

Appraisal of Sustainability for the revised draft Overarching National Policy Statement for Energy (EN-1): Non-Technical Summary

Preface

Appraisal of Sustainability of the revised draft Overarching National Policy Statement for energy

A key objective of Government energy and climate change policy is to ensure the UK has a diverse, safe, secure and affordable energy system that incentivises investment in and deployment of low carbon energy technologies. As regards the nationally significant energy infrastructure with which this document is concerned, that means that the UK needs new power stations, electricity networks and other nationally significant infrastructure if it is to continue to enjoy secure, safe and affordable supplies of energy and drastically reduce the amount of greenhouse gases (particularly carbon dioxide (CO₂)) that it emits.

Building and operating new nationally significant energy infrastructure has a range of environmental, social and economic impacts: some beneficial (such as satisfying demand for electricity and creating jobs), others detrimental (such as construction noise and adverse landscape and visual effects). A new planning regime has been set up to facilitate the rapid development of major energy projects and other important infrastructure which Government believes we need while at the same time ensuring that their benefits outweigh their detriments.

This document presents a summary, for non-specialists, of what constructing a new generation of nationally significant energy infrastructure in accordance with the requirements of the new regime is likely to mean for the environment, society and the economy. It is set out as follows:

- **Part 1** (Introduction) sets out relevant legal, factual and policy background;
- **Part 2** (Assessment of Alternatives) shows how the proposed policies of the new regime compare against other combinations of policies which could be used to support the delivery of secure, safe and affordable supplies of increasingly low-carbon energy;
- **Part 3** (Summary of Appraisal) summarises the likely effect of development taking place in accordance with the policies of the new regime in terms of various environmental, social and economic impacts; and
- **Part 4** (Next steps) outlines the process of monitoring the actual effects of the new regime.

This document is about the revised draft Overarching Energy National Policy Statement (NPS) and the Appraisal of Sustainability for it, which are subject to public consultation for 14 weeks from 18th October 2010. For more information on this consultation and how you may give us your views please see:

Consultation Document (www.energynpsconsultation.decc.gov.uk).

Further details are included below in Part 4

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Introduction

The Planning Act 2008 and National Policy Statements

- 1.1 The Planning Act (2008) changed the way in which a number of different categories of nationally important planning decisions, including those relating to nationally significant energy infrastructure, are made in England and Wales.
- 1.2 At the heart of the new regime, National Policy Statements (NPSs) produced by Government will provide a blueprint for decision-making on individual applications for development consent by those wishing to build new infrastructure. The Department of Energy and Climate Change (DECC) is responsible for preparing the NPSs relating to energy projects. These are:
 - Overarching National Policy Statement for Energy (EN-1) (sets out the need for new infrastructure and deals with a range of planning issues common to more than one type of nationally significant energy infrastructure);
 - Fossil Fuel Electricity Generating Infrastructure (EN-2) (covering power stations with a capacity of more than 50MW, fuelled by coal or gas);
 - Renewable Energy Infrastructure (EN-3) (covering onshore wind farms and power stations fuelled by waste or biomass with a capacity of more than 50MW, and offshore wind farms with a capacity of more than 100MW);
 - Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (covering nationally significant gas storage projects, gas and oil pipelines, and facilities for handling liquefied natural gas);
 - Electricity Network Infrastructure (EN-5) (covering overhead electricity transmission and distribution lines with a voltage of 132kV or more); and
 - Nuclear Power Generation (EN-6) (covering nuclear power stations).
- 1.3 Before the NPSs can take effect, they must be the subject of public consultation, including the publication of an Appraisal of Sustainability (AoS). The NPSs are plans for granting development consent to proposals to develop new nationally significant energy infrastructure – on a case by case basis, but in accordance with certain general principles which should be applied in all cases. The AoSs are evaluations of the effects of the environmental and other effects of such plans – in so far as these can be assessed given that the NPSs indicate how applications will be dealt with, but not what applications will come forward, or (except in the case of EN-6) which sites they will relate to– which Government is required to carry out under both UK and EU law (the Planning Act 2008 and the Strategic Environmental Assessment (SEA) Directive (2001/42/EC)).
- 1.4 The energy NPSs were first published for consultation in November 2009. That consultation closed in February 2010. As a result of comments received in response to it, a number of which were critical of the approach taken in the AoSs produced for them, changes have been made to the draft NPSs and the draft AoSs. The changes to the AoSs are quite radical in some respects. Revised versions of both the NPSs and the AoSs are now being consulted on for 14 weeks from 18th October 2010, with a view to designation (i.e. coming into effect) following approval by Parliament in 2011.

