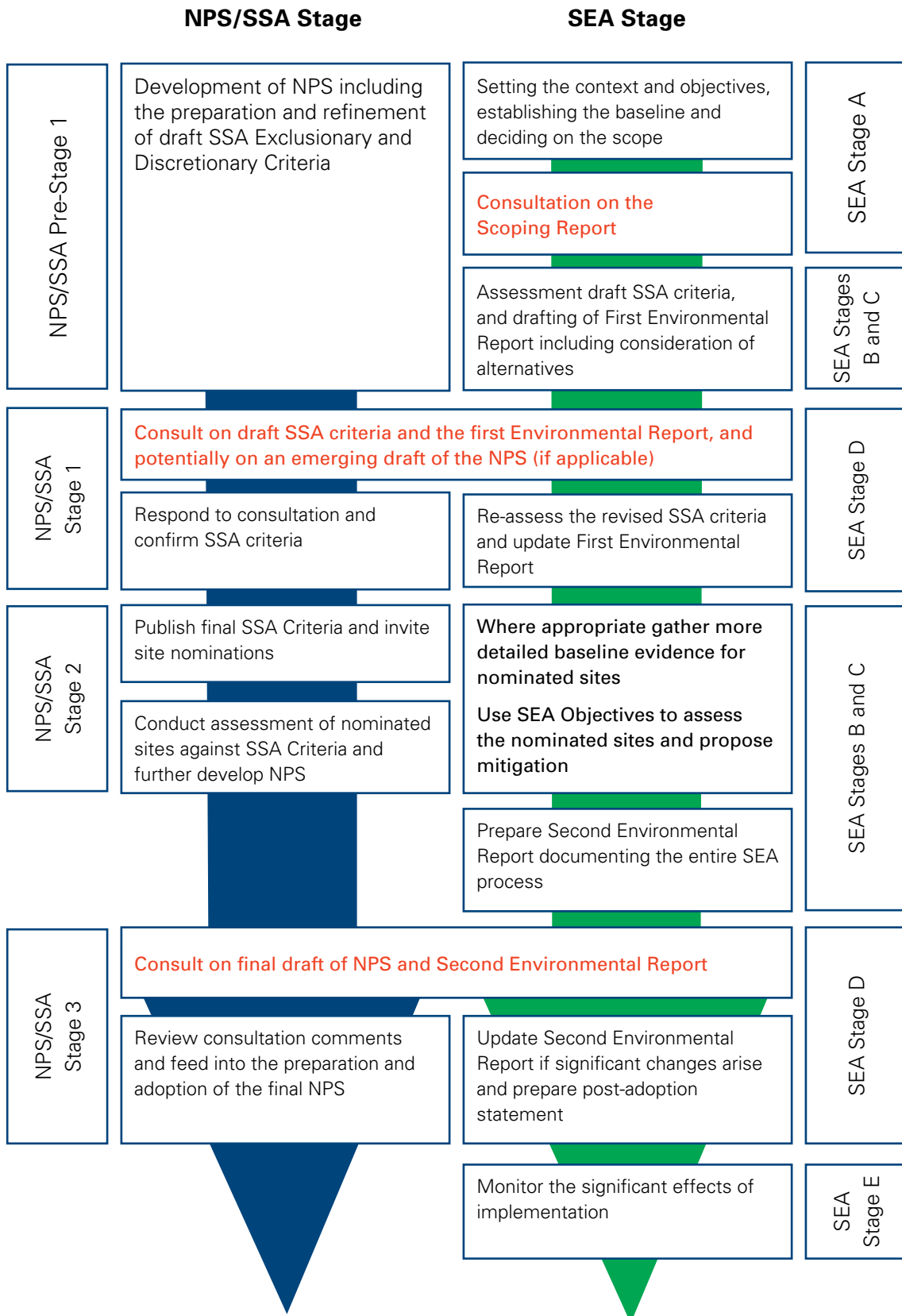


Diagram 0-1 Integrating the NPS and SEA

Proposed NPS for nuclear power



Consultation questions

We are asking the following questions throughout the Scoping Report:

Question 1: Are there any other plans, programmes or environmental protection objectives that should be identified and reviewed as part of the SEA process?

Question 2: Can you provide any additional information to help us supplement our baseline data? Any further information relating to the baseline indicators and trends over time would be very useful.

Question 3: Do you consider that there is any important information that has not been addressed in view of the SEA scope?

Question 4: Do you consider that the range of environmental problems and issues covered is appropriate?

Question 5: Are there any changes you consider should be made on the proposed SEA Objectives?

Question 6: Are there any other SEA Objectives, guide questions or indicators that should be included?

Question 7: Do you have any further suggestions regarding the scope of the SEA and its proposed assessment of the NPS?

Who are we consulting?

22. This is not a public consultation. The SEA Regulations require Government to consult statutory consultation bodies regarding the scope of the SEA. The following statutory bodies are being consulted specifically as part of this scoping consultation:

- England: The Environment Agency (EA), English Heritage and Natural England.
- Northern Ireland: The Department of the Environment.
- Scotland: Historic Scotland, Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA).
- Wales: Cadw, Countryside Council for Wales (CCW) and the EA Wales.

23. In addition, the following bodies are being consulted because of their roles in relation to the regulation of nuclear facilities and their development:

- The Department of Health.
- The Health Protection Agency.

- The Nuclear Installations Inspectorate (part of the Health and Safety Executive).
- Department for Environment, Food and Rural Affairs (Defra).
- The Industrial Pollution and Radiochemical Inspectorate (IPRI) (part of the Department of the Environment Northern Ireland).

- 24.** In addition whilst this is not a public consultation, we are publishing this consultation by placing details on the BERR website at: <http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>. We will consider any comments received from other persons or organisations prior to the close of the consultation.

Transboundary Consultation

- 25.** Other EU member states must be consulted if the plan or programme is likely to have significant effects on the environment in their territories, and these will be consulted at the time of the Environmental Report. We will be sending this SEA Scoping Report for information to the environmental authorities in the EEA countries.

Timing of this consultation

- 26.** The consultation began on 13 March 2008 and will close on 21 April 2008. This five week period is set out in the SEA Regulations.

How to respond

- 27.** A response can be submitted by letter, fax or email (email preferred) to:

SEA Scoping Consultation
 Nuclear Unit
 Bay 126
 Department for Business, Enterprise and Regulatory Reform
 London
 SW1H 0ET
 Tel. 020 7215 3331
 Fax. 020 7215 2842
 Email: SEAScope@berr.gsi.gov.uk

Additional points about this consultation

- 28.** In line with Cabinet Office best practice on consultations, we will publish the consultation responses on the BERR website. The deadline for responses is Monday 21 April 2008.

Confidentiality and Data Protection

- 29.** Your response may be made public by BERR. If you do not want all or part of your response or name made public, please state this clearly in the response. Any confidentiality disclaimer that may be generated by your organisations' IT system or included as a general statement in your fax cover sheet will be taken to apply only to information in your response for which confidentiality has been specifically requested.
- 30.** Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).
- 31.** If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.
- 32.** In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.
- 33.** The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Additional copies

- 34.** You may make copies of this document without seeking permission. An electronic version can be found at <http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

Help with queries

35. Please email SeaScope@berr.gsi.gov.uk or call 020 7215 3331.

If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

Vanessa Singateh, Consultation Co-ordinator
Department for Business, Enterprise and Regulatory Reform
Better Regulation Team
1 Victoria Street
London SW1H 0ET
E-mail: vanessa.singateh@berr.gsi.gov.uk
Tel: 020 7215 2293
Fax: 020 7215 2235

A copy of the consultation code of practice criteria is set out at Annex A.

Next Steps

36. Following this statutory consultation, the Government expects to hold a public consultation on the draft SSA criteria, any emerging draft NPS and draft Environmental Report. The table below (shown also in Section 6 of this Scoping Report) set out the future consultations stages in the SEA.

Table 0-1 Future Consultation Stages in the SEA

Indicative Date	SEA Consultation Exercise
Spring 2008	Consultation on the First Environmental Report alongside the draft SSA Exclusionary and Discretionary Criteria, and potentially an emerging draft of the Nuclear NPS.
Spring 2009	Consultation on the Second Environmental Report documenting the entire SEA process including the assessment of all relevant elements of the NPS including the sites nominated through the nominations process.

1 Introduction

Background to the Strategic Environment Assessment Scoping Report and the proposed National Policy Statement on Planning for New Nuclear Power Stations

- 1.1** In January 2008 the Government published the Nuclear White Paper⁴. The Nuclear White Paper stated that:

“The Government believes that it is in the public interest that new nuclear power stations should have a role to play in this country’s future energy mix alongside other low-carbon sources; that it would be in the public interest to allow energy companies the option of investing in new nuclear power stations; and that the Government should take active steps to open the way to the construction of new nuclear power stations”

- 1.2** The Nuclear White Paper stated that the Government would undertake a number of “facilitative actions” to reduce regulatory and planning risks associated with investment in new nuclear power stations. These included:

- Improving the planning system for major electricity generating stations in England and Wales, including nuclear power stations, by ensuring it sets a framework for development consents that gives full weight to policy and regulatory issues that have already been subject to debate and consultation at a national level, and does not reopen these issues in relation to individual applications.
- Running a Strategic Siting Assessment (SSA) process to develop criteria for determining the suitability of sites for new nuclear power stations. Subject to some European legislative requirements, this would enable the planning process to focus on the proposals rather than debate whether there are other more suitable sites for development.
- In conjunction with the SSA, taking further our consideration of the high-level environmental impacts in accordance with the Strategic Environmental Assessment (SEA) Directive. This would limit the need to consider such high-level environmental impacts of nuclear power stations during the planning process.

Planning Reforms

- 1.3** The Government recognises the impact that an effective planning system could have on successfully and fairly achieving our energy goals. In 2007, the Government published proposals⁵ for a fundamental reform of the planning

⁴ Department for Business, Enterprise and Regulatory Reform (January, 2008) Meeting the Energy Challenge – A White Paper on Nuclear Power.

⁵ Planning White Paper, Planning for a Sustainable Future, May 2007.

system for nationally significant major infrastructure projects and in November 2007 introduced a Planning Bill to bring about this reform, taking account of responses received in the course of the consultation on the original proposals. The proposals set out in this document, in particular in relation to the National Policy Statement (NPS) and the Infrastructure Planning Commission (IPC), are based on the assumption that the proposed planning reforms proceed. The precise way forward will need to take account of any amendments to the Planning Bill. In the event that there are delays to the implementation of the reforms to the planning system, we will consider other options to make clear the national case for new nuclear power stations.

- 1.4** The planning reforms to be introduced through the Planning Bill increase transparency and participation and will deliver a number of important improvements to the planning process for the development of nationally significant infrastructure, including energy projects, such as new nuclear power stations.
- 1.5** The Planning Bill, currently before Parliament, seeks to establish a new single consent regime for nationally significant infrastructure under which the Government would produce NPSs that seeks to establish the national case for infrastructure development and set the framework for independent Infrastructure Planning Commission (IPC) decisions. These NPSs will be subject to public consultation. Decisions on applications will be made by the IPC which will manage inquiries and take decisions on applications.
- 1.6** The Government has now begun developing the proposed Nuclear NPS. The Nuclear NPS would set out the Government's policy on the national strategic issues which need to be taken into account when granting consent to the construction of any new nuclear power stations. We expect that this Nuclear NPS will refer to the Government's policy on nuclear power as set out in the Nuclear White Paper. A significant component of the NPS will be siting criteria which the Government considers should be used to assess the suitability of potential sites for new nuclear power stations and an indication of certain locations that meet these criteria. Those criteria will be identified through the proposed SSA which will also assess whether nominated sites meet those criteria. The SSA process will be conducted as part of the process for developing the Nuclear NPS. If the reforms in the Planning Bill do not proceed, the Government would expect to produce a Strategic Siting Assessment Policy Statement.
- 1.7** The SSA will identify criteria that will be used to assess the suitability, at a strategic level, of appropriate sites nominated for new nuclear power stations, and to assess the high-level environmental impacts of building on those sites. These criteria will be published in draft and will be subject to public consultation. Following consultation, the Government will invite nominations for suitable sites and assess the nominated sites against these criteria.

A further public consultation would then be held inviting views on those nominated sites judged by the Government to meet the criteria. Overall, we expect the Strategic Siting Assessment process to run from now until mid or late 2009.

- 1.8** In view of the fact that the Nuclear NPS will contain the outputs of the Strategic Siting Assessment process (i.e. siting criteria and a list of suitable sites), the Government proposes to undertake a Strategic Environmental Assessment for the Nuclear NPS. The SEA assessment will be carried out on the relevant elements of the Nuclear NPS, although we consider that the key elements for SEA assessment will be the SSA criteria and list of sites.
- 1.9** The focus of this document is the SEA process. It establishes how the SEA will be undertaken, its scope and how it will be integrated into the NPS's development.

The SEA Process

- 1.10** The purpose of the SEA is to provide for the high level protection of the environment and to enable environmental considerations to be fully integrated into the development of a plan or programme. The SEA is an iterative process of gathering data and evidence, assessing environmental effects, developing mitigation measures and making recommendations to refine plans or programmes in view of the predicted environmental effects and the monitoring of significant effects of implementing the plan or programme. Further information about the scope of this SEA is provided in Section 2 and details of the stages in the process and their integration with the NPS preparation are provided in Section 3.

