

# Consultation on draft National Policy Statements for Energy Infrastructure

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Department of Energy & Climate Change  
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[www.decc.gov.uk](http://www.decc.gov.uk)

Planning for new energy infrastructure

November 2009



# Consultation on draft National Policy Statements for Energy Infrastructure

## Purpose of this consultation

This consultation seeks views on:

- The six draft National Policy Statements for energy infrastructure:
  - The draft Overarching National Policy Statement for Energy (EN-1)
  - The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)
  - The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)
  - The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
  - The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)
  - The draft National Policy Statement for Nuclear Power Generation (EN-6)
- Their supporting documents

The six draft energy National Policy Statements and their supporting documents are being published separately from this consultation document. All of the documents are available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

Subject to this consultation and Parliamentary scrutiny, the Government intends to finalise and then formally approve ('designate') these National Policy Statements in 2010.

These designated National Policy Statements would be the primary consideration for the Infrastructure Planning Commission when it makes decisions on applications for development consent for nationally significant energy infrastructure.

Issued:	9 November 2009
<b>Respond by:</b>	<b>22 February 2010</b>
Responses to:	Robin Clarke OPM 252b Gray's Inn Road London WC1X 8XG  Fax: 0845 055 1700 (FAO Robin Clarke)  Email: <a href="mailto:energynpsconsultation@opm.co.uk">energynpsconsultation@opm.co.uk</a>

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URN 09D/621 11/09

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# Contents

<b>Foreword from the Secretary of State</b>	<b>4</b>
<b>Executive Summary</b>	<b>5</b>
<b>Complete list of consultation questions</b>	<b>12</b>
<b>Chapter 1: Background</b>	<b>18</b>
<b>Chapter 2: Draft Overarching Energy NPS (EN-1)</b>	<b>28</b>
<b>Chapter 3: Draft NPSs for Fossil Fuels, Renewables, Gas Supply and Gas and Oil Pipelines, and Electricity Networks (EN 2-5)</b>	<b>32</b>
<b>Chapter 4: Appraisal of Sustainability and Habitats Regulations Assessment for EN 1-5</b>	<b>35</b>
<b>Chapter 5: Draft Nuclear NPS (EN-6) and associated documents</b>	<b>39</b>
<b>Chapter 6: Impact Assessment and other questions</b>	<b>55</b>
<b>Annex A: Consultation criteria</b>	<b>57</b>
<b>Annex B: Acronyms and abbreviations</b>	<b>58</b>
<b>Annex C: List of organisations consulted under the Planning Act 2008</b>	<b>60</b>
<b>Annex D: Diagram of NPS process</b>	<b>62</b>
<b>Annex E: Wider context for draft Nuclear NPS</b>	<b>63</b>
<b>Annex F: Site summaries for Dungeness, Druridge Bay, Kingsnorth and Owston Ferry</b>	<b>70</b>
<b>Annex G: Management and disposal of waste from new nuclear power stations</b>	<b>142</b>

# Foreword from the Secretary of State



The country faces a major energy challenge over the next decades: we need to overhaul our power infrastructure.

The threat of climate change means we need to make a transition from a system that relies heavily on high-carbon fossil fuels, to a radically different system that includes nuclear, renewable and clean coal power.

Change is also needed for energy security. In a world where our North Sea reserves begin to decline, it is not just climate change that leads us towards greater diversity in our energy supplies. A more diverse energy mix is a more secure energy mix, less vulnerable to fluctuations in the availability of any one fuel.

This transformation has begun. We are increasing our use of low-carbon energy sources and we already have more generation capacity under construction or with planning permission than is currently due to go offline by the middle of the next decade.

But there is no room for complacency. Our ambition is to move as far and as fast as we can to a secure, low-carbon energy system. Meeting that objective will mean moving swiftly from the largely 20th century infrastructure we have to the 21st century infrastructure we need.

The current planning system is a barrier to that shift. It serves neither the interests of energy security, the interests of the low-carbon transition, nor the interests of people living in areas where infrastructure may be built, for the planning process to take years to come to a decision.

That is why the Government is undertaking fundamental reform of the planning system. This reform, legislated for in the Planning Act 2008, will result in a more efficient, transparent and accessible regime.

The system revolves around National Policy Statements. These set out the criteria against which the new independent Infrastructure Planning Commission will judge applications for development consent. Individual planning decisions will be based on a transparent set of standards that set out the national interest. Investors and the public will have a clearer view about what to expect from the planning process.

The planning system depends on public consent. That is why, as well as speeding up the process, the new system has more opportunities for public engagement in decision-making.

This consultation is one such opportunity. It is the opportunity to make your views heard on the National Policy Statements that will be absolutely central to the planning decisions that are made. The quality of those decisions will be higher if the National Policy Statements are thoroughly scrutinised. That is why I urge you to take part in this consultation.

A handwritten signature in black ink that reads "Ed Miliband".

**Ed Miliband**  
**Secretary of State of Energy and Climate Change**

# Executive Summary

## Introduction

As set out in the Government's *Low Carbon Transition Plan*<sup>1</sup>, by 2050 we may need to produce more electricity than we do today, but we must do so largely without emitting greenhouse gases. To support these changes we will need an electricity grid with larger capacity and the ability to manage greater fluctuations in electricity demand and supply. We also need to ensure that our sources of energy are secure. To make this transition, the Government needs to maintain the right conditions for energy companies to invest in new energy infrastructure.

In the past, obtaining planning permission ('development consent') for large energy infrastructure projects has often been an inefficient and slow process. Consideration of applications can sometimes take years, and the consent process often involves lengthy discussions over the need for a particular type of infrastructure, rather than focusing on the specifics of a proposed project.

This is why the Government has embarked on fundamental reform of the planning system for nationally significant infrastructure. The main component of this reform is the Planning Act 2008, which provides for a more efficient, transparent and accessible planning system. Under this system, development consent for nationally significant infrastructure will be administered by a new independent body, the Infrastructure Planning Commission (IPC).

National Policy Statements (NPSs) lie at the centre of the new regime. They will be the primary consideration for the IPC when it makes decisions on applications for development consent. The Government currently envisages that there will be 12 National Policy Statements, covering major infrastructure for energy, transport, waste, water and waste water.

This consultation seeks views on the six draft National Policy Statements for energy infrastructure:

- The draft Overarching National Policy Statement for Energy (EN-1)
- The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)
- The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)
- The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
- The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)
- The draft National Policy Statement for Nuclear Power Generation (EN-6)

The draft Overarching Energy NPS (EN-1) sets out the Government's energy policy, explains the need for new energy infrastructure and instructs the IPC on how to assess the impacts of energy infrastructure development in general. The other draft energy NPSs contain supplementary information for specific types of infrastructure. These draft 'technology-specific' energy NPSs (EN 2-6) must be read in conjunction with the draft Overarching Energy NPS.

<sup>1</sup> *The UK Low Carbon Transition Plan: National strategy for climate and energy*, presented to Parliament pursuant to Sections 12 and 14 of the Climate Change Act 2008, July 2009, [http://decc.gov.uk/en/content/cms/publications/lc\\_trans\\_plan/lc\\_trans\\_plan.aspx](http://decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx)

The draft Nuclear NPS (EN-6) differs from the other draft technology-specific energy NPSs in that it also lists sites that the Government has judged to be potentially suitable for the deployment of new nuclear power stations by the end of 2025. The list of sites in the draft Nuclear NPS is the output from the Government's Strategic Siting Assessment (SSA) process. The draft Nuclear NPS also sets out the Government's preliminary conclusion that it is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK.

The principal purpose of this consultation is to identify whether the draft energy National Policy Statements are fit for purpose: in other words, whether they provide a suitable framework for the Infrastructure Planning Commission to make decisions on applications for development consent for nationally significant energy infrastructure. In the case of the draft Nuclear NPS, the consultation also seeks views on the Government's assessment of the potential suitability of sites for the deployment of new nuclear power stations, and the Government's assessment of arrangements to manage and dispose of waste from new nuclear power stations.

This consultation also seeks views on the Appraisals of Sustainability and Habitats Regulations Assessments that have been carried out in relation to the draft energy NPSs. Appraisals of Sustainability (AoS) are required by the Planning Act and are intended to help to ensure that NPSs take account of environmental, social and economic considerations, with the objective of contributing to the achievement of sustainable development. The aim of the Habitats Regulations Assessments (HRA) is to assess the implications of NPSs for protected habitats.

Finally, this consultation seeks views on the Impact Assessment carried out for the draft energy NPSs. The role of the Impact Assessment is to analyse the administrative costs and benefits of proposed Government interventions to business, the public sector and the third sector (voluntary organisations).

A full list of consultation questions follows this Executive Summary.

## How to navigate through the consultation

A description of the chapters in this consultation document is given below, in order to aid navigation:

**Chapter 1** provides general background on the Government's energy and climate policy, planning reform and National Policy Statements.

**Chapter 2** describes the draft Overarching Energy NPS (EN-1).

**Chapter 3** describes the draft NPSs for Fossil Fuels, Renewables, Gas Supply Infrastructure and Gas and Oil Pipelines, and Electricity Networks (EN 2-5).

**Chapter 4** describes the Appraisal of Sustainability and Habitats Regulations Assessment reports on these first five draft NPSs (EN 1-5).

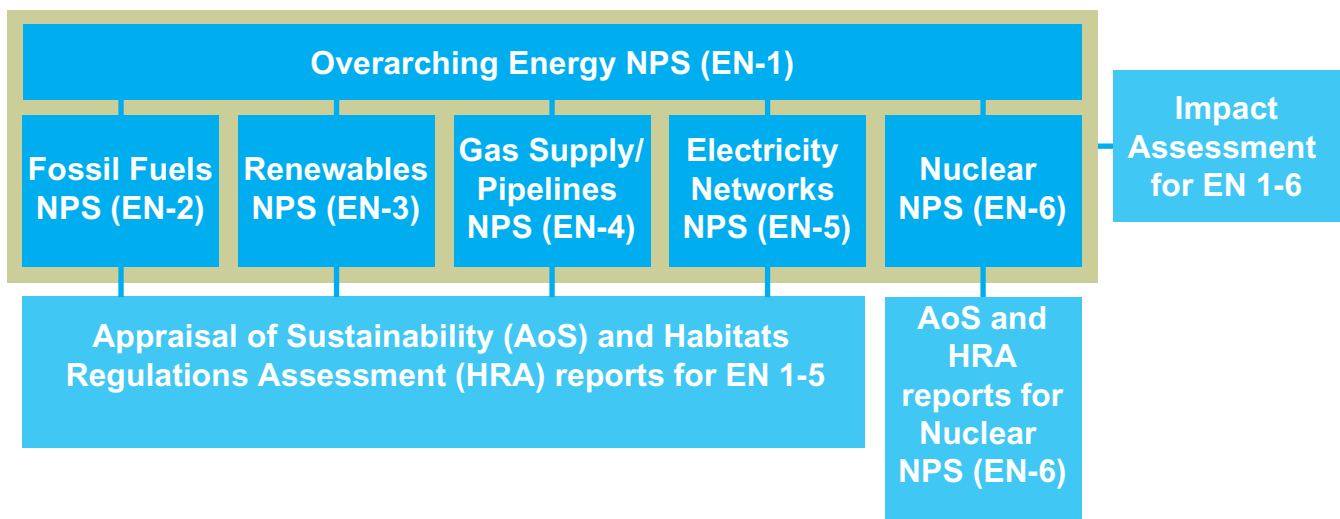


**Chapter 5** describes the draft Nuclear NPS (EN-6) and its associated documents, including Appraisal of Sustainability and Habitats Regulations Assessment reports.

**Chapter 6** describes the Impact Assessment for all six draft energy NPSs and other consultation questions.

Chapters 2-6 introduce the consultation questions relevant to the different documents. The six draft energy NPSs and their supporting documents are being published separately from this consultation document. All of the documents are available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

The diagram below illustrates the structure of the package of draft energy NPSs and their supporting documents:



## How to respond

In this consultation, the Government wants to hear from members of the public, industry, non-Governmental organisations and any other organisation or public body. When responding, please state whether you are responding as an individual or representing the views of an organisation. If you are responding on behalf of an organisation, please make it clear who the organisation represents and, where applicable, how you assembled the views of members.

Regulations made under the Planning Act 2008 require the Government to consult certain organisations on National Policy Statements<sup>2</sup>. Annex C lists those organisations who are being consulted in accordance with those regulations.

This consultation focuses on the consultation questions listed below. However, respondents are free to make other comments, and the Government will consider these where appropriate. When considering responses to this consultation, the Government will give greater weight to responses that are based on argument and evidence, rather than simple expressions of support or opposition.

This consultation began on 9 November 2009 and will close on **22 February 2010**.

<sup>2</sup> The Infrastructure Planning (National Policy Statement Consultation) Regulations 2009 (SI 2009/1302)

## Online

Responses to this consultation can be submitted online, via the Government website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

The online consultation has been designed to make it easy to submit responses to the questions. If you decide to submit your response through the website you will be asked to register with an email address and password. This will enable you to edit or update your response as often as you wish before submitting it.

## By letter, fax or email

Alternatively, you can respond by letter, fax or email via the contact details below. For this, it would be helpful if you used the response form which is available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

Robin Clarke  
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252b Gray's Inn Road  
London  
WC1X 8XG

Fax: 0845 055 1700 (FAO Robin Clarke)

Email: [energynpsconsultation@opm.co.uk](mailto:energynpsconsultation@opm.co.uk)

## Confidentiality and data protection

Responses to this consultation, including names, will be made public and may be used by Parliament as evidence in the Parliamentary scrutiny process, and may be published under the authority of Parliament, unless respondents specifically request confidentiality.

However, respondents should be aware that confidentiality cannot always be guaranteed. For example, responses, including personal information, may be subject to publication or release in accordance with the access to information regimes (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please be aware that, under the Freedom of Information Act 2000, there is a Statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this, if you are requesting confidentiality, it would be helpful if you could explain why you regard the information you have provided to be confidential. Any confidentiality disclaimer that may be generated by your organisation's 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.

### Additional copies

Electronic versions of all of the documents being published as part of this consultation are available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

You may make copies of this consultation document without seeking permission. Further printed copies of the consultation document, draft National Policy Statements, and Appraisal of Sustainability and Habitats Regulations Assessment Main Reports and Non-Technical Summaries can be obtained from:

BIS Publications Orderline  
ADMAIL 528  
London  
SW1W 8YT

Tel: 0845 015 0010  
Fax: 0845 015 0020  
Minicom: 0845 015 0030

Email: [publications@bis.gsi.gov.uk](mailto:publications@bis.gsi.gov.uk)

Welsh copies of the consultation document, draft National Policy Statements, Non-Technical Summaries for the Appraisal of Sustainability (AoS) and Habitats Regulations Assessment (HRA) Main Reports, the AoS and HRA site reports for Wylfa, Impact Assessment and response form will be available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk), and can also be obtained from the BIS Publications Orderline (contact details above).

Braille, large print and audio copies of the consultation document, draft National Policy Statements and Non-Technical Summaries for the AoS and HRA Main Reports can be made available on request from the BIS Publications Orderline (contact details above).

### Help with queries

Questions about the policy issues raised in this consultation can be addressed to:

QUERIES – Consultation on Draft National Policy Statements  
Department of Energy and Climate Change  
Area 3A  
3 Whitehall Place  
London  
SW1A 2AW

Telephone: 0300 068 6667

Email: [nps.consultation@decc.gsi.gov.uk](mailto:nps.consultation@decc.gsi.gov.uk)

## Consultation conduct

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

Marjorie Addo  
Consultation Co-ordinator  
Department of Energy and Climate Change  
Area 7C, Nobel House  
17 Smith Square  
London  
SW1P 3JR

Email: [Consultation.Coordinator@decc.gsi.gov.uk](mailto:Consultation.Coordinator@decc.gsi.gov.uk)

A copy of the consultation criteria from the Government's *Code of Practice on Consultation* is provided at Annex A.

## Consultation events

Alongside the written and online consultation exercise, the Government will hold consultation events around the country on the six draft energy National Policy Statements. The purpose of these events will be to raise awareness of the consultation, give attendees the opportunity to make comments, and encourage attendees to respond to the consultation.

In addition, the Government will hold local events around the country specifically on the draft Nuclear National Policy Statement, close to sites which the Government considers to be potentially suitable for the deployment of new nuclear power stations by the end of 2025.

More information about these events will be made available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk) or can be obtained through the contact details in the 'Help with queries' section above.

## Other opportunities for public involvement

Before applications for development consent are submitted to the Infrastructure Planning Commission, the Planning Act requires applicants to consult local communities about their plans. The IPC will need to be satisfied before it accepts any application that these requirements have been met. Pre-application consultation by applicants, including any events held by them, is different and separate from this consultation and the events that the Government will hold on the six draft energy NPSs.

The public will also have the opportunity to engage in the planning process during the IPC's examination of applications. Individuals and groups will be able to send views in writing; those making relevant representations will be able to attend and speak at hearings held by the IPC (subject to the IPC's powers of control over the conduct of the hearing).

Annex D contains a diagram showing opportunities for public involvement in the various stages of the planning process. Under the Planning Act, this consultation on the draft energy NPSs is the opportunity for making comments on the energy NPSs and their contents. Representations made at later stages in the planning process about the merits of NPS policy might be refused or disregarded by the IPC.

Those interested in the Nuclear NPS may also wish to be aware that the Government is consulting on Regulatory Justification in parallel with this consultation. See Annex E for more information.

## Parliamentary scrutiny

As well as a public consultation exercise, draft National Policy Statements will also be subject to Parliamentary scrutiny. The Planning Act requires the Government to lay each draft NPS before Parliament, and to respond to the recommendations of a Committee of either House or a resolution of either House made within a specified period.

The Government has made a commitment that, where the Select Committee recommends that a debate should be held on a draft NPS, the Government will make time available for this in both Houses, ideally within six weeks of the Select Committee's report.

Unless confidentiality is specifically requested (see 'Confidentiality and data protection' above), responses to this consultation will be passed to the relevant Select Committee, who may use them as evidence in their scrutiny of the draft energy NPSs. The Select Committee is only likely to be able to take account of consultation responses that are received by the Government before 15 January 2010. The Government's consultation will, however, remain open until 22 February 2010.

## Next steps

The Government will consider responses it receives to the consultation, and outputs from the consultation events and Parliamentary scrutiny. The Government will then issue a response to the consultation, including a summary of responses received, and revise the draft energy NPSs as necessary.

Subject to this consultation and Parliamentary scrutiny, the Government intends to finalise and formally approve ('designate') the energy NPSs in 2010. The designated NPSs would then be the primary consideration for the IPC when it makes decisions on applications for development consent for nationally significant energy infrastructure.

# Complete list of consultation questions

This consultation focuses on the consultation questions listed below. However, respondents are free to make other comments, and the Government will consider these where appropriate. When considering responses to this consultation, the Government will give greater weight to responses that are based on argument and evidence, rather than simple expressions of support or opposition.

When answering these questions please explain and give reasons for your answers.

## Chapter 2: Draft Overarching Energy NPS (EN-1)

1.	Do you think that the Government should formally approve ('designate') the draft Overarching Energy National Policy Statement?
2.	Does the draft Overarching Energy National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent?
3.	Does the draft Overarching Energy National Policy Statement provide suitable information to the Infrastructure Planning Commission on the Government's energy and climate policy?
4.	Does the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new energy infrastructure?
5.	Do the assessment principles in the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission to inform its decision-making?
6.	Does the draft Overarching Energy National Policy Statement appropriately cover the generic impacts of new energy infrastructure and potential options to mitigate those impacts?
7.	Do you have any comments on any aspect of the draft Overarching Energy National Policy Statement not covered by the previous questions?