- 1.5 EN-2 to EN-6 are known as the “technology-specific” NPSs. They set out policies and background which are relevant only to decision-making on the particular types of infrastructure to which they relate. EN-1 sets out matters of relevance to more than one type (if not all types) of nationally significant energy infrastructure. Each application will need to be considered in the light of both EN-1 and any relevant technology-specific NPS, which need to be read together. Similarly, the AoS for EN-1 (AoS-1) considers the impacts of approving the construction of all the required types of new nationally significant energy infrastructure, while the AoSs for each of EN-2 to EN-6 focus on impacts and policies specific to the specific technologies with which they are concerned.

Need for new energy infrastructure

- 1.6 Government believes that the need for new nationally significant energy infrastructure is so acute, for a variety of reasons, that it will not be necessary to consider in detail whether there is a demonstrable need for each individual proposed development. One of the functions of EN-1 is to establish this “need case”, which may be summarised as follows.
- 1.7 To meet its energy and climate change policy goals, the UK needs a new generation of energy infrastructure which will facilitate the supply of secure, safe and affordable energy generated to an increasing extent from low carbon sources (such as wind farms, nuclear power stations, and fossil fuel generating plant fitted with carbon capture and storage equipment – this last technology has yet to be successfully demonstrated at commercial scale) rather than on conventional coal- and gas-fired plant (although the latter will continue to play a part for some time in support of the transition to a low carbon energy system).
- 1.8 Government policy takes as its starting point the principle that a market-based system is 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. To ensure that investments in new nationally significant energy infrastructure support the objectives of reducing carbon emissions and so help to combat climate change, the Government seeks to provide incentives to the market to promote the development of more sustainable energy generation methods. While the policies in the NPSs are also designed to support the development of secure, safe, affordable and low carbon energy infrastructure, Government has decided not to set quotas or targets for each different technology type in the NPSs as it believes that, provided its other policies have put the right incentives in place, the NPSs will provide an appropriate framework for ensuring that the kinds of developments we need are consented in sufficient quantities to satisfy demand, while ensuring that they do not have unacceptable adverse effects.
- 1.9 As well as addressing more immediate needs, policies put in place now will result in the building of infrastructure which will in many cases still be in operation in 2050 and which in all cases will have some influence on whether we achieve the greenhouse gas reductions we are aiming to achieve by that date. But with such long time horizons come many uncertainties (for example about the future price of fuel, about the price which operators will pay to emit greenhouse gases under the EU Emissions Trading Scheme, and about the pace at which new technologies will evolve and be deployed). As a result our analysis shows that there are many different possible ways of achieving our energy and climate change policy objectives in relation to nationally significant

energy infrastructure, but that it is impossible at this stage to identify a single “best” way to do so. The NPSs therefore aim to facilitate sensible levels of development of all the technologies which are currently being deployed at the relevant scale and may form part of a successful future energy infrastructure mix, rather than attempting to match a particular view of what the future should look like, based on imperfect information.

- 1.10 The NPSs sit alongside and draw on a very substantial body of existing legislation and policy (detailed in Annex B to AoS-1), much of it deriving from EU or internationally agreed rules and principles, all of which have a bearing on planning consents generally, or specific aspects of infrastructure consenting, such as ensuring that proper protection is given to conservation interests, while still permitting much needed development to go ahead. At least parts of England and Wales have been industrialised to a significant extent for over 200 years and are relatively densely populated. At the same time, considerable legislative, administrative and voluntary effort has gone into attempting to remedy the consequences of high levels of development, often (historically at least) not carried out in a particular sustainable way, with the Government participating in EU programmes such as the designation of protected “Natura 2000” sites, as well as adopting various national measures designed to protect the environment. (For information on the resulting “baseline” condition of the environment to which the NPSs will apply, see Annex F to AoS-1.) A particular challenge facing the development of the large quantities of new large-scale energy infrastructure which the Government has determined need to be constructed is that much of it will, for one reason or another, need to be located in areas which have hitherto seen relatively little large scale development of any kind and/or enjoy some kind of protective designation. In some cases, the need to take account of the increased risk of floods which comes with climate change (and which arises particularly in areas where some types of energy infrastructure may be located) provides an additional challenge.