The Development of the National Policy Statement

- 1.11** As mentioned above, The NPS would set out the Government's policy on the national strategic issues which need to be taken into account when deciding whether to grant consent to the construction of any new nuclear power stations. Dependent upon the Planning Bill reforms, the NPS is likely to include the following indicative elements⁶:
- How the NPS contents would take effect in England, Wales, Scotland and Northern Ireland.
 - The policy background to the NPS including details of the Government's policy in relation to nuclear power, as set out in the Nuclear White Paper.

⁶ Some of the requirements listed are specific to the circumstances and regulatory requirements of the nuclear sector and should not be seen as an indication of what other NPSs will contain.

- A set of screening criteria (the SSA Criteria), which will comprise Exclusionary and Discretionary Criteria. These are likely to relate to nuclear safety, environmental protection, societal issues and operational requirements. The NPS will describe these SSA criteria and indicate how they have been applied as exclusionary or discretionary criteria.
- A list of sites which have been assessed at a strategic level to have met the SSA Criteria.
- A description of the nominations and assessment process which has been used to arrive at this list of sites.
- The NPS might also outline the methodology and/or process for assessing sites against the SSA Criteria. This would form guidance to the IPC which it could draw upon in the event that it receives an application for a proposed development site which is not listed in the NPS.
- The Nuclear White Paper made clear that it is the Government's policy that before development consents for new nuclear power stations are granted, the Government will need to be satisfied that effective arrangements exist or will exist to manage and dispose of the waste they will produce. We currently expect the NPS to set out whether the Government is satisfied that such arrangements exist or will exist.

1.12 The Government will also publish a statement summarising how environmental considerations have been integrated into the plan or programme in accordance with regulation 16 of the SEA Regulations and the SEA Directive when the final NPS is published.

1.13 Table 1-1 presents the main stages in the development of the NPS, further details about the SSA process that will be an integral element of the NPS, and when consultation will occur during the development of the NPS.

Table 1-1 Key Stages in the Development of the NPS

Stage in the NPS/ SSA	Key Activities	Approximate Timescale
Pre Stage 1	<p>The development of two categories of criteria to inform the siting process:</p> <ul style="list-style-type: none"> • Exclusionary Criteria are those criteria that for safety, regulatory, environmental or other reasons will categorically exclude a site from further consideration, for the purpose of the NPS, as a strategically acceptable site for the construction of a new nuclear power station. • Discretionary Criteria are those criteria which, whilst not absolutely exclusionary, may for various reasons make a site strategically unacceptable for the development of new nuclear power stations. 	Commencement in early 2008.
1	<p>Public consultation on draft SSA Exclusionary and Discretionary Criteria and Environmental Report. Publication of an emerging draft the Nuclear NPS. Following the consultation, the responses would be reviewed and the SSA Criteria amended as appropriate.</p>	2008. Stage 1 would last approximately 6 months.
2	<p>Confirm the SSA Criteria and invite nominations for sites against these SSA Criteria. The following information would be provided:</p> <ul style="list-style-type: none"> • The Exclusionary and Discretionary Criteria to be used • An indication of the broad geographical areas considered unsuitable for new nuclear power stations and those areas where there might be potential sites. • An invitation to nominate sites within areas not ruled out by the Exclusionary Criteria. <p>Following the close of the nomination period, an assessment would be conducted of the nominated sites against the criteria.</p>	2008. Stage 2 would last approximately 6 months.

The Government is also publishing this consultation on its website. We will consider any comments received from other persons or organisations prior to the close of the consultation.

This consultation begins on 13 March 2008 and closes on 21 April 2008.

Structure of the Scoping Report

- 1.16** Table 1-2 outlines the structure of the Scoping Report. For further details regarding the stages in the SEA process refer to Section 3 'Stages in the SEA Process'.

Table 1-2 Structure of the Scoping Report

Section of Scoping Report	Outline of Contents
1. Introduction	This section provides the background to the SEA and NPS. The purpose and structure of the Scoping Report is outlined here.
2. The Scope of the SEA	This section outlines why an SEA is being undertaken and the scope of the SEA.
3. Stages in the SEA Process	This section provides a summary of the SEA Directive and the Regulations being followed for this SEA. The main stages in the SEA process are described and an explanation provided of how the process will link with the development of the NPS. The specific stages in scoping and the statutory consultees are also identified.
4. Task A1: Identifying other Relevant Plans, Programmes and Environmental Protection Objectives	This section explains how the review of relevant plans, programmes and environmental protection objectives has been undertaken. Appendix A presents the full review of the documents.
5. Task A2: Collecting Baseline Information	This explains how the baseline data has been gathered and how additional baseline data will be collated as the SEA develops. Appendix B presents the baseline data that has been collated to date.
6. Task A3: Identifying Environmental Problems	Using the review of other relevant plans, programmes and environmental protection objectives and the baseline data collated to date, this section presents the key strategic environmental problems of relevance to this SEA.

Section of Scoping Report	Outline of Contents
7. Task A4: Developing SEA Objectives	This section explains the purpose of SEA Objectives, how they will be used and how they have been developed.
8. Task A5: Next Steps	This section outlines the likely future consultation stages during this SEA process.
Appendices	
Appendix A. Review of Plans, Programmes and Environmental Protection Objectives	A review has been undertaken of plans, programmes and environmental protection objectives of relevance to this study at international, UK wide and devolved administrations level i.e. plans produced solely for England, Scotland, Wales or Northern Ireland. The tables present the primary objectives of each plan/ programme identified, together with its key indicators and targets and how the objectives of each plan or programme might influence the considerations for the Strategic Siting Assessment (SSA), the Nuclear NPS and the SEA.
Appendix B. Baseline Data Collation	This presents the baseline data collated for England, Scotland, Wales and Northern Ireland. The data is presented using the SEA Directive topics and a series of relevant indicators.
Figures	A series of plans are presented which illustrate the locations of key features referred to in this Scoping Report.

2 The Scope of the SEA

Proposal for conducting the SEA

- 2.1** The White Paper⁷ stated that proposals for new nuclear power stations would need to be subject to a number of environmental assessment processes. Paragraph 3.21 of the White Paper stated that the Government would take further its consideration of the high-level environmental impacts through a formal Strategic Environmental Assessment in accordance with the SEA Directive⁸.
- 2.2** Whilst the siting elements of the Nuclear NPS are the main elements that are likely to require assessment, the SEA will apply to the NPS as a whole and its contents.

The SEA Directive and Regulations

- 2.3** The SEA Directive makes provision in relation to Environmental Assessments for certain plans and programmes which are likely to have significant environmental effects on the environment. The Directive establishes the basic procedural requirements which European Union (EU) Member States have transposed into their respective legal systems.
- 2.4** The SEA Directive is transposed into United Kingdom (UK) law by the following sets of regulations:
- *The Environmental Assessment of Plans and Programmes Regulations 2004 (Statutory Instrument 2004 No. 1633)*
 - *The Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (Statutory Rule 2004 No. 280)*
 - *The Environmental Assessment of Plans and Programmes (Scotland) Regulations 2004 (Scottish Statutory Instrument 2004 No. 258), and*
 - *The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (Welsh Statutory Instrument 2004 No. 1656 (W.170))*
- 2.5** The first of the above Regulations (*the Environmental Assessment of Plans and Programmes Regulations 2004 ("the SEA Regulations")*) applies to any plan or programme which relates either solely to the whole or any part of England, or to England and any other part of the UK. Each of the regulations for Scotland,

7 Department of Business, Enterprise and Regulatory Reform (January 2008) Meeting the Energy Challenge: A White Paper on Nuclear Power

8 Page 129, Department for Business, Enterprise and Regulatory Reform (January, 2008) Meeting the Energy Challenge – A White Paper on Nuclear Power

Treatment of alternatives

2.11 Article 5.1 of the SEA Directive states:

“..an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated”.

2.12 The SEA Practical Guide¹⁰ advises that only realistic and relevant alternatives should be considered and they should be sufficiently distinct to enable a meaningful comparison of their different environmental effects.

2.13 The subject of the SEA is the NPS. The alternatives to this include firstly a scenario in which no NPS is published and secondly, assuming an NPS is published, a suite of alternative means of providing the guidance to the IPC (including exploring alternatives to the SSA).

2.14 Based upon the likely contents of the NPS, the analysis of the following alternatives will be documented in the Environmental Report:

- The No NPS scenario
- Publish an NPS that includes SSA criteria only and does not invite site nominations or include a list of potential sites for new nuclear power stations
- Publish an NPS that only identifies sites from a nominations process that does not use criteria.
- Publish an NPS that includes SSA criteria and includes a list of sites that meet the criteria (this is the approach currently proposed)
- Publish an NPS that defines criteria which are used to assess the existing nuclear power station sites as potential locations for new nuclear power stations.

2.15 The consideration of alternatives will also be inherent to the assessment of the NPS, as the SSA process will invite nominations for new nuclear power station sites which will then be assessed against the SSA criteria. These will be alternative locations and not all may be included in the final Nuclear NPS.

Geographical scope

2.16 The power to consent to the construction of power stations greater than 50MW capacity has been executively devolved to Scottish Ministers and is also devolved in Northern Ireland.

- 2.17** The Infrastructure Planning Commission’s functions will be limited to England and Wales and the Nuclear NPS will only have effect under the Planning Bill in relation to England and Wales. However, the underlying policy set out in the NPS will cover the entire UK save that some of the siting criteria will be limited to England and Wales (where they relate to matters which have been devolved) and the process for nominating sites will be limited to England and Wales. In view of this, the NPS will not list any sites outside England and Wales.
- 2.18** The SEA will therefore cover the entire UK, however the assessment of certain issues under the SEA may need to focus on just England and Wales to reflect the fact that certain elements of the NPS will be limited to England and Wales.

Environmental topics to be covered in the SEA

- 2.19** In line with Annex I of the SEA Directive, this SEA will provide information on the likely significant effects on the environment including:
- Biodiversity
 - Population
 - Human health
 - Fauna
 - Flora
 - Soil
 - Water
 - Air
 - Climatic factors
 - Material assets
 - Cultural heritage including architectural and archaeological heritage
 - Landscape
 - The interrelationship between the above factors
- 2.20** Coverage of topics for this SEA goes beyond those topics set out in the SEA Directive. In addition to the topics of population, human health and material assets, we have included a wide range of socio-economic factors such as employment, demographics, life expectancy, vulnerability to illness, locations of settlements and infrastructure, property values, and access to services. The purpose of broadening the coverage of the SEA is to meet the requirements of the Planning Bill to undertake an appraisal of sustainability for the National Policy Statement. The Planning Bill specifies that:

‘Before designating a statement as a national policy statement for the purposes of this Act the Secretary of State must carry out an appraisal of the

sustainability of the policy set out in the statement'. (Part 2, Section 5(3) of the Planning Bill).

- 2.21** We intend, therefore, that this SEA forms the appraisal of sustainability, as well as being conducted in accordance with the SEA Directive. This is an approach that is specific to this NPS and will not necessarily be replicated in all NPSs.

Coverage of radioactive waste

- 2.22** The construction of new nuclear power stations will generate new radioactive waste that will need to be effectively managed and disposed of. The amount of new waste generated by new nuclear power stations will depend on the number of stations that are constructed, as well as other factors.

- 2.23** The Nuclear White Paper sets out the Government's conclusions in relation to the management of radioactive waste produced by new nuclear power stations as follows:

"Having reviewed the arguments and evidence put forward, the Government believes that it is technically possible to dispose of new higher-activity radioactive waste in a geological disposal facility and that this would be a viable solution and the right approach for managing waste from any new nuclear power stations. The Government considers that it would be technically possible and desirable to dispose of both new and legacy waste in the same geological disposal facilities and that this should be explored through the Managing Radioactive Waste Safely programme. The Government considers that waste can and should be stored in safe and secure interim storage facilities until a geological facility becomes available.

Our policy is that before development consents for new nuclear power stations are granted, the Government will need to be satisfied that effective arrangements exist or will exist to manage and dispose of the waste they will produce

The Government also believes that the balance of ethical considerations does not rule out the option of new nuclear power stations."

- 2.24** The Nuclear NPS will state that nuclear power stations should be allowed in certain locations and hence the SEA will take account of the fact that new waste will be created which will need to be managed and transported prior to disposal. The Nuclear White Paper made clear that it is the Government's policy that before development consents for new nuclear power stations are granted, the Government will need to be satisfied that effective arrangements exist or will exist to manage and dispose of the waste they will produce. We currently expect the Nuclear NPS to set out whether the Government is satisfied that such arrangements exist or will exist. The SEA will take account of this.

- 2.25** The Managing Radioactive Waste Safely (MRWS) programme will provide a mechanism for identifying a suitable site(s) for construction of a geological disposal facility for higher activity radioactive waste. The process will explore the disposal of both new and legacy waste in a geological disposal facility and a SEA will be undertaken that will identify the strategic environmental effects in relation to the construction of the facility.
- 2.26** The SEA for the Nuclear NPS will recognise that radioactive waste will be produced by new nuclear power stations. The assessment of high-level environmental impacts will take account of the fact that new waste will be created which will need to be stored and transported prior to disposal.