### Chapter 3: Draft NPSs for Fossil Fuels, Renewables, Gas Supply and Gas and Oil Pipelines, and Electricity Networks (EN 2-5)

8.	<p>Do you think that the Government should formally approve ('designate'):</p> <ul style="list-style-type: none"> <li>a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
9.	<p>Do the following draft National Policy Statements provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent:</p> <ul style="list-style-type: none"> <li>a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
10.	<p>Do the following draft National Policy Statements appropriately cover the impacts of the specific types of new energy infrastructure covered in them, and potential options to mitigate those impacts:</p> <ul style="list-style-type: none"> <li>a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>

11.	<p>Do you have any comments on any aspect of the following draft National Policy Statements not covered by the previous questions:</p> <ul style="list-style-type: none"> <li>a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
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#### Chapter 4: Appraisal of Sustainability and Habitats Regulations Assessment for EN 1-5

12.	<p>Do you agree with the findings from the following Appraisal of Sustainability reports:</p> <ul style="list-style-type: none"> <li>a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?</li> <li>b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
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13.	<p>Do you think that any findings from the following Appraisal of Sustainability reports have not been taken account of properly in the relevant draft National Policy Statements:</p> <ul style="list-style-type: none"> <li>a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?</li> <li>b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
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14.	<p>Do you have any comments on any aspect of the following Appraisal of Sustainability reports not covered by the previous questions:</p> <ul style="list-style-type: none"> <li>a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?</li> <li>b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
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15.	<p>Do you have any comments on the Habitats Regulations Assessment reports for the following draft National Policy Statements:</p> <ul style="list-style-type: none"> <li>a) Habitats Regulations Assessment report for the draft Overarching Energy National Policy Statement (EN-1)?</li> <li>b) Habitats Regulations Assessment report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?</li> <li>c) Habitats Regulations Assessment report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?</li> <li>d) Habitats Regulations Assessment report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?</li> <li>e) Habitats Regulations Assessment report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?</li> </ul>
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## Chapter 5: Draft Nuclear NPS (EN-6) and associated documents

16.	<p>Do you think that the Government should formally approve ('designate') the draft Nuclear National Policy Statement?</p>
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17.	<p>Does the draft Nuclear National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent?</p>
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18.	Does the draft Nuclear National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new nuclear power stations?
19.	Do you agree with the Government’s preliminary conclusion that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK?
20.	Does the draft Nuclear National Policy Statement appropriately cover the impacts of new nuclear power stations and potential options to mitigate those impacts?
21.	<p>Do you agree with the Government’s preliminary conclusion on the potential suitability of sites nominated into the Strategic Siting Assessment, as set out below? You can respond in general terms on the assessment as a whole, or against one or more specific sites.</p> <p>a) General comments</p> <p>The Government considers the following sites to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:</p> <ul style="list-style-type: none"> <li>b) Bradwell</li> <li>c) Braystones</li> <li>d) Hartlepool</li> <li>e) Heysham</li> <li>f) Hinkley Point</li> <li>g) Kirksanton</li> <li>h) Oldbury</li> <li>i) Sellafield</li> <li>j) Sizewell</li> <li>k) Wylfa</li> </ul> <p>The Government does not consider the following site to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:</p> <ul style="list-style-type: none"> <li>l) Dungeness</li> </ul>

22.	<p>Do you agree with the Government’s preliminary conclusion that the three sites identified in the Alternative Sites Study, as listed below, are not potentially suitable for the deployment of new nuclear power stations by the end of 2025? You can respond in general terms on the sites identified in the Study as a whole, or against one or more specific sites.</p> <ul style="list-style-type: none"> <li>a) General comments</li> <li>b) Druridge Bay</li> <li>c) Kingsnorth</li> <li>d) Owston Ferry</li> </ul>
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23.	<p>Do you agree with the findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement?</p>
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24.	<p>Do you think that any findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement have not been taken account of properly in the draft Nuclear National Policy Statement?</p>
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25.	<p>Do you have any comments on the Habitats Regulations Assessment reports for the draft Nuclear National Policy Statement?</p>
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26.	<p>Do you have any comments on any aspect of the draft Nuclear National Policy Statement or its associated documents not covered by the previous questions?</p>
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## Chapter 6: Impact Assessment and other questions

27.	<p>Do you have any comments on the Impact Assessment report for the draft energy National Policy Statements?</p>
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28.	<p>Does this package of draft energy National Policy Statements provide a useful reference for those wishing to engage in the process for development consent for nationally significant energy infrastructure, particularly for applicants?</p>
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29.	<p>Do you have any comments on any aspect of the draft energy National Policy Statements or their associated documents not covered by the previous questions?</p>
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# Chapter 1: Background

1.1 This chapter provides background on the Government's energy and climate policy, planning reform and National Policy Statements.

## Energy and climate policy

1.2 In July 2009 the Government published the *UK Low Carbon Transition Plan*<sup>1</sup>. This stated that, to avoid the most dangerous impacts of climate change, average global temperatures must rise no more than 2°C. This means global emissions must start falling before 2020 and then fall to at least 50% below 1990 levels by 2050.

1.3 The Transition Plan sets out the Government's approach to delivering emissions cuts of 18% on 2008 levels by 2020. This includes getting 40% of our electricity from low carbon sources by 2020 with policies to:

- Produce around 30% of our electricity from renewables by 2020 by substantially increasing the requirement for electricity suppliers to sell renewable electricity;
- Fund up to four demonstrations of capturing and storing emissions from coal power stations; and
- Facilitate the building of new nuclear power stations.

1.4 Reform of the planning system was identified as a key element of the plan to deliver these policies.

## Planning reform

1.5 The existing planning system for nationally significant infrastructure has grown incrementally and now consists of several separate but overlapping regimes. Consideration of individual applications can take many months or years and often includes lengthy debate about the national need for infrastructure. The process of reaching decisions can be complicated. Individuals, communities and other stakeholders can find the system archaic and opaque and can have difficulty making their voices heard.

1.6 The Government's programme to fundamentally reform the planning system for nationally significant infrastructure is designed to create a more efficient, transparent and accessible planning regime. The reforms will establish a clearer separation between policy-making and reaching decisions on individual applications. This will give applicants a clearer framework with a higher degree of predictability and a planning environment in which they can make investment decisions with more confidence. At the same time, the new regime aims to be more transparent and to facilitate participation in decision-making, strengthening the voice of communities.

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<sup>1</sup> *The UK Low Carbon Transition Plan: National strategy for climate and energy*, presented to Parliament pursuant to Sections 12 and 14 of the Climate Change Act 2008, July 2009, [http://decc.gov.uk/en/content/cms/publications/lc\\_trans\\_plan/lc\\_trans\\_plan.aspx](http://decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx)

- 1.7 These reforms were set out in the 2007 White Paper *Planning for a Sustainable Future*<sup>2</sup>. Following consultation on that White Paper, the Government introduced a bill to Parliament which received Royal Assent and became the Planning Act in November 2008<sup>3</sup>. The key elements of the Act are:
- A greater onus on promoters to ensure that proposals are properly prepared and consulted on before they apply for development consent;
  - A move towards a single consents regime, enabling the development consent to cover a range of ancillary matters, associated development (in England) and a range of other consents and licences;
  - A new independent body, the Infrastructure Planning Commission (IPC), to take over responsibility for considering and deciding on applications for nationally significant infrastructure; and
  - Production by the Government of National Policy Statements (NPSs) for nationally significant infrastructure.
- 1.8 The Department for Communities and Local Government (CLG) is delivering a programme of work to prepare for the new planning regime for nationally significant infrastructure. This programme includes preparation of, and consultation on, secondary legislation and guidance documents, as well as preparations to get the Infrastructure Planning Commission up and running, such as the appointment of Commissioners. The IPC began advising potential applicants under the new regime from 1 October 2009, and the intention is that it be ready to receive applications in the first half of 2010<sup>4</sup>.
- 1.9 The Infrastructure Planning Commission will make decisions on development consent for the following types of nationally significant energy infrastructure, which are currently decided by the Secretary of State:
- Onshore electricity generation stations with a capacity of over 50MW;
  - Offshore electricity generation stations with a capacity of over 100MW;
  - Certain underground facilities for the storage of gas in natural porous strata by a gas transporter;
  - Certain cross-country pipelines of the kind previously covered in the 1962 Pipelines Act and certain gas transporter pipelines; and
  - Overhead electricity lines of 132 kV and above<sup>5</sup>.

<sup>2</sup> *Planning for a Sustainable Future White Paper*, CM 7120, May 2007, <http://www.communities.gov.uk/publications/planningandbuilding/planningsustainablefuture>

<sup>3</sup> *Planning Act 2008*, [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

<sup>4</sup> More information on CLG's work to implement the new planning regime can be found at <http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyimplementation/reformplanningsystem/planningbill/>

<sup>5</sup> A precise description of the energy infrastructure defined as nationally significant by the Planning Act 2008 can be found in Part 3 of that Act.

1.10 The IPC will also take over responsibility for deciding on applications for development consent for the following nationally significant energy infrastructure in England currently consented under the Town and Country Planning Act regime by local planning authorities in England (or by the Secretary of State on call-in):

- Certain liquefied natural gas (LNG) facilities;
- Certain gas reception facilities; and
- Certain underground gas storage facilities.

1.11 In terms of geographical scope, the Planning Act provides for the IPC to receive:

- All proposals for nationally significant energy infrastructure development in England;
- Proposals in Wales for nationally significant electricity generation stations, overhead electricity lines, underground gas storage facilities for the storage of gas in natural porous strata by a gas transporter, and cross-country pipelines;
- Proposals in Scotland for nationally significant cross-country pipelines carrying oil or gas, provided that one end of the pipeline is in England or Wales, and the other end is in Scotland; and
- Proposals for nationally significant electricity generation stations in the territorial sea adjacent to England and Wales or in a Renewable Energy Zone<sup>6</sup> (except any part in relation to which Scottish Ministers have functions).

1.12 Welsh Ministers will continue to consent offshore generating stations in territorial waters adjacent to Wales under the Transport and Works Act 1992 if applicants apply to them rather than to the IPC.

1.13 Applications relating to development that is not nationally significant within the meaning of the Planning Act will continue to be made under existing regimes, such as the Town and Country Planning Act 1990.

## National Policy Statements

1.14 National Policy Statements will be the primary consideration for the Infrastructure Planning Commission when it makes decisions on applications for development consent for nationally significant infrastructure, and will set the framework within which the IPC will make its decisions<sup>7</sup>. NPSs will bring together a range of social, environmental and economic policies with the objective of contributing to the achievement of sustainable development. They will cover the need for new or expanded infrastructure, locational considerations, how impacts are to be assessed and weighed against benefits, and the mitigation of impacts. In making clear the Government's policies, NPSs are intended to remove the need for lengthy planning inquiries on fundamental policy questions at the application stage.

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<sup>6</sup> A Renewable Energy Zone is an area of the sea, beyond the UK territorial sea and extending up to a maximum of 200 nautical miles from the baseline, in which the UK has claimed exclusive rights with respect to production of energy from water or winds.

<sup>7</sup> The Planning Act 2008 contains a precise description of the role of National Policy Statements in the new planning regime.

- 1.15 National Policy Statements will also assist those who wish to engage in the planning process for nationally significant infrastructure projects. The intention is that NPSs should give clarity and a higher degree of predictability by informing applicants of some of the main issues the IPC will take into account when it considers applications for development consent.
- 1.16 The relevant Secretary of State will produce National Policy Statements for types of infrastructure falling within their areas of responsibility. The Planning Act specifies that designation of an NPS may only take place after there has been Appraisal of Sustainability, public consultation and Parliamentary scrutiny.
- 1.17 The Government currently envisages that initially there will be 12 NPSs, covering the following types of infrastructure:
- Overarching energy – setting the context for the five other energy NPSs below
  - Fossil fuels – oil, gas and coal power stations
  - Renewable energy projects – wind farms, biomass and energy from waste
  - Gas supply infrastructure and gas and oil pipelines – underground gas storage, gas reception facilities, liquefied natural gas (LNG) facilities and gas and oil pipelines
  - Electricity networks – i.e. power lines
  - Nuclear power
  
  - Ports
  - National networks – i.e. strategic roads and railways
  - Airports
  - Waste water – e.g. sewage treatment infrastructure
  - Water supply – e.g. reservoirs
  - Hazardous waste – e.g. high temperature incineration
- 1.18 The Department for Communities and Local Government (CLG) is co-ordinating the development of NPSs across Government. This consultation document seeks views and comments on the six draft energy NPSs.

### **How National Policy Statements will be used**

- 1.19 Following commencement of the relevant section of the Planning Act for a particular type of nationally significant infrastructure, the IPC will be able to consider applications for that type. If an NPS covering that type of nationally significant infrastructure has been formally approved ('designated'), then the IPC will take the development consent decision. If no NPS covering that type of nationally significant infrastructure has been designated, then the IPC will make a recommendation to the Secretary of State, who will take the final decision.

1.20 In deciding an application for development consent the IPC must have regard to:

- any relevant NPS;
- any local impact report submitted by a relevant local authority;
- any relevant matters prescribed in regulations;
- any appropriate Marine Policy Statement and marine plans; and
- and any other matters which the IPC thinks are both important and relevant to the decision.

1.21 In deciding on an application, the IPC, or the Secretary of State, where they are the decision-maker, may disregard representations relating to the merits of policy set out in an NPS. If the representations on a particular application for development consent relate to the merits of policy set out in an NPS, the IPC or the Secretary of State may also refuse to allow representations to be made at a hearing. This consultation is the stage in the planning process for commenting on the draft energy NPSs.

1.22 Under the Planning Act, the IPC must decide an application in accordance with any relevant NPS except where to do so would:

- lead to the UK being in breach of its international obligations;
- be in breach of any statutory duty that applies to the IPC;
- be unlawful;
- result in adverse impacts of the development outweighing the benefits; or
- be contrary to regulations about how its decisions are to be taken.

1.23 In England and Wales, NPSs may be a material consideration in decision-making on applications that fall under the Town and Country Planning Act 1990. Where relevant, decision-makers for such applications in England should apply the policy and guidance in NPSs as far as practicable.

1.24 Energy policy is generally a reserved matter under the Scotland Act 1998, i.e. it is not devolved. The energy NPSs may therefore be a relevant consideration in planning decisions in Scotland.

1.25 Energy policy is for the most part a transferred matter under the Northern Ireland Act 1998, i.e. it is devolved. The energy NPSs therefore do not apply to Northern Ireland.

1.26 The energy NPSs may be a relevant consideration for the Marine Management Organisation when it determines applications for generating stations below the thresholds set out in the Planning Act. The NPSs may also be a relevant consideration in the preparation of marine plans.



- 1.27 The energy NPSs may also be a relevant consideration for decisions taken by the Secretary of State on energy infrastructure, for example, on intervention in an application to the IPC, or where the Secretary of State takes a decision on a type of energy infrastructure that is not covered in an energy NPS.
- 1.28 Before the draft energy NPSs are designated, they may still be a relevant consideration for decisions on energy infrastructure. The weight to be accorded to a draft energy NPS before it is designated is a matter for the decision-maker, but the closer the draft NPS is to being designated, the more weight is likely to be attached to it.

### Reviewing National Policy Statements

- 1.29 The Secretary of State must review National Policy Statements, either in whole or in part, whenever they think it appropriate. In considering whether it is appropriate to review an NPS the Secretary of State must consider whether, since the time when the NPS was first published or (if later) last reviewed, there has been a significant change in any circumstances on the basis of which any of the policy set out in the statement was decided. They must also consider whether the change was not anticipated at that time, and whether, if the change had been anticipated at that time, any of the policy set out in the NPS would have been materially different.
- 1.30 If this review determines that amendments are needed, these must undergo an Appraisal of Sustainability, public consultation and Parliamentary scrutiny, unless the Secretary of State thinks that the amendments do not materially affect the policy in the NPS. As a result of this review, the Secretary of State may also choose to withdraw an NPS.
- 1.31 For the purposes of the review, the Secretary of State may suspend the operation of all or part of an NPS. During such a suspension the designation of the NPS, or of whichever part of it has been suspended, would be treated as having been withdrawn.

### The draft energy National Policy Statements

- 1.32 The draft Overarching Energy NPS (EN-1) is an umbrella document, under which all of the remaining draft energy NPSs sit. It has two main roles:
- To set out how the suite of energy NPSs will work and to explain the framework of existing Government policy; and
  - To establish the need for new energy infrastructure.
- 1.33 The need for new energy infrastructure is established in the draft Overarching Energy NPS both in general terms, by looking at the need for energy supply and a diverse mix of electricity generation, and in terms of the need for specific types of energy infrastructure. The draft Overarching Energy NPS also contains generic information on certain issues which apply across more than one type of infrastructure, such as assessment principles and impacts.

- 1.34 The other five draft ‘technology-specific’ energy NPSs (EN 2-6) must be read in conjunction with the draft Overarching Energy NPS. They contain additional information on specific types of energy infrastructure. This additional information provides further direction to the Infrastructure Planning Commission on the issues it will need to consider when presented with an application for development consent for a particular type of energy infrastructure. This includes information on impacts which may result from development of the type covered by the NPS.
- 1.35 The draft Nuclear NPS (EN-6) differs from the other draft technology-specific energy NPSs in that it also lists sites that the Government has judged to be potentially suitable for the deployment of new nuclear power stations by the end of 2025. The list of sites in the draft Nuclear NPS is the output from the Government’s Strategic Siting Assessment (SSA) process. The draft Nuclear NPS also sets out the Government’s preliminary conclusion that it is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK.
- 1.36 The draft energy NPSs do not set out to change the existing framework of energy policy or result in a shift in policies for consenting nationally significant energy infrastructure, including policies on environmental protection. Rather, the draft energy NPSs seek to codify the policy and processes that are relevant to the IPC’s decision-making in a transparent and understandable way to enable clearer and more efficient decision-making.
- 1.37 The draft energy NPSs reflect the Government response to the consultation on a framework for the development of clean coal<sup>8</sup>, and the draft version of *PPS 15: Planning for the Historic Environment*, which has been out to consultation<sup>9</sup>.
- 1.38 As this suite of draft energy NPSs does not include a draft NPS which covers wave and tidal, the Government’s intention is that wave and tidal applications for sites over 100MW will be decided by the Secretary of State with the IPC providing a recommendation. The Government has started work towards a Strategic Environmental Assessment for Marine Energy Devices for wave, tidal stream and tidal range outside the Severn Estuary, with a screening exercise to explore when the time will be right to undertake the various studies and other activities needed. This will allow the Government to better understand the energy generation potential of Marine Energy Devices, and the realistic timescales for when multiple devices will be installed and commissioned. When an NPS is published which covers wave and tidal technology, the Government intends to transfer decision-making for applications for projects above the relevant threshold to the IPC.

### Coverage of impacts in the draft energy NPSs

- 1.39 Each draft energy NPS uses the term ‘impacts’ to describe the most likely significant effects of constructing energy infrastructure. The draft Overarching Energy NPS describes generic impacts that are common across more than one type of energy infrastructure. When

<sup>8</sup> Consultation on a framework for the development of clean coal website, [http://decc.gov.uk/en/content/cms/consultations/clean\\_coal/clean\\_coal.aspx](http://decc.gov.uk/en/content/cms/consultations/clean_coal/clean_coal.aspx)

<sup>9</sup> *Consultation paper on a new Planning Policy Statement 15: Planning for the Historic Environment*, July 2009, <http://www.communities.gov.uk/publications/planningandbuilding/consultationhistoricpps>

considering an application for development consent for any type of nationally significant energy infrastructure, the IPC will therefore need to refer to the impacts section in the Overarching Energy NPS.

- 1.40 In addition, the IPC will need to refer to the impacts sections of the relevant technology-specific energy NPSs. The impacts contained within these sections are of two types:
- Impacts likely to be mainly of concern just for the type of infrastructure covered by that particular technology-specific NPS. These are covered only in that particular technology-specific NPS; and
  - Impacts that arise across a range of infrastructure types, but for which there are specific issues to address for the infrastructure type being discussed. The descriptions of these impacts must be read in conjunction with the equivalent impact text in the Overarching Energy NPS.
- 1.41 The draft energy NPSs are not intended to be exhaustive in their coverage of impacts and other issues. The IPC will also consider any other impacts it considers to be both important and relevant to its decisions. The omission of an impact from the energy NPSs will not affect the weight which the IPC may decide to give to it.

### Government policy on NPSs and environmental protection

- 1.42 The Government intends National Policy Statements to adhere to the principles previously followed with regard to planning decisions on major energy infrastructure and environmental protection. The guidance for the IPC in NPSs on how to assess the environmental impacts of projects is designed to lead to decisions being taken on broadly the same basis as now; it is the speed, efficiency and clarity around decision-making that the Government wishes to change.
- 1.43 As the primary consideration for the IPC when it makes decisions on applications for development consent, NPSs will take precedence over Planning Policy Statements (PPSs). But, in accordance with the previous paragraph, NPSs have been prepared with the intention of maintaining consistency with those elements of PPSs that are relevant to decision-making on major energy infrastructure. There are a few areas where clarification of PPSs has been necessary to avoid the risk of directions being given to the IPC which are not in accordance with the Government's policy intentions for nationally significant infrastructure and the move to a low carbon energy sector. In particular:
- **Biodiversity**  
Protection of biodiversity is an essential component of any infrastructure planning system. In drawing up the NPSs, the Government has sought to apply the principles and intent of the current *PPS9: Biodiversity and Geological Conservation*<sup>10</sup> into the NPSs.

<sup>10</sup> *Planning Policy Statement 9: Biodiversity and Geological Conservation*, August 2005, <http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/historicenvironment/pps9>

In doing so, the Government has sought to clarify its policy intentions regarding the levels of protection to be afforded to biodiversity and geological conservation interests of international, national, regional and local importance. It is particularly important that the Government's policies to protect biodiversity are viewed in the context of the challenge of climate change: failure to address this challenge will result in significant harm to biodiversity.

- **Flood risk**

Because some energy infrastructure has to be built in high flood risk areas (for example, power stations using water cooling need to be near large rivers or the sea, such projects may have the potential to increase flood risk in the local environment, particularly during the construction period. Examples of circumstances where this has previously happened include the short term breach of a flood wall during construction of a power station and increased run off in a flood zone while a gas pipeline was put in place. The draft Overarching Energy NPS therefore envisages that in exceptional circumstances the IPC may consent such projects, but does require the applicant to demonstrate that the potential increase in flood risk to the local environment, including potentially affected homes and businesses, can be mitigated to an acceptable level.

- **Landscape and visual impacts**

The Government proposes to retain and clarify the important protection that PPS 7<sup>11</sup> provides for nationally designated areas. The PPS does not refer to developments outside such areas but visible from them. In these cases outside the remit of PPS 7, the IPC will, as now, have to take account of the impact on the landscape but we propose that specifically, the IPC will need to be satisfied that the application will not compromise the objectives which were the basis for designation of the designated site.

1.44 Where PPSs are currently being consulted on, the text proposed in those consultations has been reflected in the relevant draft NPS. In the particular case of *PPS 15: Planning for the Historic Environment*<sup>12</sup>, which has been out to consultation, the Government welcomes views as to whether the appropriate approach has been taken to this subject in the draft NPSs.