Appraisals of Sustainability

- 1.11 As part of the planning process, each application for development consent for nationally significant energy infrastructure will be subject to detailed analysis of its environmental impacts. The AoS process does not substitute the need for that analysis. This AoS has two primary functions.
- EU law requires, in the Strategic Environmental Assessment Directive (2001/42/EC), that before a plan or programme which establishes the framework for development consent is adopted, it should be subject to consultation alongside an environmental report which identifies, describes and evaluates the significant effects which its implementation is likely to have on the environment. Amongst other things, the NPSs are a plan or programme for the purposes of the Directive, and so the AoSs fulfil the function of an environmental report under the Directive.
 - The Planning Act requires that NPSs must be the subject of an appraisal of sustainability before they are designated. The scope of such an appraisal is similar to that of an environmental report under the SEA Directive, but with more emphasis on social and economic impacts, and informed overall with the principles of sustainable development (often summarised as ensuring that

development meets the needs of the present without compromising the ability of future generations to meet their own needs).

- 1.12 By requiring the AoS to be produced alongside the NPSs while they are still in draft form, the Directive and Act aim to ensure that consultees are able to review and comment on the NPSs with a sense of what it would mean in environmental and other terms for a new generation of large-scale energy infrastructure to be built in accordance with decisions made on Planning Act applications for development consent which were decided on the basis of the energy NPSs.
- 1.13 Table 1 summarises how the Appraisal of Sustainability report for EN-1 is organised.

Table 1 – Layout of the Overarching Appraisal of Sustainability report

<p><u>Introduction</u> An Introduction to Appraisal of Sustainability (AoS) and how to respond to the consultation</p>
<p><u>The Overarching National Policy Statement for Energy</u> The context of the appraisal, including the Planning Act 2008, the background and context of the National Policy Statements</p>
<p><u>Methodology</u> The requirements and scope of the appraisal of sustainability process.</p>
<p><u>Assessment of Alternatives</u> Identifies, develops and assesses strategic alternatives to the National Policy Statement and comparison of the significant sustainability effects of the strategic alternatives.</p>
<p><u>Appraisal of Sustainability</u> The findings of the appraisal of the likely significant effects of the National Policy Statement policies. Potential ways of mitigating adverse effects are presented.</p>
<p><u>Monitoring and Next Steps</u> Proposals for monitoring the actual impacts of implementing the NPSs</p>

- 1.14 Just as individual applications will have to be assessed in accordance with EN-1 as well as any relevant technology-specific NPS, so the Overarching AoS report (AoS-1) must be read in conjunction with the AoS reports for the relevant technology-specific NPS(s). The Overarching AoS includes general background material and a discussion of the methodology of the AoSs, as well as considering the impacts of implementing the suite of energy NPSs as a whole, and a number of possible strategic alternatives to the policies set out in EN-1. The relevant technology-specific NPSs (EN-2 to EN-6) focus on alternatives, issues and recommendations which are additional to those already in the Overarching AoS report.