Coverage of Human Health

- 2.27** Human health is one of the SEA Directive topics and consideration of human health impacts will be a fully integrated element of this SEA. This is in line with the proposals in the Department of Health's draft guidance on covering health in the SEA¹¹.

Links with the Justification Process

- 2.28** The Government is running a process of Justification (in accordance with the Justification of Practices Involving Ionising Radiation Regulations 2004) to assess whether the economic, social or other benefits of specific new nuclear power technologies outweigh any health detriments.
- 2.29** In the UK, there is a process already in place to decide whether or not a new type or class of practice should be Justified. Additional guidance is being prepared setting out the process for making and considering applications in relation to new nuclear power stations.

Habitats Regulations Assessment

- 2.30** Under Article 6 (3) of the EU Habitats Directive¹² as transposed in the UK by the Habitats Regulations¹³, an "Appropriate Assessment" needs to be undertaken in respect of any plan or project which:
- either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the Natura 2000 network – these are Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (Natura 2000 network sites are also known as European Sites)

¹¹ Department of Health (2007): Draft guidance on health in strategic environmental assessment: consultation document

¹² Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

¹³ The Conservation (Natural Habitats, &c.) Regulations 1994 (Statutory Instrument No. 2176) (as amended) Statutory Rule 1995 No. 380 The Conservation (Nature Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)

- is not directly connected with the management of the site for nature conservation e.g. a site conservation plan.

2.31 A screening exercise will be undertaken to determine whether the NPS could have a significant effect on sites within the Natura 2000 network. This process will run alongside, but be separate to, the SEA process. The element of the NPS which could potentially result in significant effects is the SSA criteria and also the list of nominated sites. A Habitats Regulations Assessment (HRA) Screening Report will be produced during the development of the SSA criteria. This will determine whether the SSA criteria are likely to result in significant environmental effects on the Natura 2000 network. The Screening Report will be issued to Natural England, Countryside Council for Wales (CCW), the Department of the Environment's Environment and Heritage Service and Scottish Natural Heritage (SNH) for comments when we consult on the draft Exclusionary and Discretionary Criteria.

2.32 If the Screening Report concludes that significant effects on sites within the Natura 2000 network could occur, "Appropriate Assessment" will be undertaken but it will not commence until nominations for potential new nuclear power station sites are received as insufficient information will be available prior to that to be able to make reasoned judgments about the likely significance of effects.

3 Stages in the SEA Process

Introduction

- 3.1** This section of the Scoping Report provides more information about the stages in the SEA process, in particular the scoping process. Information is also provided about how the NPS and SEA processes will develop in tandem.

SEA Good Practice Guidance

- 3.2** This SEA has been designed to be in accordance with the SEA Directive as transposed by the SEA Regulations.
- 3.3** In September 2005, the Government published 'A Practical Guide to the SEA Directive'¹⁴ with advice on how to meet the requirements of the SEA Directive and implementing Regulations in practice. The preparation of this Scoping Report has followed this guidance which is referred to as the 'Practical Guide' throughout.

The SEA Process

- 3.4** The Practical Guide breaks the SEA process down into five key stages (A-E) and for each stage it recommends specific tasks that should be undertaken. Table 3-1 shows the key stages and tasks. We will establish at each stage A-E, the most appropriate methods for taking this SEA forward.

14 ODPM, Scottish Executive, Welsh Assembly Government, Department of the Environment in Northern Ireland (September, 2005) A Practical Guide to the Strategic Environmental Assessment Directive.

Table 3-1 Stages and Tasks in the SEA Process (as defined by the Practical Guide (September, 2005))

Stage in the SEA Process	Tasks within each Stage of the SEA Process
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope	A1: Identifying other relevant plans, programmes and environmental protection objectives A2: Collecting baseline information A3: Identifying environmental problems A4: Developing SEA Objectives A5: Consulting on the scope of the SEA
Stage B: Developing and refining alternatives and assessing effects	B1: Testing the plan or programme objectives against the SEA Objectives B2: Developing strategic alternatives B3: Predicting the effects of the draft plan or programme including alternatives B4: Evaluating the effects of the draft plan or programme, including alternatives B5: Considering ways of mitigating adverse effects B6: Proposing measures to monitor the environmental effects of plan or programme implementation
Stage C: Preparing the Environmental Report	C1: Preparing the Environmental Report
Stage D: Consulting on the draft plan or programme and the Environmental Report	D1: Consulting on the draft plan or programme and Environmental Report D2: Assessing significant changes D3: Decision-making and providing information
Stage E: Monitoring implementation of the plan or programme	E1: Developing aims and methods for monitoring E2: Responding to adverse effects

Tasks in the Scoping Process

3.5 Stage A of the SEA process and the associated tasks as defined in Table 3-1 are reported in subsequent sections of this Scoping Report. Table 3-2 provides further information about the purpose of each of the tasks.

Table 3-2 The Purposes of Stage A of the SEA Process

Tasks	Purpose of the Tasks
A1: Identifying other relevant plans, programmes and environmental protection objectives	This stage establishes how other plans, programmes and environmental protection objectives might influence the SEA process and the development of the NPS. The process is particularly useful for identifying potential SEA Objectives by identifying prominent international and national objectives.
A2: Collecting baseline information	This process provides the evidence base for the assessment and is also necessary to identify existing environmental problems and potential SEA Objectives.
A3: Identifying environmental problems	Through the gathering of baseline data and the review of other relevant plans, programmes and environmental protection objectives it is possible to identify existing and potential future environmental issues that the SEA and NPS must take into consideration.
A4: Developing SEA Objectives	The SEA Objectives are developed to assess the environmental performance of the constituent parts of the NPS and alternatives to it. The SEA process will also assess the extent to which the SEA objectives can be met.
A5: Consulting on the Scope of the SEA	This process ensures that the SEA covers all necessary issues and establishes the framework for the rest of the process.

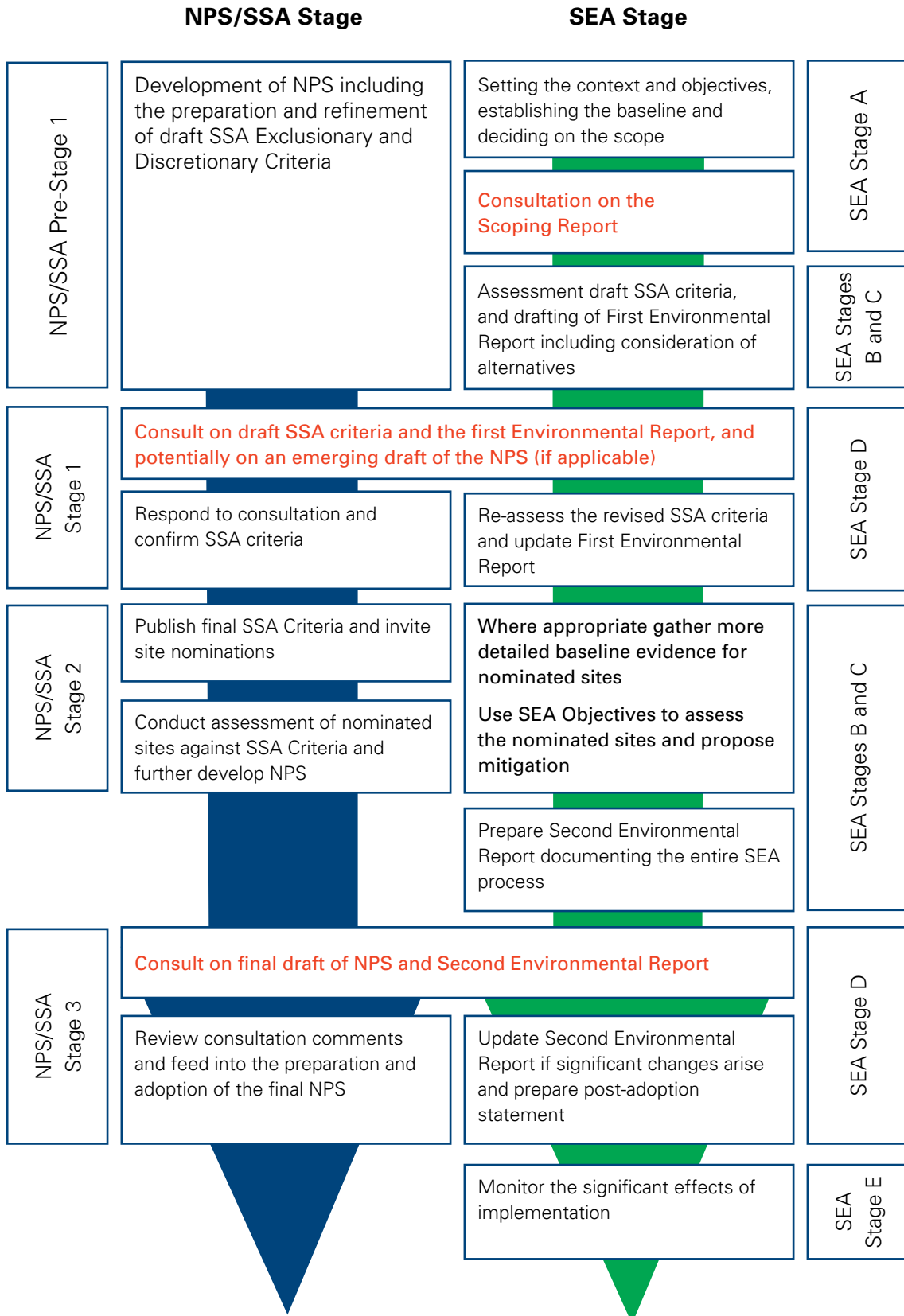
Integrating the SEA and NPS

- 3.6** The Government considers it appropriate to treat the “Nuclear NPS” as a “plan” or “programme” for the purposes of the SEA Directive. However, the Nuclear NPS is not a typical plan or programme and the application of the SEA process to it needs to be carefully tailored to ensure that maximum value is obtained from the SEA. This is an approach that is specific to this Nuclear NPS and will not necessarily be replicated for all NPSs. Diagram 3-1 demonstrates how the SEA will be integrated with the development of the NPS including the SSA.

- 3.7** Based upon the current proposed contents of the NPS, the following elements have been identified for assessment through the SEA:
- The draft SSA Exclusionary and Discretionary Criteria
 - The draft list of nominated sites
- 3.8** The reporting of these parts of the assessment will be documented in two Environmental Reports. The First Environmental Report will be issued alongside the consultation on the draft exclusionary and discretionary criteria (which may also include a draft of the emerging NPS). The First Environmental Report will document the consideration of the alternatives considered, (as defined in paragraph 2.10) as well as an assessment of the draft SSA Exclusionary and Discretionary Criteria.
- 3.9** Following the receipt of comments on the siting criteria (and on the emerging draft of the NPS if applicable) and the First Environmental Report, an updated version of the Environmental Report may be produced and this would be published, if necessary, when the Government invites nominations for the new nuclear power station sites, along with the final set of the Exclusionary and Discretionary Criteria that will form part of the final NPS.
- 3.10** The Second Environmental Report will be issued alongside a final draft of the NPS which will document the assessment of all relevant elements of the NPS including the nominated sites.
- 3.11** The stages of SEA, as proposed by the Practical Guide are presented at the side of Diagram 3-1. Note how the iterative nature of the proposed process results in stages B, C and parts of D being undertaken twice.
- 3.12** The SEA and NPS/SSA processes are intended to be integrated, running in parallel to each other with ongoing feedback occurring between them. Diagram 3-1 below sets out the proposed process for producing the Nuclear NPS, and the interlinkages with the Strategic Siting Assessment and the Strategic Environmental Assessment.

Diagram 3-1 Integrating the NPS and SEA

Proposed NPS for nuclear power



4 Task A1: Identifying other Relevant Plans, Programmes and Environmental Protection Objectives

Introduction

- 4.1** Annex I of the SEA Directive defines the requirements for the review of the relevant plans, programmes and environmental protection objectives with details provided in Box 1 below.

Box 1 SEA Directive Requirements for the Plans, Programmes and Environmental Protection Objectives Review

The SEA Directive requires:

'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))

Scope of the Review

- 4.2** There is no definitive list of the documents that should be reviewed as part of the SEA process. The documents reviewed for every SEA will vary depending upon the scope of the plan being assessed and the level at which the plan sits within the plan-making hierarchy i.e. whether it is an international, national or regional plan. As this SEA is being undertaken for a national plan that will have implications across the UK, the review of other relevant plans and programmes and other environmental protection objectives has focussed upon international documents and those produced at a national level in England, Wales, Scotland and Northern Ireland. The process has been guided by the Practical Guide

which provides an indicative list of the types of documents that could be reviewed.

4.3 The review of plans, programmes and environmental protection objectives is a valuable element of the SEA process as it assists with the following:

- The identification of environmental objectives of other relevant plans or programmes that should guide the SEA process
- The baseline data collation process by identifying key indicators and baseline trends
- The development of the SEA framework which should comprise objectives, indicators and targets
- Determining whether there are any clear potential conflicts or challenges between the plans, programmes and environmental protection objectives and the emerging plan which is the subject of the SEA process

4.4 A series of tables presented in Appendix A present the review of relevant plans, programmes and environmental protection objectives, and document the following:

- The primary objectives of the documents including their environmental protection objectives where appropriate
- Key indicators and targets of relevance in the documents
- How the objectives within the plans and programmes should be taken into consideration in the SEA and the plan-making process, including any clear potential conflicts between them and the emerging NPS.