1.45 The draft Floods and Water Management Bill includes provisions for the Secretary of State to publish National Standards for Sustainable Drainage Systems (SUDS). The final NPSs will need to take account of the provisions and standards in relation to SUDS which apply at the time they are designated.

## Appraisal of Sustainability

1.46 The Planning Act requires that before the Secretary of State can designate a National Policy Statement, it must undergo an Appraisal of Sustainability (AoS). The purpose of AoS is to ensure that NPSs take account of environmental, social and economic considerations, with the objective of contributing to the achievement of sustainable development. The

<sup>11</sup> *Planning Policy Statement 7: Sustainable Development in Rural Areas*, August 2004, <http://www.communities.gov.uk/publications/planningandbuilding/pps7>

<sup>12</sup> *Consultation paper on a new Planning Policy Statement 15: Planning for the Historic Environment*, July 2009, <http://www.communities.gov.uk/publications/planningandbuilding/consultationhistoricpps>

Appraisals of Sustainability on the draft energy NPSs have been carried out in accordance with the requirements of the Strategic Environmental Assessment (SEA) Directive<sup>13</sup>.

- 1.47 AoSs for the draft Overarching Energy NPS and the draft NPSs for fossil fuels, renewables, gas supply infrastructure and gas and oil pipelines, and electricity networks have been carried out in parallel. These are presented in one document (see Chapter 4). There is a separate AoS for the draft Nuclear NPS, which includes site-level reports (see Chapter 5). The AoS reports are being consulted on as part of this consultation.

## Habitats Regulations Assessment

- 1.48 Habitats Regulations Assessments<sup>14</sup> (HRA) examine the potential effects of the proposals in draft NPSs on nature conservation sites that are designated to be of European importance. These sites, referred to as Natura 2000 (N2K) sites or European Sites, are designated because of their importance to habitats and species of importance to European nature conservation. The Habitats Regulations Assessments have been carried out in parallel with, but separate from, the AoS process.
- 1.49 HRAs for the draft Overarching Energy NPS and the draft NPSs for fossil fuels, renewables, gas supply infrastructure and gas and oil pipelines, and electricity networks have been carried out in parallel. These are presented in one document (see Chapter 4). There is a separate HRA for the draft Nuclear NPS, which includes site-level reports (see Chapter 5). The HRA reports are being consulted on as part of this consultation.
- 1.50 The AoS and HRA are a strategic-level stage in the process to ensure that the potential impacts of new energy infrastructure are properly considered. Applications to the IPC for development consent will also need to be accompanied by an Environmental Statement. The Environmental Statement will include a more detailed assessment of potential environmental impacts of developing new energy infrastructure on a particular site. There may also need to be Appropriate Assessment at the project level at the IPC stage.

## Impact Assessment

- 1.51 A combined Impact Assessment has been undertaken on the six draft energy National Policy Statements (see Chapter 6). Impact Assessments analyse the administrative costs and benefits to business, the public sector and the third sector (voluntary organisations) of proposed Government interventions. The Impact Assessment report is being consulted on as part of this consultation.

<sup>13</sup> Council Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment.

<sup>14</sup> The Habitats Directive is the informal name for the European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna. It is transposed into UK law by the Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994/2716) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (SI 2007/1842).

# Chapter 2: Draft Overarching Energy NPS (EN-1)

2.1 This chapter explains the purpose of each part of the draft Overarching Energy National Policy Statement, and introduces the relevant consultation questions. This summary is only intended as an introduction to the draft Overarching Energy NPS. Consultees will need to read the draft Overarching Energy NPS itself before responding.

## Background

2.2 The draft Overarching Energy NPS (EN-1) is an umbrella document, under which all of the remaining draft energy NPSs sit. It has two main roles:

- To set out how the suite of energy NPSs will work and to explain the framework of existing Government policy; and
- To establish the need for new energy infrastructure.

2.3 The need for new energy infrastructure is established in the draft Overarching Energy NPS both in general terms, by looking at the need for energy supply and a diverse mix of electricity generation, and in terms of the need for specific, low-carbon types of energy infrastructure. The draft Overarching Energy NPS also contains generic information on certain issues which apply across more than one type of infrastructure, such as assessment principles and impacts.

2.4 The Government has also conducted an Appraisal of Sustainability and Habitats Regulations Assessment on the draft Overarching Energy NPS (see Chapter 4).

2.5 Subject to this consultation and Parliamentary scrutiny, the Government intends to finalise and formally approve ('designate') the Overarching Energy NPS. Along with the relevant technology-specific energy NPS, the designated Overarching Energy NPS would then be the primary consideration for the Infrastructure Planning Commission when it makes decisions on applications for development consent for new energy infrastructure.

### Consultation question

- |    |                                                                                                                                |
|----|--------------------------------------------------------------------------------------------------------------------------------|
| 1. | Do you think that the Government should formally approve ('designate') the draft Overarching Energy National Policy Statement? |
|----|--------------------------------------------------------------------------------------------------------------------------------|

### Consultation question

- |    |                                                                                                                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | Does the draft Overarching Energy National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent? |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 1 – Introduction

- 2.6 Part 1 of the draft Overarching Energy NPS is introductory. It explains the document’s role, its relationship with other key documents, the energy infrastructure it covers, its geographical coverage and the intended period of validity and review.
- 2.7 Much of the information in Part 1 describes the regulatory framework and the status and contents of the draft energy NPSs. As such, while it is helpful to read Part 1 as an introduction to the rest of the draft NPS, there are no consultation questions specifically related to Part 1.

## Part 2 – Government policy and energy infrastructure development

- 2.8 Part 2 of the draft Overarching Energy NPS sets out the Government’s energy and climate policy, in order to establish the context in which the IPC will take decisions on applications for development consent for nationally significant energy infrastructure.

### Consultation question

- |    |                                                                                                                                                                                   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. | Does the draft Overarching Energy National Policy Statement provide suitable information to the Infrastructure Planning Commission on the Government’s energy and climate policy? |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 3 – Need for new energy infrastructure

- 2.9 Part 3 of the draft Overarching Energy NPS contains an assessment of the need and urgency for new energy infrastructure. The need and urgency for new energy infrastructure will be an important factor in IPC decision-making. It is explained in the draft Overarching Energy NPS in order that the IPC should not need to consider whether there is a national need for new energy infrastructure each time it considers an individual application for development consent.
- 2.10 In its decision-making, the IPC should balance the national need for and other benefits of energy infrastructure against the impacts of particular projects. Part 4 of the draft Overarching NPS contains guidance to the IPC on the impacts of energy infrastructure (see below).

### Consultation question

- |    |                                                                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | Does the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new energy infrastructure? |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 4 – Assessment principles and generic impacts

2.11 Part 4 of the draft Overarching Energy NPS sets out the assessment principles which the IPC should adhere to when considering applications for development consent for nationally significant energy infrastructure. These principles are designed to allow the IPC to focus on issues that are pertinent to applications for development consent and to ensure that it considers applications in a consistent way. These assessment principles also explain to the IPC what information it should expect to receive as part of an application. This explanation is given both in general terms and, in the case of some infrastructure, on a more detailed technology-specific basis.

### Consultation question

- |    |                                                                                                                                                                                            |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. | Do the assessment principles in the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission to inform its decision-making? |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2.12 The draft Overarching Energy NPS described some generic impacts. These are impacts of development which will be applicable across two or more of the draft technology-specific energy NPSs. They are laid out in a format which, to aid the reader, has been developed as the standard for all draft energy NPSs and which is shown below:

- **Introduction** – An overview of the impact.
- **Applicant’s assessment** – Elements of the applicant’s assessment of this impact that the IPC should expect to find in the application.
- **IPC decision-making** – Including specific factors to be considered in judging the impact of a development, also including:
- **Mitigation** – Measures to mitigate the impact which the IPC can expect the applicant to have considered, and which may determine the acceptability of the application.

2.13 The list of generic impacts set out in Part 4 of the draft Overarching Energy NPS is not exhaustive and is not designed to be so. The IPC will also consider any other impacts it considers to be both important and relevant to its decisions. The relevant draft technology-specific energy NPSs contain additional information on impacts which is specific to particular infrastructure.

### Consultation question

- |    |                                                                                                                                                                                   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | Does the draft Overarching Energy National Policy Statement appropriately cover the generic impacts of new energy infrastructure and potential options to mitigate those impacts? |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Other comments

2.14 The Government welcomes views on any other aspect of the draft Overarching Energy NPS that the previous questions do not cover.

### Consultation question

- |    |                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|
| 7. | Do you have any comments on any aspect of the draft Overarching Energy National Policy Statement not covered by the previous questions? |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|

# Chapter 3: Draft NPSs for Fossil Fuels, Renewables, Gas Supply and Gas and Oil Pipelines, and Electricity Networks (EN 2-5)

- 3.1 This chapter explains the purpose of each part of the following draft National Policy Statements, and introduces the relevant consultation questions on them:
- a) The National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)
  - b) The National Policy Statement for Renewable Energy Infrastructure (EN-3)
  - c) The National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)
  - d) The National Policy Statement for Electricity Networks Infrastructure (EN-5)
- 3.2 These draft National Policy Statements must be read in conjunction with the draft Overarching Energy NPS (EN-1). This summary is only intended as an introduction to these draft NPSs. Consultees will need to read the draft NPS themselves before responding.

## Background

- 3.3 The draft National Policy Statements for fossil fuels, renewables, gas supply and gas and oil pipelines, and electricity networks set out how the IPC should apply Government policy in relation to applications for development consent for the types of infrastructure they cover. The draft NPSs cover impacts that might be caused by the development of this infrastructure, to be considered alongside, and in addition to, the generic impacts set out in the draft Overarching Energy NPS.
- 3.4 The Government has also conducted an Appraisal of Sustainability and Habitats Regulations Assessment (HRA) on these draft NPSs (see Chapter 4).
- 3.5 Subject to this consultation and Parliamentary scrutiny, the Government intends to finalise and formally approve ('designate') these NPSs. Along with the Overarching Energy NPS, the designated NPSs would then be the primary consideration for the IPC when it makes decisions on applications for development consent for the types of energy infrastructure they cover.

### Consultation question

8. Do you think that the Government should formally approve ('designate'):
- a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

### Consultation question

9. Do the following draft National Policy Statements provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent:
- a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

## Part 1 – The purpose of energy National Policy Statements

- 3.6 As with the draft Overarching Energy NPS, Part 1 of these draft NPSs is introductory. For each draft energy NPS, it begins with a summary of Government policy for the infrastructure covered, explains the role of the document, its relationship with other key documents, the energy infrastructure it covers, its geographical coverage and the intended period of validity and review.
- 3.7 While it is helpful to read Part 1 as an introduction to the rest of the draft NPS, there are no consultation questions specifically related to Part 1.

## Part 2 – Assessment and technology-specific information

- 3.8 In part 2 of these draft NPSs, the Government sets out guidance for the IPC to enable it to assess potential impacts associated with applications for development consent.
- 3.9 For each impact, the draft NPS includes a description of the impact, guidance on how applicants to the IPC should demonstrate that they have taken account of it, directions for the IPC on how it should consider the impact in its decision-making, and potential measures that the IPC might expect the developer to take or have taken to mitigate impacts.

3.10 Part 2 of these draft NPSs should be read alongside Part 4 of the draft Overarching Energy NPS, which contains advice to the IPC on the assessment of generic impacts common across a range of energy technologies.

### Consultation question

10. Do the following draft National Policy Statements appropriately cover the impacts of the specific types of new energy infrastructure covered in them, and potential options to mitigate those impacts:
- a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

### Other comments

3.11 The Government welcomes views on any other aspect of these draft NPSs that the previous questions do not cover.

### Consultation question

11. Do you have any comments on any aspect of the following draft National Policy Statements not covered by the previous questions:
- a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

# Chapter 4: Appraisal of Sustainability and Habitats Regulations Assessment for EN 1-5

- 4.1 This chapter explains the Appraisals of Sustainability (AoS) and Habitats Regulations Assessments (HRA) for the first five draft energy National Policy Statements (EN 1-5), and introduces the relevant consultation questions. Separate AoS and HRA have been undertaken for the draft Nuclear NPS (see Chapter 5).
- 4.2 This summary is only intended as an introduction to the AoS and HRA reports. Consultees will need to read the documents themselves before responding.

## Appraisal of Sustainability

- 4.3 An Appraisal of Sustainability (AoS) has been carried out alongside and has informed the development of the draft Overarching Energy NPS (EN-1) and the draft NPSs for fossil fuels, renewables, gas supply and gas and oil pipelines, and electricity networks (EN 2-5). The role of the AoS is to help ensure that the NPSs take account of environmental, social and economic considerations with the objective of contributing to the achievement of sustainable development. It has been undertaken in such a way that incorporates the requirements of the Strategic Environmental Assessment Directive<sup>1</sup>.
- 4.4 The specialist environmental consultancy Entec has completed this AoS on behalf of the Government. There are separate AoS reports for each draft energy NPS. However, the reports on the draft NPSs for fossil fuels, renewables, gas supply and gas and oil pipelines, and electricity networks (EN 2-5) should be read together with the AoS report on the draft Overarching Energy NPS (EN-1). This reflects the structure of the suite of draft energy NPSs.
- 4.5 Each Appraisal of Sustainability report includes:
- A Non-Technical Summary, which is also available separately;
  - An explanation of the AoS process and methods;
  - A discussion of the alternatives to the draft NPSs;
  - An appraisal of the sustainability and environmental impacts of the proposals in the draft NPSs;
  - Key recommendations; and
  - Information on monitoring of significant effects.

<sup>1</sup> Council Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment.

4.6 In this consultation, the Government is seeking views on the AoS reports. An explanation of how these views have been considered will be part of an AoS post-adoption statement, which will be published at the same time as the NPSs are designated. The NPSs may be amended and revisions to the AoS may be made as a result of this consultation.

### Consultation question

12. Do you agree with the findings from the following Appraisal of Sustainability reports:
- a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?
  - b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

### Consultation question

13. Do you think that any findings from the following Appraisal of Sustainability reports have not been taken account of properly in the relevant draft National Policy Statements:
- a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?
  - b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

## Consultation question

14. Do you have any comments on any aspect of the following Appraisal of Sustainability reports not covered by the previous questions:
- a) Appraisal of Sustainability report for the draft Overarching Energy National Policy Statement (EN-1)?
  - b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - d) Appraisal of Sustainability report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

## Habitats Regulations Assessment

- 4.7 In parallel with, but separate from, the Appraisal of Sustainability for the draft energy NPSs, the Government has also undertaken a Habitats Regulations Assessment (HRA)<sup>2</sup>.
- 4.8 The HRA examines the potential effects of the proposals in the draft energy NPSs on nature conservation sites that are designated to be of European importance. These sites, referred to as Natura 2000 (N2K) sites or European Sites, are designated because of their importance to habitats and species of importance to European nature conservation.
- 4.9 The Government is required to consult the ‘appropriate nature conservation bodies’ on the HRA and also to take the opinion of the general public, where it considers it appropriate<sup>3</sup>.

<sup>2</sup> The Habitats Directive is the informal name for the European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna. It is transposed into UK law by the Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994/2716) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (SI 2007/1842).

<sup>3</sup> In the UK the appropriate statutory bodies for nature conservation are Natural England, the Countryside Council for Wales, Scottish Natural Heritage, the Joint Nature Conservation Committee and the Department of the Environment (Northern Ireland).

## Consultation question

15. Do you have any comments on the Habitats Regulations Assessment reports for the following draft National Policy Statements:
- a) Habitats Regulations Assessment report for the draft Overarching Energy National Policy Statement (EN-1)?
  - b) Habitats Regulations Assessment report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?
  - c) Habitats Regulations Assessment report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?
  - d) Habitats Regulations Assessment report for the draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?
  - e) Habitats Regulations Assessment report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?



# Chapter 5: Draft Nuclear NPS (EN-6) and associated documents

- 5.1 This chapter explains the purpose of each part of the draft Nuclear National Policy Statement and its associated documents, and introduces the relevant consultation questions. This chapter also contains background on nuclear policy and the process that has been undertaken for the draft Nuclear NPS to date.
- 5.2 The draft Nuclear NPS must be read in conjunction with the draft Overarching Energy NPS (EN-1). This summary is only intended as an introduction. Consultees will need to read the draft Nuclear NPS and associated documents themselves before responding.
- 5.3 Further information related to the draft Nuclear NPS is in the Annexes to this consultation document:
- Wider context for the draft Nuclear NPS, including an introduction to nuclear power and an update on other steps that are being taken to facilitate new nuclear power in the UK (Annex E);
  - Site summaries for sites that are not included in the draft Nuclear NPS – Dungeness, Druridge Bay, Kingsnorth and Owston Ferry (Annex F);
  - An explanation of the Government’s preliminary conclusion that it is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK (Annex G).

## Introduction

- 5.4 The draft Nuclear NPS contains similar information to that found in the other draft technology-specific energy NPSs, but differs in that it also list sites that the Government has judged to be potentially suitable for the deployment of new nuclear power stations by the end of 2025. This is intended to reduce uncertainty about the siting of new nuclear power stations and to reduce the extent to which the IPC needs to consider alternative sites as applications come forward for development consent. The list of sites in the draft Nuclear NPS is the output from the Government’s Strategic Siting Assessment (SSA) process.
- 5.5 In the *White Paper on Nuclear Power*<sup>1</sup>, the Government made clear 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 has set out its preliminary conclusion on this in the draft Nuclear NPS.

<sup>1</sup> *Meeting the Energy Challenge: A White Paper on Nuclear Power*, CM 7296, January 2008  
<http://www.berr.gov.uk/files/file43006.pdf>

- 5.6 The Government has conducted an Appraisal of Sustainability (AoS) and Habitats Regulations Assessment (HRA) on the draft Nuclear NPS. There are AoS and HRA Main Reports covering the draft Nuclear NPS in general, as well as site-specific AoS and HRA reports on each of the sites which have been considered for their potential suitability for new nuclear power stations.
- 5.7 The Strategic Siting Assessment accepted nominations for sites in England and Wales, and the Nuclear NPS will have effect only in relation to England and Wales. This is because the legal power to consent onshore electricity generating stations with a capacity of over 50MW, including new nuclear power stations, has been executively devolved to Scotland and devolved to Northern Ireland.

### Summary of documents associated with the draft Nuclear NPS

- 5.8 In addition to the draft Nuclear NPS, and the Appraisal of Sustainability and Habitats Regulations Assessment reports, the Government is publishing other documents related to the Strategic Siting Assessment and the management and disposal of radioactive waste.
- 5.9 The table below summarises the content and purpose of each document associated with the consultation on the draft Nuclear NPS. All of these documents are available on the website [www.energy-npsconsultation.decc.gov.uk](http://www.energy-npsconsultation.decc.gov.uk).

Table showing documents associated with the draft Nuclear NPS

Document name	Content and purpose
This consultation document	<p>Describes background, context and purpose of the consultation on the six draft energy NPSs (EN 1-6)</p> <p>Includes consultation questions and explains how to respond</p> <p>Chapter 5 focuses on the draft Nuclear NPS and associated documents</p> <p>Also includes:</p> <ul style="list-style-type: none"> <li>• Wider context for draft Nuclear NPS (Annex E);</li> <li>• Site summaries for Dungeness, Druridge Bay, Kingsnorth and Owston Ferry (Annex F); and</li> <li>• Explanation of preliminary conclusion on arrangements for the management and disposal of waste from new nuclear power stations (Annex G)</li> </ul>
<p>Draft National Policy Statement for Nuclear Power Generation (EN-6)</p> <p><i>Must be read alongside the draft Overarching Energy NPS (EN-1)</i></p>	<p>Will be used by the IPC. Includes information on:</p> <ul style="list-style-type: none"> <li>• Need for new nuclear power stations (Part 2)</li> <li>• Policy and regulatory framework (Part 3)</li> <li>• Assessment of arrangements for the management and disposal of waste from new nuclear power stations (Part 3)</li> <li>• Impacts of new nuclear power stations and potential ways to mitigate them (Part 4)</li> <li>• Sites that the Government considers to be potentially suitable for new nuclear power stations (Part 5)</li> </ul>

Document name	Content and purpose
Appraisal of Sustainability (AoS) of the draft Nuclear National Policy Statement: Main Report  <i>Must be read alongside the AoS report for the draft Overarching Energy NPS</i>	Informs the draft Nuclear NPS, to ensure it meets the requirements of sustainable development Includes a Non-Technical Summary, which is also available separately, explanation of the AoS process and methods, and key recommendations
Appraisal of Sustainability – Site Reports (x14)	AoS site reports for each of the 11 sites nominated into the Strategic Siting Assessment process, and for the three sites that the Alternative Sites Study considered worthy of further consideration (see below)
Appraisal of Sustainability – Technical Appendices (x14)	Technical appendices containing baseline data and evidence used for the AoS on each of the 11 nominated sites, and for the three sites that the Alternative Sites Study considered worthy of further consideration (see below)
Habitats Regulations Assessment (HRA) of the draft Nuclear National Policy Statement: Main Report  <i>Must be read alongside the HRA report for the draft Overarching Energy NPS</i>	Examines the potential impacts of the draft Nuclear NPS on habitats and species at European designated sites Includes a Non-Technical Summary, which is also available separately
Habitats Regulations Assessment – Site Reports (x14)	HRA site reports for each of the 11 sites nominated into the Strategic Siting Assessment process, and for the three sites that the Alternative Sites Study considered worthy of further consideration (see below)
Habitats Regulations Assessment – Technical Appendices (x14)	Technical appendices containing baseline data and evidence used in the HRA assessment for each of the 11 nominated sites, and for the three sites that the Alternative Sites Study considered worthy of further consideration (see below)
Strategic Siting Assessment: Summary Report on the Opportunity to Comment on Site Nominations	Summary of the process that enabled people to comment on the 11 sites nominated into the Strategic Siting Assessment (SSA) process Includes brief summaries of responses received and statistical breakdown of responses by site
Strategic Siting Assessment: comments received on site nominations (several documents)	Published lists of original comments received from the public in response to the opportunity to comment on sites nominated into SSA

Document name	Content and purpose
Specialist advice on sites (several documents)	Advice from regulators and other specialists against the SSA criteria for each nominated site and alternative sites
Alternative Sites Study	Study undertaken by Atkins Ltd. of alternative sites (in addition to the 11 that were nominated into SSA) that have been considered for their potential suitability for the deployment of new nuclear power stations by the end of 2025
The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence	Further background information on the evidence that the Government has considered in assessing the arrangements for the management and disposal of waste from new nuclear power stations Should be read alongside Part 3 of the draft Nuclear NPS and Annex G of this consultation document

5.10 Respondents to this consultation may find it helpful to read this consultation document, the draft Nuclear NPS, the draft Overarching Energy NPS, and the AoS and HRA Main Reports first. Respondents should then refer to other documents as necessary. When reading the AoS and HRA reports, it is advisable to read the Non-Technical Summaries in the Main Reports first, and then refer to the site reports and technical appendices for more information on a particular site as necessary.

