gas and Oil pipe-lines over 16.093km [10 miles] long currently requiring consent under s.1 of the Pipe-lines Act 1962 together with diversions to nationally significant pipe-lines regardless of length. This is where the pipelines have one end in England or Wales and one end in Scotland. The IPC will only decide the English section of a Gas Transporter pipeline which crosses into Scotland.

Offshore, the IPC should note that the Secretary of State for DECC will be responsible for licensing gas storage in the offshore area and LNG unloading infrastructure where the unloading is to a pipeline or installation at sea. These arrangements include a consenting regime for construction of platforms and for the conversion of geological features for gas storage purposes. The Crown Estate is responsible for leasing the sub-sea storage area or area of the sea bed and water column.

Offshore Gas and Oil pipelines consents are also the responsibility of the Secretary of State for DECC and are issued in accordance with the Petroleum Act 1998. They cover marine pipelines in controlled waters meaning the UK territorial sea (up to the Low Water Mark or a bay closure line) and any part of the sea on the UK continental shelf.

The NPS for Gas and Oil Pipelines covers impacts that are specific to this energy infrastructure and should be read in conjunction with the Overarching NPS for energy which covers the following general impacts of energy infrastructure.

**Generic Impacts detailed within EN-1**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Air emissions;</li> <li>• Biodiversity and geological conservation;</li> <li>• Civil and military aviation and defence interests;</li> <li>• Coastal change;</li> <li>• Dust, odour, artificial light, smoke and insect infestation;</li> <li>• Flood Risk;</li> <li>• Historic Environment.</li> </ul> | <ul style="list-style-type: none"> <li>• Landscape and visual impacts;</li> <li>• Land-use including open space, green infrastructure and greenbelt</li> <li>• Noise;</li> <li>• Socio-economic;</li> <li>• Traffic and transport Impacts;</li> <li>• Waste management; and</li> <li>• Water quality and resources.</li> </ul> |
|--|--|

The main impact topics where Gas and Oil infrastructure detailed in EN-4 may result in technology-specific impacts in addition to those set out in EN-1, or where there are technology-specific considerations about impacts which are covered in EN-1 are:

Impacts detailed within EN-4	
Underground Natural Gas Storage	LNG Import Facilities
<ul style="list-style-type: none"> <li>• Disposal of brine</li> <li>• Noise and vibration,</li> <li>• Water quality and resources</li> </ul>	<ul style="list-style-type: none"> <li>• Dredging</li> <li>• Landscape and Visual</li> <li>• Noise and Vibration</li> </ul>
Gas Reception Facilities	Gas and Oil Pipelines
<ul style="list-style-type: none"> <li>• Noise and Vibration</li> </ul>	<ul style="list-style-type: none"> <li>• Landscape and Visual</li> <li>• Noise and Vibration</li> <li>• Soil Geology</li> <li>• Water quality and Resources</li> </ul>

### 1.3 Reasonable Alternatives

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or



4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What 'No NPS' means:** Government does not draft or designate an NPS for energy infrastructure. This is the "business as usual" scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1.1** with reasons for them not being included with the NPS identified by DECC.

**Table 1.1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p><b>Gas Supply Infrastructure:</b> The NPS should specify exact locations where gas supply infrastructure should be sited.</p>	<p>The NPS makes clear that there is a need for increased import and storage of natural gas. It does not, however, aim to calculate the precise volumes needed or the proportion and mix of storage and import infrastructure which will need to be deployed. There are a number of ways in which the market could deploy existing and evolving technology to meet the need for gas and sites for the infrastructure will need to be tested and explored. A combination of short range and medium range underground storage options are likely to be needed as well as long range storage options which could provide endurance. Industry is in the best place to explore the feasibility of these options. As a more diverse gas supply market becomes established, further options will need to be continuously reassessed.</p> <p>It is therefore unreasonable for the NPS to specify exact locations where gas supply infrastructure should be sited.</p>
<p><b>Pipelines:</b> The NPS should specify exact location where pipelines should be sited.</p>	<p>The case for new gas and oil pipelines will be linked to the need to connect up new infrastructure, or to reinforce transmission pipelines to reflect changing requirements for the flow of gas or oil due to new import and storage arrangements. . It would not be feasible to set out these requirements in advance of the siting of new infrastructure. The aim should be to ensure that the siting of new gas pipelines should be designed in to new infrastructure plans as early as possible so that full consideration can be given to the routing rather than the siting of gas and oil pipelines</p> <p>It would be unreasonable therefore to specify pipeline routes that would necessarily constrain development of gas and oil infrastructure.</p>

## 2. APPRAISAL AND REPORTING

### 2.1 Topic Based Approach

This section presents a summary of the appraisal of the Gas Supply Infrastructure and Gas and Oil Pipelines NPS (EN-4) against the 14 AoS objectives (which were identified in the Scoping Report). The appraisal compared the existing ‘business as usual’ scenario (see **Annex F** of the Overarching AoS Report) with what would be achieved under the NPS.

Entec provided on-going commentary on the sustainability effects of the emerging NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### 2.1.1 Summary of Appraisal

**Table 2.1** summarises the appraisal of the EN-4.

**Table 2.1 Summary of the appraisal of EN-4**

AoS Objective	Assessment	Comment
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	?	EN-4 sets out specific detail on resilience to climate change on top of the generic mitigation outlined in EN-1 which will result in a significant positive score against climate change resilience. The NPS in combination with Overarching NPS EN-1 will significantly improve the speed of the application determination process and as such will result in gas and oil infrastructure coming forward more quickly. However, it is not clear the effect that this will have against the climate change objective. As a consequence, the overall effect of improving storage and infrastructure for their delivery is assessed as uncertain.
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	?	There is the potential for projects consented under by the IPC to have ecological effects; however, at the strategic level the effects on ecology from the energy infrastructure are uncertain due to the lack of specificity of sites and potential locations of proposed plant.
<b>3. Material Assets and Resources Use:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy	+ / -	The speeding up of the delivery of gas and oil infrastructure could be considered to have a positive effect against the delivery of secure and affordable energy part of the objective. However, speeding up the construction of import and storage facilities as fossil fuel use would not score positively against the promotion of sustainable use of resources and natural assets. It is therefore considered that there will be both positive and negative effects against this objective.
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	+	This NPS is anticipated to have short term positive effects against local economies due to the added requirements on goods and services. The security provided by a swifter planning system will have a positive effect on both energy suppliers and industry users.
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to

AoS Objective	Assessment	Comment
and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.		flood risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>6. Water Quality:</b> To protect and enhance surface (including costal) and groundwater quality (including distribution and flow).	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to traffic and transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape townscape and visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and cultural heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Soil and Geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.
<b>14. Equality:</b> To encourage equality and sustainable communities.	0	EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to

AoS Objective		Assessment	Comment	
			equality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-4 is considered not to be significant against this objective.	
Score Key	Significant (Major) Positive ++	Significant (major) negative --	no overall effects <b>0</b>	Uncertain ?
	Minor Positive +	Minor Negative -		

The following provides more detailed information on the findings of the assessment.

### 2.1.2 Climate Change

**Objective:** *To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.*

Climate change resilience is an important consideration for the LNG facilities and gas reception facilities as this infrastructure will be marine or coastal in location where the anticipated effects of climate change will be most keenly felt. As such, EN-4 provides guidance for applicants with proposals relevant to the infrastructure covered by EN-4 such as increase in the risk of flooding, damage from the effects of wind, higher temperatures and earth movement or subsidence. The importance of considering the effects of climate change in relation to this infrastructure is important in maximising resilience to climate change. Ensuring that these issues are robustly addressed at the planning stage helps EN-4 to score positively against climate change.

The NPS in combination with Overarching NPS EN-1 will significantly improve the speed of the application determination process and as such will result in gas and oil supply infrastructure coming forward more quickly. It is unclear what the effects of this will be against the climate change objective as a secure supply of gas and oil could be seen to promote cleaner gas power stations over more polluting coal power stations. However, it could also be seen to promote supply of aviation fuel, road vehicle fuel and domestic fuel, all of which contribute significantly to national greenhouse gas levels.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas reception facilities/Gas and Oil Pipelines** – In addition to the mitigation measures outlines in EN-1, EN-4 requires applicants to set out specific detail on resilience to climate change which will result in a significant positive score against climate change resilience. The IPC/NPS system will result in the speeding up of applications. However, it is not clear the effect that this will have against the climate change objective. In consequence, the overall effect of improving storage and infrastructure for their delivery is assessed as uncertain.

*The appraisal indicated that the effects against this objective will be **uncertain**.*

### 2.1.3 Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures which will apply to the ecological effects of infrastructure outlined in EN-4. EN-4 presents the guidance for the IPC in appraising applications for gas supply infrastructure and gas and oil pipelines. Only LNG import facilities are recognised as having the potential for specific ecological effects which are not addressed by EN-1.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** – As LNG facilities will often be in coastal and estuarine locations which will often require dredging, EN-4 includes detail on how to consider effects on local marine and estuarine environments. EN-4 goes on to suggest that applicants propose mitigation measures to address the effects of dredging. It is not clear that this will ensure that there will be no overall effects on marine ecosystems though the NPS does require the application of best practice for all applications.

The effects related to the disposal of brine from salt cavern gas storage facilities on ecological receptors is not explored in the 2.10.3 ‘Disposal of brine’ impacts section; however, reference is made to the requirement for environmental permits and discharge consents from the Environment Agency which should ensure that effects are no different from those experienced under the current system.

**Summary of Appraisal: *Gas and Oil Pipelines*** No specific effects associated with pipelines are set out in the NPS, and the IPC is directed to the generic issues set out in EN-1 with regard to the potential effect on ecology of the proposed energy infrastructure. It is felt that the inclusion of details such as those provided on landscape features could be useful here; the fragmentation of habitat by linear features, even in a temporary sense could result in significant effects on ecological resources. For example the removal of hedgerow for several miles is thought to fragment the habitat of some species (e.g. dormice and some bat species); this could be mitigated through the inclusion of appropriate mitigation techniques<sup>94,95</sup>.

In accordance with the requirements of Article 6 of the Habitats Directive (92/43/EEC) in which a plan or project is likely to have a significant impact on a protected site, DECC have completed a screening assessment of the effects of the NPSs on European designated sites. The conclusion of the assessment was that the effects on ecology from the energy infrastructure are uncertain. Given the conclusion of the screening assessment, it is also considered that there will be uncertain effects on ecology as a result of EN-4 in conjunction with EN-1,

*The appraisal indicated that effects against this objective are **uncertain**.*

#### 2.1.4 Material Assets and Resource Use

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.*

EN-4 does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since the infrastructure outlined in EN- 4 are not anticipated to generate notable volumes of waste. The exception to this is

<sup>94</sup> *Natural England (1996) Dormouse conservation handbook.*

<sup>95</sup> *National Grid (2007) Barton Stacey to Lockerly ES.*



the disposal of brine in the creation of new underground gas storage facilities in salt caverns. Here a clear waste hierarchy is detailed which will help to mitigate the effects associated with the disposal of brine.

The speeding up of the delivery of gas and oil infrastructure could be considered to have a positive effect against the delivery of secure and affordable energy part of the objective. However, both gas and oil are fossil fuels and because gas is considered to be *cleaner* than oil and even cleaner than coal speeding up the delivery of gas supply infrastructure will allow the UK to take advantage of the best and cleanest fossil fuel whilst cleaner and low carbon technologies are being developed. Speeding up the construction of import and storage facilities as fossil fuel use would not score positively against the promotion of sustainable use of resources and natural assets. It is therefore considered that there will be both positive and negative effects against this objective.

*The appraisal indicated that effects against this objective are positive and negative.*

### 2.1.5 Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all.*

EN-4 provides guidance for the IPC in reaching a planning decision for gas supply infrastructure and gas and oil pipelines. It is anticipated that the introduction of the new planning system for major infrastructure, which is outlined in the NPSs, will speed up the planning process. It is anticipated that increasing the speed of delivery of these projects will have localised positive effects against employment, and subsequently the economy particularly in areas where new LNG facilities and gas reception facilities are proposed.