Question 1

Are there any other plans, programmes or environmental protection objectives that should be identified and reviewed as part of the SEA process?

5 Task A2: Collecting Baseline Information

Introduction

- 5.1** Annex I of the SEA Directive defines the requirements for the collation of baseline data with details provided in Box 2 below.

Box 2 SEA Directive Requirements for Baseline Data Collation

The SEA Directive requires:

'the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.'
(Annex I (b))

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

Purpose of the Baseline Data Collation Process

- 5.2** The gathering of baseline data provides a basis for predicting and monitoring the environmental effects of implementing a plan or programme. By gathering baseline data it is possible to determine the following:
- The current status of the environment
 - Sensitive receptors e.g. rare habitats, sensitive populations
 - Current issues and problems and trends through time
 - Environmental performance against established thresholds and targets.

Methodology

- 5.3** The baseline data collation process varies for every SEA and is driven by the scope and scale of the plan or programme being assessed. Whilst this SEA is being undertaken for a NPS which will have national implications, it will also identify broad sites at a more local scale which will need to be considered in the SEA. Consequently, a two-stage approach to the baseline data collation process is to be adopted which will allow higher-level data to be collated first and then regional and local data to be collated, as appropriate, once sites for new nuclear power stations have been nominated.

Stage One of the Baseline Data Collation

- 5.4** To enable a robust assessment of the SSA Exclusionary and Discretionary developed as part of the NPS, an understanding of the environmental constraints at a national scale across the UK is required.
- 5.5** The starting point for the collation of baseline data was the environmental topics referred to in Annex I of the SEA Directive: biodiversity, population, human health, flora, fauna, soil, water, air, climatic factors, material assets and cultural heritage including architectural and archaeological heritage. For the purposes of this SEA, data has also been collated in relation to geology.
- 5.6** As recommended in good practice guidance the baseline data collation has been based around a series of indicators which will be linked to the SEA Objectives (refer to Section 7 for further details). Data has largely been collated for international and national features with an emphasis placed upon features which have a statutory importance, for example SPAs, Sites of Special Scientific Interest (SSSI), National Parks, etc. This is supported by additional information on non-statutory features where possible. The emphasis is on spatial data as the NPS and the integral SSA will lead to the identification of sites at a strategic level that are potentially suitable for new nuclear power stations. Much of the baseline data has been sourced using Geographical Information Systems (GIS). Table 5-1 presents the indicators that have been collated to date for each SEA Directive topic.

Table 5-1 Indicators Used for the First Stage of the Baseline Data Collation

SEA Directive Topic	Indicators (First Stage)
Biodiversity, Flora and Fauna	Location of SPAs, SACs, Ramsar Sites, National Nature Reserves (NNR), SSSI, Areas of Special Scientific Interest (ASSI), (Northern Ireland only), Marine Nature Reserves (MNR), Marine Consultation Areas (MCA), Biosphere Reserves. Location of Areas of Ancient Woodland

SEA Directive Topic	Indicators (First Stage)
Population and Human Health	Population The location of major settlements and areas of population Age structure working-age population Unemployment Economic activity rates Job density Average earnings by residence Radiation exposure to the public Radioactivity levels in the environment Life expectancy at birth and at age 65 Healthy life expectancy at age 65 Index of Multiple Deprivation – overall deprivation domain for England, Wales, Scotland and Northern Ireland Standardised Mortality Ratio Perinatal, infant and neonatal mortality rates Rates of leukaemia (Crude rate per 100,000 population) Cancer mortality statistics per 100,000 population Percentage of population in 'not good health' Location of National Trails (England and Wales) and Long Distance Routes (Scotland)
Material Assets	Location of strategic rail links Location of strategic road network (motorways and trunk roads) Location of airports Location of ports Average property values
Air and Climatic Factors	Location of Air Quality Management Areas (AQMAs) Regional distribution of net greenhouse gas emissions Contribution of sectors to greenhouse gas emissions Location of fluvial and tidal floodplain
Water	Chemical and biological water quality Freshwater Fish Directive Sites Bathing Water Quality Designated Shellfish Waters
Soils and Geology	Location of geological SSSI/ASSI Location of Geoparks

SEA Directive Topic	Indicators (First Stage)
Cultural Heritage	Location of World Heritage Sites Location of Scheduled Monuments (Scheduled Zones in Northern Ireland which also includes battlefields) Location of Historic Battlefields (England) Location of Designated Protected Wrecks Location of Historic Parks and Gardens (England only) Location of Historic Garden and Designated Landscape (Scotland only) Location of Historic Gardens (Northern Ireland only) Register of Parks and Gardens of Special Historic Interest (Wales only)
Landscape	Location of National Parks Location of Areas of Outstanding Natural Beauty (AONB) (England, Wales, Northern Ireland) and National Scenic Areas (NSA) (Scotland) Heritage Coast (England and Wales) and Preferred Conservation Zones (Scotland)

Stage Two of the Baseline Data Collation

- 5.7** Following the nomination of potential sites for new nuclear power stations, the baseline data collation process will be further refined. It is proposed that regional and local level data will be sourced, as appropriate, to enable a more detailed, although still strategic, assessment to be undertaken.
- 5.8** Data that would typically be collated to inform an Environmental Impact Assessment i.e. very site specific data or data requiring the execution of surveys would not be gathered as part of this SEA as this is a strategic study. The collation of the additional baseline data is likely to require liaison with regional/local bodies and is, therefore, best undertaken once nominated sites have been identified.
- 5.9** Additional information about designated features and sites will also be obtained. For example, whilst the first stage in the data collation process only identified the location of designated sites e.g. SPAs, the second stage will seek to obtain more information about the relevant sites, for example, the qualifying features, for those in the vicinity of nominated nuclear power station sites. Very detailed and site specific data will not be collated as this would be more appropriate for project level EIA to consider.
- 5.10** Table 5-2 presents the indicators that will be gathered for each of the SEA Directive topics during this second stage of data collation. This list may be amended or added to as the SEA evolves.

Table 5-2 Indicators to be Used for the Second Stage of the Data Collation

SEA Directive Topic	Indicators (Second Stage)
Biodiversity, Flora and Fauna	<p>Location of Areas of Special Protection (AoSP) (England, Scotland and Wales) and Wildlife Refuges (Northern Ireland).</p> <p>Location of Sensitive Marine Areas</p> <p>Location of Local Wildlife Sites</p> <p>Location of Local Nature Reserves (LNR) (England, Scotland and Wales) and Local Authority Nature Reserves (LANR) in Northern Ireland.</p> <p>Location of Limestone Pavement Orders</p> <p>Collation of local level species records e.g. protected species records from Local Wildlife Trusts and local authority records.</p> <p>Collation of more information about designated sites e.g. the qualifying features where appropriate</p>
Population and human health	<p>Collation of additional data at the nominated sites stage in relation to the location of recreational land, Woodland Parks, Country Parks</p> <p>Collation of more regional/localised data in relation to access to services, housing and public transport infrastructure</p> <p>Radon levels in UK homes</p> <p>Locations of emergency services including hospitals, fire stations, police stations</p> <p>Satisfaction with the local area as a place to live</p> <p>Age standardised incidence and mortality statistics for most common cancers</p> <p>Collation of additional regional/local level data at the nominated sites stage in relation to the structure of the population and its vulnerability including data about the age structure and incidence of key illnesses and diseases. There will also be an emphasis placed upon obtaining age standardised incidence and mortality rates for specific diseases for males and females.</p> <p>Key skills and the major skills gaps in the regional/local workforce</p> <p>Additional Index of Multiple Deprivation data will be sought for each of the nominated sites by breaking the index down into the relevant sub-domains</p>
Material Assets	<p>As for human health collation of more regional/localised data in relation to access to services, housing and public transport infrastructure</p>

SEA Directive Topic	Indicators (Second Stage)
Air and Climatic Factors	Areas benefiting from flood defences including coastal defences Flood water storage areas
Water	Chemical and biological water quality – further details Groundwater vulnerability Location of Groundwater Source Protection Zones
Soils and Geology	Location of Regionally Important Geological/ Geomorphological Sites (RIGS) Recorded mineral sites Areas of known mining instability Control of Major Accident Hazard (COMAH) sites
Cultural Heritage	Location of Listed Buildings Location of Conservation Areas
Landscape	Location of Country Parks Location of Regional Parks Location of Woodland Parks Identification of landscapes of local importance

The Collated Data and Proposed Data Collation

5.11 Appendix B presents the baseline data collated to date and also presents the additional indicators for which data will be sourced during stage two of the baseline data collation process. The appendix is structured to provide the following information:

- Details of the indicators that have been collated and also, where relevant, the legislative or statutory framework that supports the indicator, for example with designated areas such as SPAs.
- Data for England, Northern Ireland, Scotland and Wales.
- Data about trends through time where available.
- The source of the information provided.

5.12 Appendix B is supported by Figures 1 to 5 which show the geographical distribution of some of the key designated sites and features across the UK. Table 5-3 provides a summary of the data presented on these figures. An indication is provided in brackets of whether an information layer only applies to a specific part of the UK.

Table 6-1: Environmental Problems and Issues

SEA Directive Topic	Key Environmental Problems and Issues
Biodiversity, Flora and Fauna	<p>The conservation of biological diversity is an important global issue. In 2002 in the UK, 97% of unimproved lowland grasslands and 94% of lowland raised bogs were estimated to have been lost since the nineteenth century. Seed-eating farmland birds declined sharply between 1977 and 1991, species at risk including the common linnet, reed bunting, skylark and tree sparrow and some continue to decline. Species such as the large copper, Kentish plover and Ivell's sea anemone are now extinct in the UK¹⁵. By 2005, 22% of UK Biodiversity Action Plan (BAP) habitats and 11% of priority species were shown to be increasing. 39% of habitats and 27% of priority species were declining although the decline is slowing for 25% of all habitats and 10% of all species. Overall, in 2005, more priority species showed improved trends than in 1999 and 2002¹⁶.</p> <p>Although many targets for BAP habitats and species have still to be achieved, it can take time to reverse adverse trends and progress is being made in many cases.</p> <p>Habitat loss/degradation (particularly due to agriculture and infrastructure development) and global warming are the current or emerging threats of significance to the highest proportion of priority species and habitats.</p> <p>There are many internationally and nationally designated sites located across the UK which are afforded the highest levels of protection. These sites include principally, SPAs, SACs, wetlands designated under the International Convention of Wetlands of International Importance (Ramsar sites), SSSI, NNRs and MNRs. The location of the nature conservation features is shown on Figure 1.</p> <p>The total area of land and sea designated in the UK as SSSI, SPA or SAC increased between 1996 and 2006 from 2.3 million to 3.5 million hectares which is an overall increase of 50% (Defra)¹⁷. It is estimated that approximately 70% of the Welsh coastline lies within SAC.¹⁸</p> <p>The features of the designated sites are monitored to determine whether conservation objectives are being met. The Government has set a target for 95% of features to be in either favourable or recovering towards favourable condition by 2010. At April 2006, condition of features under the SSSI, SAC and SPA designations were below the target.</p>

15 Defra (2005) The UK Biodiversity Action Plan – 2002 Reporting Round

16 Defra (2005) The UK Biodiversity Action Plan – Highlights from the 2005 Reporting Round

17 Defra (2007) Biodiversity Indicators in your Pocket 2007, Measuring Progress Towards Halting Biodiversity Loss

18 CCW (2007) Strategic Environmental Assessment: Guidance for Practitioners, SEA Topic: Landscape

SEA Directive Topic	Key Environmental Problems and Issues
Biodiversity, Flora and Fauna	<p>Many of the internationally designated sites across the UK are situated in estuarine and coastal locations. These issues must be given careful consideration when assessing locations for new nuclear power stations. The review of the international and national plans, programmes and environmental protection objectives highlights the need to ensure the highest level of protection to these sites both now and into the future.</p> <p>A large number of local and non-statutory wildlife sites exist across the UK, which, while not as important as the designations mentioned above, are a significant means of describing the spread of valued and protected wildlife. Many of these contain rare and protected species but they are too detailed to map adequately at this stage of the SEA. Similarly, designated areas are only a part of the UK's ecological network which is under varying degrees of threat in different locations. Biodiversity in general, whether designated or not, is very important and the maintenance of wildlife corridors and ecological networks will be key when siting new nuclear power stations. Further information on valuable habitats and species will be collated where appropriate (and at an appropriate scale) at the nominated sites stage.</p> <p>Biodiversity, flora and fauna can be affected by a variety of anthropogenic impacts particularly as a result of development pressures, for example land take, noise and vibration, lighting, pollution, water level changes etc. These issues must be given consideration when assessing locations for new nuclear power stations.</p>
Population and Human Health	<p>The UK population is growing and has increased by around 8% since 1971.</p> <p>Whilst life expectancy across the UK has been increasing, there remain health inequalities that result from a wide variety of factors. Health issues are closely related to socio-economic conditions and the quality of people's living environment. A wide range of central and local government schemes are in place to help reduce these inequalities. Typically, inequalities are at their most extreme in inner city areas.</p> <p>A new performance framework has recently been defined for local authorities by the Government which establishes key performance indicators and departmental strategic objectives. A key objective is to promote better health and well-being for all¹⁹.</p>

19 Department for Communities and Local Government (DCLG) (2007) The New Performance Framework for Local Authorities and Local Authority Partnerships: Single Set of National Indicators.