5.11 For example, a respondent principally interested in the Government’s assessment of the potential suitability of the nominated site at Sizewell might find it most useful to focus on the following documents:

- Consultation document, focusing on question 21;
- Draft Overarching Energy NPS;
- Draft Nuclear NPS, focusing on the site summary for Sizewell in Part 5;
- AoS Non-Technical Summary and the AoS site report for Sizewell; and
- HRA Non-Technical Summary and the HRA site report for Sizewell.

## Government policy on new nuclear power

5.12 Following consultation<sup>2</sup>, the Government published the *White Paper on Nuclear Power* in January 2008<sup>3</sup>. The White Paper set out the Government’s decision 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 facilitate this”. The Government concluded that nuclear power was

<sup>2</sup> *The Future of Nuclear Power – The Role of Nuclear Power in a Low Carbon UK Economy: Consultation Document*, URN 07/970, May 2007 <http://www.berr.gov.uk/files/file39197.pdf>

<sup>3</sup> *Meeting the Energy Challenge: A White Paper on Nuclear Power*, CM 7296, January 2008 <http://www.berr.gov.uk/files/file43006.pdf>

low-carbon, affordable, dependable, safe and capable of increasing diversity and reducing our dependence on any one technology or country for our energy or fuel supplies.

- 5.13 The White Paper set out a series of facilitative actions that the Government would take to remove potential barriers to investment in new nuclear. The facilitative actions were intended to subject high-level policy and regulatory issues to debate and consultation at a national level, so that they would not need to be reopened each time an individual project was considered at a particular site.
- 5.14 One facilitative action in the White Paper involved “making use of the provisions in the Planning Bill to ensure that nuclear development projects are treated like other critical infrastructure projects and are dealt with effectively through the use of a National Policy Statement”<sup>4</sup>. The White Paper also said that the Government would carry out a Strategic Siting Assessment (SSA) and Strategic Environmental Assessment (SEA)<sup>5</sup>, which had been the subject of an earlier consultation<sup>6</sup>.
- 5.15 An update on other steps that are being taken to facilitate new nuclear power in the UK is provided in Annex E.

## Strategic Siting Assessment

- 5.16 The aim of the Strategic Siting Assessment is to identify and assess which sites in England and Wales are potentially suitable for the deployment of new nuclear power stations by the end of 2025. This is intended to reduce uncertainty about the siting of new nuclear power stations and to reduce the extent to which the IPC needs to consider alternative sites as applications come forward for development consent.
- 5.17 The Government consulted on the SSA criteria and process in July 2008. In its response in January 2009<sup>7</sup>, the Government explained that there would be three categories of criteria for the SSA process – exclusionary criteria, discretionary criteria and criteria that would be more appropriately assessed at the local level (called ‘flag for local consideration’ criteria).
- 5.18 As part of its consultation response in January 2009, the Government issued a call for nominations of sites into the SSA process. Eleven sites were nominated – Bradwell, Braystones, Dungeness, Hartlepool, Hinkley Point, Heysham, Kirksanton, Oldbury, Sellafield, Sizewell and Wylfa. A map showing the location of these 11 sites is provided below.

<sup>4</sup> *White Paper on Nuclear Power*, pg.7.

<sup>5</sup> SEA is being taken forward through the Appraisal of Sustainability, which is explained later in this chapter.

<sup>6</sup> *Consultations on the proposed processes for Justification and Strategic Siting Assessment*, URN 07/972, May 2007, <http://www.berr.gov.uk/files/file39199.pdf>

<sup>7</sup> *Government response to consultations on the Strategic Siting Assessment process and siting criteria for new nuclear power stations in the UK; and to the study on the potential environmental and sustainability effects of applying the criteria*, URN 09/581, January 2009, <http://www.berr.gov.uk/files/file49865.pdf>



Map showing sites nominated into the Strategic Siting Assessment (SSA) process

5.19 The Government screened the nominated sites against the conditions of nomination. This included consideration of the steps taken to raise awareness of nominations with local communities, and whether the sites were credible for deployment by the end of 2025. The Government then published the nominations and invited the public to comment on them from 15 April to 14 May 2009. The public could comment on the information provided in

nominations against the SSA criteria, and submit any additional relevant information. A report summarising comments received during this period is being published as part of this consultation and is available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

- 5.20 In assessing nominated sites against the SSA criteria, the Government took account of information provided by nominators, comments received from the public, advice from specialists including the nuclear regulators and other Government departments, as well as recommendations from the Appraisal of Sustainability and Habitats Regulations Assessment reports. The range of sources that the Government used in coming to its preliminary conclusion can be viewed at [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).
- 5.21 The Government's preliminary conclusion is that all of the nominated sites, with the exception of Dungeness, are potentially suitable for the deployment of new nuclear power stations by the end of 2025. In this consultation, the Government is seeking views on this preliminary conclusion.
- 5.22 Part 5 of the draft Nuclear NPS includes site summaries for the sites that the Government considers to be potentially suitable. A site summary explaining the Government's assessment of Dungeness is included at Annex F to this consultation document.

### Alternative Sites Study

- 5.23 The Government considers that the nominations-driven Strategic Siting Assessment process is well-suited to identifying potentially suitable sites for the deployment of new nuclear power stations by the end of 2025. However, in order to ensure that, so far as possible, alternative sites have been identified and assessed, and in line with the requirements of the Habitats Directive, the Government also commissioned Atkins Ltd to identify whether there might be other sites in England and Wales worthy of further consideration, and the Government has separately considered those sites.
- 5.24 Beyond those sites that were nominated into the SSA process, the Alternative Sites Study found three sites worthy of further consideration – Druridge Bay, Kingsnorth and Owston Ferry. The Study is being published as part of this consultation and is available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).
- 5.25 The Government's preliminary conclusion is that these three sites are not potentially suitable for the deployment of new nuclear power stations by the end of 2025. The three sites identified in the Alternative Sites Study have therefore not been included in the draft Nuclear NPS.
- 5.26 In this consultation, the Government is seeking views on this preliminary conclusion. Site summaries explaining the Government's assessment of these three sites are included at Annex F to this consultation document.

## Sites not listed in the Nuclear NPS

- 5.27 The Government has conducted an extensive exercise to identify potentially suitable sites for new nuclear power stations deployable by the end of 2025. That search has only identified ten sites which the Government considers to be both potentially suitable and deployable by the end of 2025, and those sites are listed in the draft Nuclear NPS.
- 5.28 The effect of the Nuclear NPS is limited to the development of new nuclear power stations on the sites listed in the Nuclear NPS. This means that the IPC does not have the function of deciding applications for the development of new nuclear power stations on sites which are not listed in the Nuclear NPS.
- 5.29 Any application for development consent for a new nuclear power station on a site which is not listed in the Nuclear NPS would be decided by the Secretary of State; the IPC would examine the application and make a recommendation to the Secretary of State on it. In considering any such application, as well as having regard to the recommendation from the IPC and the matters set out in section 105(2) of the Planning Act, the Secretary of State could also expect to have regard to:
- the Strategic Siting Assessment (SSA) criteria, including consideration of whether or not it is necessary to review the criteria or conduct a further SSA; and
  - the need for new nuclear generation capacity and wider energy policy, where relevant.
- 5.30 Specifically, in the event that a developer made an application early in the period between now and 2025, the Government would expect the developer to be able to demonstrate that the site is suitable for the deployment of new nuclear power stations by the end of 2025.

## Consultation questions on draft Nuclear NPS

- 5.31 Subject to this consultation and Parliamentary scrutiny, the Government intends to finalise and formally approve ('designate') the Nuclear NPS. Along with the Overarching Energy NPS, the designated Nuclear NPS would then be the primary consideration for the Infrastructure Planning Commission when it makes decisions on applications for development consent for new nuclear power stations.

### Consultation question

- |     |                                                                                                                     |
|-----|---------------------------------------------------------------------------------------------------------------------|
| 16. | Do you think that the Government should formally approve ('designate') the draft Nuclear National Policy Statement? |
|-----|---------------------------------------------------------------------------------------------------------------------|

### Consultation question

- |     |                                                                                                                                                                                                   |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17. | Does the draft Nuclear National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent? |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Part 1 – Role of this NPS in the planning system

- 5.32 Part 1 of the draft Nuclear NPS is introductory. It explains the document’s role, relationship with the draft Overarching Energy NPS, geographical coverage and period of validity and review. It explains the need for an Appraisal of Sustainability and interaction with the Habitats Directive.
- 5.33 Much of the information in Part 1 flows directly from requirements in the Planning Act, rather than introducing any new guidance to the IPC. As such, while it may be helpful to read this part as an introduction to the rest of the draft Nuclear NPS, there are no consultation questions specifically related to Part 1.

## Part 2 – Government policy on new nuclear power stations and energy infrastructure development

- 5.34 Part 2 of the draft Nuclear NPS contains an assessment of the need and urgency for new nuclear power stations, and the need for the sites listed in the draft Nuclear NPS. The need and urgency for new nuclear power will be an important factor in IPC decision-making. It is explained in the draft Nuclear NPS in order that the IPC should not need to consider whether there is a national need for new nuclear power each time it considers an individual application for development consent.
- 5.35 In its decision-making, the IPC should balance the national need for and other benefits of nuclear power against the impacts of particular projects. Part 4 of the draft Nuclear NPS contains guidance to the IPC on the impacts of new nuclear power stations (see below).
- 5.36 Part 2 of the draft Nuclear NPS should be read alongside the draft Overarching Energy NPS, which sets out the Government’s energy and climate policy and the need for new energy infrastructure in general.

### Consultation question

- |     |                                                                                                                                                                               |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18. | Does the draft Nuclear National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new nuclear power stations? |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 3 – Policy on assessment of development consent applications

- 5.37 Part 3 of the draft Nuclear NPS explains that in assessing any application for development consent, the IPC should follow the assessment principles and guidance set out in the draft Overarching Energy NPS.
- 5.38 Part 3 also provides instructions to the IPC on how it should assess sites identified through the Government’s Strategic Siting Assessment process as potentially suitable for the deployment of new nuclear power stations by the end of 2025. More background information on the Strategic Siting Assessment and how the criteria were applied, plus site summaries for the ten sites judged to be potentially suitable, appears in Part 5 of the draft Nuclear NPS (see below).

- 5.39 The relationship between the process for development consent and the regulatory framework for new nuclear power stations also features in Part 3 of the draft Nuclear NPS. This is followed by information for the IPC on the consideration of good design, combined heat and power and climate change adaptation.
- 5.40 Another element of Part 3 relates to the management and disposal of waste from new nuclear power stations. In the *White Paper on Nuclear Power*, the Government made clear 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”<sup>8</sup>.
- 5.41 The Government has set out its preliminary conclusion on this in Part 3 of the draft Nuclear NPS. A description of how this preliminary conclusion has been reached is included at Annex G to this consultation document. Further background information on the evidence that the Government has considered is set out in the paper *The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence*, which is being published alongside this consultation, and which is available on the website [www.energy-npsconsultation.decc.gov.uk](http://www.energy-npsconsultation.decc.gov.uk).

### Consultation question

- |     |                                                                                                                                                                                                    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19. | Do you agree with the Government’s preliminary conclusion that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK? |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 4 – Policy and guidance for the IPC when considering nuclear-specific impacts and siting issues

- 5.42 In part 4 of the draft Nuclear NPS the Government sets out guidance for the IPC to enable it to assess potential impacts associated with applications for development consent for new nuclear power stations. For each impact, the draft nuclear NPS includes a description of the impact, guidance on how applicants to the IPC should demonstrate they have taken account of it, directions for the IPC on how it should consider the impact in its decision-making, and potential measures that the IPC might expect the applicant to take or have taken to mitigate the impact.
- 5.43 Part 4 of the draft Nuclear NPS should be read alongside Part 4 of the draft Overarching Energy NPS, which contains advice to the IPC on the assessment of generic impacts common across a range of energy technologies.

### Consultation question

- |     |                                                                                                                                                                 |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20. | Does the draft Nuclear National Policy Statement appropriately cover the impacts of new nuclear power stations and potential options to mitigate those impacts? |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>8</sup> *Meeting the Energy Challenge: A White Paper on Nuclear Power*, CM 7296, January 2008  
<http://www.berr.gov.uk/files/file43006.pdf>, pg.99

## Part 5 – Assessment of sites nominated as part of the SSA process

5.44 The Government's preliminary conclusion is that the following sites, which were nominated into the Strategic Siting Assessment (SSA) process, are potentially suitable for the deployment of new nuclear power stations by the end of 2025:

- Bradwell
- Braystones
- Hartlepool
- Heysham
- Hinkley Point
- Kirksanton
- Oldbury
- Sellafield
- Sizewell
- Wylfa

5.45 Part 5 of the draft Nuclear NPS includes site summaries explaining why these sites are considered to be potentially suitable. The summaries also contain guidance to the IPC on site-specific issues which the Government believes require further consideration either by the applicant, the regulators or the IPC. This guidance to the IPC should be read in conjunction with guidance on impacts which is contained in Part 3 of the draft Nuclear NPS and Part 4 of the draft Overarching NPS. Appraisal of Sustainability and Habitats Regulations Assessment reports for these sites are available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

5.46 Although the Government has reached the preliminary conclusion that Braystones and Kirksanton are potentially suitable, given the challenges inherent in developing greenfield sites, the Government has considerable reservations about the practicability of their deployment by the end of 2025 and would be particularly interested in hearing evidence over the consultation period on its assessment in respect of these sites. The Government has, however, noted that in making the nominations for these sites, credible nuclear power operators (CNPOS) have been prepared to confirm that these sites are deployable by the end of 2025 and have undertaken public awareness raising activities as required by the SSA process. This is not the case in respect of any of the sites that the Alternative Sites Study identified as worthy of further consideration.

5.47 The Government's preliminary conclusion is that Dungeness, which was also nominated into the SSA process, is not potentially suitable for the deployment of new nuclear power stations by the end of 2025. Dungeness has therefore not been included in the draft Nuclear NPS. A site summary explaining the Government's assessment of Dungeness is included at Annex F to this document. AoS and HRA reports for Dungeness are available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk). The Government would be particularly interested in hearing evidence over the consultation period on its assessment in respect of Dungeness.

## Consultation question

21. Do you agree with the Government’s preliminary conclusion on the potential suitability of sites nominated into the Strategic Siting Assessment, as set out below? You can respond in general terms on the assessment as a whole, or against one or more specific sites.
- a) General comments
- The Government considers the following sites to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:
- b) Bradwell
  - c) Braystones
  - d) Hartlepool
  - e) Heysham
  - f) Hinkley Point
  - g) Kirksanton
  - h) Oldbury
  - i) Sellafield
  - j) Sizewell
  - k) Wylfa
- The Government does not consider the following site to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:
- l) Dungeness

## Alternative sites

- 5.48 Beyond those sites that were nominated into the Strategic Siting Assessment, the Alternative Sites Study found three sites worthy of further consideration – Druridge Bay, Kingsnorth and Owston Ferry.
- 5.49 The Government’s preliminary conclusion is that these three sites are not potentially suitable for the deployment of new nuclear power stations by the end of 2025. The three sites identified in the Alternative Sites Study have therefore not been included in the draft Nuclear NPS.
- 5.50 Site summaries explaining the Government’s assessment of these three sites are included at Annex F to this consultation document. AoS and HRA reports for these sites are available from the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk).

- 5.51 In making the judgement that the three sites identified in the Alternative Sites Study are not potentially suitable, their ability to be deployed by the end of 2025 has been considered. The Government attaches significant weight to this date, for the climate change and energy security policy reasons set out in Part 2 of the draft Nuclear NPS. Sites which are not capable of deployment by the end of 2025 will not meet the Government’s climate and energy security goals and, hence, will not meet the objectives of the Nuclear NPS.
- 5.52 If further evidence or reasoning should come forward during this consultation which would cause the Government to reconsider its position on excluding Dungeness or one (or more) of the sites identified in the Alternative Sites Study, then the Government would expect to undertake further consultation with communities in the vicinity of those sites specifically on the potential inclusion of those sites in the Nuclear NPS.

### Consultation question

- |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22. | <p>Do you agree with the Government’s preliminary conclusion that the three sites identified in the Alternative Sites Study, as listed below, are not potentially suitable for the deployment of new nuclear power stations by the end of 2025? You can respond in general terms on the sites identified in the Study as a whole, or against one or more specific sites.</p> <ul style="list-style-type: none"> <li>a) General comments</li> <li>b) Druridge Bay</li> <li>c) Kingsnorth</li> <li>d) Owston Ferry</li> </ul> |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Appraisal of Sustainability

- 5.53 An Appraisal of Sustainability (AoS) has been carried out alongside and has informed the development of the draft Nuclear NPS. The role of the AoS is to help to ensure that the draft Nuclear NPS takes account of environmental, social and economic considerations, with the objective of contributing to the achievement of sustainable development. It has been undertaken in such a way that incorporates the requirements of the Strategic Environmental Assessment Directive<sup>9</sup>.
- 5.54 The AoS for the draft Nuclear NPS has been produced by the Department of Energy and Climate Change (DECC) based on technical assessment undertaken by MWH UK Ltd with Enfusion Ltd, Nicholas Pearson Associates Ltd, Studsvik UK Ltd and Metoc plc. The AoS covers:
- An appraisal of the sustainability and environmental impacts of the proposals in the draft Nuclear NPS as a whole, including the cumulative effects of potential development on all the listed sites (the AoS Main Report);

<sup>9</sup> Council Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment.

- An appraisal of the potential impacts of developing new nuclear power stations at each individual site (the AoS site-level reports); and
- An assessment of alternatives to the Nuclear NPS, covering what impacts there might be if the Government designated:
  - A Nuclear NPS in line with Government policy;
  - A Nuclear NPS that prohibits the construction of new nuclear power stations; and
  - No Nuclear NPS.

5.55 The AoS for the draft Nuclear NPS also examines the impacts on sustainability if radioactive wastes from new nuclear power stations were managed in line with the policies and processes considered by the Government in reaching its preliminary conclusion on waste. The Government has taken into account the potential impacts identified in the AoS in making its assessment on waste, and has concluded that none of the potential sustainability impacts identified in the AoS prevent it from reaching its preliminary conclusion.

5.56 There is an AoS Main Report for the draft Nuclear NPS, including a Non-Technical Summary, which is also available separately. There are also site-level AoS reports and technical appendices for each of the 11 nominated sites and the three sites identified in the Alternative Sites Study. The findings from the AoS reports have informed the Strategic Siting Assessment and consideration of alternative sites, and where relevant are reflected in the site summaries in Part 5 of the draft Nuclear NPS and Annex F of this consultation document.

5.57 In this consultation, the Government is seeking views on the AoS reports for the draft Nuclear NPS. An explanation of how these views have been considered will be part of an AoS post-adoption statement, which will be published at the same time as the Nuclear NPS is designated. The NPS may be amended and revisions to the AoS reports may be made as a result of this consultation.

### Consultation question

23.	Do you agree with the findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement?
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### Consultation question

24.	Do you think that any findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement have not been taken account of properly in the draft Nuclear National Policy Statement?
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## Habitats Regulations Assessment

- 5.58 In parallel with, but separate from, the Appraisal of Sustainability for the draft Nuclear NPS, the Government has also undertaken a Habitats Regulations Assessment (HRA)<sup>10</sup>. The HRA for the draft Nuclear NPS has been produced by DECC based on technical assessment undertaken by MWH UK Ltd with Enfusion Ltd and Nicholas Pearson Associates Ltd.
- 5.59 The HRA examines the potential effects of the proposals in the draft Nuclear NPS on nature conservation sites that are designated to be of European importance. These sites, referred to as Natura 2000 (N2K) sites or European Sites, are designated because of their importance to habitats and species of importance to European nature conservation.
- 5.60 The HRA for the draft Nuclear NPS focuses on:
- assessing the potential impacts of development of new nuclear power stations at individual sites, based on available information; and
  - assessing the potential impacts of the draft Nuclear NPS overall.
- 5.61 There is an HRA Main Report for the draft Nuclear NPS, including a Non-Technical Summary, which is also available separately. There are also site-level HRA reports and technical appendices for each of the 11 nominated sites and the three sites identified in the Alternative Sites Study. The findings of the HRA reports have informed the Strategic Siting Assessment and consideration of alternative sites, and where relevant are reflected in the site summaries in Part 5 of the draft Nuclear NPS and Annex F of this consultation document.
- 5.62 Where the HRA has been unable to conclude that the development of a particular site will not have an adverse impact on designated sites, the Government has considered the tests set out in article 6(4) of the Habitats Directive. This is described in further detail in Annex A to the draft Nuclear NPS.
- 5.63 The Government is required to consult the ‘appropriate nature conservation bodies’ on the HRA and also to take the opinion of the general public, where it considers it appropriate<sup>11</sup>.