The additional security provided by projects being completed faster will have direct positive effects on energy and industry. More certainty about the delivery of gas and oil will allow more accurate judgements to be made and longer term planning.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, gas reception facilities and Gas and Oil pipelines** – This NPS is anticipated to have short term positive effects against local economies due to the added requirements on goods and services. The security provided by a swifter planning system will have a positive effect on both energy suppliers and industry users.

*The appraisal indicated that there will be **significant positive effects** on this objective.*

### 2.1.6 Flood Risk

**Objective:** *To avoid an increase in flood risk (including coastal flood risk) and to avoid siting flood sensitive infrastructure in areas of high flood risk.*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas reception facilities** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable impact on flood risk. Under climate change impacts, the NPS notes that LNG and Gas reception facilities are likely to be in coastal locations and the flood risk assessment will need to take account of resilience to climate change.



EN-4 does not set out any specific requirements or identify any specific impacts relating to flood risk although it is recognised that LNG and gas reception facilities are likely to be proposed for coastal or estuarine sites. Generic guidance on flood risk is contained within EN-1 which sets out that the approach the IPC will take to assessing whether any application that comes forward is permissible in terms of flood risk will be in accordance with the principles of *Planning Policy Statement (PPS) 25: Development and Flood Risk*. This will seek to ensure that proposed development does not result in increased flood risk, that it would be safe from flooding given the prevailing flood risk and where possible reduces flood risk overall.

Notwithstanding these requirements there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.22) that *'the IPC may grant consent if it is satisfied that the increase in flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...'*. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

EN-4 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to flood risk, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

## 2.1.7 Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas reception facilities** – In addition to the generic effects considered within EN-1, EN-4 considers effects from the construction of an underground gas storage facility in a salt dome which has high demand on water and will also result a requirement to dispose of brine.

**Mitigation:** The NPS recommends measures to control the abstraction of water, given in abstraction licences and environmental permits through the Environment Agency. Similarly, for the disposal of brine water EN-4 requires that the IPC should refuse consent if it has good reason to believe that the Environment Agency will not approve the disposal arrangements. Consequently, the NPS is not considered to have a significant effect.

**Summary of Appraisal: Gas and Oil Pipelines.** EN-4 considers the addition effects arising from the construction of pipelines, which create corridors of surface clearance and excavation with potential effects on water courses. Aquifers, water abstraction, discharge points and areas prone to flooding.

**Mitigation:** EN-4 recommends that the IPC secure appropriate mitigation measures (such as working methods to prevent spillage of fuels, as well as achieve acceptable residual impacts on water quality and resources using techniques for crossing rivers, managing surface water after construction, including restoring vegetation in order to

control run off) be included in the planning application. In combination with the generic guidance included in EN-1 it is not considered that the NPS will have any significant effect.

*The appraisal indicated that there are **no overall effects** on this objective.*

### 2.1.8 Traffic and Transport

**Objective:** *To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.*

Generic traffic and transport effects are explored in EN-1. Specific safety considerations associated with the transport of Gas and Oil are regulated by the Control of Major Accident Hazards (COMAH) Regulations 1999 and are enforced jointly through the HSE and Environment Agency. Detail on the applicant's assessment of these effects is discussed in more detail under the health and well-being objective.

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore gas storage and reception facilities are not anticipated to create a notable impact on traffic and transport. However, it is felt, with reference to LNG facilities shipping issues should be adequately addressed within EN-4.

**Summary of Appraisal: *Gas and Oil Pipelines*** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable impact on traffic and transport, particularly post construction.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

#### **Traffic and Transport:** Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation: 7.1:** With reference to LNG facilities, DECC to consider effects of increased tanker shipments on marine transport, with particular reference to safety

**Response: 7.1:** DECC agrees that the safety of shipping and navigation is an important issue for all shipping, especially LNG tanker shipments. The existing legal framework and its enforcement will ensure that LNG tanker shipments are safely regulated. The Safety of Life at Sea Convention (SOLAS) governs the requirements for safe navigation between ports. Chapters 4 and 5 cover the carriage requirements of navigation and communications equipment, nautical charts and publications, and the planning and execution of the passage, port to port. The carriage requirements vary between ship sizes and classes, but for all intents and purposes LNG ships (because of their size) will face the strictest carriage requirements of any cargo ship. These are variously inspected, surveyed and certified by the Flag Maritime Administration or a Recognised Organisation acting on their behalf. A proportion of foreign Flag vessels entering UK ports are subject to Port State Control.

At sea, LNG tankers have to obey all the normal traffic reporting and routing rules and procedures as well as COLREGs (collision regulations).

There are special rules regarding port operations for LNG vessels, with detailed procedures set out port by port in each Port Safety

**Traffic and Transport:** Key recommendation(s) emerging from the appraisal and how DECC responded

Management System.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.9 Noise

**Objective:** *To protect both humans and ecological receptors from disturbing levels of noise.*

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** – EN-4 recognises that the construction of underground gas storage facilities including the drilling of new boreholes, solution mining and operational noise from pumps, compressors and drivers can potentially give rise to high noise levels. Gas Reception Facilities also may have noise impacts from operation of motors, compressors and equipments such as heaters and inter-stage coolers. LNG Reception Facilities also have noise from their process plant, compressors and LNG pumps.

**Mitigation:** To minimise the noise, the NPS recommends the use of typical noise mitigation measures such as high performance acoustic cladding for buildings, the use of sound attenuators on ventilation systems, acoustic lagging on pipe work. With this mitigation in place, it is anticipated that there will be no overall effects against this objective for underground gas storage, LNG facilities and gas reception facilities.

**Summary of Appraisal: *Gas and Oil Pipelines*** - EN-4 recognises that the construction and routing of pipelines is likely to create some noise impacts.

**Mitigation:** To minimise the impacts, the NPS requires the IPC to ensure pipelines avoid areas of human habitation or other noise sensitive sites, and identify all noise sensitive sites within a 300m corridor either side of the pipeline. Mitigation is proposed for the effects of construction noise; though given the temporary nature of construction it is not anticipated that there would be any significant effects.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.10 Landscape, Townscape and Visual Effects

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** In addition to the requirements of EN-1, the NPS recognises that there are specific issues relating to LNG import facilities.

**Mitigation** The NPS suggests that LNG facilities can be reduced in scale or counter sunk or use squat tanks to minimise visual impacts so far as is possible. It is not clear that the proposed mitigation will be practical in all events but it is anticipated that the consideration of methods to reduce the visual impacts of LNG facilities could help to reduce the residual landscape effects of development.

**Summary of Appraisal: Gas and Oil Pipelines** – In addition to the requirements set out in EN-1, the NPS recognises that pipelines have potential to have a temporary and permanent impact on landscape.

**Mitigation:** The proposed route should avoid any impact on protected landscapes such as AONBs or National Parks except in exceptional circumstances. The mitigation outlined in EN-4 relating to pipelines is currently applied to pipelines in areas of sensitive landscape and as such its inclusion in EN-4 is welcome.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.11 Archaeology and Cultural Heritage

**Objective:** *Protect and where possible enhance the historic environment including heritage resources, historic buildings and archaeological features.*

Increasing the speed at which planning applications are processed is not anticipated to alter the effects of gas and oil infrastructure on archaeology and cultural heritage resources. No specific guidance on the assessment, appraisal or mitigation of effects on archaeology and cultural heritage within EN-4 other than the inclusion of detail about the protection of hedgerows under the landscape effects of pipelines (the Hedgerow regulations consider a hedgerow 'important' based on a number of criteria one of which are 'ancient'). This is considered to be current best practice and is not anticipated to result in any significant effects against this objective.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1.

**Summary of Appraisal: Gas and Oil Pipelines** - The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.12 Air Quality

**Objective:** *To Protect and enhance air quality on local, regional, national and international scale.*

Increasing the speed at which applications are processed is anticipated to speed up the delivery of gas and oil infrastructure projects. This is expected to provide a more secure supply of gas and oil in the UK. As such there could be an increase in gas power stations coming forward which, depending on market conditions could be in place of more or less polluting alternatives.

**Summary of Appraisal: Underground Gas Storage, LNG facilities, and gas receptions facilities** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 .

**Summary of Appraisal: Gas and Oil Pipelines** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable impact on air quality.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.13 Soil and Geology

**Objective:** *To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.*

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore Gas storage and reception facilities are not anticipated to create a notable effect on soil and geology.

**Summary of Appraisal: *Gas and Oil Pipelines*:** In addition to the requirements set out in EN-1, the NPS recognises that pipelines can be installed within a variety of geological conditions.

**Mitigation:** The NPS advises that provided the proposed development adequately mitigates any adverse impact on geology and soils, this is not likely to be an issue which causes the IPC to refuse an application.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.14 Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population and enhance the physical and mental health of the population.*

Gas infrastructure is governed by the Control of Major Accident Hazards (COMAH) Regulations 1999, section 2.4 of EN-4 addresses the requirements for applicants and the IPC to consult with the HSE and Environment Agency in relation to COMAH. As such it is anticipated that there will be no overall effects against this objective.

Speeding up the planning process for gas and oil infrastructure is also not anticipated to result in effects against this objective.

*The appraisal indicated that there are **no overall effects** on this objective.*

#### 2.1.15 Equality

**Objective:** *To encourage equality and sustainable communities.*

**Summary of Appraisal: *Underground Gas Storage, LNG facilities, and gas reception facilities*** – The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 since onshore gas storage and reception facilities are not anticipated to create a notable effect on equality.

**Summary of Appraisal: *Gas and Oil Pipelines*** The NPS does not set out any specific requirements for the IPC to consider beyond those identified in EN-1 as pipelines are not anticipated to create a notable effect on equality.

It is clear that the availability of energy (including gas) has a positive impact on equality, for example, shortage of supply increases prices and increases the number of people in fuel poverty. Secure supplies make energy more affordable.

*The appraisal indicated that there are **no overall effects** on this objective.*

## 2.2 Cumulative Effects

The SEA Directive, and its implementing regulations in the UK, requires the consideration of cumulative and synergistic effects as part of the appraisal. Cumulative effects were considered (where appropriate) in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that ‘the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place’ (para 4.2.4). To support this, the NPS states that ‘the Environmental Statement should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)’ (para 4.2.3).

## 2.3 Mitigation Measures

Mitigation measures were considered during and the iterative process of developing the NPS. Examples of how these were avoided or mitigated are identified in the recommendations (identified in Section 2.1). Entec considers that the generic mitigation measures identified in the NPS are appropriate to the generic impacts identified.

### 3 Conclusion

#### 3.1 Key Findings Arising From the Appraisal of Sustainability

The NPS, in conjunction with EN-1, is likely to improve business and investor confidence in energy infrastructure projects. However, beyond this there are no significant differences between existing consenting requirements and what will be required under the IPC/NPS system. EN-4 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, the NPS is not envisaged to have any significant effects at the national policy level when compared to the existing planning controls. However, at the individual project level there is the potential for significant effects depending on the nature of the infrastructure development that comes forward for determination by the IPC.

#### 3.2 Monitoring

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>96</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Climate Change (AoS Objective 1);
- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

- Positive effects on Economy and Skills (AoS Objective 4).

And the

- Positive and negative effects on Resources and Raw Material (AoS Objective 3); and

The measures are identified in the **Table 3.1** (these will be reviewed in light of comments on the significance of effects).

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<sup>96</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).



**Table 3.1 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 3.3 Quality Assurance

The Government's guidance on SEA contains a quality assurance checklist to help ensure that the requirements of the SEA Directive are met. This has been completed and is presented in **Annex A**.