**SEA
Directive
Topic**

Key Environmental Problems and Issues

Population and Human Health

Health statistics indicate that there is a link between occupational circumstances and mortality. Between 2001 and 2003 the age standardised mortality rate of men aged 25-64 in routine occupations was 513 per 100,000 population which was 2.8 times the rate of 182 per 100,000 among men in the higher managerial occupations²⁰.

In 2005, radiation doses to people living around the nuclear sites in the UK remained below national European limits and in 2005 there were no major changes in the levels of radioactivity in food or environmental materials compared to 2004²¹.

In areas remote from nuclear sites, food and drinking water in the general diet and in sources of public drinking water were analysed and indicated that radioactivity from naturally occurring sources was the most significant source of exposure to communities in these areas. Man-made radionuclides contributed only a small proportion of the public radiation dose in general diet²².

The average annual dose of radiation to the UK population from all sources is 2.6 mSv. Around 80% of this dose originates from natural sources, whilst medical procedures such as X-rays accounts for around 14% of our total annual exposure to man made radiation. Data for the period 1998 to 2003 indicates that occupational exposure to radiation in the nuclear industry has decreased significantly²³. These issues must be given careful consideration when assessing locations for new nuclear power stations.

Unemployment is also varied across the UK, although on the whole it has been falling in recent years. Unemployment is lowest in Northern Ireland compared to other parts of the UK and highest in certain parts of Greater London and Merseyside. The construction, operation and decommissioning of power generating plant of all types is expected to create employment opportunities.

20 National Statistics (2007) Health Statistics Quarterly, Number 36.

21 Environment Agency, Environment and Heritage Service, Food Standards Agency, SEPA (2006) Radioactivity in Food and the Environment, 2005.

22 Environment Agency, Environment and Heritage Service, Food Standards Agency, SEPA (2006) Radioactivity in Food and the Environment, 2005.

23 Health Protection Agency (2005) Ionising Radiation Exposure of the UK Population: 2005 Review

SEA Directive Topic	Key Environmental Problems and Issues
Material Assets	<p>There is a comprehensive transport network across the UK comprising road, rail, air, inland waterways and ports. Nonetheless, traffic congestion and associated air quality and climatic impacts are rising, notably in major urban areas. There are still many more remote, rural areas of the UK which are less well served by the transport network.</p> <p>Between 1990 and 2005, motor vehicle traffic rose by over 21% in Great Britain²⁴. Traffic generation and transport infrastructure capacity are important issues that must be given careful consideration when assessing locations for new nuclear power stations.</p> <p>Property and land values throughout the UK have risen significantly over the last seven years. Recent House Price Indices, such as Nationwide Building Society's, show that prices are now levelling off in many areas.</p> <p>The UK has accumulated a substantial legacy of radioactive material from a range of civil and defence related programmes. Radioactive waste is classified into high, medium and low-level. Other materials including spent fuel, plutonium and uranium are not classified as waste but may need to be managed through disposal. The consultation document, <i>Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal</i>, quoted CoRWM's estimate that the projected amount of legacy waste and remaining potential legacy waste that will need to be managed through disposal at 2120 is approximately 477,680m³ of which the majority by volume is intermediate level waste. Much of the waste in the estimate has yet to be generated, as it still forms part of working nuclear power stations and reprocessing plants²⁵.</p>
Air and Climatic Factors	<p>The key sources of air pollution in the UK include transport, energy generation, industry, waste and agriculture.</p> <p>Most AQMAs designated across the UK are declared for exceedances of the nitrogen dioxide and PM10 objectives mainly due to road transport emissions. The main sources are local authority roads and the strategic highway network. Traffic generation and knock-on air quality issues must be given careful consideration when assessing locations for new nuclear power stations.</p>

24 Department for Transport (2006) Transport Statistics for Great Britain, 2006 Edition, Road Traffic by Type of Vehicle 1949 to 2005.

25 Defra (2007) *Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal*, A Public Consultation by Defra, DTI, and the Welsh and Northern Irish Devolved Administrations

**SEA
Directive
Topic**

Key Environmental Problems and Issues

Air and Climatic Factors

Whilst air quality has significantly improved since the 1950s, there remain levels of pollutants that continue to pose significant harm to human health and the environment and the focus of the 2007 Air Quality Strategy²⁶ is to further improve air quality in the future.

Between 1985 and 2003 radioactive emissions to air fell in the UK by approximately 76%²⁷.

The international framework for action in relation to climate change is established through the UN Framework Convention on Climate Change and the Kyoto Protocol to the UN Framework Convention on Climate Change. Both emphasise the need to significantly reduce greenhouse gas emissions.

Sea levels have been monitored at five sites around the UK between 1850 and 2006 at Liverpool, Newlyn, Aberdeen, North Shields and Sheerness. Records demonstrate a UK sea level rise of approximately 1mm per year combined with long-term geological movements which are causing the south and east to sink and the north to rise. Rises of sea levels are occurring as a consequence of thermal expansion of the oceans, isostatic change and other factors monitored by the Intergovernmental Panel on Climate Change such as the melting of low latitude glaciers.²⁸ Coastal locations have historically been selected for nuclear power stations because of the need for cooling water. The potential impact of future sea level rise will need to be taken into consideration when siting new nuclear power stations.

The Met Office has recently undertaken a study for British Energy investigating the medium to long term coastal risks to British Energy nuclear power station sites²⁹. The report highlights that little certainty can be placed on predictions of regional variations in sea level, excluding those that occur as a result of isostatic rebound. Climate induced sea level rise may put some unprotected low-lying coastal areas at risk and it assumed that the core of the eight sites studied are situated above even the most extreme estimates of local net sea level rise. It concludes that the main risk to the coastal sites would be from storm surges that are caused by low atmospheric pressure and strong winds and can be further exacerbated by the funnelling effect created at estuaries and river mouths. Unless the existing defences at some sites are enhanced then there could be risks to some sites.

26 Defra in partnership with Scottish Executive, Welsh Assembly Government and the Department of the Environment Northern Ireland (2007) the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Volume 1.

27 Defra (2005) Key Facts About: Radioactivity

28 Defra (2007) Key Facts about: Climate Change

29 Met Office (2007) Review of medium to long term coastal risks associated with British Energy sites: Climate Change Effects – Final Report.

SEA Directive Topic	Key Environmental Problems and Issues
Air and Climatic Factors	<p>Greenpeace also commissioned a study investigating the potential risks associated with siting new nuclear power station facilities at Hinkley Point, Sizewell, Bradwell and Dungeness in light of their coastal locations and the risks posed by climate change³⁰. The study projects net sea level change to 2080 for low and high emission scenarios and estimates the value of the predicted increase in 50 year surge height by 2080. The report concludes that with sea level rises and increases in storm surge under a high-emission scenario, Dungeness is at risk of flooding by 2080 and by 2195 would be highly threatened. Bradwell and Hinkley Point were also demonstrated to be at risk in the short and long-term. Conclusions were less clear in relation to risks at Sizewell although the risks of coastal retreat at this location were emphasised.</p> <p>UK emissions of the six greenhouse gases covered by the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) fell by 15.3% between the base year and 2005 from 775.2 to 656.2million tonnes of carbon dioxide equivalent. The biggest contributor to carbon dioxide emissions in 2005 was from energy industries (37%) compared to 22% for road transport³¹.</p> <p>The development of the siting criteria for new nuclear power stations should take account of the importance of avoiding any increase in flood risk or loss of floodplain. There are significant areas of the UK at risk of both coastal and fluvial flooding (See Figure 4 in the Scoping Report Appendices and Figures Volume).</p>

30 Greenpeace (2007) The Impacts of Climate Change on Nuclear Power Station Sites: A Review of Four Proposed New Build Sites on the UK Coastline’.

31 Defra (2007) 2005 UK Climate Change Sustainable Development Indicator and Greenhouse Gas Emissions Final Figures: Statistical Release

SEA Directive Topic	Key Environmental Problems and Issues
Water	<p>Chemical and biological water quality in England and Wales has improved between 1990 and 2006 and in Scotland water quality improved over the period 2000 to 2006. In Northern Ireland biological water quality decreased between 2000 and 2006 but chemical water quality improved. Clearly, water quality varies significantly between locations. The key contributors to poor water quality are agricultural run-off and industrial and water treatment discharges.</p> <p>The UK is currently implementing the Water Framework Directive which uses the ecology of water bodies as the main indicator of quality. This will, in the future, result in changes to the way water quality is monitored.</p> <p>Significant areas of the UK coast are designated under the Shellfish Waters Act for commercial fishing purposes. They are areas of coastal or brackish waters used for commercial fishing and water quality standards are set for these areas.</p> <p>Significant stretches of rivers and a number of additional areas of standing water are designated under the Freshwater Fish Directive which is concerned with the protection and improvement of fresh waters to support fish life. Between 1995 and 2005 failures to comply with the physical and chemical parameters proposed by the Directive were largely attributed to effluent discharges from waste water treatment works, low river flows, algal blooms and farm run-off³².</p> <p>In the UK between 1985 and 2003 radioactive emissions to water fell by about 82%³³.</p> <p>When assessing nominated sites under the SSA, the SEA assessment will need to take account of implications for discharges. The implications of discharges, abstractions, pollution and hydrology/hydrogeology must be given careful consideration when assessing locations for new nuclear power stations whether they be either in inland or in coastal areas.</p> <p>Whilst a large amount of baseline data is readily available in relation to the quality of surface waters there is very limited information available about groundwater quality.</p>

32 Defra (2007) e-Digest statistics about: Inland Water Quality and Use

33 Defra (2005) Key Facts About: Radioactivity

SEA Directive Topic	Key Environmental Problems and Issues
Soils and Geology	<p>Around one third of the SSSIs designated in the UK have a notified geological interest. These sites comprise some of the most important geological sites nationally and reflect the full range of the UK's geology.</p> <p>The geological conditions across the UK will be investigated in more detail once sites are nominated as part of the SSA process. Whilst it is possible to make some broad generalisations about the conditions across the UK, any of the indicators of relevance to this particular topic are most meaningfully gathered at the local level (i.e. during stage two of the baseline data collation once sites have been nominated), for example, the locations of RIGS, areas of known mining instability and the COMAH sites.</p>
Cultural Heritage	<p>The historic environment and cultural heritage as a whole is an important national resource³⁴. Cultural heritage is not just the physical remains but also the associated landscape elements. Heritage is made up of the rural and urban landscapes/townscapes as well as maritime archaeology. Heritage resources demonstrate how communities have been shaped through time and they are a resource which people can learn from, the economy can benefit from and which the community can easily interact with. Preservation of these resources is essential.</p> <p>Key physical heritage features in the UK include World Heritage Sites, Scheduled Monuments and Zones, Historic Battlefields, designated Protected Wrecks, Registered Parks and Gardens, Conservation Areas and Listed Buildings (the location of the latter two features will be explored in more detail once potential locations for new nuclear power stations are nominated). The location of these features is shown on Figure 2 in the Scoping Report Appendices and Figures Volume. In Scotland, there are far more features situated in the eastern part of the country and the lowlands, with far fewer features in the western Highlands and the western Isles. In England, Wales and Northern Ireland there are sites widely distributed across the countries. In England, there are far more World Heritage Sites in southern England.</p> <p>The preservation of the historic environment and its setting must be given consideration when assessing locations for new nuclear power stations.</p>

34 Department for Culture, Media and Sport (2001) The Historic Environment: A Force for Our Future

7 Task A4: Developing SEA Objectives

The Purpose of SEA Objectives

- 7.1** The use of SEA Objectives is not a requirement of the SEA Directive but their use is a recognised method of assessing the effects of a plan or programme. This technique is also proposed in the Practical Guide.
- 7.2** SEA Objectives are aspirational and reflect a desired direction of change, for example the maintenance of biodiversity levels. It therefore follows that these objectives do not have to be met in full. Ideally, the SEA Objectives should be supported by indicators which can be used to determine performance of an option or policy against the objective. The baseline data collation process should gather data for the indicators proposed to support the SEA Objectives, highlighting the iterative nature of the stages in the SEA process.

Development of the SEA Objectives

- 7.3** The SEA Objectives have been developed in accordance with the Practical Guide. At least one objective has been developed for each SEA Directive topic to ensure that all necessary topics will be addressed through the SEA. The objectives were also derived using:
- The review of environmental plans, programmes and environmental protection objectives conducted as part of stage A1 (we have also included a number of other initiatives).
 - The baseline data collation.
 - The identification of environmental problems.
- 7.4** Whilst the objectives have been grouped into the SEA Directive topics, there are significant inter-relationships and linkages between all of the objectives. For example an objective relating to flood risk has been grouped in the air quality and climate category but this also has implications for water resources, human health, population and material assets. The grouping of the objectives should, therefore, be seen as a tool for assisting the development of the objectives, rather than a specific indication that an objective is only relevant to one particular SEA Directive topic.
- 7.5** Each SEA Objective is supported by a series of guide questions. The guide questions are intended to provide more direction and focus to the SEA Objectives as the latter are more high-level. The guide questions will assist

the overall assessment process and help to ensure that it covers all necessary issues.