### Consultation question

- |     |                                                                                                                          |
|-----|--------------------------------------------------------------------------------------------------------------------------|
| 25. | Do you have any comments on the Habitats Regulations Assessment reports for the draft Nuclear National Policy Statement? |
|-----|--------------------------------------------------------------------------------------------------------------------------|

<sup>10</sup> The Habitats Directive is the informal name for the European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna. It is transposed into UK law by the Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994/2716) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (SI 2007/1842).

<sup>11</sup> In the UK the appropriate statutory bodies for nature conservation are Natural England, the Countryside Council for Wales, Scottish Natural Heritage and the Department of the Environment (Northern Ireland).

## Other comments

5.64 The Government welcomes views on any other aspect of the draft Nuclear NPS and its associated documents that the previous questions do not cover.

### Consultation question

26.	Do you have any comments on any aspect of the draft Nuclear National Policy Statement or its associated documents not covered by the previous questions?
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# Chapter 6: Impact Assessment and other questions

## Impact Assessment

- 6.1 Impact Assessments analyse the administrative costs and benefits to business, the public sector and the third sector (voluntary organisations) of proposed Government interventions. The assessments set out why the measure is needed and options for achieving the policy aims, with reasons for the option adopted.
- 6.2 A combined Impact Assessment has been prepared on the costs and benefits associated with the six draft energy National Policy Statements, and is being published as part of this consultation.
- 6.3 The Impact Assessment for the Planning Bill, published in November 2007<sup>1</sup>, sets out in detail the costs and benefits to business and the public sector of the new planning regime. This includes an assessment of the cost savings likely to accrue to business through more certainty in the planning process and faster decision-making. It also details expected changes in staff costs for departments when the Infrastructure Planning Commission begins making decisions on applications for development consent that were previously made by the Secretary of State.
- 6.4 The Impact Assessment for the draft energy NPSs does not repeat the information given in the Impact Assessment for the Planning Bill. Instead it sets out the options for drafting NPSs, with reasons why the option selected is deemed to be the most appropriate. In particular, the NPSs are required for the IPC to determine applications for development consent for nationally significant infrastructure. For this reason, the Impact Assessment explains that it is not considered to be an appropriate option not to draft energy NPSs to cover the likely applications to the IPC for the nationally significant energy infrastructure specified in the Planning Act.

### Consultation question

- |     |                                                                                                           |
|-----|-----------------------------------------------------------------------------------------------------------|
| 27. | Do you have any comments on the Impact Assessment report for the draft energy National Policy Statements? |
|-----|-----------------------------------------------------------------------------------------------------------|

<sup>1</sup> In the UK the appropriate statutory bodies for nature conservation are Natural England, the Countryside Council for Wales, Scottish Natural Heritage and the Department of the Environment (Northern Ireland).

## Relevance to applicants

- 6.5 One of the aims of the Government’s reform of the planning system is to establish a clear separation between policy-making and decisions on individual applications. This should give applicants a clearer framework with a higher degree of predictability in which they can make investment decisions with more confidence. NPSs have been drafted in order to deliver this higher degree of predictability by informing applicants of some of the main issues the IPC will take into account and some of the main policy the IPC will use to reach its decisions. The NPSs should also help applicants to prepare applications by setting out some of the information the IPC may require on the assessment of impacts and on their mitigation.
- 6.6 NPSs are also designed to help the public and local communities to get involved in decisions on applications for development consent, by setting out the kinds of issues which the IPC will be taking into account, the policy framework against which the IPC will be considering applications, and the information that applicants should be providing on the assessment and mitigation of impacts.

### Consultation question

- |     |                                                                                                                                                                                                                                           |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28. | Does this package of draft energy National Policy Statements provide a useful reference for those wishing to engage in the process for development consent for nationally significant energy infrastructure, particularly for applicants? |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Other comments

- 6.7 The Government welcomes views on any other aspect of the draft energy NPSs and their associated documents that the previous questions do not cover.

### Consultation question

- |     |                                                                                                                                                            |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29. | Do you have any comments on any aspect of the draft energy National Policy Statements or their associated documents not covered by the previous questions? |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Annex A: Consultation criteria

The Government's seven consultation criteria are:

## **Criterion 1 – When to consult**

*Formal consultation should take place at a stage when there is scope to influence the policy outcome.*

## **Criterion 2 – Duration of consultation exercises**

*Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible.*

## **Criterion 3 – Clarity of scope and impact**

*Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals.*

## **Criterion 4 – Accessibility of consultation exercises**

*Consultation exercises should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach.*

## **Criterion 5 – The burden of consultation**

*Keeping the burden of consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained.*

## **Criterion 6 – Responsiveness of consultation exercises**

*Consultation responses should be analysed carefully and clear feedback should be provided to participants following the consultation.*

## **Criterion 7 – Capacity to consult**

*Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.*

The complete *Code of Practice on Consultation* is available online at <http://www.berr.gov.uk/files/file47158.pdf>

# Annex B: Acronyms and abbreviations

AONB	Area of Outstanding Natural Beauty
AoS	Appraisal of Sustainability
AoSP	Area of Special Protection
AQMA	Air Quality Management Area
ASNW	Area of Semi-Natural Woodland
ASSI	Area of Special Scientific Interest
BAP	Biodiversity Action Plan
BERR	Department for Business, Enterprise and Regulatory Reform
CCW	Countryside Council for Wales
CLG	Department for Communities and Local Government
COMAH	Control of Major Accident Hazard
CoRWM	Committee on Radioactive Waste Management
cSAC	Candidate Special Area of Conservation
DECC	Department of Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DoENI	Department of the Environment in Northern Ireland
dSAC	Draft Special Area of Conservation
EA	Environment Agency
EC	European Council
EEA	European Economic Area
EHS	Environment and Heritage Service
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESDP	European Spatial Development Perspective
EU	European Union
FDP	Funded Decommissioning Programme
GDA	Generic Design Assessment
GDF	Geological Disposal Facility
GIS	Geographical Information Systems
ha	Hectare
HLW	High level waste
HRA	Habitats Regulations Assessment
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency
ILW	Intermediate level waste
IMD	Index of Multiple Deprivation
IPC	Infrastructure Planning Commission
IQM	Integrated Quality Management
JNCC	Joint Nature Conservation Committee
LANR	Local Authority Nature Reserve
LCA	Landscape Character Assessment
LCPD	Large Combustion Plants Directive

LDR	Long Distance Route
LGD	Local Government District
LLW	Low level waste
LNG	Liquefied Natural Gas
LNR	Local Nature Reserve
LWR	Light Water Reactor
LWS	Local Wildlife Sites
MCA	Marine Conservation Area
MNR	Marine Nature Reserve
MRWS	Managing Radioactive Waste Safely
mSv	Millisievert
NDA	Nuclear Decommissioning Authority
NEA	Nuclear Energy Agency
NIA	Nuclear Industry Association
NII	Nuclear Installations Inspectorate
NLFAB	Nuclear Liabilities Financing Assurance Board
NNR	National Nature Reserve
NPPG	National Planning Policy Guidance
NPS	National Policy Statement
NSA	National Scenic Area
NSIP	Nationally Significant Infrastructure Project
OCNS	Office for Civil Nuclear Security
OECD	Organisation for Economic Co-operation and Development
OS	Ordnance Survey
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
pSAC	Potential Special Area of Conservation
pSPA	Possible Special Protection Area
PWR	Pressurised Water Reactor
RDS	Regional Development Strategy
RIGS	Regionally Important Geological and Geomorphological Site
RTS	Regional Transport Strategy
SAC	Special Area of Conservation
SCI	Site of Community Importance
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SI	Statutory Instrument
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SPP	Scottish Planning Policy
SSA	Strategic Siting Assessment
SSSI	Site of Special Scientific Interest
TAN	Technical Advice Note
TBq	Terabecquerel
TCPA	Town and Country Planning Act
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WSP	Wales Spatial Plan

# Annex C: List of organisations consulted under the Planning Act 2008

In accordance with the requirements of regulations made under the Planning Act 2008<sup>1</sup>, the following organisations are being consulted on the draft energy NPSs:

- The Scottish Executive;
- The Welsh Ministers;
- The relevant Northern Ireland Department;
- Regional planning bodies;
- Local authorities;
- Strategic Health Authorities;
- The Local Government Association;
- The Association of Chief Police Officers;
- The Chief Fire Officers Association;
- The Health and Safety Executive;
- The Environment Agency;
- Natural England;
- Regional development agencies;
- The Commission for Sustainable Development;
- The Equality and Human Rights Commission;
- The Joint Nature Conservation Commission;
- Waste Authorities;
- The Joint Committee of the National Amenity Societies;
- Transport for London;
- The Crown Estate Commissioners;
- The Committee on Climate Change;
- The National Association of Local Councils;
- AONB Conservation Boards;
- The National Consumer Council;
- The Chartered Institute of Environmental Health;

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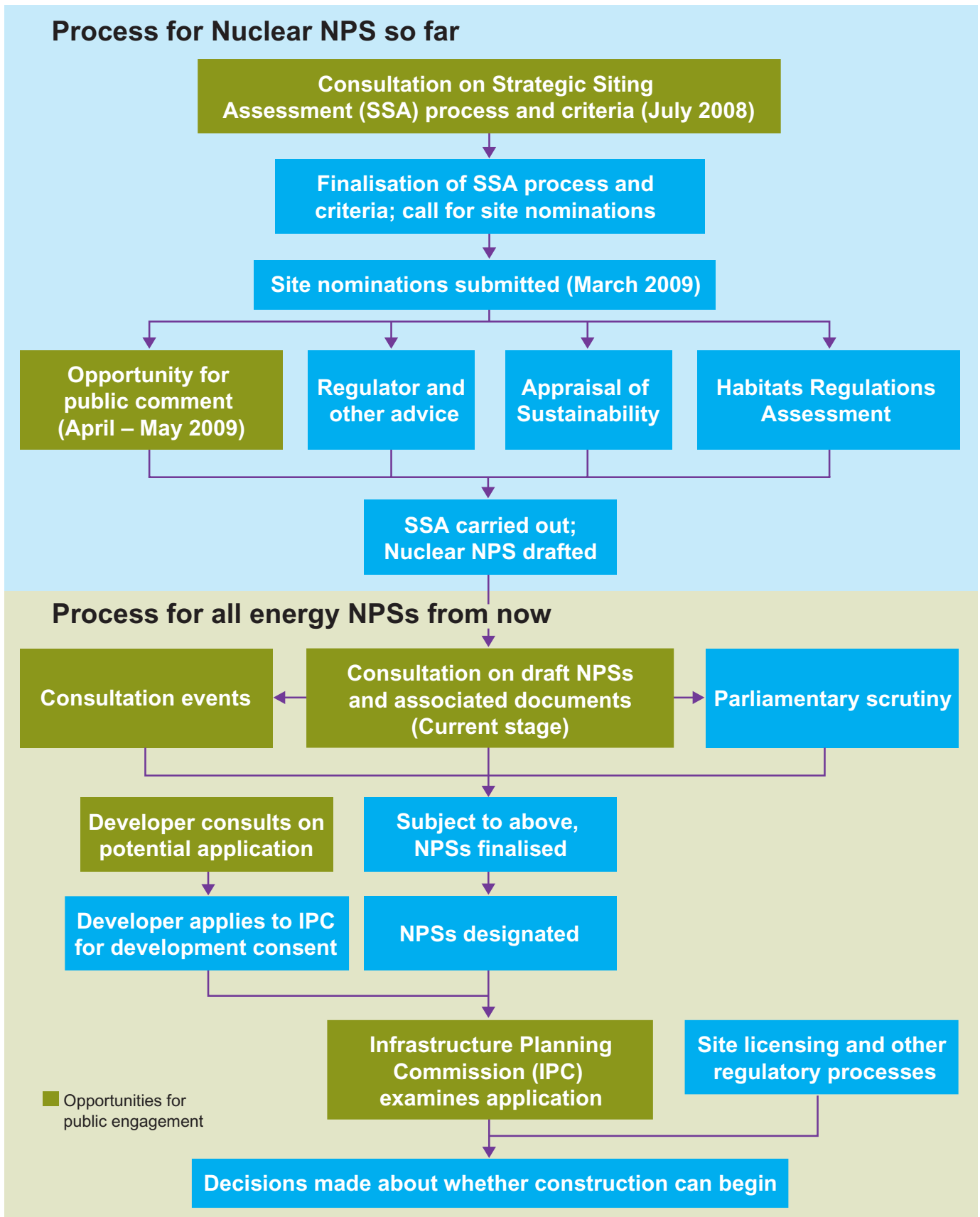
<sup>1</sup> The Infrastructure Planning (National Policy Statement Consultation) Regulations 2009 (SI 2009/1302)

- The Civil Aviation Authority;
- The Rail Passengers Council;
- The Disabled Persons Transport Advisory Committee;
- The Coal Authority;
- The Office of Rail Regulation and approved operators;
- The Gas and Electricity Markets Authority;
- The Water Services Regulation Authority;
- The Forestry Commission;
- The British Waterways Board;
- The Commission for Architecture and the Built Environment;
- The Health Protection Agency;
- Statutory Undertakers, where the NPS is relevant to their functions;
- Trinity House;
- The Royal Commission on the Ancient and Historical Monuments of Wales;
- The Commission for Integrated Transport;
- The Countryside Council for Wales;
- The Welsh Local Government Association;
- The Historic Buildings and Monuments Commission for England;
- The Commission for Rural Communities;
- The Homes and Communities Agency;
- The Maritime and Coastguard Agency;
- Integrated Transport Authorities and Passenger Transport Executives.

For the sites identified as potentially suitable for the deployment of new nuclear power stations in the draft Nuclear NPS:

- The relevant police authority and any police authority sharing a boundary with that authority;
- The relevant fire and rescue authority and any fire and rescue authority sharing a boundary with that authority;
- The relevant internal drainage board;
- The relevant local resilience forum.

# Annex D: Diagram of NPS process





# Annex E: Wider context for draft Nuclear NPS

1. This Annex provides some wider context for the draft Nuclear NPS, including an introduction to nuclear power and an update on other steps that are being taken to facilitate new nuclear power in the UK.

## Introduction to nuclear power

2. Nuclear power works in a similar way to conventional electricity generation, in that it depends on the creation of heat to generate steam, which in turn powers a turbine. Rather than burning fuel, however, nuclear power stations generate heat by the fission, or splitting, of uranium atoms inside a nuclear reactor. This process creates very large amounts of energy: per atom the energy released is about 50 million times more than that released from the combustion of carbon.
3. There are ten nuclear power stations currently operating in the UK, providing around 13% of our electricity. All but one of these are scheduled to close by 2023 based on published lifetimes. The last nuclear power station to be built in the UK, Sizewell B in Suffolk, began generating electricity in 1995.

## Safety, security and health

4. In the *White Paper on Nuclear Power*<sup>1</sup>, the Government concluded that new nuclear power stations would pose very small risks to safety, security and health, and that the UK has an effective regulatory framework that ensures that these risks are minimised and sensibly managed by industry.
5. The nuclear reactions that take place in nuclear power stations create a high level of radioactivity in the reactor. Radioactivity occurs naturally in the environment but nuclear power stations create much higher intensities that require careful management during and after operation.
6. The UK has strict, independent, safety and environment protection regimes for nuclear power. The Nuclear Installations Inspectorate (NII), a part of the Health and Safety Executive's Nuclear Directorate, and the Environment Agency regulate nuclear power stations in England and Wales. The operators of new nuclear power stations will be required to obtain authorisations from and comply with conditions set by the regulators to ensure safety and the protection of the environment. These conditions include meeting statutory obligations which require that radiation exposures not only comply with dose limits but are as low as reasonably achievable (ALARA).

<sup>1</sup> *Meeting the Energy Challenge: A White Paper on Nuclear Power*, CM 7296, January 2008  
<http://www.berr.gov.uk/files/file43006.pdf>

7. NII and the Environment Agency are currently assessing two new nuclear reactor designs through the Generic Design Assessment (GDA) process (see below).
8. The security of the civil nuclear industry in the UK is regulated by the Office for Civil Nuclear Security (OCNS). OCNS ensures that security measures are included in plans for the construction of any new nuclear power station from the outset. The Department for Transport (DfT) is responsible for the security of transporting radioactive material.
9. Through the Regulatory Justification process<sup>2</sup>, European Member States must consider whether a new class or type of practice involving ionising radiation is justified by its economic, social or other benefits in relation to the health detriment it may cause. The Government is currently consulting on its proposed decision that two new nuclear power station designs should be Justified (see below).

### Construction and operation

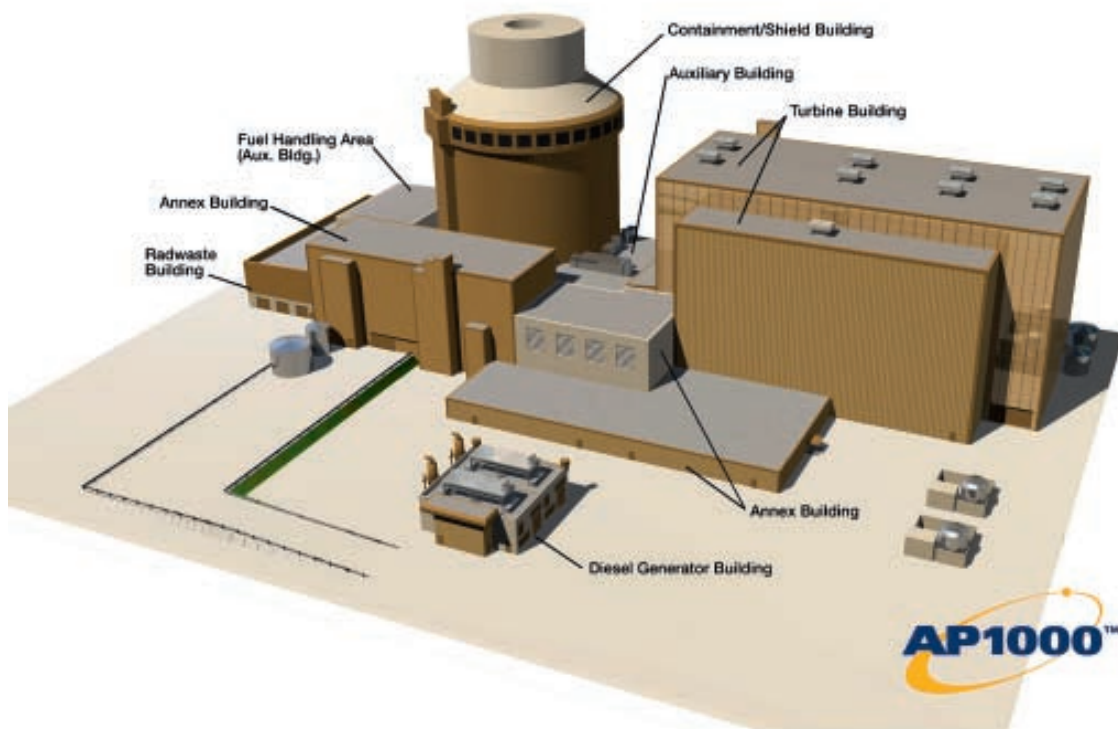
10. It is estimated that construction of a new nuclear power station would take approximately five to six years from first concrete through to commercial operation. Most of the skills and resources needed to build new nuclear power stations are generic to large engineering construction projects. Development of a new nuclear power station may also involve the provision of additional infrastructure in the local area, for example road improvements, temporary accommodation and related facilities for on-site workers.
11. The last nuclear new build project in the UK (Sizewell B) saw approximately 70,000 man years of work expended directly on the build, with a peak of around 5,000 workers on site. In addition, approximately 700 local suppliers were involved<sup>3</sup>.
12. The two new nuclear reactor designs currently being considered by the regulators in the GDA process have lifetimes estimated by their designers to be around 60 years, though it may be possible to extend these, subject to regulatory approval. Diagrams illustrating the basic layout of plant for these two new nuclear reactor designs are provided below.

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<sup>2</sup> Council Directive 96/29/EURATOM of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation (OJ L 159, 29.6.1996, p.1) [http://ec.europa.eu/energy/nuclear/radioprotection/doc/legislation/9629\\_en.pdf](http://ec.europa.eu/energy/nuclear/radioprotection/doc/legislation/9629_en.pdf) Implemented in the UK by the Justification of Practices Involving Ionising Radiation Regulations 2004, Statutory Instrument 2004 No. 1769 <http://www.opsi.gov.uk/si/si2004/20041769.htm>

<sup>3</sup> Nuclear Electric: *Sizewell B Power Station – A Successful Partnership With Industry*, May 1994

### The Westinghouse AP1000™



AP1000 reactor layout, copyright Westinghouse



EPR reactor layout, copyright AREVA

Note: The Radwaste/Waste Building is used to store and treat radioactive waste.