# Annex A

## Quality Assurance Checklist

The Government's Guidance on SEA<sup>97</sup> 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	
<b>Objectives and Context</b>	
The plan's purpose and objectives are made clear.	<b>Section 1</b> of this AoS Report and <b>Section 2</b> of the AoS Report for EN-1.
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in <b>Annex B</b> and <b>Annex F</b> .
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	<b>Section 3.4</b> of the AoS Report for EN-1 presents the AoS objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	<b>Annex F</b> identifies a number of relevant plans and programmes.
<b>Scoping</b>	
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 13 <sup>th</sup> February 2009 to 23 <sup>rd</sup> 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 <b>Annex F</b> .
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the <b>Scoping Report</b> where appropriate, and are presented in <b>Section 3.7</b> and <b>Section 3.8</b> of the AoS Report for EN-1.
Reasons are given for eliminating issues from further consideration.	These are stated in the <b>Scoping Report</b> as appropriate and in <b>Section 2.5</b> .
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in <b>Section 2.5</b> of the AoS Report for EN-1. Technology-specific alternatives are presented in <b>Section 1.3</b> of this AoS Report.
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in <b>Section 1.3</b> of this AoS Report.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to <b>Section 2.5</b> .

<sup>97</sup> ODPM, *Scottish Executive, Welsh Assembly Government, DoENI (2005) A Practical Guide to the Strategic Environmental Assessment Directive*, ODPM, London.

Quality Assurance Checklist	
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to <b>Section 2.5</b> and the review of policies, plans and programmes in <b>Annex F</b> .
Reasons are given for selection or elimination of alternatives.	These are presented in <b>Section 2.5</b> .
Baseline Information	
Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	This is set out in <b>Annex F</b> .
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.	Refer to <b>Annex F</b> .
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 <b>Annex F</b> and <b>Section 2.2</b> of this AoS Report.
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 <b>Section 2.2</b> of this AoS Report and in <b>Annex F</b> .
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to <b>Section 2.3</b> of this AoS Report.
Inter-relationships between effects are considered where practicable.	Refer to <b>Section 2.2</b> of this AoS Report.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in <b>Annex F</b> .
Methods used to evaluate the effects are described.	These are described in <b>Section 3.6</b> of the AoS Report of EN-1.
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 <b>Section 2.2</b> .
Issues to be taken into account in project consents are identified.	These are considered in <b>Section 2.2</b> .
Environmental Report	
Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in <b>Section 1</b> .
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in <b>Annex A</b> 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 <b>Section 3</b> of the AoS Report of EN-1.
Explains who was consulted and what methods of consultation were used.	This is covered in <b>Section 1.5</b> of the AoS Report of EN-1.
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in <b>Section 3</b> , <b>Section 4</b> and <b>Annex F</b> of the AoS Report of EN-1.

### Quality Assurance Checklist

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 at the front of the AoS Report.
<b>Consultation</b>	
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 is 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.
<b>Decision-making and Information on the Decision</b>	
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).
<b>Monitoring Measures</b>	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect).	These are presented in <b>Section 5.2</b> of the AoS Report of EN-1 and in <b>Section 3.1</b> .
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).

# Planning For New Energy Infrastructure

Appraisal of Sustainability for the draft National Policy Statement for Electricity Networks Infrastructure

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## Non Technical Summary

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This document is the **Non-Technical Summary** of the **Appraisal of Sustainability** (AoS) Report produced as part of the appraisal undertaken to inform the **National Policy Statement (NPS) for Electricity Network Infrastructure** (also referred to as EN-5).

The following sections explain what the NPS for Electricity Network Infrastructure is, provide an outline of its content and describes the relationship of the NPS to the Overarching NPS and to the other technology-specific NPSs. An outline of the AoS process and the role of the AoS Report in this process is described on page iii. The findings and recommendations arising from the AoS are presented on page xi.

For more information on this public consultation and how to give us your views, please see the Consultation Document on the draft NPSs for energy.

## 1. What are the National Policy Statements for Energy Infrastructure?

The Planning Act 2008 changes the way in which nationally important planning decisions are made. It has established a new Infrastructure Planning Commission (IPC) to take planning decisions on nationally significant infrastructure. The IPC replaces the current process in which the decisions are taken by the Secretary of State from the appropriate Government Department. The IPC will determine planning applications on nationally significant infrastructure projects using planning policy and guidance set out within National Policy Statements (NPSs) for the infrastructure from the transport, energy, waste, and water sectors. Government Departments are responsible for preparing each of the NPSs. The Department of Energy and Climate Change (DECC) are responsible for preparing those related to energy infrastructure projects. These are:

- Overarching NPS for Energy (EN-1);
- Fossil Fuel Electricity Generating Infrastructure (EN-2);
- Renewable Energy Infrastructure (EN-3);
- Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4);
- Electricity Network Infrastructure (EN-5); and
- Nuclear Power Generation (EN-6).

Under the Act, the IPC will examine applications and make decisions on the following nationally significant energy development:

- Electricity generating stations generating more than 50 megawatts onshore and 100 megawatts offshore. This includes electricity generation from fossil fuels, renewables and nuclear power stations. For these types of infrastructure, the Overarching NPS (EN-1) in conjunction with the relevant technology-specific NPSs will be the primary basis for IPC decision making.
- Electricity lines at or above 132kV. For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for IPC decision making.
- Large gas reception and Liquefied Natural Gas facilities and underground gas storage facilities (above limits set out in EN-4 and the Planning Act). For this infrastructure, EN-1 in conjunction with the gas supply infrastructure and pipelines NPS (EN-4) will be the primary basis for IPC decision making.
- Cross country oil and gas pipelines at or above the threshold of 16.093 kilometres/10 miles in length and certain licensed gas transporter pipelines (see EN-4 for all pipeline thresholds). For this infrastructure, EN-1 in conjunction with EN-4 will be the primary basis for IPC decision making.



NPSs collectively present a summary of government energy and climate policy, the national need for energy infrastructure and guidance to the IPC on how to assess the likely impacts of energy infrastructure. The Nuclear NPS is different in that it also assesses the potential suitability of sites for new nuclear stations and it is the subject of a separate AoS which has assessed those parts of the Overarching NPS which apply to nuclear stations.

## 2. What is the NPS for Electricity Network Infrastructure (EN-5)?

The NPS for Electricity Network Infrastructure sets out the national policy for new electricity network infrastructure. In combination with the Overarching NPS and the additional technology-specific NPSs, it will be used to provide the primary basis for decisions made by the IPC regarding the granting of development consent for nationally significant energy infrastructure.

Developers will need to ensure that their applications for development consent are consistent with the requirements of relevant NPSs, as the IPC must decide the application in accordance with their content except in the circumstances set out in Section 104 of the Planning Act 2008.

The NPS for Electricity Network Infrastructure is issued by the Secretary of State for DECC. It applies to decisions for overhead electricity lines of 132kv and above and associated electricity network infrastructure (as described in Part 1 of the NPS) in England and Wales. The NPS for Electricity Network Infrastructure will remain in force in its 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 it remains appropriate for IPC decision making.

## 3. What is an Appraisal of Sustainability (AoS)?

The Planning Act 2008 requires that ‘an appraisal of the sustainability of the policy set out in the statement’ is carried out. Section 5(5)e of the Planning Act explains what the policy set out in statement may, in particular, contain<sup>98</sup>. It may:

- Set out, in relation to energy infrastructure, the amount, type or size of development which is appropriate nationally or for a specified area [Section 5(5)(a) of the Act]
- Set out criteria to be applied in deciding whether a location is suitable (or potentially suitable) for specified energy technologies [Section 5(5)(b) of the Act];
- Set out the relative weight to be given to specific criteria [Section 5(5)(c) of the Act];
- Identify locations which are potentially suitable or unsuitable for specified energy technologies [Section 5(5)(d) of the Act]; and
- Set out circumstances in which it is appropriate for a specified type of action to be taken to mitigate the impact of specified energy technologies [Section 5(5)(f) of the Act].

Section 5(5)(e) of the Planning Act states that a National Policy Statement may identify one or more statutory undertakers as appropriate persons to carry out a specified description of development. Given that energy is delivered through a liberalised market, limiting energy developers would restrict competition and contravene the market approach to energy development.

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<sup>98</sup> Section 5(5) of the Planning Act. Available at [http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080029\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080029_en.pdf) (Accessed 23/09/09)

The AoS of the NPS for Electricity Network Infrastructure has been undertaken in a manner that incorporates the requirements of the European Directive on Strategic Environmental Assessment (SEA) (2001/42/EC) and the transposing UK Regulations<sup>99</sup>.

SEA is a statutory requirement following the adoption of European Community Directive 2001/42/EC which was transposed into UK legislation on the 20th July 2004 as Statutory Instrument No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004. The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

In addition to assessing the environmental effects required by the SEA Directive, the aim of the AoS is to identify, describe and evaluate the likely significant social and economic effects of implementing the NPS. Each AoS has been carried out at the same time as the development of the NPS and has therefore helped to inform that NPS. The NPS contains potential measures to mitigate significant adverse effects. All the NPSs (EN-1 to EN-6) have been subjected to an AoS<sup>100</sup>.

An overview of the key stages of the AoS process is presented below.

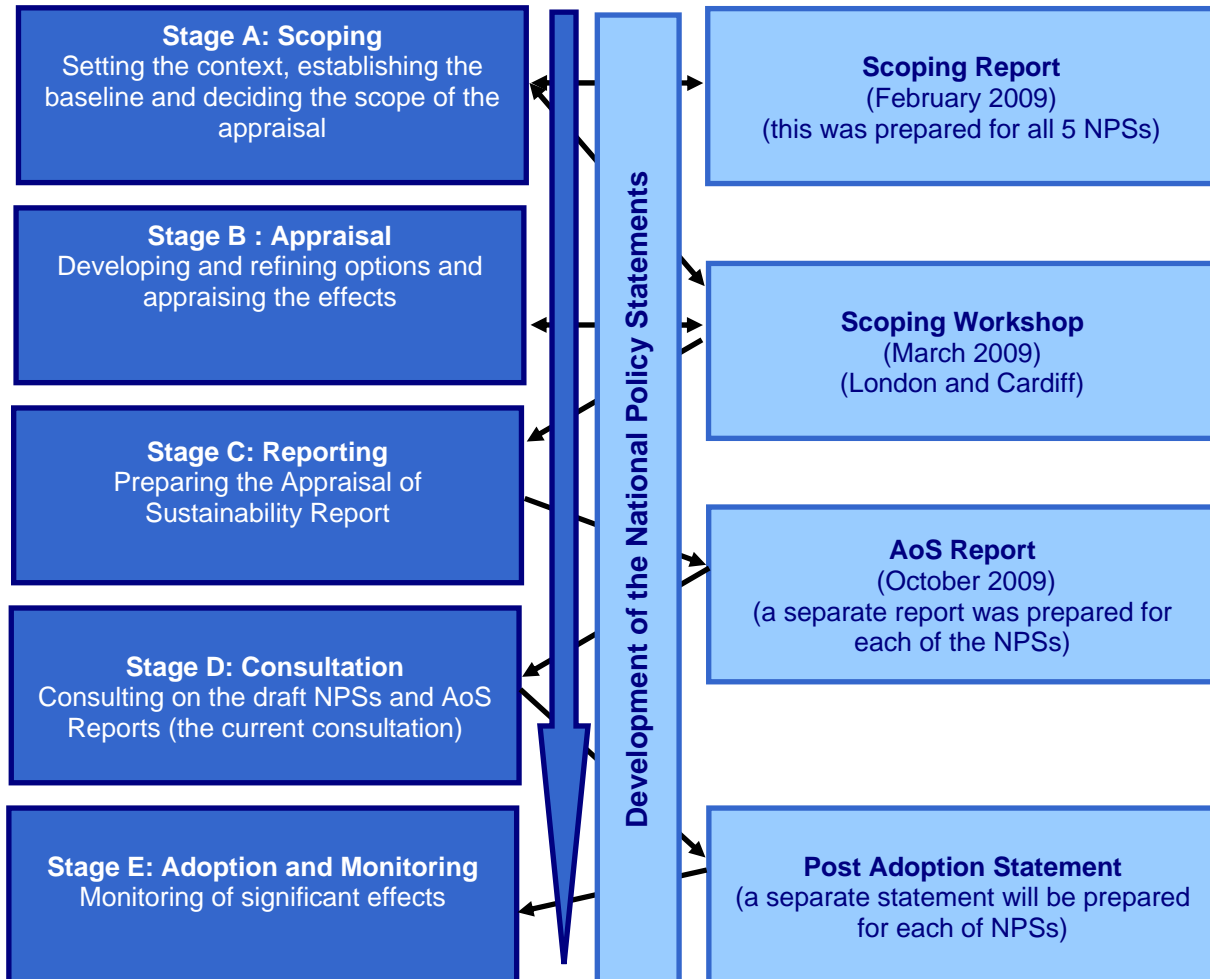
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<sup>99</sup> *The Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633). Note: Note: These Regulations apply when the plan or programme applies to England and any other part of the UK.*