Assessment of Alternatives

- 2.1. The SEA Directive requires the identification, description and evaluation of the likely significant effects of implementing NPSs (which constitute a “plan or programme” for the purposes of the Directive) and any reasonable alternatives to them. In this context, an alternative is reasonable if it may be expected to achieve the ultimate objectives of the plan it is being compared against. Here, that plan is set out in the NPSs and the objectives are those of using the NPS framework to facilitate the development of a new generation of nationally significant energy infrastructure that will produce secure, safe and affordable supplies of increasingly low carbon energy (recognising that the NPSs are not the only policy tool available to Government to achieve this objective).
- 2.2. The AoS published with the draft EN-1 for public consultation in November 2009 contained an assessment of alternatives. However, the Government decided that the assessment of alternatives was one of the aspects of the appraisal that should be revised to take account of comments received that questioned both the range of alternatives considered and why certain alternatives had not been assessed more fully.
- 2.3. The approach taken in assessing the alternatives to EN-1 for the revised AoS has been a two stage process: 1) Development and initial screening to establish a series of reasonable strategic alternatives to the plan; and 2) Assessment of the selected reasonable alternatives against the AoS objectives.
- 2.4. A wide range of strategic alternatives have been considered in the initial screening. Those alternatives that appear capable of fulfilling the objectives of the plan and of representing genuinely strategic-level choices have been tested against the AoS objectives. The strategic alternatives proposed and considered by the appraisal team in the initial screening are discussed in the main report, together with the reasons for those options not taken forward to the second stage of the alternatives assessment. The main report also details the assessment of the selected reasonable alternatives against the AoS objectives, the methodology used for the assessment of alternatives and the methodology for grouping of these objectives into high-level themes.
- 2.5. The revised draft EN-1 sets out numerous individual policies, and it is not practical to attempt to assess alternatives to each individual policy. However, EN-1 policies collectively are designed to strike a balance between four criteria: 1) cost; 2) security of supply; 3) reduction of greenhouse gas emissions; and 4) minimising environmental impacts other than greenhouse gas emissions, and therefore alternatives have been considered which tilt the balance to favour one or more of these criteria to greater or lesser extent. A consideration of reasonable alternatives, based on ‘tilting the balance’ of the criteria, resulted in three reasonable alternatives as follows:
 - Alternative A1, that places more emphasis on a low cost of energy;
 - Alternative A3, that places more emphasis on reduction in greenhouse gas emissions; and
 - Alternative A4, that places more emphasis on reducing environmental impacts other than greenhouse gas emissions.

- 2.6. EN-1 was also compared against a so-called “business as usual” alternative of consenting new nationally significant energy infrastructure in accordance with existing policies but without the framework for decision-making provided by the NPSs.
- 2.7. The findings of the assessment of alternatives, grouped according to six key sustainable development themes, are summarised in table 2. The conclusion was that although some of the alternatives could be expected to perform better against some of the themes, their potential advantages compared with the policies set out in the NPSs were not so great or certain as to make up for the fact that they each carried at least some risk of performing less well than the NPS policies as regards ensuring security of supply and/or reducing greenhouse gas emissions, both of which are key elements of the overall objective of ensuring the supply of secure, safe, affordable and increasingly low carbon energy supplies.

Table 2 – Summary of Alternatives Assessment Findings

<i>Sustainable Development Themes</i>	EN-1	No NPS	Alternative A1	Alternative A3	Alternative A4
Climate Change		0?	-	+	0
Security of Energy Supply		-?	-	-	-
Health & Well-Being		0	+	+/-	+/-
The Economy		0?	+	+/-	+/-
The Built Environment		0?	-	0	+
The Natural Environment		0?	-	0	+

- 2.8. Therefore the Government’s preferred option is to take forward the Energy NPS EN-1 and the technology-specific NPSs EN-2 to EN-6.
- 2.9. The assessments of technology-specific alternatives to EN-2 to EN-6 are given in the AoS reports for these NPSs.

Summary of Appraisal

Findings for individual sustainability topics

- 3.1 The appraisal of the impacts of implementing EN-1 was undertaken topic by topic (see table 3) against a series of “AoS objectives” (section 2 of AoS-1 explains in more detail what each of these topics covers). Many issues and effects for sustainability are cross-cutting and effects are reported where they are most relevant to avoid duplication of appraisal.

Table 3 – Appraisal of Sustainability topics

Climate Change
Ecology (Flora and Fauna)
Resources and Raw Materials
Economy and Skills
Flood Risk
Water Quality
Traffic and Transport
Noise
Landscape, Townscape and Visual
Archaeology and Cultural Heritage
Air Quality
Soil and Geology
Health and Well Being
Equality

3.2 The likely short, medium and long-term effects of EN-1 on each of these AoS objectives was evaluated and recorded using the key in table 4.

Table 4 – Key to Appraisal Significance of Predicted Effects

Likely Significant Effects:		
Major Positive	++	Policy would resolve an existing sustainability problem; major effect considered to be of national/international significance.
Minor Positive	+	No major sustainability constraints or effects ; minor effect considered to be of regional/ national/international significance.
Neutral	0	Neutral effect ie no overall effects or not-applicable.
Minor Negative	-	Potential sustainability issues, mitigation possible; effect considered to be of regional/ national/international significance.
Major Negative	--	Policy would exacerbate known sustainability issues; mitigation difficult and/or expensive; major effect considered to be of national/ international significance.
Uncertainty	?	Where the significance of an effect is particularly uncertain, e.g. insufficient information is available at the plan stage to fully appraise the effects of the policy or the potential for successful mitigation, the significance category is qualified by the addition of the symbol"?".