## Decommissioning

13. When a nuclear power station reaches the end of its life, it has to be dismantled – a process normally referred to as decommissioning. This is a major operation that could last 30 years or more, and needs careful management. Some parts of the power station will be radioactive because they were exposed to high levels of radiation, or have become contaminated with radioactive materials.
14. Operators of new nuclear power stations are required to have secure funding arrangements in place to meet the full costs of decommissioning and their full share of waste management and disposal costs (see below).

## Waste

15. Generating electricity by nuclear power creates radioactive waste, some of which remains radioactive for thousands of years. The storage and disposal of this waste is an important part of the nuclear fuel cycle and needs careful long-term management.
16. The *Managing Radioactive Waste Safely* (MRWS) White Paper<sup>4</sup> sets out the Government's framework for managing higher activity radioactive waste in the long term through geological disposal. Geological disposal involves isolating radioactive waste deep inside a suitable rock formation to ensure that no harmful quantities of radioactivity ever reach the surface environment.
17. For new nuclear power stations, the Government's current assumption is that there will need to be a period of safe and secure interim storage of waste on site before the waste is sent to a geological disposal facility. It is possible to envisage a scenario in which onsite interim storage of some spent fuel might be required for around 160 years from the start of the power station's operation.
18. In the *White Paper on Nuclear Power*, the Government made clear 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"<sup>5</sup>.
19. The Government has set out its preliminary conclusion on this in Part 3 of the draft Nuclear NPS. A description of how this preliminary conclusion has been reached is included at Annex G to this consultation document. Further background information on the evidence that the Government has considered is set out in the paper *The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence*, which is being published alongside this consultation, and which is available on the website [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk). The Government is seeking views on its preliminary conclusion as part of this consultation.

<sup>4</sup> *Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal*, CM 7386, June 2008  
<http://mrws.decc.gov.uk/>

<sup>5</sup> *Meeting the Energy Challenge: A White Paper on Nuclear Power*, CM 7296, January 2008  
<http://www.berr.gov.uk/files/file43006.pdf> pg.99

## Wider new nuclear activities

20. Alongside development of the Nuclear National Policy Statement, other important steps are being taken to facilitate nuclear new build in the UK. The following section provides a brief update on progress in these other areas.
21. In particular, in parallel with this consultation on the draft Nuclear NPS, the Government is also consulting on the Secretary of State's proposed decision on Regulatory Justification (see below).
22. Nothing in the draft Nuclear NPS or its associated documents is intended to pre-empt decisions on other consultations related to nuclear new build, nor vice-versa: each proposed action will be considered on its own merits, without prejudice to the others. However, information received by the Government in response to one consultation may be used to inform decisions on the matters that are the subject of other consultations<sup>6</sup>.
23. An indicative timeline showing how the various new nuclear activities fit together is available online<sup>7</sup>.

## Generic Design Assessment

24. The Health and Safety Executive (HSE) and the Environment Agency (EA) are undertaking a process of Generic Design Assessment (GDA) of new nuclear reactor designs. GDA allows the generic safety, security and environmental implications of new nuclear reactor designs to be assessed before an application is made for a licence and permissions to build a particular design of reactor on a particular site.
25. Two new nuclear reactor designs are currently being assessed in the GDA process:
  - the UK EPR developed by AREVA and Electricité de France (EDF); and
  - the AP1000 developed by Westinghouse Electric Company (WEC)<sup>8</sup>.

These designs are also the subject of the Regulatory Justification consultation (see below).

26. At the end of the GDA process, if the regulators consider a design to be acceptable for building in the UK, they will issue a statement of acceptability. This will then be taken into account during the next stage of the approval process, when a potential operator applies to the regulators for a site licence to allow them to install and operate a nuclear power station of that type on a particular site. GDA is scheduled to be completed in June 2011<sup>9</sup>.

<sup>6</sup> A fuller list of forthcoming consultations related to new nuclear is available at [http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/energy\\_mix/nuclear/consultations/consultations.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/consultations/consultations.aspx)

<sup>7</sup> *Indicative Timeline for First New Nuclear Power Stations*  
[http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/energy\\_mix/nuclear/new/programme/programme.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/new/programme/programme.aspx)

<sup>8</sup> Two other reactor designs – AECL's ACR-1000 and GE's ESBWR – were initially entered into GDA, but AECL subsequently withdrew from the process and GE has temporarily suspended its involvement.

<sup>9</sup> More information on GDA can be found at <http://www.hse.gov.uk/newreactors/index.htm>

## Regulatory Justification

27. Regulatory Justification<sup>10</sup> is a requirement of EU law under which Member States must consider whether a new class or type of practice involving ionising radiation is justified by its economic, social or other benefits in relation to the health detriment it may cause. The Secretary of State for Energy and Climate Change makes the decision as Justifying Authority.
28. The Nuclear Industry Association (NIA) submitted an application to the Government in 2008 for Justification of new nuclear reactor designs. Between December 2008 and March 2009 the Government consulted on the NIA's application.
29. The Secretary of State's proposed Regulatory Justification decision on the EPR and the AP1000 is being published for consultation in parallel with this consultation on the draft Nuclear NPS<sup>11</sup>. The Regulatory Justification consultation closes on 22 February 2010. Following consultation, the Secretary of State will make a final decision.

## Waste and decommissioning funding arrangements

30. The Energy Act 2008 included provisions to require any operator of a new nuclear power station to have a Funded Decommissioning Programme (FDP) approved by the Secretary of State before construction of the station can begin. FDPs will ensure that operators of new nuclear power stations have secure funding arrangements in place to meet the full costs of decommissioning and their full share of waste management and disposal costs.
31. The Government has created the independent Nuclear Liabilities Financing Assurance Board (NLFAB) to provide impartial scrutiny and advice on the suitability of the FDPs submitted by operators of new nuclear power stations to the Secretary of State. The NLFAB will advise the Secretary of State on the financial arrangements that operators submit for approval, and on the regular review and ongoing scrutiny of funding. The first meeting of the NLFAB took place in June 2009.
32. The Government has also published three discussion papers on issues around establishing an indicative fixed unit price for the disposal of intermediate level waste and spent fuel from new nuclear power stations. These discussion papers will be followed by a consultation on the Government's cost model and methodology for establishing a fixed unit price, and there will also be a consultation on draft regulations implementing the waste and decommissioning funding arrangements provisions in the Energy Act.

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<sup>10</sup> Council Directive 96/29/EURATOM of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation (OJ L 159, 29.6.1996, p.1) [http://ec.europa.eu/energy/nuclear/radioprotection/doc/legislation/9629\\_en.pdf](http://ec.europa.eu/energy/nuclear/radioprotection/doc/legislation/9629_en.pdf) Implemented in the UK by the Justification of Practices Involving Ionising Radiation Regulations 2004, Statutory Instrument 2004 No. 1769 <http://www.opsi.gov.uk/si/si2004/20041769.htm>

<sup>11</sup> Regulatory Justification website [http://decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/energy\\_mix/nuclear/new/reg\\_just/reg\\_just.aspx](http://decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/new/reg_just/reg_just.aspx)

33. Following these consultations, the Government intends to issue final guidance on FDPs and the fixed unit price, and bring the relevant Energy Act regulations into force, in 2010.

### **Restructuring of the nuclear regulator**

34. Between June and September 2009, the Government consulted on legislative proposals to restructure the Nuclear Directorate of the Health and Safety Executive (HSE) as an independent Statutory Corporation under the auspices of HSE<sup>12</sup>.
35. The proposals are designed to enhance transparency and accountability, improving the organisational framework for the sustained delivery of robust, effective and efficient nuclear regulation in the UK.
36. The Government expects to publish its response to the consultation towards the end of 2009.

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<sup>12</sup> *A Consultation on the Restructuring of the Health and Safety Executive's Nuclear Directorate*, June 2009, [http://www.decc.gov.uk/en/content/cms/consultations/hse\\_restruct/hse\\_restruct.aspx](http://www.decc.gov.uk/en/content/cms/consultations/hse_restruct/hse_restruct.aspx)

# Annex F: Site summaries for Dungeness, Druridge Bay, Kingsnorth and Owston Ferry

1. The Government ran the Strategic Siting Assessment (SSA) to identify and assess sites which are potentially suitable for the deployment of new nuclear power stations by the end of 2025<sup>1</sup>. The sites which the Government believes are potentially suitable are reflected in the draft Nuclear National Policy Statement (NPS).
2. This Annex contains site summaries for sites that the Government does not consider to be potentially suitable, and which are therefore not included in the draft Nuclear NPS – Dungeness (nominated into the SSA), Druridge Bay, Kingsnorth and Owston Ferry (identified by the Alternative Sites Study<sup>2</sup>).
3. When reading these summaries, please see the consultation on the SSA process and criteria and the Government response to that consultation<sup>3</sup> for more details on the SSA criteria. Part 5 of the draft Nuclear NPS also has a summary of the criteria<sup>4</sup>.

## Dungeness

### Overview

4. Having assessed Dungeness, the Government is not satisfied that Dungeness is potentially suitable for the deployment of new nuclear power stations by the end of 2025. As a consequence the draft Nuclear NPS does not include Dungeness.
5. The range of sources that the Government used in reaching this view can be seen at <http://www.energynpsconsultation.decc.gov.uk>. This includes comments made by the public during the opportunity for public comments<sup>5</sup>, Appraisal of Sustainability and Habitats Regulations Assessment reports both on each site and on the NPS as a whole, and advice from specialists including the regulators<sup>6</sup>.

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<sup>1</sup> For the purposes of this document, “deployment of new nuclear power stations” means commencing operation of one or more new nuclear power stations on the site.

<sup>2</sup> *A consideration of alternative sites to those nominated as part of the Government’s Strategic Siting Assessment process for new nuclear power stations*, Prepared by Atkins for the Department of Energy and Climate Change, November 2009, [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk)

<sup>3</sup> BERR, *Towards a Nuclear National Policy Statement: Consultation on the Strategic Siting Assessment Process and Siting Criteria for New Nuclear Power Stations in the UK, July 2008*, URN 08/925, <http://www.berr.gov.uk/files/file47136.pdf>; BERR, *Towards a nuclear national policy statement: Government response to the consultation on the Strategic Siting Assessment process and criteria*, January 2009 <http://www.berr.gov.uk/files/file47136.pdf> URN09/581

<sup>4</sup> See “The SSA criteria and how they were assessed” in Part 5 of the draft Nuclear NPS.

<sup>5</sup> Nominations were published and people were able to provide comments on them against the criteria from 15 April – 14 May 2009.

<sup>6</sup> Nuclear Installations Inspectorate, Environment Agency, Office of Civil Nuclear Security, Civil Aviation Authority, Ministry of Defence, Department of Transport, Atkins Ltd, MWH Enfusion.



## Summary

6. **The Government is not satisfied that the nominated site at Dungeness is potentially suitable for the deployment of one or more new nuclear power stations by the end of 2025. The nominated site did not meet discretionary criterion D6: Internationally designated sites of ecological importance.**
  7. **In the consultation on the SSA process and criteria the Government set out that the SSA will, through the application of criterion D6, seek to ensure that developers minimise the adverse impact of new nuclear power stations on environmentally sensitive features in the UK that are also considered to be of European and International importance.**
  8. **Dungeness is both a unique coastal system and an internationally important shingle site. The area has a number of internationally designated sites including a Special Area of Conservation (SAC) and Special Protection Area (SPA) which are part of the Natura 2000 network. There is also a proposed Ramsar site. The Ramsar Convention is an international treaty that aims to stem the progressive encroachment on, and loss of, wetlands now and in the future.**
  9. **The SSA is conducted at an early stage in the planning process, and does not include an analysis of detailed plans and proposals. However, the Government has concluded that, given the nature of the habitat and the inability to readily mitigate the impacts on the shingle system, it does not believe that a new nuclear power station can be built at Dungeness without causing an adverse effect on the integrity of the SAC (i.e. that any impacts could not be avoided or mitigated).**
10. The Government also has concerns under criterion D2 (coastal processes), but concluded that at this stage that Dungeness should not be ruled out against this criterion.
  11. A summary of the assessment is below. Given that the site has not been found to be potentially suitable this summary does not include guidance for the IPC.
  12. In this consultation the Government is seeking views on its preliminary conclusion that Dungeness is not potentially suitable for the deployment of new nuclear power stations by the end of 2025, and that it therefore should not be included in the draft Nuclear NPS.

### Description of the site

13. The nominated site is located to the west of Dungeness B nuclear power station on a shingle foreland projecting into the English Channel. The nearest town is Lydd, 6km to the north west. The site is in the civil parish of Lydd within Shepway District and the County of Kent. The grid reference of the approximate centre of the nominated site is 607500, 116850. A map of the site is at the end of this summary.
14. Dungeness B is expected to operate until at least 2018. Further east is Dungeness A, a twin-reactor Magnox power station which operated from 1965 to 2006 and is now undergoing decommissioning.
15. The site lies at the edge of Denge Beach, an area of vegetated shingle ridges to the seaward side of the Romney and Denge marshes. The site includes parts of the Dungeness Site of Special Scientific Interest (SSSI), the Dungeness National Nature Reserve (NNR) and the Dungeness Special Area of Conservation (SAC). Further north is the Dungeness Special Protection Area (SPA).

### Deployability by the end of 2025

16. The SSA is limited to considering sites which are deployable by the end of 2025. This is because it is important to focus on sites which can come on stream in good time to contribute to the Government's objectives on climate change and energy security.
17. Deployment means commencing operation of one or more new nuclear power stations on the site. At Dungeness, the Government in particular notes that there is already a great deal of knowledge of the site developed through the construction and operation of the adjacent power station and the ongoing detailed work on the nominated site.
18. Government also notes that a grid connection agreement for a transmission capacity of 1650 MW is in place with National Grid, with a connection date of 2016 (although this does not mean that a site will be deployed by that date).
19. The Government is satisfied from the information provided by nominators and an independent assessment that the Dungeness site is deployable by the end of 2025, notwithstanding the issues highlighted under criterion D6, in particular, below.

## Assessment of suitability against SSA criteria

### C1 : Demographics

#### Analysis

20. The Health and Safety Executive has advised that no area of the site exceeds the semi-urban criterion.

#### Assessment

21. This site therefore passes the demographics criterion.

## C2 and D5: Proximity to military activities

### Analysis

22. The Ministry of Defence has advised that the site identified does not occupy any Ministry of Defence statutory safeguarding zones protecting aerodromes, explosive storage sites, technical sites or ranges. There are no military explosive or nuclear facilities within 1000 metres of the site identified. The site is 800 metres from the nearest Ministry of Defence Danger Area, which is Lydd Training Area.
23. Within this Danger Area training exercises and firing are conducted, and responses to the period for public comments raised this as a potential concern. The Ministry of Defence has advised that all firing activities at the Lydd Training Area are contained within the Danger Area and as such there is not a direct hazard to a new nuclear facility at this location.
24. The Ministry of Defence has found that it is reasonable to conclude, at a strategic level, that any likely power station development within the site boundary can be protected against the risk of external hazards created by neighbouring military activities, throughout its lifetime. The Nuclear Installations Inspectorate has agreed with this advice.
25. The Restricted Area that encompasses the existing Dungeness nuclear power station (EG R063) overlaps with the Ministry of Defence Danger Area Air Exclusion Area that contains the Lydd Training Area (EG D044). The site identified for a new nuclear power station is west of the existing facility and as such a new Restricted Area (or expansion of EG R063) would extend further across EG D044. Whilst EG D044 is not used by aircraft for firing activities there is a designated helicopter landing site within the range. The Ministry of Defence has advised that accordingly an appropriate exemption to the Restricted Area may be appropriate. Such an exemption would need to satisfy the regulators as not compromising the safety of the site.
26. Given this potential for mitigation, the Ministry of Defence has advised that it is reasonable to conclude, at a strategic level, that any likely power station development within the nominated site boundary will not adversely affect the capabilities of the armed forces to carry out essential training and operations, throughout its lifetime.

### Assessment

27. Based on the advice of the Nuclear Installations Inspectorate and the Ministry of Defence outlined above it is reasonable to conclude that:
  - the site does not occupy any Ministry of Defence areas which would give rise to the site being excluded in whole or in part from the assessment;
  - the site is not in proximity to or may affect any Ministry of Defence assets or activities to an extent that would suggest that it should be ruled out;

- the development of a new nuclear power station at the site will not affect the capabilities of the armed forces to carry out essential training and operations throughout its lifetime;
- any likely power station development within the site boundary can be protected against the risk of external hazards created by neighbouring military activities, throughout its lifetime.

28. This site therefore passes these criteria.

## D1: Flooding, tsunami and storm surge

### Analysis

29. The majority of the site is in flood zone 1 (low probability). Small parts of the site are in flood zones 2 (medium probability) and 3 (high probability)<sup>7</sup>.
30. The Environment Agency has advised that based on current understanding of the flood risk in this area and the potential for mitigation it is potentially reasonable to conclude, at the strategic level, that the site can be protected from flood risk throughout its operational lifetime<sup>8</sup>. However, it has cautioned that there could be significant difficulties in doing so because of risks posed both by climate change and by the sustainability of maintaining the current standard of protection pose challenges for the site. This is linked to the issues discussed in more detail under “coastal processes” as current protection for both flooding and coastal processes is given by the shingle embankment discussed against criterion D2.
31. The Environment Agency has noted that protecting the site from flood risk now and in the future prevents the coastline and estuary from changing and adapting naturally. The Environment Agency has noted that any defences constructed to protect the power station are likely to affect the natural morphology of the Dungeness Peninsula over time, preventing natural processes from prevailing. The impacts are likely to be quite different depending upon whether “soft” or “hard” defences are proposed. For soft defences, there could be long term sustainability issues regarding the availability of shingle. Any hard defences at this location could have detrimental effects on the adjacent frontages, which could indirectly impact on flooding elsewhere.
32. The Appraisal of Sustainability identified potential adverse effects relating to flood risk due to predicted rising sea levels caused by climate change, especially during the later stages of operation and decommissioning. Possible impacts on coastal processes, hydrodynamics and sediment transport from any necessary new or upgraded coastal

<sup>7</sup> The flood zones refer to the probability of flooding from rivers, the sea and tidal sources and ignore the presence of existing defences. For a definition of each of the flood zones see *Planning Policy Statement 25 : Development and Flood risk*, CLG, December 2006, Annex D pp22-25:  
<http://www.communities.gov.uk/documents/planningandbuilding/pdf/planningpolicystatement25.pdf>

<sup>8</sup> Please see entry D1 in the table “The SSA criteria and how the sites were assessed” in Part 5 of the draft Nuclear NPS for details on the potential lifetime of the site and the period this assessment covered.

defences have also been identified, although mitigation may be possible through appropriate design and construction of defences, taking account of coastal processes, hydrodynamics and sediment transport.

33. The Environment Agency has also advised that flooding could impede access and egress to the site, although it believes that this could be mitigated for in the design of routes to ensure that access remains open. The Environment Agency does not think that the proposals would increase the impact of flooding elsewhere.

### Assessment

34. The Government has some concerns over whether it is reasonable to conclude that this site can be protected from flood risk throughout its operational lifetime, including the potential effects of climate change, storm surge and tsunamis. This is because the Government has some concerns about both the difficulty of instituting adequate protection, the impact of coastal processes on the site and the consequential flood risk that could emerge. However, the Environment Agency has advised that there is potential to protect the site, although with significant difficulties. This site therefore has the potential to pass this criterion. However, at Dungeness, the issues of coastal processes and flooding are particularly closely linked, and the ability to protect the site from coastal processes is discussed in more detail below.

## D2: Coastal processes

### Analysis

35. This and associated flood risk was the subject of a number of comments during the period for public comments, particularly around the dynamic nature of the coastline and its perceived ability to withstand storms and climate change.
36. The nominator of the site states in the nomination that “the existing nuclear power station site is protected against coastal erosion and flooding by a shingle embankment...This structure is fronted by a relatively steep shingle beach and was designed to provide protection against a 1 in 10,000 year flood event associated with a tsunami wave. The shingle structure in front of the site erodes, but this is artificially replenished using shingle from Lydd-on-Sea. This shingle recycling process will continue in order to defend the existing power stations and this operation will therefore also defend the nominated site.”
37. The nomination also states that “an integrated approach would be applied to the design of new nuclear development incorporating land raising, flood defence improvements and coastal protection measures to protect the site from flooding over the full lifetime of the power plant”<sup>9</sup>.

<sup>9</sup> For the nomination documentation see <http://www.energynpsconsultation.decc.gov.uk>

38. The Government also acknowledges that protection measures would be in place into the future to protect the existing Dungeness nuclear power station for its lifetime, including any waste stored on the site.
39. Whilst the Environment Agency has advised that it is potentially reasonable to conclude that development at the site could avoid or mitigate the effects of coastal erosion or other landscape change scenarios throughout its operational lifetime<sup>10</sup>, including the potential effects of climate change, the Environment Agency notes that to do so could present a significant challenge, particularly as the current shingle defence is complex to maintain and climate change could bring increased wave heights and more wave energy impacting upon the shingle defence.