<sup>100</sup> *In addition to the work on the NPSs (including their AoS), DECC has also completed an SEA for Offshore Energy, is undertaking a feasibility study for tidal range power in the River Severn, which includes an SEA, and is beginning a feasibility study for wave and tidal projects around English and Welsh territorial waters.*

## Appraisal Process

## Key Outputs



The AoS process began in early 2009 and reflects national guidance on SEA practice<sup>101</sup>. A Scoping Report (Stage A) was consulted on by statutory consultees in February and March 2009. A summary of the results of this consultation are presented in **Annex C** of the Overarching Energy AoS Report and the consultees' responses have been considered within that AoS and also within the AoS for the NPS for Electricity Network Infrastructure. From March through to September options were developed and refined and the effects of the NPSs were appraised (Stage B). The AoS Reports were prepared during this time (Stage C) before being consulted on (Stage D, the current consultation). Stage E, the final stage will involve setting the measures for monitoring significant impacts.

<sup>101</sup> ODPM (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

#### 4. What relationship does the NPS for Electricity Networks Infrastructure have with other policies plans and programmes?

The AoS reviewed other relevant policies, plans, and programmes that could influence the NPS for Electricity Network Infrastructure, to identify how the NPS could be affected by the other policies, or how it could contribute to, or hinder, the achievement of any environmental or sustainability targets set out in these policies. The review also helped to support the completion of the social, economic and environmental baseline and aid the determination of the key issues. The full review is provided in **Annex B** of the Overarching Energy AoS Report.

The NPS for Electricity Network Infrastructure reflects European and International requirements where these are set out in legislation (for example, the UK Climate Change Act and other government agreements on climate change being key influences on the development of the NPSs).

#### 5. Which sustainability topics has the NPS for Electricity Networks been appraised against?

EN-5 has been appraised against 14 topic areas. All of the topics identified in the Scoping Report were ‘scoped in’ (i.e. considered to be relevant to the appraisal<sup>102</sup>). The topics are identified below and are linked with the AoS Objectives identified in **Table 2** (page x).

1. Climate Change	6. Water Quality & Resources	11. Air Quality
2. Ecology (Flora and Fauna)	7. Traffic and Transport	12. Soil and Geology
3. Resources and Raw Materials	8. Noise	13. Health and Well-Being
4. Economy and Skills	9. Landscape, Townscape and Visual	14. Equality
5. Flood Risk	10. Archaeology and Cultural Heritage	

The baseline is common to all of the non-nuclear NPSs (EN-1 –EN-5). To avoid repetition, the baseline material is presented in **Annex F** of the Overarching AoS Report and referenced in each of the non-nuclear AoS reports (EN-2 to EN-5).

#### 6. What reasonable alternatives for implementing the NPS for Electricity Network Infrastructure were identified and appraised?

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

<sup>102</sup> Following consultation on the Scoping Report, *noise* and *landscape features* were scoped back into the appraisal (i.e. they were originally anticipated not to be relevant to a high-level appraisal but following comments this was reconsidered and they were included).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments; or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1** with reasons for them not being included with the NPS identified by DECC.

**Table 1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
The NPS should specify exact locations where electricity networks should be sited; in particular, this should follow the ENSG map.	<p>The ENSG map is based on a range of possible scenarios for transmission reinforcement and not a complete survey of the network requirements in England and Wales. It would not therefore be reasonable to specify sites or routes for electricity networks based on the map. The map also only indicates very broad corridors for these potential reinforcements, which would lead to unnecessary planning blight for large swathes of the countryside. Further, the sites for electricity generating stations are not specified in the NPSs for non-nuclear generation.</p> <p>It would therefore be unreasonable to specify network routes and sites that would necessarily constrain development of electricity generating stations.</p>

## 7. What aspects of the draft NPSs were appraised?

Projects consented under the IPC/NPS process will clearly have a number of direct, indirect and cumulative effects. The AoS identifies and assesses those effects arising as a result of the NPS and this is considered against the baseline (i.e. what's happening now and what's likely to happen in the future). In this way the appraisal assesses the effects of the differences between the current consenting regime ('business as usual') and the IPC/NPS process.

The likely effects of the NPS have been considered across a range of geographic scales (including UK, regional and local). However, with the exception of the Nuclear Power Generation NPS, the Energy NPSs do not prescribe the location for new infrastructure projects and there are limitations in terms of how far appraising effects at a non-spatially specific level can be taken. This is not to exclude the possibility that the effects could be significant; rather, that it will often only be possible to judge whether such effects are significant at the project level.

It is anticipated that relevant receptors and the assessment of project-level effects will be given full consideration at the project level, through for example Environmental Impact Assessment (EIA), Habitats Regulations Assessment (HRA) and other statutory and non-statutory assessments.

The following assumptions have then been used to aid the understanding of the influence of the NPS on the outcome of planning decisions. It is intended that the IPC/NPS process:

- Will help to ensure that decisions are taken consistently, and will increase certainty (and efficiency) for investors.
- Will add greater certainty to the delivery of nationally significant energy infrastructure by making the guidance on decision-making clearer and more transparent.
- Will lead to faster decisions which may lead to more projects being built in the short-term. Faster decisions will improve the UK's security of supply. The guidance to the IPC on the overall level of need for energy infrastructure is relevant in terms of the IPC's understanding of the scale of need when considering individual applications.
- Will not have a significant effect on the proportion or type of energy generating facilities being submitted for consent – i.e. the NPSs focus on the factors that are considered during the decision making process for applications. They do not determine how many applications or the types of applications submitted – this is left to the market to decide or is influenced by Government policy delivered through other means to ensure new infrastructure is available quickly enough to meet demand.
- The Government will monitor the infrastructure to ensure that goals are being achieved and, if necessary, alter the signals it gives to the market to drive development.

These effects have then been used as the basis to assess the implications of the NPS for future planning decisions. The AoS focuses on the material differences to sustainability against the existing planning system for energy infrastructure.

## 8. What approach was taken to the appraisal?

The appraisal of the NPS for Electricity Network Infrastructure has been undertaken using an objectives-led approach. The baseline information, the review of plans and programmes and the key issues identified were used to develop 14 AoS objectives (presented in **Table 2**). Each objective is supported by a series of guide questions (presented in **Section 3.4** of the AoS for EN-1). The AoS objectives cover all of the topics that the appraisal is required to include information on (as set out in the SEA Directive).

The NPS for Electricity Network Infrastructure has been appraised in terms of the extent to which it contributes towards achieving the AoS objective (e.g. Biodiversity) when considered against the baseline set by the existing planning environment. The 'guide questions' have been used to assist the appraisal of the potential effects in a qualitative manner, ensuring consideration is given to relevant influencing factors.



**Table 2 AoS Objectives**

AoS Objective	SEA Topic Requirement
<b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.	Climate Change
<b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.	Fauna, flora and biodiversity
<b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.	Material assets
<b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.	Material assets
<b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.	Climatic factors
<b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).	Water
<b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.	Population
<b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.	Population
<b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.	Landscape
<b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.	Cultural heritage, including architectural and archaeological heritage
<b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.	Air
<b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.	Soil
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population	Human health
<b>14. Equality:</b> To encourage equality and sustainable communities.	Human health

For each of the objectives against which the NPS has been appraised, the score given was one of the following:

- **Significant Positive:** A very strong positive effect of the proposed NPS on the AoS Objective
- **Minor Positive:** A minor positive effect of the proposed NPS on the AoS Objective
- **No Overall effect:** No overall effects arising from proposed NPS on the AoS Objectives although this may include some very minor or isolated effects (where this is the case these are identified)
- **Minor Negative:** A minor negative effect of the proposed NPS on the AoS Objective
- **Significant Negative:** A very strong negative effect of the proposed NPS on the AoS Objective
- **Uncertain:** An uncertain effect of the proposed NPS on the AoS Objective
- **No Relationship:** There is no relationship between the proposed NPS and the AoS Objective.

In predicting and evaluating the effects of the NPS for Electricity Network Infrastructure, all effects have been

considered, including those that are minor or non-significant, but which could combine to create a significant cumulative or synergistic effect.

## 9. What were the key significant effects (when considered against the existing consenting regime)?

This section presents a summary of the appraisal of the NPS for Electricity Network Infrastructure against the 14 objectives.

**Table 3 Summary of the appraisal of EN-5**

AoS Objective	Assessment	Comment
<p><b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.</p>	+	<p>EN-1, in combination with the technology-specific NPSs, will improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented within a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As the electricity networks infrastructure would result in the distribution of this low carbon energy, it would also make a significant contribution to the achievement of this objective. As a consequence, EN-5 is considered to have a significant positive effect on the climate change objective.</p>
<p><b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.</p>	?	<p>In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC), the effects on ecology from EN-5 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for low carbon energy infrastructure is likely to necessitate development on previously undeveloped areas.</p> <p>Development applications will also be required to accord with advice given within EN-1 and EN-5 and appropriately mitigate and where practical create new habitats of value within the proposed landscaping.</p>
<p><b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.</p>	+ +	<p>No specific effects have been identified within EN-5; however, EN-1 contains generic effects of waste management and resource use. The electricity infrastructure may be used to distribute power created from low carbon technologies, and as such strengthen the existing supply of electricity from low carbon sources as a result support the delivery of secure, clean and affordable energy. In addition, by facilitating the operation of the provision of more decentralised electricity generation this will benefit security of supply. As a consequence, it is considered to result in a significant positive benefit overall.</p>
<p><b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.</p>	+ +	<p>Whilst EN-5 or EN-1 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times). As a consequence, whilst there would be no net change in the employment opportunities created (when compared to those resulting from the current planning system), it is anticipated that these employment opportunities are more likely to occur earlier and when they are more likely to be significant to the economy – i.e. during a recession/or emerging from a recession. As a result, the significance of such effects will be greater than in a period of high employment.</p>

AoS Objective	Assessment	Comment
<p><b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Flood Risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 could be considered not significant against this objective.</p>
<p><b>6. Water Quality:</b> To protect and enhance surface (including costal) and groundwater quality (including distribution and flow).</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Water Quality and Resources, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Traffic and Transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape, townscape and Visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and Cultural Heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>

AoS Objective		Assessment	Comment	
14. <b>Equality:</b> To encourage equality and sustainable communities.		<b>0</b>	EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.	
Score Key:	Significant (major) Positive +	Significant (major) negative -	no overall effects <b>0</b>	Uncertain ?
	Minor Negative -	Minor negative -		

Entec provided ongoing commentary on the sustainability effects of the emerging NPSs, and where relevant these points were incorporated in the NPSs. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

There are a number of topics against which EN-5 does not set out any specific requirements or identify any specific impacts. In these instances, EN-1 sets out the generic impacts, guidance and requirements and EN-5 is not considered to have any additional significant effects. Where the appraisal has not raised any additional issues or recommendations these are excluded from the analysis of EN-5 below. These topics include Traffic and Transport (7); Archaeology and Cultural Heritage (10), Air Quality (11), Soil and Geology (12) and Equality (14).