- 7.6** Table 7-1 presents the proposed SEA Objectives and indicates how they were developed and Table 7-2 presents the SEA Objectives, the supporting guide questions and indicators.
- 7.7** The SEA process will also consider the extent to which the SEA objectives set out here can be met.

Question 5

Are there any changes you consider should be made to the proposed SEA Objectives?

Question 6

Are there any other SEA Objectives, guide questions or indicators that should be included?

Table 7-1: Derivation of the SEA Objectives³⁵

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
<p>Biodiversity, Flora and Fauna</p> <p>The protection of biodiversity, flora and fauna is a central component and theme of many international documents. Some of the key objectives in the international documents are:</p> <ul style="list-style-type: none"> To conserve biological diversity (EU Biodiversity Strategy) The EU Sixth Environmental Action Plan identifies that protecting, conserving, restoring and developing the functioning of natural systems, natural habitats, wild flora and fauna is needed to halt desertification and the loss of biodiversity, including the diversity of genetic resources, both in the EU and on a global scale. The Bern Convention on the Conservation of European Wildlife and Natural Habitats requires every contracting party to the Convention to promote national policies for the conservation of wild flora, wild fauna and natural habitats, with particular attention to endangered and vulnerable species, especially endemic ones, and endangered habitats, in accordance with the provisions of this Convention. 	<p>The overarching theme of all national documents is the need to ensure that biodiversity and the impacts upon it are a central consideration of all decision-making. Opportunities to enhance biodiversity should also be pursued where possible.</p> <p>The overall goal of the UK BAP is to conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms.</p> <p>Similar principles and objectives are mirrored in the biodiversity strategies and action plans of the devolved administrations.</p>	<p>Potential for direct physical damage to habitats including fragmentation and severance.</p> <p>There might also be disturbance to species or alteration to habitats.</p> <p>Increased sediment loading and discharges e.g. low level radiation or as a result of accidents or spillages e.g. fuel, oil could adversely affect both terrestrial and aquatic ecology.</p> <p>Physical works associated with the construction and operation of the site could lead to modifications to watercourse/ waterbody morphology and hydrology.</p> <p>Contamination of soils as a result of the construction, operation and decommissioning of the new nuclear power station could have adverse effects for habitats and species.</p> <p>Biodiversity impacts could be long-term and impacts could continue during operation and potentially following decommissioning.</p>	<p>There are many internationally and nationally designated sites situated across the UK which must be afforded the highest levels of protection. These sites include SPAs, SACs, SSSIs/ASSIs and Ramsar sites. The location of the nature conservation features is shown on Figure 1 in the separate Figures and Appendices Volume.</p> <p>Regional and local level designations are also important once the sites are nominated. Furthermore, protected species and valuable but not protected flora and fauna are present across the UK, but these have not been mapped at this stage.</p>	<ol style="list-style-type: none"> To avoid adverse impacts on designated wildlife sites of international and national importance To avoid adverse impacts on valuable ecological networks To avoid adverse impacts on protected habitats and species

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development³⁶	Relevant Baseline Data for the UK³⁷	SEA Objective
<ul style="list-style-type: none"> • The Ramsar Convention includes a number of objectives which seek to ensure the wise use of wetlands. • The OSPAR (the Oslo Paris Convention) Biological Diversity Strategy seeks to protect and enhance the ecosystems and the biological diversity of the maritime area, which are, or could be, affected as a result of human activities. • The Bonn Convention on the Conservation of Migratory Species of Wild Animals includes an objective which seeks to provide immediate protection for migratory species included in Annex 1 of the Convention. <p>All of the documents are further supported by the EU Directive on the Conservation of European Wildlife and of Wild Fauna and Flora (92/43/EC) and the EU Directive on the Conservation of European Wild Birds (79/406/EEC) which require the highest level of protection to be afforded to biodiversity, flora and fauna.</p>				

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
<p>Population and Human Health</p> <p>All of the international documents in some way address the principles of protecting population and human health. A central principle of the UK Sustainable Development Strategy is 'ensuring a strong, healthy and just society' and a key priority is the need to build sustainable communities where people want to live and work now and into the future.</p> <p>The above principle is clearly embodied within the EU Sixth Environmental Action Plan 2002 – 2012 which states that 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. Sustainable urban development should also be promoted.</p>	<p>All of the national documents in some way address the principles of protecting population and human health. A central principle of the UK Sustainable Development Strategy is 'ensuring a strong, healthy and just society' and a key priority is the need to build sustainable communities where people want to live and work now and into the future.</p>	<p>The construction, operation and decommissioning of the nuclear power stations could create job opportunities. Whilst there could be job opportunities created by the power stations, perceptions of the safety or acceptability of the power stations could deter other types of investors. There may be impacts upon property values. Perceptions of the risks associated with the new nuclear power stations could deter people from choosing to live in the area and could lead to localised demographic changes. The construction works could lead to disruption to services like electricity, water, gas etc. During the construction, operation and decommissioning phases there could be a risk of accidents. Whilst operational, site staff could be exposed to low-levels of radiation.</p>	<p>Unemployment across the UK has been falling in recent years. Differences in unemployment rates in local areas within regions are greater than differences between regions. New nuclear power stations present an opportunity to provide new employment opportunities. Life expectancy in the UK has increased. In 2005, radiation doses to people living around nuclear sites remained well below national and European limits. The limit is 1 milliSievert (mSv). Food and drinking water in the general diet and in sources of public drinking water were analysed across the UK. Results showed that radioactivity from naturally occurring sources was the most significant source of exposure to communities in areas remote from nuclear sites. Man-made radionuclides only contributed a small proportion of the total public radiation dose in general diet.</p>	<p>4. To create employment opportunities</p> <p>5. To encourage the development of sustainable communities³⁸</p> <p>6. To protect physical health</p> <p>7. To protect mental health</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
		<p>Throughout the construction, operation and decommissioning there could be exposure to noise and vibration.</p> <p>The perception of the health impacts of the facilities could have adverse impacts upon well-being.</p> <p>The wider population living in the vicinity of the new nuclear power station could be exposed to risks from ionising radiation during the operation of the facility. The radiation dose may arise from direct radiation, inhalation and ingestion of radioactive materials through food and through the food chain as a result of the discharge and disposal of radioactive wastes.</p> <p>There is the potential for loss of land used for recreational purposes and also impacts upon adjacent land uses, for example footpaths.</p>		

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
		<p>There may be opportunities to educate nearby residents and other interested parties through the establishment of visitor centres at the sites.</p> <p>Alterations to level of lighting could lead to light pollution for nearby residents.</p>		
Material Assets				
<p>This is a very broad topic area and all of the international documents address the protection and enhancement of material assets by seeking to protect the quality of the built and natural environment and highlighting the need to establish sustainable communities.</p>	<p>This is a very broad topic area and all of the national documents address the protection and enhancement of material assets by seeking to protect the quality of the built and natural environment and highlighting the need to establish sustainable communities.</p>	<p>The construction and operation of new nuclear power stations could increase pressure on the use of the strategic transport network to enable delivery of raw materials and also ensuring suitable access for workers. See also impacts identified in the population and human health section relating to land values and loss of recreational land.</p>	<p>There is a comprehensive transport network across the UK comprising road, rail, air, inland waterways and ports. However, some areas are more poorly served than others. Between 1990 and 2004, motor vehicle traffic rose by 21% in Great Britain and congestion is a significant issue.</p>	<p>8. To avoid adverse impacts on the function and efficiency of the strategic transport infrastructure</p> <p>9. To avoid disruption to basic services and infrastructure³⁹</p> <p>10. To avoid adverse impacts on property and land values and to avoid planning blight</p> <p>11. To avoid the loss of recreational and amenity land</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
<p>Air and Climatic Factors</p> <p>There are a number of international air quality directives which establish the need for the protection of air quality. The EU Air Quality Framework Directives (96/62/EC) and Daughter Directives (1999/30/EC), (2000/69/EC), (2002/3/EC), (2004/107/EC) set the framework for protecting and enhancing air quality in Europe.</p> <p>The UN Framework Convention on Climate Change sets an overall intergovernmental effort to tackle the challenges and threats posed by climate change.</p>	<p>The UK Air Quality Strategy provides the overall framework for ensuring that air quality is protected and enhanced. This strategy also emphasises the need to consider the impacts of adverse air quality upon human health.</p> <p>The UK Sustainable Development Strategy identified climate change and energy as a priority issue that needs to be tackled. Climate change and objectives are reiterated throughout the national documents with one of the most important being "Climate Change – the UK Programme 2006: Tomorrow's Climate, Today's Challenge". This essentially outlines how the UK is to meet greenhouse gas reduction commitments.</p>	<p>The construction of new nuclear power stations could lead to dust generation and an increase in vehicular emissions from construction vehicles, although such impacts would tend to be quite localised.</p> <p>During operation there could be releases of radionuclides into the atmosphere and vehicular emissions.</p> <p>The operation of nuclear power stations could lead to a reduction in carbon dioxide emissions compared with some other energy generating sources.</p> <p>Depending upon the location of the new nuclear power stations there could be increased flood risk as a result of direct loss of floodplain and potentially through increasing runoff rates.</p>	<p>The UK's air is cleaner in overall terms than at any time since the industrial revolution, but it still causes serious adverse health effects and there are significant benefits to be gained from improving air quality further. Pollutants from sources such as cars, aircraft and industrial plants lead to levels of pollution which are still having a marked affect on our health and natural environment. Air pollution is currently estimated to reduce the life expectancy of every person in the UK by an average of 7-8 months.</p> <p>Emissions of the six greenhouse gases covered by the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) fell by 15.3% between the base year and 2005 from 775.2 to 656.2 million tonnes of carbon dioxide equivalent. The biggest contributor to carbon dioxide emissions in 2005 was from energy industries (37%) compared to 22% for road transport (Defra, 2007)⁴⁰.</p>	<p>12. To avoid adverse impacts upon air quality</p> <p>13. To minimise greenhouse gas emissions</p> <p>14. To avoid increased flood risk (including coastal flood risk)</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
<p>Water</p> <p>International documents emphasise the need to protect both water quality and water resource availability. The most significant international water related Directive of recent years is the EU WFD (2000/60/EC) which establishes a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. The emphasis is upon holistic river basin planning.</p> <p>There are a number of other Directives addressing water quality including the Groundwater Directive (80/68/EEC), Surface Water Abstraction Directive (75/440/EEC) and the Drinking Water Directive (98/83/EC).</p> <p>The OSPAR Radioactive Substances Strategy is a very important document that seeks to prevent the pollution of the maritime area by reducing discharges and emissions and losses of radioactive substances.</p>	<p>The UK Sustainable Development Strategy emphasises the need to ensure natural resource protection and use including water resource use and protecting and enhancing water quality.</p> <p>Reducing flood risk and preventing an increase in flood risk is a central theme to many of the documents and planning guidance relating to development and flood risk is prepared by each of the Devolved Administrations.</p>	<p>There could be the potential for adverse impacts to water quality during the construction, operational and decommissioning phases as a result of the disturbance of contaminated soil, accidental spillages of fuels, oils or cleaning fluids and the mobilisation of sediment. Impacts on water quality could have knock on effects on human health if drinking water is affected.</p> <p>The compaction of the soil could result in increased surface runoff and works undertaken in close proximity to rivers or streams could lead to modifications to bank stability. Any changes to flow patterns in the watercourses could lead to increased sedimentation.</p> <p>Groundwater abstraction could lead to alterations to the water table and groundwater distribution and flow.</p> <p>New nuclear power stations would require cooling water and increased abstraction from waterbodies to service the facilities could lead to alterations to aquatic ecosystems.</p>	<p>There are significant areas of the UK at risk of tidal and fluvial flooding. The location of the flood areas is shown on Figure 4.</p> <p>There are a number of sensitive water receptors in the UK including Shellfish Waters, Freshwater Fish Directive sites and other habitats and species dependent upon a healthy water environment.</p>	<p>15. To avoid adverse impacts on surface water hydrology and channel geomorphology (including coastal geomorphology)</p> <p>16. To avoid adverse impacts on surface water quality (including coastal water quality)</p> <p>17. To protect the supply of water resources</p> <p>18. To avoid adverse impacts on groundwater quality, distribution and flow</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
<p>Soils and Geology</p> <p>Protection of natural resources is a central theme of all of the international documents.</p> <p>A priority area in the Sixth Environmental Action Plan is natural resources and waste and the need to ensure that the use of non-renewable resources does not exceed the carrying capacity of the environment.</p>	<p>The UK Sustainable Development Strategy highlights that natural resource protection and environmental enhancement is a priority issue to be addressed.</p>	<p>The construction of the new nuclear power stations could lead to soil compaction and potentially increase erosion risks.</p> <p>During operation there could be contamination risks associated with the release of radioactive substances and other hazardous materials as a result of accidents.</p> <p>The creation of new access roads to the power stations could lead to an increase in runoff from roads which could also lead to soil contamination.</p> <p>Once a nuclear power station site has been decommissioned some soil contamination could remain which could have implications for future uses of the land.</p> <p>There could be direct loss of geological resources as a result of the need to construct the site. There could also be indirect effects as a result of the waste generated by the process and how this would be treated and disposed of.</p>	<p>The collation of baseline data has to date focussed upon the location of key geological sites including SSSIs and Geoparks. Around one third of the SSSIs in the UK are notified for some geological interest features.</p> <p>Geological conditions will be explored in more detail once nominated sites are received for new nuclear power stations. The additional data gathered will include details about the location of RIGS, coal mining affected areas and COMAH sites.</p>	<p>19. To avoid damage to important geological sites</p> <p>20. To avoid use of greenfield land and encourage the re-use of brownfield sites</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
Cultural Heritage including architectural and archaeological heritage				
<p>Whilst there are no specific documents identified that specifically address cultural heritage, the European Landscape Convention incorporates cultural heritage issues and recognises the links between the landscape and heritage.</p>	<p>There is a clear emphasis throughout all of the documents upon the need to ensure that heritage resources are protected. For example, the Scotland Sustainable Development Strategy emphasises the need to protect natural heritage and resources.</p> <p>Planning guidance for all of the devolved administrations includes planning policy guidance relating to the protection of archaeological and built heritage resources.</p>	<p>Construction of the new nuclear power stations could result in damage to archaeological and built heritage features. Impacts could be direct e.g. direct loss or indirect e.g. an impact upon setting.</p> <p>During operation there could be adverse impacts upon the setting and during decommissioning there could also continue to be adverse impacts upon heritage features.</p>	<p>Across the UK there are a number of cultural heritage features including World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, protected wrecks and historic battlefields. The location of all of these sites is shown on Figure 2.</p> <p>These resources are important educational and economic resource, as well as providing us with valuable evidence of our past and the factors that have influenced communities today.</p>	<p>21. To avoid adverse impacts on the internationally and nationally important features of the historic environment</p> <p>22. To avoid adverse impacts on the setting and quality of built heritage, archaeology and historic landscapes.</p>