### Assessment

40. The Government acknowledges that protection measures would be in place into the future to protect the existing Dungeness nuclear power station for its lifetime, including any waste stored on the site. However, given the difficulties highlighted during the assessment, the Government has concerns about the practicality of increasing the area that needs to be protected by adding the new site, which is also within an area which has been designated for its European nature conservation importance. However, given that the Environment Agency has said that there is potential to protect the site from the impacts of flooding and coastal processes, the Government has not ruled the site out on this criterion at this stage. This is clearly a challenge that would need further exploration should plans have progressed for Dungeness.

## D3: Proximity to hazardous industrial facilities

### Analysis

41. Based on Health and Safety Executive records the nominated site is not in the vicinity of any COMAH establishments. These are establishments subject to the Control of Major Accidents and Hazards (COMAH) Regulations 1999 (which is determined by chemical type and inventory). Please see the consultation on the SSA process and criteria for more detail<sup>11</sup>).

### Assessment

42. This site passes this criterion. Given that the site is not in proximity to any hazardous facilities it is reasonable to conclude that a new nuclear power station at the nominated site could be protected against risk arising from proximity to hazardous facilities throughout its lifetime.

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<sup>10</sup> Please see entry D2 in the table "The SSA criteria and how the sites were assessed" in Part 5 of the Nuclear NPS for details on the potential lifetime of the site and the period this assessment covered.

<sup>11</sup> *Towards a nuclear national policy statement : Consultation on the Strategic Siting Assessment process and criteria* URN 08/295 <http://www.berr.gov.uk/files/file47136.pdf> pp52-53

## D4: Proximity to civil aircraft movements

### Analysis

43. The Civil Aviation Authority has advised that it is potentially reasonable to conclude that any likely power station development within the nominated site boundary can be protected against risks from civil aircraft movement. The Nuclear Installations Inspectorate has agreed with this advice.
44. Nuclear power stations in the UK receive some protection from aviation activity through the establishment of a Restricted Area at each individual station. This is established by regulations<sup>12</sup>. Typically, such Restricted Areas have a radius of 2 nautical miles and extend vertically to 2000 feet above the surface. Any aviation activity within a Restricted Area is limited to that specifically permitted by the regulations.
45. The Civil Aviation Authority has advised that the existing Dungeness nuclear installation has an associated Restricted Area and that a Restricted Area around the proposed facility (or an amendment to the existing Restricted Area to extend it) would provide a similar level of protection from civil aircraft movements.
46. However, the Civil Aviation Authority has advised that the existing Dungeness-associated Restricted Area has the potential to impact upon operations associated with London Ashford (Lydd) Airport, although such impact is mitigated by the related Statutory Instrument allowing flights that have taken off or intend to land at London Ashford (Lydd) to cross the existing Restricted Area providing they remain at least 1.5 nautical miles from the Restricted Area datum.
47. The Civil Aviation Authority has advised that it follows that any new (or amended) Restricted Area established in association with the proposed nuclear installation would have the potential to impact upon operations associated with London Ashford (Lydd) Airport, and may similarly need to similarly mitigate the impact upon the airport. It would also need to consider power station associated helicopter activity.
48. The Government also received a number of public comments querying whether development of a new power station at Dungeness could go ahead if plans to develop London Ashford (Lydd) Airport are approved. As outlined above, the Civil Aviation Authority has advised that there is potential for an exclusion zone which mitigates impacts on the existing airport.
49. The Nuclear Installations Inspectorate has advised that the risks to the existing site from the proposed development have been considered to be acceptable. It has also advised that consideration of the risks posed to any new nuclear development from airport operations would be assessed as part of the licensing process and take

<sup>12</sup> In accordance with Statutory Instrument 2007 No 1929 (The Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007)

account of the prevailing conditions at London Ashford (Lydd) Airport and any proposed developments. This would include a review of the implications of any new Restricted Areas on the risks from accidental aircraft impact.

50. The Civil Aviation Authority has also advised that there are no other known (i.e. marked on Civil Aviation Authority approved charts or promulgated in the UK Aeronautical Information Publication) civilian landing sites in such proximity to the proposed nuclear installation that a new or amended Restricted Area would have a material impact on associated operations, and that the current establishment of the existing Dungeness Restricted Area is such that the impact of a new or amended Restricted Area upon civil aircraft in transit through local airspace is likely to be negligible (the advice about potential operations concerning London Ashford (Lydd) Airport-related aircraft activity relates to aircraft that are arriving or departing as opposed to aircraft in transit).

### Assessment

51. This site meets this criterion. Given the advice above it is reasonable to conclude that any likely power station development within the nominated site boundary can be protected against risks from civil aircraft movement, and that the effects on air traffic and aerodromes can be potentially mitigated. As part of licensing there would be a need for any proposals to be considered in detail alongside the most current plans for London Ashford (Lydd) Airport both to ensure that the safety of the site was not compromised and that the impact on the airport was taken into account, had the site been in the Nuclear NPS.

### For D5 see C2

## D6: Internationally designated sites of ecological importance

### Analysis

52. The Appraisal of Sustainability site report has identified that the potential for adverse effects on sites and species considered to be of European nature conservation importance (the Dungeness SAC, the Dungeness to Pett Level SPA and also the proposed Ramsar designated site) means that significant strategic effects on biodiversity cannot be ruled out at this stage of the appraisal.
53. The Appraisal of Sustainability conclusions on sites of European nature conservation importance<sup>13</sup> are drawn from the Habitats Regulations Assessment for Dungeness, and the assessment of this site against this criterion was in particular informed by the Habitats Regulations Assessment and the input of the statutory consultees<sup>14</sup> who

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<sup>13</sup> The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance by establishing a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European sites, and comprise of Special Protection Areas (SPAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC), and Sites of Community Importance (SCIs) designated and defined under the EC Habitats Directive. It is Government policy to treat Ramsar sites, designated by the Ramsar Convention on Wetlands (1971) and potential SPAs (pSPAs) as if they are fully designated European sites for the purpose of considering any development proposals that may affect them.

<sup>14</sup> Natural England, the Countryside Council for Wales, the Department of the Environment's Environment and Heritage Service (Northern Ireland) and Scottish Natural Heritage are the Statutory Consultees for the Habitats Directive.



highlighted, amongst other concerns, that there would be “permanent and direct loss of SAC and SSSI habitat of international and national importance.” They commented that “Natural England has particular concern that the proposed build will have direct impact on the SSSI and SAC and likely indirect disturbance over a prolonged period to the SPA. Based on information made available to date this will amount to a potentially significant impact on the biodiversity interest of this internationally important shingle site.”

54. Taking into account the strategic nature of the plan and the information available, the Habitats Regulations Assessment has found that it cannot, at this strategic level, rule out adverse effects on the integrity of three European sites (Dungeness SAC, Dungeness to Pett Level SPA) and a proposed Ramsar site (the Dungeness, Romney Marsh and Rye Bay proposed Ramsar or pRamsar) with regards to impacts upon water resources and quality, air quality; habitat and species loss and fragmentation/ coastal squeeze; and disturbance (noise, light and visual).
55. The Habitats Regulations Assessment recommends a suite of avoidance and mitigation measures to be considered as part of the project level Habitats Regulations Assessment (i.e. accompanying any application for development consent should plans for the site progress). The Habitats Regulations Assessment concludes that, based on Habitats Regulations Assessment experience, professional judgement, and the consultation advice received from the statutory consultees, if the proposed suite of measures is effectively implemented as an integral part of the nominated site development (including through refinements developed as part of site level Habitats Regulations Assessment), there is the potential to address the identified adverse effects relating to air quality and water quality on the European sites’ integrity. The Habitats Regulations Assessment report is less certain at this stage that impacts relating to disturbance could be mitigated for. It is not considered that mitigation of impacts related to habitat loss would be possible.
56. The Habitats Regulations Assessment has concluded that losses as a result of a new nuclear power station at Dungeness would prove difficult to mitigate or compensate for, due to lack of suitable alternative shingle habitat available in the vicinity, the active role that coastal processes play in maintaining the shingle habitats, and the time period that successional shingle vegetation communities take to establish.
57. The Habitats Regulations Assessment report for Dungeness should be referred to for more details, but in summary, it is concluded that further assessment supported by detailed data at the project level will be required before it can be concluded whether a nuclear power station development can be undertaken without adversely affecting the integrity of the Dungeness to Pett Level SPA. However, it is unlikely to be possible to develop nuclear generating facilities at Dungeness without adversely affecting the integrity of Dungeness SAC, and possibly the proposed Dungeness Romney Marsh and Rye Bay proposed Ramsar site, should the pRamsar and SAC have the same boundaries.
58. The Habitats Regulations Assessment has found that that there are likely to be inherent difficulties in providing compensation for habitat losses at the Dungeness SAC. Natural England has advised that it would be “very difficult, if not impossible in some cases”

to compensate for the loss of habitat should a new nuclear power station be built at Dungeness.

## Assessment

59. The Government notes the scope for avoidance and mitigation identified in the Habitats Regulations Assessment for sites of international importance.
60. The Habitats Regulations Assessment has concluded that only some impacts on European sites could be avoided or mitigated and that compensation for remaining impacts would be difficult. The Government is not satisfied that a new nuclear power station could be built at Dungeness without causing an adverse effect on the integrity of a Natura 2000 site.
61. Because adverse effects on the integrity of European Sites cannot be ruled out, Government has also considered whether alternative solutions are available and whether there is an Imperative Reason of Overriding Public Interest (IROPI)<sup>15</sup> which justifies the inclusion of Dungeness in the Nuclear NPS.
62. The draft Nuclear NPS states that the Government believes in principle new nuclear power should be free to contribute as much as possible towards meeting the need for 25GW of new non-renewable capacity<sup>16</sup> within the strategic market framework set by Government. The Alternative Sites Study did not result in the identification of any feasible alternative sites beyond the nominated sites. However, as detailed in Annex A of the draft Nuclear NPS, whilst the Government considers that it is necessary to include the ten other nominated sites in the NPS to ensure that sufficient sites are available for development to allow energy companies to fill a significant proportion of the 25GW of new capacity that has been identified, even if a number of sites fail at the project level, the Government does not consider it is appropriate to include more than ten sites in the Nuclear NPS at this stage when balanced against the potential harm to Natura 2000 sites and other factors like planning blight.
63. The Habitats Regulations Assessment reports for the ten other sites suggest at this stage that development of them would better protect the integrity of the Natura 2000 network of European sites. In particular there is a greater scope for mitigation of adverse effects at these sites, and Dungeness is the only nominated site that overlaps with a European site to such an extent that avoidance of adverse effects is not possible and mitigation of the effects of direct land take is assessed as unlikely to be successful. In view of the fact that the Government does not consider it appropriate

<sup>15</sup> Where it was not possible to rule out an adverse effect on the integrity sites protected under the Directive, as part of the SSA the Government considered whether there were alternative solutions and subsequently Imperative Reasons of Overriding Public Interest ("IROPI") in favour of including those sites in the NPS in accordance with article 6(4) of the Habitats Directive. The Government's consideration of IROPI is set out in Annex A of the draft Nuclear NPS. The Government was also required to consider the issue of compensatory measures under article 6(4) of the Habitats Directive (The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive)).

<sup>16</sup> See Part 2 of the draft Nuclear NPS for details of the need for new capacity.

to include more than ten sites in the NPS at this stage when the need is balanced against the potential harm to Natura 2000 sites and other factors like planning blight and given that it is considered at this stage that the other ten sites would better protect the integrity of the Natura 2000 network, the Government considers that those sites are alternatives to Dungeness.

- 64. Because of the alternative solutions available, it is not currently considered that there is an Imperative Reason of Overriding Public Interest for the inclusion of Dungeness as an eleventh site in the draft Nuclear NPS.
- 65. Given that the above tests from the Habitats Directive have not been met, it is not strictly necessary to consider the issue of compensatory measures that could be taken. However, in this respect the Government notes the Habitats Regulations Assessment conclusion that there likely to be inherent difficulties in providing compensation for adverse effects.
- 66. The Government also notes that the Habitats Regulations Assessment cannot rule out, at this stage, that development of the nominated site would result in adverse effects on the integrity of the proposed Ramsar site.
- 67. The site does not pass this criterion.

## D7: Nationally designated sites of ecological importance

### Analysis

- 68. The Government notes that the Appraisal of Sustainability has identified potential impacts on nationally designated sites of ecological importance. It has found that there are significant negative effects on several national and internationally protected nature conservation sites, and that as well as the Dungeness SAC and the Dungeness to Pett Level SPA, these include the Dungeness SSSI and National Nature Reserve (NNR).
- 69. The Appraisal of Sustainability finds that the adverse effects would include direct loss of vegetated shingle habitat, which is internationally recognised for its ecological importance. It is considered unlikely that these adverse effects could be fully mitigated. The Appraisal of Sustainability notes that development of the site would also involve land take from the Dungeness SSSI and the Dungeness NNR. The Appraisal of Sustainability finds that these designated sites share some common interest with the Dungeness SAC and the same impacts and mitigations would apply.

### Assessment

- 70. There is a strict regulatory regime governing internationally designated sites and a high threshold given the significance of the designations, and to the extent that the nationally designated sites are covered by international designations, criterion D6 should be referred to.

71. The overlap between national and international sites and the similarities in effects makes this criterion difficult to judge in isolation. Government has reservations about this site given the unique nature of the habitat and that in some respects the assessment of D6 and D7 are intrinsically linked. However, although the level of impact in parts of the nationally designated sites is potentially significant, and mitigation may not be complete, the Government considers that the scope for mitigation is sufficient to meet this criterion given that the sites are not designated at a European level.

## **D8: Areas of amenity, cultural heritage and landscape value**

### **Analysis**

72. The Appraisal of Sustainability identified potential adverse effects on the view from the Lade Fort Scheduled Monument. However, there is a possibility that this can be mitigated.
73. The prominent, coastal location of the nominated site and low-lying hinterland mean that the nominated site can be seen from distant viewpoints including parts of the High Weald Area of Outstanding Natural Beauty (AONB) located 22km to the west, the Kent Downs AONB located 25km to the north east and the Dover-Folkestone Heritage Coast located approximately 21km to the north east of the proposed development.
74. The Appraisal of Sustainability therefore identifies potential, adverse visual effects and some localised impacts on landscape and the seascape character, including potentially some perceptible adverse indirect impacts on parts of the High Weald and Kent Downs AONBs and the Dover – Folkestone Heritage Coast.
75. The nominator of the site has noted that “the proximity of the new nuclear development alongside the existing Dungeness A and B power stations will help to minimise its visual impact. The overall visual impact of the group of power stations will not be significantly greater than the existing power stations and substation building.”<sup>17</sup> The Appraisal of Sustainability concurs that overall, the new power station would be seen in the context of existing power station facilities and industrial setting, prior to any decommissioning. However, given the scale of the nominated site it is unlikely that effects could be mitigated entirely.
76. During the period for public comments concerns were raised about the impact on the newly designated South Downs National Park. Whilst the nearest point of the National Park is over 50km from the site at Dungeness, it is possible that some views, for instance from Beachy Head, could stretch as far as Dungeness on a clear day.

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<sup>17</sup> Please see <http://www.energynpsconsultation.decc.gov.uk> for the nomination of Dungeness, and in particular the “Nomination Report” for the nominator’s proposals against this criterion.

## Assessment

77. The Government has considered the purpose of the relevant AONBs, which is of conserving and enhancing the natural beauty of the area of outstanding natural beauty. The Government has also given consideration to the purposes of the designation of the National Park in conserving and enhancing the natural beauty, wildlife and cultural heritage of the park and of promoting opportunities for the understanding and enjoyment of the special qualities of those areas by the public.
78. The Government believes that in relation to this criterion, the site is potentially suitable despite the potential impacts. This takes into account the fact that the nature, scope, and scale of any effect is currently uncertain and is dependent on the exact form of development proposed; that, had the site been in the Nuclear NPS, there would have been some scope for a developer and the IPC to explore in detail minimisation, avoidance and mitigation of adverse effects; and in particular the distance to the AONBs, National Park and Folkestone Heritage coast, and the context of the nominated site (next to existing facilities) when viewed from these distances, which does not suggest significant effects.

## D9: Size of site to accommodate operation

### Analysis

79. The nominated area is approximately 91 hectares. The Nuclear Installations Inspectorate and Office for Civil Nuclear Security have advised that this is of sufficient size and shape for the safe and secure operation of a new nuclear power station.
80. However, the Office for Civil Nuclear Security has advised that there appears to be insufficient land to provide effective defence-in-depth for a reactor (including the associated turbine hall), spent fuel and intermediate level waste stores and other plant important to the safe operation of the nuclear power station in the area east of longitude grid reference 608 as the land area is of inadequate size (this land appears to be nominated for a road (or something similar) rather than siting the plant).
81. The Office for Civil Nuclear Security has advised that the location of the National Grid transformer building may limit the potential locations for a reactor at this nominated site unless the transformer facility is re-located. However, this does not suggest that the size of site is not sufficient at this stage.
82. The Office for Civil Nuclear Security has also noted that the nominated land has a public track bisecting it. It is a security requirement that the licensee has exclusive rights of access to and control of a civil licensed nuclear site and that it is not therefore bisected by any public rights of way.

## Assessment

83. Whilst part of the site may not be suitable for the siting of those elements of a nuclear power station which require defence-in-depth, based on the advice of the Office for Civil Nuclear Security and the Nuclear Installations Inspectorate there is sufficient land elsewhere within the boundary for the safe and secure operation of at least one nuclear power station, including the safe and secure storage of all the spent fuel and intermediate level waste produced through operation, and from decommissioning, on the site of the station until it can be sent for disposal in a geological disposal facility. This site passes this criterion.

## D10: Access to suitable sources of cooling

### Analysis

84. The nomination details a range of cooling options, expressing a preference for direct cooling from the sea<sup>18</sup>.
85. The Appraisal of Sustainability for Dungeness has found that if cooling water is returned to sea at elevated temperatures, this could have direct effects on sediment transport and water quality locally, and potential indirect effects on nationally and internationally designated habitats. It has noted that a more detailed appraisal is required at the project Environmental Impact Assessment level (i.e. accompanying an application for development consent) to assess the implications of this thermal discharge and that any future thermal discharge would be subject to consent from the Environment Agency.
86. The Environment Agency has noted that there are important nursery grounds on this coast for mackerel, sprat, bass and sole. Sea trout are common in Rye Bay and along the coast and Twaite shad are becoming common on this coast during the summer and autumn. However, the Environment Agency has advised that it is reasonable to conclude that there is access to potentially suitable source of cooling at this site.

### Assessment

87. Based on the advice of the Environment Agency, there appears to be access to potentially suitable sources of cooling at the site. The site passes the criterion.

## Appraisal of Sustainability and Habitats Regulations Assessment for Dungeness

88. The Planning Act (2008)<sup>19</sup> requires an Appraisal of Sustainability to be carried out for all National Policy Statements. The purpose of an Appraisal of Sustainability is to consider the social, economic and environmental implications of the policy and to suggest possibilities for improving the sustainability of the NPS. The purpose of the Appraisal of Sustainability for Dungeness is to examine the potential positive and negative effects of the nominated site, identify the significance of these effects, and suggest any mitigation possibilities.

<sup>18</sup> Please see <http://www.energynpsconsultation.decc.gov.uk> for the nomination of Dungeness, and in particular the "Nomination Report" for the nominator's proposals against this criterion.

<sup>19</sup> Planning Act (2008) [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

89. The draft Nuclear NPS has also been assessed in accordance with the European Habitats Directive. That assessment (the “Habitats Regulations Assessment”) tests whether a plan or project could have an adverse effect on the integrity of European Sites of nature conservation importance. A Habitats Regulations Assessment was carried out on the Dungeness site.
90. The conclusions of the Dungeness Appraisal of Sustainability and Habitats Regulations Assessment highlight areas of significance on, amongst other things:
- i) significant negative effects on several national and internationally protected nature conservation sites, including the Dungeness SAC, the Dungeness to Pett Level SPA, and the Dungeness SSSI. The adverse effects would include direct loss of vegetated shingle habitat, which is internationally recognised for its ecological importance. It is considered unlikely that these adverse effects could be avoided or successfully mitigated;
  - ii) adverse effects on water quality and fish populations in nearby coastal waters due to the abstraction and release of sea water for cooling;
  - iii) risk from coastal and fluvial flooding at parts of the site and also from coastal erosion. There are existing flood defences in place at the site and continual management is required to replenish shifting shingle deposits. Flood defences and erosion management plans may require significant upgrading to protect against sea level rise and coastal erosion for the full life time of a new power station;
  - iv) additional adverse visual impacts on parts of the High Weald and Kent Downs AONBs and the Dover–Folkestone Heritage Coast.
91. Dungeness is not close to any other nominated site and therefore does not form part of a cluster. This means that regional or sub-regional cumulative impacts are not considered relevant for this nominated site.
92. The key findings are taken into account in the summaries against the SSA criteria above.

## Other issues raised during the assessment

### Health

93. The Appraisal of Sustainability for Dungeness has also considered strategic effects on human health and well being. The Appraisal of Sustainability looks at a range of different factors and should be referred to for a more in depth assessment.
94. One factor of particular interest to the public is incidence of cancer. The Appraisal of Sustainability reports that there has been, since 1965, a nuclear power station operating on the nominated site. There is, therefore, historical data which the Appraisal of Sustainability has analysed to correlate the incidence of cancer reported around this site so that it can be compared to the average prevalence of the same cancer in the British population as a whole. The Appraisal of Sustainability considers comparisons for childhood leukaemia, non-Hodgkin lymphoma and other malignant tumours undertaken

by the Committee on Medical Aspects of Radiation in the Environment (COMARE). COMARE is a scientific advisory committee providing independent authoritative expert advice on all aspects of health risk to humans exposed to natural and man-made radiation. It has, for over twenty years, investigated the incidence of childhood cancer and other cancers around nuclear sites. COMARE has published eleven reports on topics related to exposure to radiation. Its view is that there is no evidence for unusual aggregations of childhood cancers in populations living near nuclear power stations in the UK.