### Climate Change

**Objective:** *Does the NPS minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change?*

EN-1 details the requirements in relation to and mitigation of any effects on, climate change. EN-1 also describes how electricity networks should be designed to be resilient to such impacts. The effects of climate change are likely to increase risks to the resilience of some electricity infrastructure. EN-1 directs applicants of electricity infrastructure to include climate change resilience measures as part of the relevant impact assessment in the ES accompanying an application and set out how the proposal would be resilient to:

- flooding, particularly for sub-stations that are vital for the electricity transmission and distribution network,
- effects of wind and storms on overhead lines,
- higher average temperatures leading to increased transmission losses; and
- earth movement or subsidence caused by flooding and drought for underground cables.

EN-5 focuses specifically on electricity network infrastructure which may connect to renewable or non renewable energy sources.

**Summary of Appraisal: *Electricity Network Infrastructure:*** EN-5 does not set out any specific requirements or identify any specific impacts relating to climate change, the generic requirements in relation to and mitigation of any effects on climate change are addressed in EN-1.

EN-1, in combination with the technology-specific NPSs, will improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented within a faster timescale.

This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As the electricity networks infrastructure would result in the distribution of this low carbon energy, it would also make a significant contribution to the achievement of this objective. As a consequence, EN-5 is considered to have a minor positive effect on the climate change objective.

*The appraisal indicated that there will be **minor positive effects** on this objective.*

## Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality?*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-5 focuses on electricity networks which comprises the transmission systems and associated infrastructure such as pylons, lines, and substations.

**Summary of Appraisal: Electricity Network Infrastructure:** EN-5 does not set out any specific requirements or identify any specific impacts relating to ecology. The generic requirements in relation to and mitigation of any effects on ecology are addressed in EN-1. The installation of towers and associated infrastructure can cause large scale habitat disturbance either terrestrially or in a marine environment depending on the location of the project. Where the lines are underground there may be specific impacts on animals where they bisect their habitats. However, habitats around towers and along overhead lines can also be reinstated to be of greater biodiversity value than they were previous to the installation and can result in additional wildlife corridors that facilitate species movement.

EN-1 concluded that in light of the outcome of the screening opinion in line with the Habitat's Directive (92/43/ECC), the effects on ecology from the energy infrastructure are considered to be uncertain. Given this conclusion, this view is also considered true for the EN-5 as the need for electricity networks infrastructure is likely to also necessitate development on previously undeveloped areas and as such impact on biodiversity. Development applications will also be required to accord with advice given within EN-1 and EN-5 and appropriately mitigate and where practical create new habitats of value within the proposed landscaping.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

## Material Assets and Resource Use

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy?*

EN-1 addresses the generic issues of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy. EN-5 focuses on electricity networks which comprises the transmission systems and associated infrastructure such as pylons, lines, and substations.

**Summary of Appraisal Electricity Network Infrastructure:** EN-5 does not set out any specific requirements or identify any specific impacts relating to material assets and resource use. The requirements in relation to and mitigation of any effects on material assets and resource use are addressed in EN-1.

No specific effects have been identified within EN-5; however, EN-1 contains generic effects of waste management and resource use. The electricity infrastructure may be used to distribute power created from low carbon technologies, and as such strengthen the existing supply of electricity from renewable sources as a result support the delivery of secure, clean and affordable energy. In addition, by facilitating the operation of the provision of more decentralised electricity generation this will result in increased security of supply more than in the past within the UK. As a consequence, it is considered to result in a significant positive benefit overall.

*The appraisal indicated that there will be **significant positive effects** on this objective.*

## Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all?*

EN-1 considers this objective under socio-economic effects, and outlines the long term economic benefits of the generation infrastructure. However, it is noted that it does not cover the more short term issues that are likely to arise from the construction of national networks.

EN-1 contributes positively towards improving the vitality and competitiveness of the UK energy market, by providing greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The establishment of the IPC is intended to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

**Summary of Appraisal *Electricity Network Infrastructure*:** EN-5 does not set out any specific requirements or identify any specific impacts relating to economy and skills. The requirements in relation to and mitigation of any effects are addressed in EN-1.

Whilst EN-5 or EN-1 are not intended to alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times). As a consequence, whilst there would be no net change in the employment opportunities created (when compared to those resulting from the current planning system), it is anticipated that these employment opportunities are more likely to occur earlier and when they are more likely to be significant to the economy – i.e. during a recession/or emerging from a recession. As a result, the significance of such effects will be greater than in a period of high employment.

*The appraisal indicated that there will be a **significant positive effect** on this objective.*

## Flood Risk

**Objective:** *Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?*

EN-1 identifies generic guidance on flood risk and directs the IPC to assess whether any application that comes forward is permissible in terms of flood risk in accordance with the principles of *Planning Policy Statement (PPS) 25: Development and Flood Risk*.



Notwithstanding these requirements, there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.24) that ‘*the IPC may grant consent if it is satisfied that the increase in flood risk is acceptable and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...*’. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

**Summary of Appraisal:** EN-5 does not set out any specific requirements or identify any specific impacts relating to water quality and resources, therefore requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1.

EN-1 and EN-5 represents a continuation of the approach under the current planning system and therefore would not significantly increase or decrease flood risk.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The NPS states that the IPC should satisfy itself that a proposal has regard to the River Basin Management Plans and the requirements of the Water Framework Directive. Additionally it requires the IPC to consider whether appropriate conditions should be attached to any development consent or planning obligations entered into to mitigate adverse effects on the water environment. The NPS states that where there may be indirect effects (such as on marine ecology) the IPC should refer to relevant guidance within other sections of the NPS. Additionally, it requires that where an effect cannot be mitigated, the applicant provides suitable information to enable the implications of such an effect to be fully understood and that the IPC should seek advice from the relevant statutory bodies.

**Summary of Appraisal:** EN-5 does not set out any specific requirements or identify any specific impacts relating to water quality and resources, therefore requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1.

EN-1 sets out generic impacts, guidance and requirements in relation to water quality and resources. EN-5 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new electricity infrastructure. Furthermore, EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality and resources, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Noise

**Objective:** *To protect both human and ecological receptors from disturbing levels of noise.*



EN-1 directs the IPC to consider the effects of noise generated by the proposals against a baseline level of noise and ensure that they are satisfied that the applicants' proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible; contribute to improvements to health and quality of life by effective management and control of noise.

Short term effects on noise during construction and decommissioning activities are also covered in EN-1.

**Summary of Appraisal:** EN-5 recognises all high voltage transmission lines have some potential to generate noise under certain conditions. EN-5 seeks to specifically consider the effects of noise generated by the proposals against a baseline level of noise, and require assessments to be taken during dry and wet weather periods. Further detail on the assessment of noise levels, specifically in relation to receptors (both human and ecological) is required to ensure that project level effects are adequately dealt with. The IPC is advised to expect that the applicant considers the positioning of the lines, the size of the conductor, the prevention of damage to the conductor in transit and ensures that the conductors are clean, in order to minimise the level of noise produced.

EN-1 sets out generic impacts, guidance and requirements in relation noise. Furthermore, EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Landscape, Townscape and Visual

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

EN-1 identifies national designations as the key landscape features to protect, in accordance with current landscape guidance.

**Summary of Appraisal:** EN-5 recognises that there are specific landscape and visual effects which apply to electricity networks. EN-5 identifies the Holford Rules as guidelines for the routing of overhead lines, and advise that when the IPC considers the under grounding of lines, it should balance the benefit of the reduction in visual intrusion against the economics and technical challenges of under grounding. To mitigate the impact, EN-5 advises the IPC to expect the applicant to have considered network reinforcement options, the selection of the most appropriate suitable type and design of the support structure and the preferred selection of an appropriate corridor. In addition more specific measures to minimise visual impact include landscape schemes and screening methods.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

## Landscape, Townscape and Visual Effects: Key recommendation(s) emerging from the appraisal and how DECC responded

**Recommendation 9.1:** There is specific guidelines for many projects and these will be relevant to each of the technology-specific NPSs. The focus is almost exclusively on designations. However energy projects can also have significant effects on non-designated areas such as hedgerows, wildlife corridors and the historic landscape. This should be recognised in the NPS.

**Recommendation 9.2:** We suggest the different components of an electricity line are detailed. Information on route components is given in National Grid's publication 'A Sense of Place - Design guidelines for development near high voltage overhead lines' (2003) Download available from <http://www.nationalgrid.com/uk/Senseofplace/Download/pp23> accessed 30 July 2009 Information on tower types is given in National Grid's Publication 'Development Near Overhead Lines' - Planning and amenity aspects of high voltage electricity transmission lines and substations. Download available from [http://www.nationalgrid.com/uk/LandandDevelopment/DDC/devnearohl\\_final/pdf/brochure.htm](http://www.nationalgrid.com/uk/LandandDevelopment/DDC/devnearohl_final/pdf/brochure.htm) Appendix II pp.21-22 accessed 30 July 2009

**Recommendation 9.3:** Correct citation of documents. Ensure that all relevant and up to date citations are included i.e. 'A Sense of Place - Design guidelines for development near high voltage overhead lines' - National Grid (2003) and 'Development Near Overhead Lines' - Planning and amenity aspects of high voltage electricity - National Grid (2008)

**Recommendation 9.4:** Components of electricity line to be defined adequately

**Response 9.1:** EN-1 covers impacts on the historic environment. EN-1 recognises that virtually all energy projects will have effects on the landscape.

**Response 9.2:** A decision was taken to strip all this information out of the NPS as it is available elsewhere.

**Response 9.3:** Development near overhead lines etc is irrelevant here as we are talking about putting the overhead lines in the first place, and these docs are about building AFTER a line has been built. We do have references to undergrounding and Holford Rules, which are relevant.

**Response 9.4:** See 9.2.

EN-1 sets out the generic impacts and mitigating measures that relate to landscape. EN-5 sets out specific additional requirements concerning the impacts on landscape from electricity infrastructure. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this effect. As the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-5 do not differ from the existing planning system, the contribution of EN-5 over and above the existing planning system to the achievement of this objective is not considered to be significant.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population*

**Summary of Appraisal:** EN-5 recognises that electromagnetic fields can have direct and indirect effects on human health. Direct effects occur in the form of impacts on the central nervous system and indirect effects occur from electric charges. The balance of scientific evidence over several decades of research has not proven a causal link between EMFs and cancer or any other disease, but the possibility however small, cannot be ruled out. The IPC is advised to ensure that the lines comply with Electricity Safety, Quality and Continuity Regulations 2002.

EN-5 (in conjunction with EN-1) does not set out any specific additional requirements or identify any specific impacts relating to health, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## 10. What are the cumulative and synergistic effects of the NPS?

The SEA Directive, and its implementing regulations in the UK, requires that secondary, cumulative and synergistic effects are considered as part of the appraisal. These effects were considered in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that *'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'* (para 4.2.4). To support this, the NPS states that *'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)'* (para 4.2.3).

## 11. What are the conclusions and key findings of the appraisal?

The NPS is likely to improve business and investor confidence in electricity network infrastructure projects. The NPS is also likely to improve the speed of the application process and as such will result in these projects being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon targets and progress towards a low carbon economy. However, beyond this there are no significant differences between existing consenting requirements and what will be required under the IPC/NPS system. EN-5 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, and in light of the assumptions (set out in **Section 4.6**) EN-5 is not envisaged to have any significant effects at the national policy level when compared to the existing consenting controls.

## 12. How will any effects be monitored?

It is a requirement of the SEA Directive to describe how the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>103</sup> (ODPM, 2005) notes, *'it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects'*.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

<sup>103</sup> *Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, September 2005).

The effects that should be monitored therefore include:

Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

Positive effects on Climate Change (AoS Objective 1);  
 Positive effects on Resources and Raw Material (AoS Objective 3); and  
 Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the Table 2 (these will be reviewed in light of comments on the significance of effects).