- 3.3 Inter-relationships between topics and likely interactions between different impacts, as well as the overlapping impacts of different projects (so-called “cumulative effects”) are also reported where appropriate in each topic. Where significant adverse effects are predicted, possibilities for mitigation are suggested.
- 3.4 Technology specific effects are reported in detail in AoS 2-6; appraisal findings reported in AoS-1 relate to likely generic effects and the overall effects for the NPS as a national policy statement.
- 3.5 For the purposes of the AoS the short term has been defined as the effects arising from the infrastructure construction period of between 2-7 years; the medium term as between 5 and 25 years (varying with the characteristics of different technologies); and the long term as beyond 25 years (and including decommissioning where relevant).

Climate Change

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

AoS Objective 1. Climate Change:	Assessment (by timescale)		
	S	M	L
	0 ?	+ ?	+ ?

- 3.6 One of the main purposes of EN-1 is to facilitate the development of low carbon technologies. It therefore has the potential for positive effects in the medium and longer term as regards the AoS objective seeking to reduce the emission of carbon dioxide and other greenhouse gases. However, the proportion of low carbon technologies in the UK’s overall energy mix in the short, medium and longer term is not known, so the contributions to climate change objectives, whilst potentially positive, are also uncertain. The other aspect of climate change in this context is the resilience of new infrastructure to forecast impacts of climate change, such as increased incidence of flooding. The NPS policies can be expected to make some positive contribution towards this.

Ecology (Flora and Fauna)

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

AoS Objective 2. Ecology (Flora and Fauna):	Assessment (by timescale)		
	S	M	L
	-	- ?	- ?

- 3.7 There is potential for significant negative effects on biodiversity, including adverse effects on European designated sites, which are appraised as being most significant in the short term (as a result of habitat disruption during the construction process). Proposed mitigations, set out in the energy policies will be necessary to address any adverse effects and ensure that ecological networks and ecosystem functionality is maintained. The effects on flora and fauna of implementing the policy set out in EN-1 are more uncertain in the medium and long term and will depend on location specific factors and the effectiveness of mitigation measures in implementation.

Resources and Raw Materials

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

AoS Objective 3. Resources and Raw Materials:	Assessment (by timescale)			
	S	M	L	
	-	0	0	+

- 3.8 The construction and operation of new generating capacity will require a range of natural resource and raw material inputs in the short and longer term (e.g. for metals used in construction and water – large quantities of which are required for cooling in all thermal power stations). This may lead to minor negative impacts in areas where specific development types are concentrated or clustered (for example with fossil fuel and nuclear generation). In mitigation, the requirement for the reuse and recycling of materials (particularly where development occurs adjacent to existing or decommissioned facilities) is promoted by EN-1 through Environmental Statements.
- 3.9 Waste generation depends on technology type with minor negative effects possible for construction and decommissioning for large scale developments (including fossil fuels

and nuclear). Overall the long term effects of EN-1 against this objective are likely to be neutral with some minor positive effects.

Economy and Skills

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

AoS Objective 4. Economy and Skills:	Assessment (by timescale)			
	S		M	L
	-	++	+	+

- 3.10 Short to medium term positive effects are likely to be significant for the economy and employment across the range of technology types (EN-2 to EN-6) in both new and established industries. These benefits should accrue at local and regional levels and there may be positive cumulative effects nationally. These effects may also be particularly significant in the context of current (2010) economic conditions.
- 3.11 The AoS reports for EN-2 to EN-6 identify the potential for minor negative effects in the short to medium term where the impacts arising from new energy infrastructure have a detrimental effect on existing industries (e.g. tourism, through a loss of amenity/negative landscape impacts/ lower property values, and agriculture/fisheries/shipping through direct impacts on natural resources from direct land loss or windfarm exclusion zones). However, the overall long term impacts are assessed as positive.

Flood Risk

Objective: 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.