Relevant International Plans, Programmes and Environmental Protection Objectives.	Relevant National Plans, Programmes and Environmental Protection Objectives.	Potential Issues Associated with Nuclear Power Station Development ³⁶	Relevant Baseline Data for the UK ³⁷	SEA Objective
Landscapes				
<p>The European Landscape Convention seeks to foster the protection, management and planning of the European landscape.</p>	<p>Protecting and enhancing the natural environment is a central theme of many of the national documents.</p> <p>There are no specific national landscape strategies of relevance but landscape concerns are clearly presented throughout most of the documents.</p> <p>For example, the “Environment Strategy Wales” seeks to protect and enhance landscape and seascape.</p>	<p>The construction of new nuclear power stations could introduce a new prominent feature into the existing landscape which could have impacts upon landscape character and quality and upon nearby visual receptors.</p> <p>The above impacts could continue throughout operation and decommissioning.</p>	<p>There are a number of areas designated across the UK as AONBs/NSAs and National Parks because of the high quality of the landscape and the need to protect and enhance such areas. The location of these areas is shown on Figure 3.</p> <p>Significant stretches of the England and Wales coast are identified as Heritage Coast.</p>	<p>23. To avoid adverse impacts on internationally and nationally important landscapes</p> <p>24. To avoid adverse impacts on landscape character, quality and tranquillity</p>

³⁵ As well as relevant plans and programmes, we have included ‘initiatives’, such as the Energy White Paper.

³⁶ It should be noted that the impacts identified in this column are potential impacts only, many of which could be mitigated through careful planning and the implementation of mitigation measures. The table is not intended to identify all those impacts that would definitely occur but rather to ensure that all potential issues are identified and hence that appropriate SEA Objectives are developed for the purposes of the assessment process.

³⁷ For full baseline details refer to Appendix B.

³⁸ The Egan Review states that ‘sustainable communities meet the diverse needs of existing and future residents, their children and other users, contribute to a high quality of life and provide opportunity and choice. They achieve this in ways that make effective use of natural resources, enhance the environment, promote social cohesion and inclusion and strengthen economic prosperity’ (ODPM (2004) The Egan Review, Skills for Sustainable Communities)

³⁹ Basic services include General Practitioners surgeries, post offices, primary schools, food shops and bus stops.

⁴⁰ Defra (2007) 2005 UK Climate Change Sustainable Development Indicator and Greenhouse Gas Emissions Final Figures: Statistical Release

Table 7-2: The SEA Objectives, Guide Questions and Indicators

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Biodiversity, Flora, Fauna	<p>To avoid adverse impacts on designated wildlife sites of international and national importance</p> <p>To avoid adverse impacts on valuable ecological networks</p> <p>To avoid adverse impacts on protected habitats and species</p>	<p>Will it result in the loss of habitats of international/national importance?</p> <p>Will it affect other statutory or non-statutory wildlife sites?</p> <p>Will it result in harm to internationally or nationally important species?</p> <p>Will it adversely affect the achievement of favourable conservation status for internationally and nationally importance wildlife sites?</p> <p>Will it maintain BAP habitats and species in line with UK BAP targets?</p> <p>Will it result in the release of harmful substances e.g. oil, fuel and other pollution into watercourses which could affect aquatic ecosystems?</p> <p>Will it result in the accidental migration of radionuclides which could harm aquatic or terrestrial ecosystems?</p> <p>Will it result in changes to stream hydrology and morphology that could affect aquatic or terrestrial ecosystems?</p> <p>Will it result in thermal discharges that could adversely affect aquatic ecosystems?</p> <p>Will it result in soil contamination that could damage aquatic or terrestrial ecosystems?</p>	<p>Location of the following internationally and nationally designated sites:</p> <p>SPAs</p> <p>SACs</p> <p>Ramsar Sites</p> <p>NNRs</p> <p>MNRs</p> <p>SSSI/ASSIs (Northern Ireland only)</p> <p>MCAs</p> <p>AoSs (England, Scotland and Wales) and Wildlife Refuges (Northern Ireland).</p> <p>Biosphere Reserves</p> <p>Areas of Ancient Woodland</p> <p>Location of Sensitive Marine Areas</p> <p>Location of Local Wildlife Sites</p> <p>Location of LNRs (England, Scotland, Wales) and LANRs in Northern Ireland.</p> <p>Limestone Pavement Orders</p> <p>Collation of local level species records e.g. protected species records from Local Wildlife Trusts and local authority records.</p>

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Population and human health	<p>To create employment opportunities</p> <p>To encourage the development of sustainable communities</p> <p>To protect physical health</p> <p>To protect mental health</p>	<p>Will it create both temporary and permanent jobs in areas of need?</p> <p>Will it result in in-migration of population?</p> <p>Will it result in out-migration of population?</p> <p>Will it affect the population dynamics of nearby communities (age-structure)?</p> <p>Will it result in changes to services and service capacity in population centres?</p> <p>Will it adversely affect the health of local communities through accidental radioactive discharges or exposure to radiation?</p> <p>Will the storage of radioactive waste result in adverse physical and mental health effects for local communities?</p> <p>Will exposure to noise and vibration as a result of plant activities lead to physical and mental health impacts on nearby communities?</p> <p>Will the perceptions of adverse risk as a result of activities lead to adverse impacts on mental health for nearby communities?</p> <p>Will it adversely affect the ability of an individual to enjoy and pursue a healthy lifestyle?</p>	<p>Population</p> <p>The location of major settlements and areas of population</p> <p>Age structure – working age population</p> <p>Unemployment</p> <p>Economic activity rates</p> <p>Job density</p> <p>Average earnings by residence</p> <p>Radiation exposure to the public</p> <p>Radioactivity levels in the environment</p> <p>Life expectancy at birth and age 65</p> <p>Index of Multiple Deprivation – overall domain and sub-domains where relevant</p> <p>Rates of Leukaemia (Crude rate per 100,000 population)</p> <p>Perinatal, infant and neonatal mortality rates</p> <p>Healthy life expectancy at age 65</p> <p>Standardised Mortality Ratio</p> <p>Cancer mortality statistics per 100,000 population</p> <p>Age standardised incidence and mortality statistics for most common cancers</p> <p>Percentage of population in ‘not good’ health</p> <p>Ten most common causes of cancer deaths in males and females</p>

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Population and human health			<p>Location of National Trails (England and Wales) and Long Distance Routes (Scotland)</p> <p>Radon levels in UK homes</p> <p>Locations of emergency services including hospitals, fire stations, police stations.</p> <p>Key skills and the major skills gaps in the regional/local workforce</p> <p>Satisfaction with the local area as a place to live</p> <p>Collation of additional regional/local level data at the nominated sites stage in relation to the structure of the population and its vulnerability including data about the age structure, incidence of key illnesses and diseases, overall levels of reported health. There will also be an emphasis placed upon obtaining age standardised incidence and mortality rates for specific diseases for males and females.</p> <p>Collation of additional data at the nominated sites stage in relation to the location of recreational land, Woodland Parks, Country Parks.</p> <p>Collation of more regional/localised data in relation to access to services, housing and public transport infrastructure.</p>

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Material Assets	<p>To avoid adverse impacts on the function and efficiency of the strategic transport infrastructure</p> <p>To avoid disruption to basic services and infrastructure</p> <p>To avoid adverse impacts on property and land values and to avoid planning blight</p> <p>To avoid the loss of recreational and amenity land</p>	<p>Will it result in the direct loss of strategic road/rail/air/port infrastructure?</p> <p>Will it result in increased congestion/pressure on key transport infrastructure?</p> <p>Will it result in a decrease in property and land values as a result of a change in perceptions or blight?</p> <p>Will it result in the loss of recreational and amenity land?</p>	<p>Location of strategic rail links</p> <p>Location of strategic road network</p> <p>Location of airports</p> <p>Location of ports</p> <p>Average property values</p> <p>Collation of more regional/localised data in relation to access to services, housing and public transport infrastructure.</p>
Air and Climatic Factors	<p>To avoid adverse impacts upon air quality</p> <p>To minimise greenhouse gas emissions</p> <p>To avoid increased flood risk (including coastal flood risk)</p>	<p>Will it result in the release of low level radionuclides that may adversely affect human health or biodiversity?</p> <p>Will it result in increased vehicular emissions (particularly carbon dioxide)?</p> <p>Will it contribute to an increase in the number or expansion of AQMAs?</p> <p>Will it result in the loss of floodplain?</p> <p>Will it increase surface water runoff and therefore increase flood risk?</p>	<p>Location of AQMAs</p> <p>Regional distribution of net greenhouse gas emissions</p> <p>Contribution of sectors to greenhouse gas emissions</p> <p>Location of fluvial and tidal floodplain</p> <p>Areas benefiting from flood defences</p> <p>Flood water storage areas</p>

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Water	<p>To avoid adverse impacts on surface water hydrology and channel geomorphology (including coastal geomorphology)</p> <p>To avoid adverse impacts on surface water quality (including coastal water quality)</p> <p>To protect the supply of water resources</p> <p>To avoid adverse impacts on groundwater quality, distribution and flow</p>	<p>Will it result in the increased sedimentation of watercourses?</p> <p>Will it adversely affect channel geomorphology?</p> <p>Will it cause a deterioration in surface and groundwater quality as a result of accidental pollution, for example spillages, leaks?</p> <p>Will it cause a deterioration in surface and groundwater quality as a result of the disturbance of contaminated soil?</p> <p>Will it increase the sediment loading of watercourses?</p> <p>Will it adversely affect water supply as a result of abstraction?</p> <p>Will hydrology and flow regimes be adversely affected by water abstraction?</p> <p>Will it affect designated Shellfish Waters?</p> <p>Will it affect Freshwater Fish Directive sites?</p>	<p>Chemical and biological water quality (further details to be collated at nominated sites stage where applicable)</p> <p>Freshwater Fish Directive Sites</p> <p>Bathing Water Quality</p> <p>Designated Shellfish Waters</p> <p>Groundwater Source Protection Zones (England and Wales)</p> <p>Groundwater Vulnerability</p>
Soils and Geology <i>(Geology is not an SEA Directive topic but is linked to the soil resource and is essential to consider)</i>	<p>To avoid damage to important geological sites</p> <p>To avoid the use of greenfield land and encourage the re-use of brownfield sites</p>	<p>Will it result in the compaction and erosion of soils?</p> <p>Will it lead to the removal or alteration of soil structure and function?</p> <p>Will it lead to the contamination of soils which would affect biodiversity and human health</p> <p>Will it compromise the future extraction/use of geological/mineral reserves?</p> <p>Will it result in the loss agricultural land?</p> <p>Will it lead to damage to geological SSSIs and other geological sites</p> <p>Will it result in the loss of greenfield land?</p> <p>Will it adversely affect land under land management agreements?</p>	<p>Location of geological SSSIs/ASSIs</p> <p>Location of Geoparks</p> <p>Location of RIGS</p> <p>Recorded mineral sites</p> <p>Areas of known mining instability</p> <p>COMAH Sites</p>

SEA Directive topic	SEA Objective	Guide Questions	Indicators
Cultural Heritage including architectural and archaeological heritage	<p>To avoid adverse impacts on the internationally and nationally important features of the historic environment</p> <p>To avoid adverse impacts on the setting and quality of built heritage, archaeology and historic landscapes.</p>	<p>Will it adversely affect historic sites of international/national importance and their setting?</p> <p>Will it adversely affect other historic sites of known value?</p> <p>Will it adversely affect landscapes of historic importance?</p>	<p>Location of World Heritage Sites</p> <p>Location of Scheduled Monuments</p> <p>Location of Historic Battlefields</p> <p>Location of Designated Protected Wrecks</p> <p>Location of Registered Parks and Gardens</p>
Landscape	<p>To avoid adverse impacts on internationally and nationally important landscapes</p> <p>To avoid adverse impacts on landscape character, quality and tranquillity</p>	<p>Will it adversely affect landscapes within or immediately adjacent to a National Park?</p> <p>Will it adversely affect landscapes in or immediately adjacent to an AONB or NSA?</p> <p>Will it adversely affect Heritage Coast or Preferred Conservation Zones?</p> <p>Will it adversely affect local landscapes of value?</p>	<p>Location of National Parks</p> <p>Location of AONBs (England, Wales, Northern Ireland) and NSA (Scotland)</p> <p>Heritage Coast (England and Wales) and Preferred Conservation Zones (Scotland)</p> <p>Location of Country Parks</p> <p>Location of Regional Parks</p> <p>Location of Woodland Parks</p> <p>Identification of landscapes of local importance</p>

Internal Compatibility of the SEA Objectives

- 7.8** The Practical Guide recommends that an internal test of compatibility is undertaken of the SEA Objectives. This process can highlight any potential conflicts or inconsistencies which might need to be resolved and can also demonstrate the close inter-relationships and linkages between many of the objectives.
- 7.9** Table 7-3 presents numbered SEA Objectives, Table 7-4 is the key to the compatibility matrix and Table 7-5 is the compatibility matrix. The numbering of objectives does not reflect any order of priority. They are for ease of cross-referencing to Table 7-1.