**Table 2 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 13. What are the next steps?

The AoS Report and the consultation on it fulfil the requirements of Stage C and D of the SEA process (see **Section 1.3**). This Non-Technical Summary of the AoS Report for EN-5 provides a summary of the information presented in the AoS Report, which should be referred to for more detailed information.

This AoS Report will be presented for consultation alongside the draft NPS for Electricity Network Infrastructure from 9 November 2009 to 22 February 2010. Feedback received from consultees in relation to the AoS will be documented and considered. The NPS for Electricity Network Infrastructure may be amended and revisions to the AoS may be made. A Post Adoption Statement will be produced to summarise how the AoS and the consultation responses have been taken into account and how environmental considerations have been integrated into the NPS for Electricity Network Infrastructure.

## 1. INTRODUCTION

### 1.1 Purpose of this Report

This AoS Report for the **Electricity Networks Infrastructure NPS** provides information on the:

- Electricity Networks Infrastructure NPS (**Section 1.2**);
- alternatives (**Section 1.3**);
- findings of the Appraisal of Sustainability (AoS) (**Section 2**); and
- proposed measures for monitoring significant effects (**Section 3**).

This report should be read in conjunction with the AoS Report for the Overarching Energy NPS which provides information on the:

- suite of NPSs being prepared by DECC (**Section 2**);
- methodology (including when the AoS was undertaken and by whom) (**Section 3**);
- scope of the appraisal (**Section 3.3**);
- method for collecting and presenting baseline information (**Section 3.4**);
- approach to completing the appraisal (including the AoS objectives), assumptions and technical difficulties encountered during the appraisal (**Section 3.5 – 3.7**).

This AoS Report alongside the AoS for the Overarching NPS allow DECC to demonstrate compliance with the AoS requirements of the Planning Act 2008, the SEA Directive and relevant regulations.

### 1.2 The NPS for Electricity Networks Infrastructure

The NPS for Electricity Networks Infrastructure (EN-5) in conjunction with the Overarching NPS for Energy (EN-1) sets out the relevant planning factors that should be considered by the IPC when determining whether development consent should be granted for a proposed scheme.

EN-5 has been developed via an iterative process, taking account of the ongoing appraisal of the anticipated sustainability effects. As the NPS was developed, specific topic sections were reviewed by technical specialists and recommendations made to DECC for their consideration. A record of some of these recommendations and responses to them, highlighting how the NPS was developed is provided in **Section 2**.

### 1.2.1 The Content of the NPS for Electricity Networks Infrastructure (EN-5)

The definition of what is a nationally significant energy infrastructure project (and hence must be submitted to the IPC) as defined in the Planning Act 2008, varies between technologies. For the nationally significant electricity network infrastructure, the definition is described as follows:

- transmission systems (the long distance transfer of electricity through 275 and 400kV lines), and distribution systems (lower voltage lines from 132kV to 240V from transmission substations to the end-user) which can either be carried on towers/poles or placed underground; and
- associated infrastructure e.g. sub-stations (the essential link between generation, transmission and the distribution systems that also allow circuits to be switched or voltage transformed to a useable level for the consumer) and HVDC converter stations to convert DC power to AC power.

The Overarching NPS for Energy (EN-1) identifies the need for new energy generation capacity and a diverse mix of fuels and technologies, including the necessary electricity network infrastructure to ensure a security of supply and to meet carbon reduction and low carbon energy targets. EN-5 covers impacts that are specific to electricity networks and should be read in conjunction with EN-1 which covers the general impacts of energy infrastructure.

EN-1 removes the necessity for the IPC to consider whether there is a need for new energy infrastructure development. The IPC's role is therefore to consider the impacts that a proposed new energy infrastructure could have and whether a particular application should be granted consent.

Certain impacts may result from the development of new energy infrastructure regardless of the specific technologies involved. EN-1 identifies the potential generic impacts of new energy infrastructure and directs the IPC's decision making with respect to each impact topic (i.e. landscape and visual or socio-economic impacts) but does not cover impacts that would be specific to a particular energy technology.

#### Generic Impacts detailed within EN-1

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Air emissions;</li> <li>• Biodiversity and geological conservation;</li> <li>• Civil and military aviation and defence interests;</li> <li>• Coastal change;</li> <li>• Dust, odour, artificial light, smoke and insect infestation;</li> <li>• Flood Risk;</li> <li>• Historic Environment.</li> </ul> | <ul style="list-style-type: none"> <li>• Landscape and visual impacts;</li> <li>• Land-use including open space, green infrastructure and greenbelt</li> <li>• Noise;</li> <li>• Socio-economic;</li> <li>• Traffic and transport Impacts;</li> <li>• Waste management; and</li> <li>• Water quality and resources.</li> </ul> |
|--|--|

The main impact topics where electricity network infrastructure detailed in EN-5 may result in technology-specific impacts in addition to those set out in EN-1, are as follows.

#### Generic Impacts detailed within EN-5

- Electric and Magnetic Fields (EMF)
- Landscape and visual impacts
- Noise

The Overarching NPS for Energy sets out the assessment principles for the IPC and considers the topics for which effects may occur and sets out the key factors for IPC decision making with regards to these specific topics

### 1.3 Reasonable Alternatives

In line with the principles of good policy making and the requirements of the SEA legislation, a range of reasonable alternatives for the NPS were considered. These alternatives should be realistic, feasible and genuine. Within the strategic framework set by Government, the energy sector relies on private sector investment. In general, the UK Government does not therefore specify the technologies that should be within the energy mix or what their volumes should be (with the exception of renewables where there are specific EU targets although not at the level of individual renewables technologies).

The objective in drafting the non-nuclear NPSs has been, for the most part, to reflect and clarify existing policy and practice of the Secretary of State in consenting nationally significant energy infrastructure. The intention is not to use the non-nuclear NPSs to change significantly the underlying policies against which applications are assessed (or the “benchmark” for what is, or is not, an acceptable nationally significant energy development). Therefore, the non-nuclear NPSs are based on established energy and climate change policies and the focus of their content is the manner in which energy infrastructure that flows from those policies should be controlled, i.e. guidance on the key issues that the IPC should take into account in its decision making. Where there have been policy developments these have been conducted through separate processes, such as the consultation on the framework for the development of clean coal, and the NPS reflects those separate developments.

As a result, the following strategic-level alternatives were considered:

1. No NPS - “the effects of No NPS” to mean the effects of constructing energy infrastructure under a business as usual scenario where there is no NPS to set the framework for development consents;
2. An NPS that only set out high level Government energy policy;
3. An NPS that a) set out high level Government energy policy and b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments;  
or
4. An NPS that a) set out high level Government energy policy, b) defined, through generic criteria, types of location which were unlikely (and/or likely) to be suitable for energy developments and c) set out guidance on how impacts of energy developments could be avoided or mitigated.

**What ‘No NPS’ means:** Government does not draft or designate an NPS for energy infrastructure. This is the “business as usual” scenario; energy companies would still apply for development consent for new nationally significant energy infrastructure to the IPC, which would consider a planning application and make a



recommendation to the Secretary of State instead of making the decision themselves. However, in the absence of a comprehensive statement of national need and specific guidance on the application of energy policy to development consents that are provided by the NPS, the IPC would have few benchmarks against which to make recommendations. The IPC would have to attempt to interpret Government policy, but with no guarantee that their interpretation concurred with Government intentions. The IPC might fail to consider wider policy issues.

New nationally significant energy infrastructure could still be built but it is doubtful that some of the benefits of the new consenting regime would be realised.

Further, where there is no designated NPS and the IPC therefore acts as recommending body to the Secretary of State, the IPC should report to the Secretary of State within nine months of accepting an application. The Secretary of State has a further three months to make a decision to grant consent. This means that development consent should be granted in 12 months. However, since the IPC has the power to extend the time it is given to examine the application, it is more likely to need to extend its timetable in the absence of a designated NPS to allow time to consider the questions of need, the suitability of a location or alternative locations without specific guidance on particular issues. It is therefore highly likely that development consent would take longer than if an NPS were designated. This could result in delays in the planning process which would increase uncertainty for energy companies and make new nationally significant energy infrastructure a less attractive option.

The preferred option is Option 4 as this enables the clearest guidance to be given to the IPC on the circumstances in which different forms of energy development will be acceptable and does so in a way that is transparent to other interested parties. This option also helps to ensure that significant effects on the environment, economy and society are duly considered in the decision making process (which may be overlooked or not considered in Option 2). Furthermore, Option 4 includes details of avoidance and mitigation measures that may be adopted by the applicant or the IPC thus enabling the minimisation of potentially detrimental effects. The inclusion of such information is considered to be beneficial as it enables the applicant to see what effects the IPC will be considering and the types of mitigation measures that may be relevant.

The site-specific approach has been undertaken for the Nuclear NPS only, owing to the public interest in where nuclear is sited and in accordance with Parliamentary commitments. However, the Government does not consider it appropriate to use the energy NPSs to attempt at a national level to identify and prescribe specific locations for all of the technologies referred to in the suite of Energy NPSs. Given the range and complexity of technical, legal, environmental, geological and commercial siting issues that are relevant to each of the non-nuclear technologies, a strategic search would significantly delay the publication of the non-nuclear NPSs to the detriment of the timely deployment of new electricity infrastructure (given the urgency and need as set out in the Overarching Energy NPS). In any event, it would be very difficult to accurately predict the number of sites/routes that would be needed. For these reasons, it was not considered a reasonable alternative for the NPS to identify the specific sites for the development of energy infrastructure.

The other alternatives, are identified below in **Table 1.1** with reasons for them not being included with the NPS identified by DECC.

**Table 1.1 Alternative Approaches to Implement the NPS**

Alternative Approaches to Implement the NPS	Response to the alternatives (provided by DECC)
<p>The NPS should specify exact locations where electricity networks should be sited; in particular, this should follow the ENSG map.</p>	<p>The ENSG map is based on a range of possible scenarios for transmission reinforcement and not a complete survey of the network requirements in England and Wales. It would not therefore be reasonable to specify sites or routes for electricity networks based on the map. The map also only indicates very broad corridors for these potential reinforcements, which would lead to unnecessary planning blight for large swathes of the countryside. Further, the sites for electricity generating stations are not specified in the NPSs for non-nuclear generation.</p> <p>It would therefore be unreasonable to specify network routes and sites that would necessarily constrain development of electricity generating stations.</p>

## 2. APPRAISAL AND REPORTING

### 2.1 Topic Based Approach

This section presents a summary of the appraisal of the Electricity Networks Infrastructure NPS against the 14 objectives. Entec provided ongoing commentary on the sustainability effects of the emerging NPS. The boxes presented under each of the objectives identify some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

There are a number of topics against which EN-5 does not set out any specific requirements or identify any specific impacts. In these instances, EN-1 sets out the generic impacts, guidance and requirements and EN-5 is not considered to have any significant effects. Where the appraisal has not raised any additional issues or recommendations these are excluded from the analysis of EN-5 below. These topics include Traffic and Transport (7); Archaeology and Cultural Heritage (10), Air Quality (11), Soil and Geology (12) and Equality (14).