AoS Objective 5. Flood Risk:	Assessment (by timescale)		
	S	M	L
	- ?	0 ?	0 ?

- 3.12 Minor negative effects are possible in the short term as a result of the consenting of a range of technologies with requirements to be located near or adjacent to coasts, estuaries or rivers. Depending on the scale and extent of new developments this may lead to negative cumulative effects where a number of different significant developments are located close together.
- 3.13 The medium and long term effects on flood risk should therefore be managed through the design, planning and regulatory measures set by the Environment Agency, but the long term effects are uncertain.

Water Quality

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

AoS Objective 6. Water Quality:	Assessment (by timescale)		
	S	M	L
	- ?	0 ?	0 ?

- 3.14 There is a potential for adverse effects on water quality and resources (including cumulative effects in some areas) in England and Wales. Measures will have to be taken to ensure that adverse effects are adequately mitigated. The effects of implementing the policy set out in EN-1 are appraised as neutral in the medium to long term, but less certain in the longer term if a larger proportion of energy demand is met through water intensive technologies (such as those in EN-2 and EN-6).

Traffic and Transport

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

AoS Objective 7. Traffic and Transport:	Assessment (by timescale)		
	S	M	L
	0	0	0

- 3.15 Negative effects (including cumulative effects) on traffic and transport will most likely be temporary and affect local communities. The transport of large infrastructure (for example pylons and rotors), can have short term negative effects on existing transport infrastructure, particularly in rural areas. Construction and decommissioning effects can usually be mitigated by imposing appropriate traffic and transport management conditions. There is also a potential for negative effects on civilian and military aviation interests, but it should generally be possible to address these through appropriate mitigation measures. Accordingly there should be no overall strategic effect in the short, medium or long term.

Noise

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

AoS Objective 8. Noise:	Assessment (by timescale)		
	S	M	L
	0	0	0

- 3.16 There is the potential for energy infrastructure and associated supporting activities to have negative impacts on ambient noise levels (including cumulative effects). The significance of these effects is dependent on the type of development and its proximity to sensitive receptors, and they can generally be mitigated through the design and planning process, so are not considered significant in the short, medium or long term.

Landscape, Townscape and Visual

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

AoS Objective 9. Landscape, Townscape and Visual:	Assessment (by timescale)		
	S	M	L
	-?	-?	-?

3.17 The AoS of EN-1 has identified the likelihood of significant negative effects for landscape, townscape and visual receptors as a result of the plan implementation in the short, medium and long term. The development of a mix of generating technologies will deliver nationally significant (EN-2, EN-4, EN-4) and tall (EN-3, EN-5) structures, in both existing industrial locations and in new greenfield/offshore/coastal settings. Many of these structures are likely to be in predominantly rural, remote areas, including areas of high landscape value where visual impacts will be significant. The mitigation of small scale structures may be possible, and is required by EN-1, however, the negative visual impacts of new developments are likely to be considerable for foreseeable timescales due to the permanence and scale of structures enabled by the implementation of EN-1 policy objectives. In the circumstances where infrastructure is subject to decommissioning then some of the long term negative impacts identified may be reversed.

Archaeology and Cultural Heritage

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

AoS Objective 10. Archaeology and Cultural Heritage:	Assessment (by timescale)		
	S	M	L
	- ?	- ?	- ?

3.18 The significance of effects on archaeology and cultural heritage is highly dependent on the location and scale of development, as well as the importance of heritage assets and their setting relative to energy infrastructure. The AoSs of EN-2 to EN-6 indicate that the majority of negative effects on heritage assets from energy infrastructure developments can be avoided, reduced and mitigated through careful design and planning. There is the potential for minor negative effects (including cumulative effects) on heritage assets in the short, medium and long term as a result of the potential impacts on heritage assets and their settings (with some uncertainty about the extent of direct effects such as disturbance and loss).

Air Quality

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

AoS Objective 11. Air Quality:	Assessment (by timescale)		
	S	M	L
	0	-?	-?

3.19 Air quality is unlikely to be a significant issue for the majority of energy infrastructure types, principally due to the relatively low level of air pollutant emissions during operation. For EN-2 and some EN-3 technologies potentially significant local or regional effects are identified in the medium to long term. It is appraised that overall EN-1 will have no strategic effects on air quality in the short, medium and long term.