Table 7-3 The SEA Objectives

Objective Number	Objective
1	To avoid adverse impacts on wildlife sites of international and national importance
2	To avoid adverse impacts on valuable ecological networks
3	To avoid adverse impacts on protected habitats and species
4	To create employment opportunities
5	To encourage the development of sustainable communities
6	To protect physical health
7	To protect mental health
8	To avoid adverse impacts on the function and efficiency of the strategic transport infrastructure
9	To avoid disruption to basic services and infrastructure
10	To avoid adverse impacts on property and land values and to avoid planning blight
11	To avoid the loss of recreational and amenity land
12	To avoid adverse impacts upon air quality
13	To minimise greenhouse gas emissions
14	To avoid increased flood risk (including coastal flood risk)
15	To avoid adverse impacts on surface water hydrology and channel geomorphology (including coastal geomorphology)
16	To avoid adverse impacts on surface water quality (including coastal water quality)
17	To protect the supply of water resources

Objective Number	Objective
18	To avoid adverse impacts on groundwater quality, distribution and flow
19	To avoid damage to important geological sites
20	To avoid the use of greenfield land and encourage the re-use of brownfield sites where possible
21	To avoid adverse impacts on internationally and nationally important features of the historic environment
22	To avoid adverse impacts on the setting and quality of built heritage, archaeology and historic landscapes
23	To avoid adverse impacts on internationally and nationally important landscapes
24	To avoid adverse impacts on landscape character, quality and tranquillity

Table 7-4 Key to the Compatibility Matrix

✓	Objectives are compatible
0	There is no link between the objectives
?	It is uncertain whether the objectives are compatible as this would depend upon implementation
✗	The objectives are incompatible

- 7.10** The compatibility matrix (Table 7-5) shows that there are no definite areas of conflict between any of the SEA Objectives. However, for a number of the objectives there is some uncertainty about how compatible they would be with Objective 4 *‘to create employment opportunities’*. This is primarily because it is unknown exactly where the development would occur and so there is potential for incompatibility between this objective and those that seek to protect biodiversity, water quality, air quality, landscape and cultural heritage resources.
- 7.11** Objective 20 *‘to protect greenfield sites and encourage the re-use of brownfield sites where possible’* could potentially conflict with those objectives that seek to protect biodiversity, flora and fauna as some brownfield sites have the potential to be highly biodiverse.
- 7.12** The identification of the potential for conflicts does not necessarily mean that objectives need to be changed rather these tensions should be taken into consideration at later stages in the SEA process. The compatibility matrix has clarified these so that subsequent decisions can be made with this in mind.

Application of the SEA Framework

7.13 The main elements of the NPS that will require assessment are the Discretionary and Exclusionary SSA Criteria and the sites that are nominated. As outlined in Section 2, the NPS is an evolving document and as the SEA proceeds, there may be additional elements requiring assessment. The Scoping Report identifies how the assessment will proceed for the two main elements that are currently proposed to be assessed.

7.14 The SEA Directive requires that the likely significant effects on the environmental topics (biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape) should be identified. In line with the provisions of Annex II of the SEA Directive, the assessment of significant effects through the SEA (at both stages) will have regard to:

- The probability, duration, frequency and reversibility of the effects
- The cumulative nature of the effects
- The transboundary nature of the effects
- The risks to human health or the environment (e.g. due to accidents)
- The magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected)
- The value and vulnerability of the area likely to be affected
- The effects on areas or landscapes which have a recognized national, European Community or international protection status.

Assessment of the Exclusionary and Discretionary Criteria

7.15 The Discretionary and Exclusionary SSA Criteria will be assessed against the SEA Objectives to identify their likely significant environmental effects. It is proposed that the matrix presented in Table 7-6 would be used to assess the criteria against each SEA Objective. To help improve the understanding of the assessment assumptions and key thought processes, causal chain analysis will be used illustrating the linkages between sources of effects and receptors. The following sections explain the key elements of the matrix and how its use will enable the requirements of the SEA Directive to be fulfilled. An explanation is also provided of how confidence levels in assessment will be addressed.

Table 7-6 Extract of Proposed Assessment Matrix for the Assessment of SSA Criteria

SEA Objective	Potentially Sensitive Receptors	Geographical Scale of Effect											
		Site			Locality (<10km from site)			10-100km from Site			100+km from Site		
		Construct.	Operation	Decomm.	Construct.	Operation	Decomm.	Construct.	Operation	Decomm.	Construct.	Operation	Decomm.
e.g. To avoid adverse impacts on wildlife sites of international and national importance	e.g. SPA (and pSPA) SAC (and cSAC/dSAC) Ramsar Sites NINR SSSI ASSI MNR												
		Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
		The summary text will be used to explain the assessment results, to clarify the permanency of effects and whether they would be short, medium or long-term effects. The assessment will highlight generic as well as site related effects in the text.											
Assumptions / Recommendations													
This box would be used to document the main assumptions in the assessment and any key recommendations for mitigation													

Spatial Extent of the Impacts

- 7.16** The matrix includes four different spatial scales that will be considered in the assessment. These are defined in Table 7-7.

Table 7-7 Definition of Spatial Scales

Spatial Scale	Definition
Site	This refers to the boundary of the nominated site.
Locality 8km from the site boundary	This scale refers to the area immediately bordering the site.
8-100km from site	This scale relates to those effects that could be realised in the wider local authority area and beyond depending upon location.
100+km from the site	This scale refers to impacts that could be realised at distances greater than 100km from the nominated sites.

- 7.17** The spatial scale outside the site scale also includes the identification of those effects that could potentially affect other Member States (transboundary effects).

Timescales

- 7.18** The matrix is structured to enable the identification of effects during each phase of a nuclear power stations lifetime i.e. construction, operation and decommissioning. Table 7-8 defines each of these phases.

Table 7-8 Definitions of Timescales

Phase of the Nuclear Power Station	Definition
Construction and Commissioning	This phase begins at the commencement of the construction works and ends when the construction of the nuclear power station is complete. It is anticipated that this phase would last approximately 5 to 6 years.
Operation	This phase begins when power is generated at the site and would end when power generation ceases. We are assuming a reactor life of 40 years in accordance with the Base Case assumptions; however we note that reactor lives might be extended to 60 years. Operators may propose alternative station lifetimes or life extensions.
Decommissioning	Decommissioning begins when the reactor is shut down with no intention of further use for the purpose of generating electricity and work is undertaken to decommission the site. It is anticipated that this phase would last a minimum of 30 years and would not cease until all station buildings and facilities have been returned to an end state which has been agreed with the regulators and the planning authority. This is likely to be a state similar to "greenfield" depending on the state of the site prior to the construction of the station. The exact decommissioning timescales will be set out in the Funded Decommissioning Programme for the station that the operator will submit to the Secretary of State for approval.

7.19 In addition to understanding the types of impacts that will occur during each phase of a nuclear power station's life, it is important for the timescale of the effects to be clarified i.e. whether they would persist in the short, medium or long-term and if they would be temporary or permanent. For example, an effect could occur during the construction of the nuclear power station that is temporary and only lasts for the duration of that phase. Conversely, there could be an effect that occurs during construction e.g. habitat loss that would be permanent and last beyond the construction phase. Clarity regarding the permanency and duration of the effects will be provided.

The Nature of the Effect

7.20 As part of the assessment it is necessary to determine whether the effects would be positive or negative or if there is no real link between the SEA Objective and the SSA criterion. The assessment should also clarify whether the effect is direct or indirect. Table 7-9 presents the definitions of the symbols that will be used to present the nature of the effects.

Table 7-9 Definition of Assessment Symbology

Symbol	Definition
++	The criterion would make a major positive contribution (either direct or indirect) towards the achievement of the SEA Objective i.e. it would positively fulfil all elements of the objective.
+	The criterion would make a positive contribution (either direct or indirect) towards the achievement of the SEA Objective i.e. it would partially contribute to the achievement of the objective.
0	There would be no significant contribution towards the achievement of the SEA Objective.
-	The criterion would not contribute to the achievement of the SEA Objective and would work against the achievement of the objective, potentially resulting in negative impacts upon sensitive receptors.
--	The criterion would not contribute to the achievement of the SEA Objective and would work against the achievement of all elements of the objective, potentially resulting in major negative impacts upon sensitive receptors.
+/-	The criterion would make both a positive and negative contribution to the achievement of the SEA Objective. Without further information it is not possible to confirm whether the positive or negative effects would outweigh one other.
NA	There is no clear link between the criterion and the SEA Objective.
Direct	Effects that would occur as a result of a single pathway e.g. the direct loss of cultural heritage resources because of land take.
Indirect	Knock-on/secondary effects that frequently occur as a result of a complex pathway.

Levels of Certainty in the Prediction

7.21 There is an element of uncertainty involved in all predictions of environmental effects and it is important for readers of the assessment to understand the confidence of the SEA assessors (to be established) and how likely it is that the effects predicted will be realised. This is particularly important for this assessment which is based upon a series of criteria that are going to be applied by organisations wishing to nominate potential new nuclear power stations across the UK and by the Government when assessing nominated sites. This assessment is not informed by any site specific information and can only consider how certain criteria could be applied and subsequently how they could affect the achievement of some of the SEA Objectives. Table 7-10 presents the definitions of certainty that will be used in the assessment.

Table 7-10 Definition of Levels of Certainty

Level of Certainty	Definition
Low	The prediction of an effect is the best estimate in light of the information currently available. It is based upon the judgement of the assessors and further information would be beneficial to confirm the assessment of the effect and to increase levels of certainty.
High	The prediction of an effect is an informed judgement based upon reliable information. Further information would be unlikely to change the level of certainty in the prediction.

Evidence Base

7.22 It is important for all predictions to be informed by evidence where possible, for example previous research or examples from other situations. Evidence will be cited where relevant to support any key assumptions that are used in the prediction process. Each matrix will also be supported by an overall causal chain analysis which will help explain the predictions.

The Assessment of Cumulative Effects

7.23 It will be necessary to determine the cumulative effects resulting from the application of the criteria in their entirety i.e. the whole package. The assessment of cumulative effects is an SEA Directive requirement and in reality is essential, as the criteria will be applied as a package by site nominators and when assessing the nominated. The assessment of cumulative effects of the SSA Criteria will be presented in the First Environmental Report in April/May 2008.

Assessment of Nominated Sites

- 7.24** This second stage of the assessment will be the assessment by an Assessment Panel (to be established) of the nominated sites against the SEA Objectives. It is anticipated that this will be undertaken using an assessment matrix which would ensure that each site is assessed against the suite of SEA Objectives. This may be supported where appropriate by causal chain analysis and a literature review to assist the identification of the key effects. The assessment will also consider the baseline environmental data available for each site, drawing from that already collated, plus further, more local level (although still strategic) data where appropriate. Separate technical papers may also need to be produced to support the assessment of certain objectives through the matrix.
- 7.25** The effects predicted at this stage will remain at a strategic level and will not provide as much detail as project level EIAs. Any uncertainty will be documented in the assessment. The focus will be on identifying significant environmental effects and also identifying mitigating measures to avoid or offset such effects where they are identified.
- 7.26** It will also be necessary to consider cumulative effects. To this end, scenarios may potentially be developed which would consider the combined and synergistic effects of different combinations of the nominated sites that will be included in the NPS.

ANNEX A

The Consultation Code of Practice Criteria

The six consultation criteria:

- 1 Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.
- 2 Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.
- 3 Ensure that your consultation is clear, concise and widely accessible.
- 4 Give feedback regarding the responses received and how the consultation process influenced the policy.
- 5 Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.
- 6 Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.

The complete code is available on the Cabinet Office's web site, address <http://www.cabinetoffice.gov.uk/regulation/consultation/index.asp>