#### 2.1.1 Summary of Appraisal

**Table 2.1 Summary of the Appraisal of EN-5**

AoS Objective	Assessment	Comment
<p><b>1. Climate Change:</b> To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.</p>	+	<p>EN-1, in combination with the technology-specific NPSs, will improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented within a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As the electricity networks infrastructure would result in the distribution of this low carbon energy, it would also make a significant contribution to the achievement of this objective. As a consequence, EN-5 is considered to have a significant positive effect on the climate change objective.</p>
<p><b>2. Ecology (Flora and Fauna):</b> To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.</p>	?	<p>In light of the outcome of the HRA carried out in line with the Habitat's Directive (92/43/ECC), the effects on ecology from EN-5 are considered to be uncertain. This is also the case for ecology on sites outside the Natura 2000 network as the need for renewable energy infrastructure is likely to necessitate development on previously undeveloped areas.</p> <p>Development applications will also be required to accord with advice given within EN-1 and EN-5 and appropriately mitigate and where practical create new habitats of value within the proposed landscaping.</p>
<p><b>3. Resources and Raw Materials:</b> To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy.</p>	++	<p>No specific effects have been identified within EN-5; however, EN-1 contains generic effects of waste management and resource use. The electricity infrastructure may be used to distribute power created from low carbon technologies, and as such strengthen the existing supply of electricity from renewable sources as a result support the delivery of secure, clean and affordable energy. In addition, by facilitating the operation of the provision of more decentralised electricity generation this will result in increased security of supply more than in the past within the UK. As a consequence, it is considered to result in a significant positive benefit overall.</p>

AoS Objective	Assessment	Comment
<p><b>4. Economy and Skills:</b> To promote a strong and stable economy with opportunities for all.</p>	++	<p>Whilst EN-5 or EN-1 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times). As a consequence, whilst there would be no net change in the employment opportunities created (when compared to those resulting from the current planning system), it is anticipated that these employment opportunities are more likely to occur earlier and when they are more likely to be significant to the economy – i.e. during a recession/or emerging from a recession. As a result, the significance of such effects will be greater than in a period of high employment.</p>
<p><b>5. Flood Risk:</b> To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Flood Risk, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 could be considered not significant against this objective.</p>
<p><b>6. Water Quality:</b> To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Water Quality and Resources, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>7. Traffic and Transport:</b> To minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Traffic and Transport, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>8. Noise:</b> To protect both human and ecological receptors from disturbing levels of noise.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Noise, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>9. Landscape, Townscape and Visual:</b> To protect and enhance landscape quality, townscape quality and to enhance visual amenity.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to landscape, townscape and Visual, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>10. Archaeology and Cultural Heritage:</b> Protect and where appropriate enhance the historic environment including heritage resources, historic buildings and archaeological features.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to Archaeology and Cultural Heritage, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>11. Air Quality:</b> To protect and enhance air quality on local, regional, national and international scale.</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to air quality, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.</p>
<p><b>12. Soil and Geology:</b> To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important</p>	0	<p>EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to soil and geology, above those already considered through the</p>

AoS Objective		Assessment	Comment
sites and agriculturally important land.			planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.
<b>13. Health and Well-Being:</b> To protect and enhance the physical and mental health of the population		<b>0</b>	EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.
<b>14. Equality:</b> To encourage equality and sustainable communities.		<b>0</b>	EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to health and wellbeing, above those already considered through the planning process. As a consequence, when compared to the existing baseline, the additional impact of EN-5 is considered not to be significant against this objective.
Score Key:	Significant (major) Positive +	Significant (major) negative -	no overall effects <b>0</b>
	Minor Negative -	Minor negative -	

The following provides more detailed information on the findings of the assessment.

### 2.1.2 Climate Change

**Objective:** *Does the NPS minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change?*

EN-1 details the requirements in relation to and mitigation of any effects on, climate change. EN-1 also describes how electricity networks should be designed to be resilient to such impacts. The effects of Climate change are likely to increase risks to the resilience of some electricity infrastructure. EN-1 directs applicants of electricity infrastructure to include climate change resilience measures as part of the relevant impact assessment in the ES accompanying an application and set out how the proposal would be resilient to:

- flooding, particularly for sub-stations that are vital for the electricity transmission and distribution network,
- effects of wind and storms on overhead lines,
- higher average temperatures leading to increased transmission losses; and
- earth movement or subsidence caused by flooding and drought for underground cables.

EN-5 focuses specifically on electricity network infrastructure which may connect to renewable or non renewable energy sources.

**Summary of Appraisal: *Electricity Network Infrastructure:*** EN-5 does not set out any specific requirements or identify any specific impacts relating to climate change, the generic requirements in relation to and mitigation of any effects on climate change are addressed in EN-1. Including measures to future proof the tolerance of the electricity networks infrastructure.

EN-1, in combination with the technology-specific NPSs, will improve the speed of the application determination process and as such will result in low carbon energy infrastructure being implemented within a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon energy targets and progress towards a low carbon economy. As the electricity networks infrastructure would result in the distribution of this low carbon energy, it would also make a significant contribution to the achievement of this objective. In consequence, EN-5 is considered to have a minor positive effect on the climate change objective.

*The appraisal indicated that there will be **minor positive effects** on this objective.*

### 2.1.3 Ecology

**Objective:** *To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality?*

EN-1 recognises existing national and international designations for wildlife and habitat protection along with a range of potential effects and mitigation measures. EN-5 focuses on electricity networks which comprises the transmission systems and associated infrastructure such as pylons, lines, and substations.

**Summary of Appraisal: Electricity Network Infrastructure:** EN-5 does not set out any specific requirements or identify any specific impacts relating to ecology. The generic requirements in relation to and mitigation of any effects on ecology are addressed in EN-1. The installation of towers and associated infrastructure can cause large scale habitat disturbance either terrestrially or in a marine environment depending on the location of the project. Where the lines are underground there may be specific impacts on animals where they bisect their habitats. However, habitats around towers and along overhead lines can also be reinstated to be of greater biodiversity value than they were previous to installation and result wildlife corridors.

EN-1 concluded that in light of the outcome of the screening opinion in line with the Habitat's Directive (92/43/ECC), the effects on ecology from the energy infrastructure are considered to be uncertain. Given this conclusion, this view is also considered true for the EN-5 as the need for electricity networks infrastructure is likely to also necessitate development on previously undeveloped areas and as such impact on biodiversity. Development applications will also be required to accord with advice given within EN-1 and EN-5 and appropriately mitigate and where practical create new habitats of value within the proposed landscaping.

*The appraisal indicated that this will have **uncertain effects** on this objective.*

### 2.1.4 Material Assets and Resource Use

**Objective:** *To promote the sustainable use of resources and natural assets and to deliver secure, clean and affordable energy?*

EN-1 addresses the generic issues of waste management and seeks to ensure that all development utilises effective waste management practices consistent with the waste management hierarchy. EN-5 focuses on electricity networks which comprises the transmission systems and associated infrastructure such as pylons, lines, and substations.

**Summary of Appraisal Electricity Network Infrastructure:** EN-5 does not set out any specific requirements or identify any specific impacts relating to material assets and resource use. The requirements in relation to and mitigation of any effects on material assets and resource use are addressed in EN-1.

No specific effects have been identified within EN-5; however, EN-1 contains generic effects of waste management and resource use. The electricity infrastructure may be used to distribute power created from low carbon technologies, and as such strengthen the existing supply of electricity from renewable sources as a result support the delivery of secure, clean and affordable energy. In addition, by facilitating the operation of the provision of more decentralised electricity generation this will result in increased security of supply more than in the past within the UK. In consequence, it is considered to result in a significant positive benefit overall.

*The appraisal indicated that there will be **significant positive effects** on this objective.*

#### 2.1.5 Economy and Skills

**Objective:** *To promote a strong and stable economy with opportunities for all?*

EN-1 considers this objective under socio-economic effects, and outlines the long term economic benefits of the generation infrastructure. However, it is noted that it does not cover the more short term issues that are likely to arise from the construction of national networks.

EN-1 states that the documents contribute positively towards improving the vitality and competitiveness of the UK energy market, by providing greater clarity for developers, which can help in terms of planning risks associated with investment. Greater investment certainty would improve the UK's position for inward investment into energy infrastructure creating opportunities for skilled workers. The establishment of the IPC is intended to deliver faster and more transparent decisions on energy infrastructure which should improve the UK's security of supply. The UK economy will benefit from reliable energy supplies.

**Summary of Appraisal Electricity Network Infrastructure:** EN-5 does not set out any specific requirements or identify any specific impacts relating to economy and skills. The requirements in relation to and mitigation of any effects are addressed in EN-1.

Whilst EN-5 or EN-1 will not alter the volume of projects coming forward (compared to the present), it is likely to speed up the determination process (the impact assessment references an improvement in application times). As a consequence, whilst there would be no net change in the employment opportunities created (when compared to those resulting from the current planning system), it is anticipated that these employment opportunities are more likely to occur earlier and when they are more likely to be significant to the economy – i.e. during a recession/or emerging from a recession. As a result, the significance of such effects will be greater than in a period of high employment.

*The appraisal indicated that there will be a **significant positive effect** on this objective.*



### 2.1.6 Flood Risk

**Objective:** *Does the NPS avoid an increase in flood risk (including coastal flood risk) and avoid siting flood sensitive infrastructure in areas of high flood risk?*

EN-1 identifies generic guidance on flood risk and directs the IPC to assess whether any application that comes forward is permissible in terms of flood risk in accordance with the principles of *Planning Policy Statement (PPS) 25: Development and Flood Risk*.

Notwithstanding these requirements, there may be **exceptional** instances, where an increase in flood risk cannot be avoided or mitigated and in these circumstances, EN-1 states (in Section 4.24) that '*the IPC may grant consent if it is satisfied that the increase in flood risk is acceptable and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3...*'. However, there are **exceptional** instances where under the present planning system, projects that will result in an increased flood risk have still been consented. EN-1 therefore represents a continuation of the approach under the current planning system and does not significantly increase or decrease flood risk.

**Summary of Appraisal:** EN-5 does not set out any specific requirements or identify any specific impacts relating to water quality and resources, therefore requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1.

EN-1 and EN-5 represents a continuation of the approach under the current planning system and therefore would not significantly increase or decrease flood risk.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### 2.1.7 Water Quality and Resources

**Objective:** *To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).*

The NPS states that the IPC should satisfy itself that a proposal has regard to the River Basin Management Plans and the requirements of the Water Framework Directive. Additionally it requires the IPC to consider whether appropriate conditions should be attached to any development consent or planning obligations entered into to mitigate adverse effects on the water environment. The NPS states that where there may be indirect effects (such as on marine ecology) the IPC should refer to relevant guidance within other sections of the NPS. Additionally, it requires that where an effect cannot be mitigated, the applicant provides suitable information to enable the implications of such an effect to be fully understood and that the IPC should seek advice from the relevant statutory bodies.

**Summary of Appraisal:** EN-5 does not set out any specific requirements or identify any specific impacts relating to water quality and resources, therefore requirements in relation to and mitigation of any effects on, water quality and resources are addressed in EN-1.

EN-1 sets out generic impacts, guidance and requirements in relation to water quality and resources. EN-5 does not provide any additional guidance, set out any specific requirements or identify any specific impacts in relation to the construction of new electricity infrastructure. Furthermore, EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to water quality and resources, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### 2.1.8 Noise

**Objective:** *To protect both human and ecological receptors from disturbing levels of noise.*

EN-1 directs the IPC to consider the effects of noise generated by the proposals against a baseline level of noise and ensure that they are satisfied that the applicants' proposals will avoid significant adverse impacts on health and quality of life from noise and will mitigate and minimise other adverse impacts on health and quality of life from noise. The applicant is also required to, where possible; contribute to improvements to health and quality of life by effective management and control of noise.

Short term effects on noise during construction and decommissioning activities are also covered in EN-1.

**Summary of Appraisal:** EN-5 recognises all high voltage transmission lines have some potential to generate noise under certain conditions. EN-5 seeks to specifically consider the effects of noise generated by the proposals against a baseline level of noise, and require assessments to be taken during dry and wet weather periods. Further detail on the assessment of noise levels, specifically in relation to receptors (both human and ecological) is required to ensure that project level effects are adequately dealt with. The IPC are advised to expect the applicant to consider the positioning of the lines, the size of the conductor, prevent damage to the conductor in transit and ensure that the conductors are clean, in order to minimise the level of noise produced.