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.

AoS Objective 12. Soil and Geology:	Assessment (by timescale)		
	S	M	L
	0 ?	0 ?	0 ?

3.20 The direct effects to soil and geology are likely to be localised within the footprint of the development and the significance will be dependent on location. In the short term the construction of energy infrastructure has the potential for direct negative effects on soils and geology as a result of disturbance and loss and possible pollution risks in the longer term (although these are less certain). In the medium term, indirect negative effects on soil could arise during operation of energy infrastructure as a result of increased pollution risk, which can lead to the contamination of soils. The effects in the long term are uncertain as there is the potential for the remediation of contaminated land during the decommissioning. The policies and mitigation measures set out in the NPSs should help to minimise these.

Health and Well-being

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

AoS Objective 13. Health and Well-Being:	Assessment (by timescale)		
	S	M	L
	- ?	+	+

3.21 Energy production in its various forms has the potential to impact on health and well being in the short, medium and long term. Negative effects are typically localised and associated with the construction phases of development (short term effects). EN-1 to EN-6 include a range of mitigation measures and regulatory requirements to ensure that resident and working populations are protected. Potential longer term negative

effects, related for example, to radioactivity or electromagnetic field exposure, are not considered by the AoSs to be significant given the scale of any likely release and when mitigation measures have been taken into account.

- 3.22 Significant indirect positive effects for health and well being are identified as a result of EN-1 implementation and across the EN-1-6 AoSs from improved employment opportunities and the predicted enhanced economic conditions arising from investment in energy infrastructure. Employment is recognised as a key positive indicator for overall health¹ that will bring medium and long term health benefit overall. These positive effects have the potential to be cumulative in the long term from improved vibrancy in the energy industry sector.

Equality

Objective: To encourage equality and sustainable communities.

AoS Objective 14. Equality:	Assessment (by timescale)		
	S	M	L
	0	+	+

- 3.23 Enabling the development of energy infrastructure within a faster timescale to meet the energy demands of the UK has the potential for positive effects on all equality through ensuring energy security and affordability. Indirect positive effects might also arise as a result of enhanced economic benefits and increased employment that could occur as a result of the suite of Energy NPSs. These effects are likely to be of most significance in the medium to long term once new energy infrastructure is operational.

Cumulative Effects

- 3.24 It is good practice to integrate interactions between topics and cumulative effects assessment (CEA) within the overall appraisal and this has been undertaken in the revised AoS. The significance of cumulative effects may vary with the mix of technology projects proposed and the sensitivity of the receiving communities and environment. Overall and strategically, the AoS found that the energy NPSs may have positive significant cumulative effects in the medium to longer term on climate change objectives; indirect positive cumulative effects on the economy, skills and equalities, are indicated from the certainty of investment and security of energy supplies due to the implementation of the NPSs. Negative cumulative effects were identified for landscape/townscape and visual amenity, and for biodiversity.
- 3.25 All major infrastructure projects have the potential for temporary cumulative effects in the short term during the construction phase and the significance will vary according to the number, type and location of such development. These cumulative effects may be negative, such as on traffic and air quality, or positive, such as on employment and economy. Negative cumulative effects on the environment may be mitigated through implementation of Environmental Management Plans (EMPs) agreed with local communities and EN-1 sets out that the project level Environmental Impact Assessment (EIA) requirements include a description of the measures to prevent,

¹ EN1 AoS Baseline. Health and Well Being.

reduce and where possible offset any significant adverse effects and this may inform an EMP. Negative cumulative effects on communities may be identified and mitigated through a sustainability assessment and EN-1 advises the Infrastructure Planning Commission (IPC) to expect a development consent application to contain an assessment of the considerations given to socio-economic issues as well as environmental factors.