EN-1 sets out generic impacts, guidance and requirements in relation noise. Furthermore, EN-5 in conjunction with EN-1 does not set out any specific additional requirements or identify any specific impacts relating to noise, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

### 2.1.9 Landscape, Townscape and Visual

**Objective:** *To protect and enhance landscape quality, townscape quality and to enhance visual amenity.*

EN-1 identifies national designations as the key landscape features to protect, in accordance with current landscape guidance.

**Summary of Appraisal:** EN-5 recognises that there are specific landscape and visual effects which apply to electricity networks. EN-5 identifies the Holford Rules as guidelines for the routing of overhead lines, and advise

that when the IPC considers the under grounding of lines, it should balance the benefit of the reduction in visual intrusion against the economics and technical challenges of under grounding. To mitigate the impact, EN-5 advises the IPC to expect the applicant to have considered network reinforcement options, the selection of the most appropriate suitable type and design of the support structure and the preferred selection of an appropriate corridor. In addition more specific measures to minimise visual impact include landscape schemes and screening methods.

The table below identifies some of the issues and recommendations which were identified during the appraisal and how they were responded to by DECC.

**Landscape, Townscape and Visual Effects: Key recommendation(s) emerging from the appraisal and how DECC responded**

**Recommendation 9.1:** There is specific guidelines for many projects and these will be relevant to each of the technology-specific NPSs. The focus is almost exclusively on designations. However energy projects can also have significant effects on non-designated areas such as hedgerows, wildlife corridors and the historic landscape. This should be recognised in the NPS.

**Response 9.1:** EN-1 covers impacts on the historic environment. EN-1 recognises that virtually all energy projects will have effects on the landscape.

**Recommendation 9.2:** We suggest the different components of an electricity line are detailed. Information on route components is given in National Grid's publication 'A Sense of Place - Design guidelines for development near high voltage overhead lines' (2003) Download available from <http://www.nationalgrid.com/uk/Senseofplace/Download/pp23> accessed 30July 2009 Information on tower types is given in National Grid's Publication 'Development Near Overhead Lines' - Planning and amenity aspects of high voltage electricity transmission lines and substations. Download available from [http://www.nationalgrid.com/uk/LandandDevelopment/DDC/devnearohl\\_final/pdf/brochure.htm](http://www.nationalgrid.com/uk/LandandDevelopment/DDC/devnearohl_final/pdf/brochure.htm) Appendix II pp.21-22 accessed 30July 2009

**Response 9.2:** A decision was taken to strip all this information out of the NPS as it is available elsewhere.

**Recommendation 9.3:** Correct citation of documents. Ensure that all relevant and up to date citations are included i.e. 'A Sense of Place - Design guidelines for development near high voltage overhead lines' - National Grid (2003) and 'Development Near Overhead Lines' - Planning and amenity aspects of high voltage electricity - National Grid (2008)

**Response 9.3:** Development near overhead lines etc is irrelevant here as we are talking about putting the overhead lines in the first place, and these docs are about building AFTER a line has been built. We do have references to undergrounding and Holford Rules, which are relevant.

**Recommendation 9.4:** Components of electricity line to be defined adequately

**Response 9.4:** See 9.2.

EN-1 sets out the generic impacts and mitigating measures that relate to landscape. EN-5 sets out specific additional requirements concerning the impacts on landscape from electricity infrastructure. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this effect. As the range of impacts identified and mitigation measures proposed (and their means of implementation) given in EN-1 and EN-5 do not differ from the existing planning system, the contribution of EN-5 over and above the existing planning system to the achievement of this objective is marginal.

*The appraisal indicated that there will be **no overall effect** on this objective.*

#### 2.1.10 Health and Well-Being

**Objective:** *To protect and enhance the physical and mental health of the population*

**Summary of Appraisal:** EN-5 recognises that electromagnetic fields can have direct and indirect effects on human health. Direct effects occur in the form of impacts on the central nervous system and indirect effects occur from electric charges. The balance of scientific evidence over several decades of research has not proven a causal link between EMFs and cancer or any other disease, but the possibility however small, cannot be ruled out. The IPC is advised to ensure that the lines comply with Electricity Safety, Quality and Continuity Regulations 2002.

EN-5 (in conjunction with EN-1) does not set out any specific additional requirements or identify any specific impacts relating to health, above those already considered through the planning process. In consequence, when compared to the existing baseline, the additional impact of the NPS is not considered significant against this objective.

*The appraisal indicated that there will be **no overall effect** on this objective.*

## 2.2 Cumulative Effects

The SEA Directive, and its implementing regulations in the UK, requires the consideration of cumulative and synergistic effects as part of the appraisal. Cumulative effects were considered (where appropriate) in the commentary above.

A number of individual developments may give rise to cumulative effects when they are considered together (rather than in isolation). This is recognised by the Overarching NPS which states that 'the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place' (para 4.2.4). To support this, the NPS states that 'the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)' (para 4.2.3).

## 2.3 Mitigation Measures

Mitigation measures were considered during and the iterative process of developing the NPS. Examples of how these were avoided or mitigated are identified in the recommendations (identified in Section 2.1). Entec considers that the generic mitigation measures identified in the NPS are appropriate to the generic impacts identified.

### 3. CONCLUSION

#### 3.1 Key Findings Arising From the Appraisal of Sustainability

The NPS is likely to improve business and investor confidence in electricity network infrastructure projects. The NPS is also likely to improve the speed of the application process and as such will result in these projects being implemented in a faster timescale. This is anticipated to have a positive contribution towards the realisation of the government's low carbon targets and progress towards a low carbon economy. However, beyond this there are no significant differences between existing consenting requirements and what will be required under the IPC/NPS system. EN-5 has neither set out additional, more stringent requirements for applications, in terms of identifying, assessing or mitigating the effects nor has it relaxed any requirements. Therefore, and in light of the assumptions (set out in **Section 4.6**) EN-5 is not envisaged to have any significant effects at the national policy level when compared to the existing consenting controls.

#### 3.2 Monitoring

It is a requirement of the SEA Directive to describe the measures envisaged concerning how significant effects of implementing the NPS will be monitored. As ODPM Guidance<sup>104</sup> (ODPM, 2005) notes, '*it is not necessary to monitor everything, or monitor an effect indefinitely. Instead, monitoring needs to be focused on significant sustainability effects*'.

Monitoring should therefore be focussed upon significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused and significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.

The effects that should be monitored therefore include:

- Uncertain effects on Ecology (AoS Objective 2).

Monitoring measures have also been proposed for positive effects, these include:

- Positive effects on Climate Change (AoS Objective 1);
- Positive effects on Resources and Raw Material (AoS Objective 3); and
- Positive effects on Economy and Skills (AoS Objective 4).

The measures are identified in the **Table 3.1** (these will be reviewed in light of comments on the significance of effects).

<sup>104</sup> ODPM (September 2005) Practical Guide to the Strategic Environmental Assessment Directive.

**Table 3.1 Potential Monitoring Measures**

AoS Objective	Monitoring Measure	Source(s) of Information
1. Climate Change	Emission of greenhouse gases Emission of CO <sub>2</sub> and greenhouse gases from Energy sector	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/globalatmos">www.defra.gov.uk/environment/statistics/globalatmos</a> )
2. Ecology (Flora and Fauna)	Condition reports for designated sites	Natural England; Countryside Council Wales; Scottish Natural Heritage
3. Resources and Raw Materials	Industrial and commercial waste Energy Trends and Prices	Defra ( <a href="http://www.defra.gov.uk/environment/statistics/waste/wrindustry">www.defra.gov.uk/environment/statistics/waste/wrindustry</a> ) National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )
4. Economy and Skills	Energy costs	National Statistics ( <a href="http://stats.berr.gov.uk/uksa/energy/sa20090827.htm">http://stats.berr.gov.uk/uksa/energy/sa20090827.htm</a> )

### 3.3 Quality Assurance

The Government’s guidance on SEA contains a quality assurance checklist to help ensure that the requirements of the SEA Directive are met. This has been completed and is presented in **Annex A**.

# Annex A

## Quality Assurance Checklist

The Government's Guidance on SEA<sup>105</sup> 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	
<b>Objectives and Context</b>	
The plan's purpose and objectives are made clear.	<b>Section 1</b> of this AoS Report and <b>Section 2</b> of the AoS Report for EN-1.
Sustainability issues, including international and EC objectives, are considered in developing objectives and targets.	International and European objectives and targets are identified in <b>Annex B</b> and <b>Annex F</b> .
SEA objectives are clearly set out and linked to indicators and targets where appropriate.	<b>Section 3.4</b> of the AoS Report for EN-1 presents the AoS objectives and Guide Questions.
Links to other related plans, programmes and policies are identified and explained.	<b>Annex F</b> identifies a number of relevant plans and programmes.
<b>Scoping</b>	
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 13 <sup>th</sup> February 2009 to 23 <sup>rd</sup> 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 <b>Annex F</b> .
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	These were stated throughout the <b>Scoping Report</b> where appropriate, and are presented in <b>Section 3.7</b> and <b>Section 3.8</b> of the AoS Report for EN-1.
Reasons are given for eliminating issues from further consideration.	These are stated in the <b>Scoping Report</b> as appropriate and in <b>Section 2.5</b> .
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Alternatives were identified in <b>Section 2.5</b> of the AoS Report for EN-1. Technology-specific alternatives are presented in <b>Section 1.3</b> of this AoS Report.
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	These were considered in <b>Section 1.3</b> of this AoS Report.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	Refer to <b>Section 2.5</b> .

<sup>105</sup> ODPM, *Scottish Executive, Welsh Assembly Government, DoENI (2005) A Practical Guide to the Strategic Environmental Assessment Directive*, ODPM, London.



Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	Refer to <b>Section 2.5</b> and the review of policies, plans and programmes in <b>Annex F</b> .
Reasons are given for selection or elimination of alternatives.	These are presented in <b>Section 2.5</b> .
<b>Baseline Information</b>	
Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	This is set out in <b>Annex F</b> .
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.	Refer to <b>Annex F</b> .
Difficulties such as deficiencies in information or methods are explained.	These are stated throughout the report where appropriate.
<b>Prediction and Evaluation of Significant Environmental Effects</b>	
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 <b>Annex F</b> and <b>Section 2.2</b> of this AoS Report.
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 <b>Section 2.2</b> of this AoS Report and in <b>Annex F</b> .
Likely secondary, cumulative and synergistic effects are identified where practicable.	Refer to <b>Section 2.3</b> of this AoS Report.
Inter-relationships between effects are considered where practicable.	Refer to <b>Section 2.2</b> of this AoS Report.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	These are considered in the appraisal in <b>Annex F</b> .
Methods used to evaluate the effects are described.	These are described in <b>Section 3.6</b> of the AoS Report of EN-1.
<b>Mitigation Measures</b>	
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.	This is presented in <b>Section 2.2</b> .
Issues to be taken into account in project consents are identified.	These are considered in <b>Section 2.2</b> .
<b>Environmental Report</b>	
Is clear and concise in its layout and presentation.	The layout of the AoS Report is set out in <b>Section 1</b> .
Uses simple, clear language and avoids or explains technical terms.	Abbreviations are presented in <b>Annex A</b> 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 <b>Section 3</b> of the AoS Report of EN-1.
Explains who was consulted and what methods of consultation were used.	This is covered in <b>Section 1.5</b> of the AoS Report of EN-1.
Identifies sources of information, including expert judgement and matters of opinion.	This is covered in <b>Section 3</b> , <b>Section 4</b> and <b>Annex F</b> of the AoS Report of EN-1.
Contains a non-technical summary covering the overall approach to the SEA, the objectives of the plan, the main options considered, and any	An NTS is provided at the front of the AoS Report.

changes to the plan resulting from the SEA.

### 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 5.2** of the AoS Report of EN-1 and in **Section 3.1**.

Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA. These are presented in **Section 5.2** of the AoS Report of EN-1 and in **Section 3.1**.

Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect). These are presented in **Section 5.2** of the AoS Report of EN-1 and in **Section 3.1**.

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).