Overall findings and conclusions

- 3.26 Current government policy promotes the delivery of low carbon energy. The Energy NPSs are predicted to speed up the transition to a low carbon economy thus promoting positive cumulative effects on the AoS climate change objectives because UK climate change commitments may be realised sooner than continuation under the current planning system. However, there is also some uncertainty as it is difficult to predict the mix of technology that will be delivered by the market.
- 3.27 The Energy NPSs are likely to contribute positively towards improving the vitality and competitiveness of the UK energy market by providing greater clarity for developers which should improve the UK's security of supply. Reliable energy supplies nationally will contribute to positive effects generally on our economy and skills with indirect positive effects for health and well-being in the medium to longer term through helping to secure affordable supplies of energy and minimising fuel poverty; positive medium and long term effects are also likely for equalities.
- 3.28 The development of new energy infrastructure, at the scale and speed required to meet the current need, is likely to have negative effects on biodiversity, landscape/visual amenity and cultural heritage; however the significance of these effects and the effectiveness of mitigation possibilities is uncertain at the strategic level at which EN-1 must necessarily be considered (since it does not prescribe particular locations for development). Short-term construction impacts are also likely through an increased use of raw materials and resources, and negative effects on the economy due to impacts on existing land and sea uses. There may also be cumulative negative effects on water quality, water resources, flood risk, coastal change and health at the regional or sub-regional levels depending upon location and the extent of clustering of new energy and other infrastructure. Proposed energy developments will still be subject to project level assessments, including EIA, and this will address locationally specific effects. The Energy NPSs set out mitigation for cumulative negative effects by requiring the IPC to consider accumulation of effects as a whole in their decision-making on individual applications for development consent.
- 3.29 The findings for each technology specific NPS are summarised by timescales (short, medium and long term) in the main AoS report for EN-1 (see tables 4.1 to 4.3) and the overall findings for the Overarching AoS 1 are summarised in table 5 following.

Table 5: Overall Summary of Key AoS Findings for Overarching NPS EN-1²

AoS Objective	Assessment of effects (by timescale)		
	S	M	L
1. Climate Change	0?	+	+
2. Ecology (Flora and Fauna)	-	-?	-?
3. Resources and Raw Materials	-	0	0 +
4. Economy and Skills	- +	+	+
5. Flood Risk and Coastal Change	-?	0?	0?
6. Water Quality and Resources	-?	0?	0?
7. Traffic and Transport:	0	0	0
8. Noise	0	0	0
9. Landscape, Townscape and Visual	-?	-?	-?
10. Archaeology and Cultural Heritage	-?	-?	-?
11. Air Quality	0	-?	0
12. Soil and Geology	0?	0?	0?
13. Health and Well-Being	-?	+	+
14. Equality	0	+	+

² This table is a reproduction of table 4.4 in the main AoS report for EN-1.

Next Steps

Consultation

- 4.1 The Appraisal of Sustainability and the revised draft Overarching Energy National Policy Statement (NPS) are subject to public consultation.
- 4.2 The public consultation commences on the 18th October 2010 and continues until the 24th January 2011.
- 4.3 For more information on this consultation and how you may give us your views please see the Consultation Document which is available at:
www.energy-nps-consultation.decc.gov.uk.
- 4.4 Alternatively you may contact nps.consultation@decc.gsi.gov.uk for further details.
- 4.5 The Government will consider any further comments received during the public re-consultation in the decision making on the finalising the energy NPSs. On designation of the NPS, an AoS Post Adoption Statement will be published and this will summarise how the AoS and the consultation responses have been taken into account, including how sustainability and environmental considerations have been integrated into EN-1.

The monitoring process

- 4.6 Monitoring helps to examine the effects predicted through the AoS process against the actual effects of the NPS when it is implemented. It is also a requirement of the SEA Directive to describe how the potential significant sustainability effects of implementing the energy NPSs will be monitored.
- 4.7 Monitoring should be focussed on significant sustainability effects that may give rise to irreversible damage. Monitoring should also look to identify trends before irreversible damage is caused, as well as identify significant effects where there was uncertainty in the AoS and where monitoring would enable preventative or mitigation measures to be undertaken.
- 4.8 It is proposed that the effects that should be monitored overall for the energy NPSs are focused on the positive effects predicted for climate change, resources, and economy/skills; and the negative or uncertain effects predicted for landscape/visual amenity and biodiversity.
- 4.9 The Government will further develop a monitoring strategy for the energy AoSs and NPSs during the re-consultation period and to take into account responses received to the consultation on the revised draft NPSs and AoSs. The monitoring strategy will set out the proposed indicators for monitoring together with agreed responsibilities and frequencies of monitoring during the implementation of the NPSs. This will be summarised in the AoS Statements that will be published with the designated NPSs.

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