95. COMARE's tenth report<sup>20</sup> considered the incidence of childhood cancer around nuclear installations. These were divided into nuclear power generating stations and other nuclear installations. The results for the power generating stations supported the conclusion that 'there is no evidence from this very large study that living within 25 km of a nuclear generating site in Britain is associated with an increased risk of childhood cancer'.
96. The tenth report did however state that for other nuclear sites the situation was more complicated. The study did demonstrate corresponding results to previously published studies that showed excesses of some types of childhood cancer. These results (excess childhood cancers in Seascale near Sellafield, in Thurso near Dounreay and around Aldermaston, Burghfield and Harwell) have been extensively discussed in previous COMARE reports.
97. In its eleventh report<sup>21</sup> COMARE examined the general pattern of childhood leukaemia within Great Britain and concluded that 'the search for increased risk levels near to nuclear power generation sites shows no pattern of excess cases of childhood cancer close to the sites of these types of nuclear installations'. Among its recommendations, the report said that the incidence of childhood leukaemia and other cancers in the vicinity of Sellafield and Dounreay was raised and should be kept under surveillance and periodic review. COMARE is undertaking this work with the aim of producing an update report.
98. The Appraisal of Sustainability reports that radioactive monitoring carried out in 2007<sup>22</sup> found low concentrations of artificial radionuclides in water, sediment and beach samples and in meat and seafood samples taken around the existing Dungeness nuclear power stations. From this sampling, the Appraisal of Sustainability notes that the estimated total dosage levels to the public from all sources within the Dungeness area were assessed as being approximately 28% of the dose limit for members of the public of 1mSv per year as specified in the Ionising Radiations Regulations 1999.

<sup>20</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2005). Tenth Report. *The incidence of childhood cancer around nuclear installations in Great Britain*, June 2005.

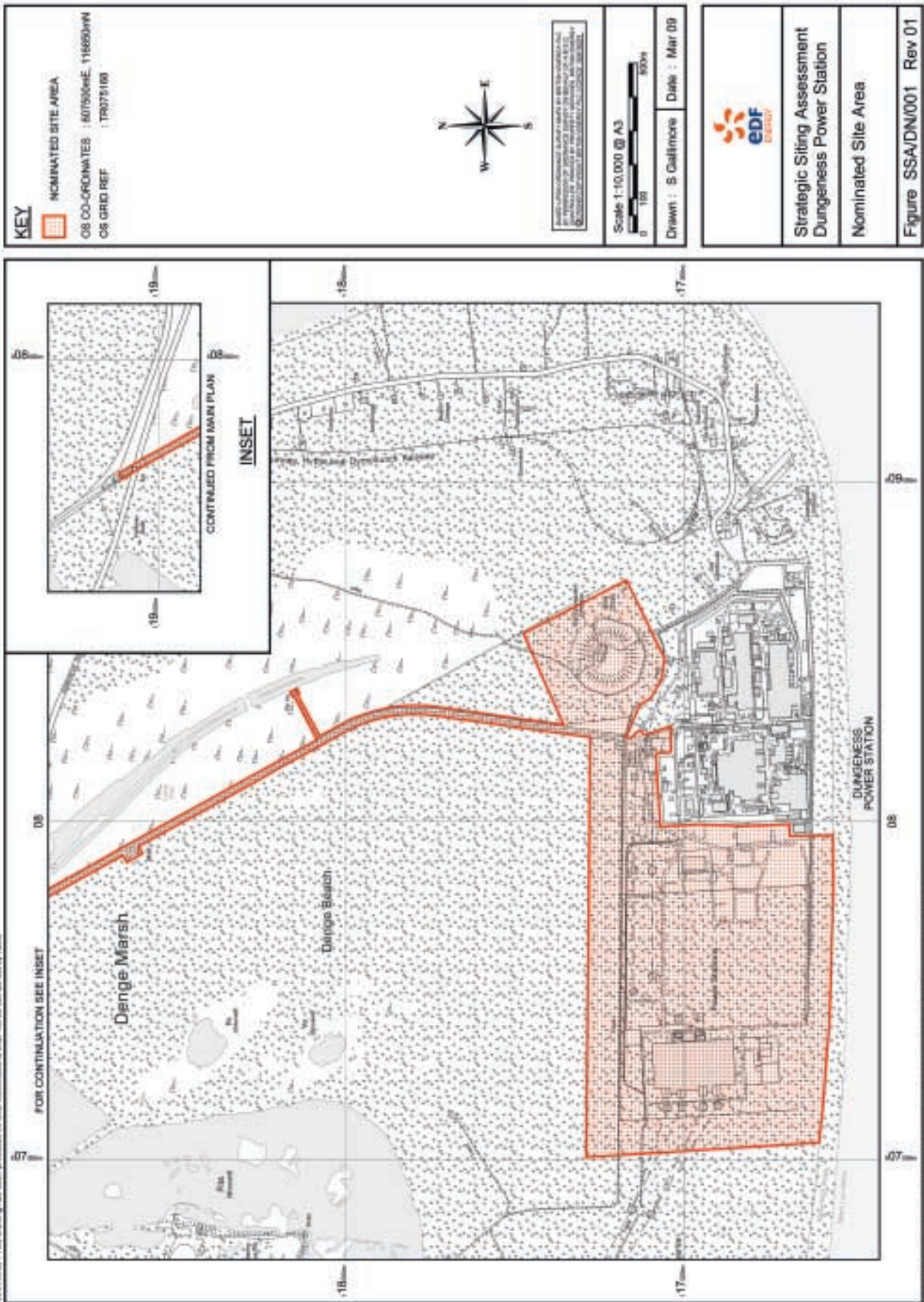
<sup>21</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2006). Eleventh Report. *The distribution of childhood leukaemia and other childhood cancer in Great Britain 1969-1993*. July 2006.

<sup>22</sup> Food Standards Agency. *Radioactivity In Food and the Environment (RIFE 13) Report*, 2007.



99. The Appraisal of Sustainability has found that the rigorous system of regulation of routine discharges from the proposed nuclear power station at Dungeness should ensure that there are no unacceptable risks to the health of the local population when the plant is operating normally.
100. The Appraisal of Sustainability also concludes that there is a very small risk of adverse health impacts arising from an accidental release of radiation but the multiple safety features within modern nuclear plants makes such an event exceedingly unlikely. Part 4 of the draft Nuclear NPS (Human health and wellbeing) should be referred to for further guidance on health.

## Dungeness location map



## Assessment of alternative sites to those nominated

### Overview

#### Introduction

101. The SSA was designed to ensure that, as far as possible, sites which might be considered to be potential alternative sites to those listed in the draft Nuclear NPS have been identified and assessed at a strategic level. In this way it is intended to minimise the need for discussion of strategic alternative sites at the development consent stage.
102. In addition to the consideration undertaken by nominators when deciding which sites to nominate, to ensure that, as far as possible, alternative sites have been identified, and in line with the Habitats Directive, the Government also commissioned Atkins Ltd to produce an Alternative Sites Study to identify such sites<sup>23</sup>.
103. The Alternative Sites Study used information from energy companies, historic site studies carried out by the Central Electricity Generating Board (CEGB) and others and a national screening exercise to identify alternative sites in England and Wales and assess whether in Atkins opinion these sites would meet the SSA criteria.
104. The Alternative Sites Study refers to the sites it believes would meet the SSA criteria as “worthy of further consideration”, in recognition that it is for Government to determine whether they are suitable or potentially suitable from the perspective of the SSA. This also recognises that Atkins has carried out its analysis at a national level on information which is not as detailed or site specific as the information provided by nominators as part of the SSA process.
105. The Study identified three sites as “worthy of further consideration” by the Government, although it noted that there were drawbacks, some of them significant, associated with each of these sites. The sites are:
  - Druridge Bay, Northumberland
  - Kingsnorth, Kent
  - Owston Ferry, Lincolnshire
106. In order to help assess whether these sites are alternatives to the sites in the draft Nuclear NPS the Government conducted a Habitats Regulations Assessment and Appraisal of Sustainability for each site, and gave further consideration to whether the sites are credible for deployment by the end of 2025 and would meet the SSA criteria.

<sup>23</sup> *A consideration of alternative sites to those nominated as part of the Government’s Strategic Siting Assessment process for new nuclear power stations*, Prepared by Atkins for the Department of Energy and Climate Change, November 2009, <http://www.energynpsconsultation.decc.gov.uk>

107. The range of sources that the Government used in coming to its decision can be viewed at <http://www.energynpsconsultation.decc.gov.uk>. This includes advice from specialists such as the regulators, the Appraisals of Sustainability and Habitats Regulations Assessments, and the Alternative Sites Study.

### Results of the assessment of the sites identified by the Alternative Sites Study

108. The draft Nuclear NPS sets out the policy for the development of new nuclear power stations within a defined planning horizon, that is up to the end of 2025. This is because it is important to focus on sites which can come on stream in good time to contribute to the Government's objectives on climate change and energy security. Therefore for a site to be included in the Nuclear NPS, it should be credible for deployment by the end of 2025.
109. The preliminary conclusion of the Government's further consideration of the sites identified by the Alternative Sites Study is that they are not reasonable alternatives to the sites that have been nominated and should not be included in the Nuclear NPS. This is because the Government considers that these sites are not credible for deployment by the end of 2025.

### Other issues identified in the assessment

110. At some of the sites, there are also risks that the inclusion of the site in the Nuclear NPS or the subsequent development of the site (which inclusion in the Nuclear NPS would enable) could conflict with existing Government policy. The site summaries set out where there were such concerns, and in addition where there were concerns against other SSA criteria or any other significant issues that arose during the assessment.
111. The Government also notes that the Habitats Regulations Assessment for each of the three sites showed that effects of the development on the Natura 2000 network could not be ruled out (though in line with the sites listed in the draft Nuclear NPS it may be possible to mitigate the effects). At a strategic level it is not possible to determine whether these effects would be better or worse than the potential effects for the ten sites that are listed in the draft Nuclear NPS.
112. The Government has concluded that the inclusion of the ten sites that are listed in the draft Nuclear NPS will allow energy companies to fill a significant proportion of the 25GW of new capacity even if a number of sites fail at the project level. The Government does not consider it appropriate to include more than ten sites in the Nuclear NPS at this stage when balanced against the potential harm to Natura 2000 sites (and other factors such as planning blight).

## Conclusion

113. The Government has concluded that the sites are not credible for deployment by the end of 2025 and do not therefore meet one of the conditions of the SSA. However, the Government has considered them against the SSA criteria to ensure that they have been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria. **Whilst the sites may meet the SSA criteria, because they are not credible for deployment by the end of 2025 they have not been included in the draft Nuclear NPS. The Government would welcome comments on this or any aspect of the assessment.**

## Druridge Bay

### Overview

114. The Alternative Sites Study identified the site at Druridge Bay as worthy of further consideration by Government. Druridge Bay was not nominated into the SSA and there is no credible nuclear power operator (CNPO) letter of support for the site.

### Summary

115. **Having given Druridge Bay further consideration the Government has come to the view that it is reasonable to conclude that Druridge Bay is not credible for deployment by the end of 2025. The preliminary conclusion reached by Government is therefore that Druridge Bay is not potentially suitable and should not be included in the Nuclear NPS.**
116. **In coming to this view the Government has considered the problems inherent with deploying a site which has not previously hosted nuclear facilities, potential difficulties implementing transmission and distribution infrastructure at the site, and the difficulties (and potential delay) that the high amenity value and land ownership of the site are likely to pose for planning and licensing. In addition, the Government also notes the decision by energy companies not to nominate the site. The decision that Druridge Bay is not potentially suitable has been reached due to all these factors. Whilst some may be capable of mitigation, when considered in combination they considerably impair the credibility of deployment of the site by the end of 2025.**

### Description of the site

117. The site generally comprises low lying land in agricultural use, and is bordered to the east by Druridge Bay coastal embayment and dune system, which extends for approximately 12km.
118. The site is in a coastal location, north of the village of Cresswell and south of the village of Hadston, Northumberland, in the North East region of England.
119. There is no existing nuclear power station at Druridge Bay, although the area has been investigated in the past, with the most recent plans for nuclear power generation discontinued in 1996. A map of the site is at the end of this section.

### Deployability by the end of 2025

120. Druridge Bay has been previously considered both by the Central Electricity Generating Board (CEGB) and by energy companies as a possible nuclear site but was not nominated by any Credible Nuclear Power Operator (CNPO) as part of the SSA process. The Alternative Sites Study notes that this was partly because of its distance to transmission and distribution infrastructure.

121. The site is approximately 10-14km from the nearest relevant existing transmission lines and would require significant investment on the part of the National Grid. It would also necessitate securing planning applications for extensive additional transmission lines and necessary grid upgrades. Connecting Druridge Bay to the Grid by the end of 2025 is not impossible. However, it increases the complexity, cost and risk of delay to deploying the site, given the larger amount of land that needs to be traversed and the need for associated planning permissions. Whilst a minority of nominated sites would also require entirely new connections to the Grid, at these sites industry have not considered this drawback large enough to preclude a site from nomination and work is underway to progress these issues with the National Grid.
122. As noted against criterion D8 (cultural heritage, civic amenity and landscape value), some of the land at Druridge Bay is owned by the National Trust. Purchase of National Trust land can take a considerable amount of time and, if land is held “inalienably”, could necessitate the intervention of Parliament through the Acquisition of Land Act 1981 (Schedule 3, section 5) which requires the use of Special Parliamentary Procedures under the Statutory Orders (Special Procedure) Act 1945 in respect of any compulsory purchase order.
123. Sufficient land has been identified at Druridge Bay to build a nuclear power station outside (whilst next to) the areas of National Trust ownership. However the site, which also includes Druridge Bay Country Park and land owned by the Northumberland Wildlife Trust, is clearly of high amenity value. This does not add up to a failure against the relevant criterion (D8), but it does highlight the difficulties which may complicate both site purchase and any application for development consent.
124. The Alternative Sites Study identifies that the shoreline at Druridge Bay is designated as a site of national ecological importance. This could result in mitigation measures to minimise impact, the most likely being a long cooling water outfall culvert and an even longer intake culvert to avoid recirculation of the warm water plume. However, this is technically possible, and not dissimilar issues may be faced by potentially suitable sites in the draft Nuclear NPS.
125. There are also general complicating factors when developing at sites which have not hosted nuclear facilities before including:
- lack of pre-existing suitable infrastructure;
  - no history of operation at the site and consequently much less qualified information about site characteristics in relation to nuclear. This poses a significant disadvantage given the amount of work that would be necessary to be undertaken before any planning or licensing application could take place- which at potentially suitable sites is being undertaken now given the necessary lead-in times; and
  - lack of qualified workforce.

126. The factors relating to previously undeveloped sites do not, when considered singly, preclude deployment by the end of 2025. However, when taken in combination with site specific issues, they give rise to significant concerns about delay and deployability at Druridge Bay. Whilst these factors may be capable of mitigation individually, when considered in combination it is reasonable to conclude that the site is not credible for deployment by the end of 2025. Therefore it is not included in the draft Nuclear NPS.
127. The Government has considered this site against the SSA criteria to ensure that it has been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria. **Whilst the site may meet the SSA criteria, because it is not credible for deployment by the end of 2025 it has not been included in the draft Nuclear NPS. The Government would welcome comments on this or any aspect of the assessment.**

## Assessment of suitability against the SSA criteria

### C1: Demographics

#### Analysis

128. The Alternative Sites Study has assessed that none of this site exceeds the semi-urban criterion.
129. The Health and Safety Laboratory, which supported Health and Safety Executive in the SSA process, has peer reviewed the Alternative Sites Study, including the work on demographics. Health and Safety Executive has therefore advised DECC that it sees no reason to challenge the Alternative Sites Study conclusion that this site passes the demographic criterion.

#### Assessment

130. The Alternatives Sites Study has assessed that the site passes this criterion and the Government has identified no further information to suggest that it would not. This site passes the demographics criterion.

### C2 and D5: Proximity to military activities

#### Analysis

131. The Alternative Sites Study has identified that there are no significant military activities within this site. The site does not occupy any Ministry of Defence statutory safeguarding zone and is not in proximity to any Tactical Training sites or Danger sites.
132. The Alternative Sites Study has noted that the site is located on the east coast some 10 miles south of RAF Boulmer. However, it is not located within a military low flying area. Flying activity at RAF Boulmer is currently restricted to the operation of A Flight, 202 Squadron. The Alternative Sites Study considers it unlikely that the construction of a new nuclear power station would affect the operations of 202 Squadron.



133. The Alternative Sites Study has also noted that there is an associated long range radar located at Brizlee Wood some 8 miles to the west of RAF Boulmer and 15 miles to the north west of Druridge Bay and that it is also unlikely that any new nuclear power station would adversely affect transmission and reception at either RAF Boulmer or the associated radar at Brizlee Wood.
134. The Ministry of Defence has advised that the potential site would not occupy the published statutory safeguarding zones surrounding the operational defence assets at RAF Brizlee Wood and RAF Boulmer. However, as a precaution, should the site be in the draft Nuclear NPS and plans ever come forward, the Alternative Sites Study recommends that the Ministry of Defence (RAF) should be consulted at an early stage in the planning process.
135. The Ministry of Defence agrees with the initial assessment of proximity to defence activities, noting that the structures associated with a new nuclear power station are unlikely to interfere with or cause an obstruction to the helicopter search and rescue operations conducted from RAF Boulmer. However, should this site be in the Nuclear NPS and plans come forward for development, the effects of an Restricted Area associated with a nuclear power station at this location would need to be considered further.

### Assessment

136. Given the findings of the Alternative Sites Study and the advice of the Ministry of Defence, it is reasonable to conclude that:
- the site does not occupy any Ministry of Defence areas which would give rise to the site being excluded in whole or in part from the assessment;
  - the site is not in proximity to or may affect any Ministry of Defence assets or activities to an extent that would suggest that it should be ruled out;
  - the development of a new nuclear power station at the site will not affect the capabilities of the armed forces to carry out essential training and operations throughout its lifetime. However, the effects of an Restricted Area associated with a nuclear power station at this location would need to be considered further in the event this site was considered in the future for development; and
  - any likely power station development within the site boundary can be protected against the risk of external hazards created by neighbouring military activities, throughout its lifetime.
137. This site therefore passes these criteria.

## D1: Flooding, tsunami and storm surge

### Analysis

138. The Alternative Sites Study has identified that over 90% of the site is located in Flood Zone 1 (land assessed as having a low flood risk). The remainder, a coastal strip of up to 1km wide and thin floodplains along the Chevington Burn and an un-named watercourse near Low Hauxley, lies predominantly in Flood Zone 3 (land assessed as being at high flood risk).
139. The Alternative Sites Study has noted that it is likely that development would therefore take place in the lower flood zone. It has noted that the land in flood zone 1 is crossed by contours 5m and 10m above ordnance datum (AOD), suggesting that a significant proportion of the site is located above extreme tide levels – and hence only limited engineering would be needed to protect against extreme events.
140. The Appraisal of Sustainability for Druridge Bay<sup>24</sup> has identified potential adverse effects relating to flood risk due to rising sea levels, especially during the later stages of operation and decommissioning. The Appraisal has noted that development of the Druridge Bay site is not likely to increase the existing risk of flooding. However, possible secondary impacts on coastal processes, hydrodynamics and sediment transport from any necessary new or upgraded coastal defences have also been identified. The Appraisal of Sustainability finds that mitigation may be possible through appropriate design and construction of defences.
141. The Environment Agency has advised that it is reasonable to conclude that flood defences could be constructed to protect a power station at this location. The Environment Agency has particularly noted that account would need to be taken of climate change as part of the site lies below the 10 metre contour. Detailed studies of any flood protection measures would be required at the planning stage to ensure that they did not increase flood risks to neighbouring properties. The Environment Agency has also advised that the potential for flooding and/or coastal erosion to affect access to site is low as access would be gained from the west (i.e. inland), away from areas of flood and coastal erosion risk.

### Assessment

142. This site passes this criterion. This is because, based on the findings of the Alternative Sites Study and the advice of the Environment Agency, it is reasonable to conclude that a nuclear power station within the nominated site could potentially be protected against flood risks throughout its lifetime, including the potential effects of climate change, storm surge and tsunami. This takes into account the potential identified by the Environment Agency to protect the site and to mitigate risks.

<sup>24</sup> *Appraisal of Sustainability: Site report for Druridge Bay*, November 2009, <http://www.energygnpsconsultation.decc.gov.uk>

## D2: Coastal processes

### Analysis

143. The Alternative Sites Study has noted that Druridge Bay is a wide sandy beach backed by dunes. The maximum width of the dune system along this frontage is 300 metres, although over much of the bay it does not exceed 150 metres.
144. The Alternative Sites Study gives extensive details of erosion patterns at the site. It concludes that it is unlikely that sea level rise will cause significant changes in the position or form of the beaches and dunes over the coming century, and whilst the dunes may be vulnerable to breaching during extreme conditions there are therefore no reasons not to consider the site further on the basis of coastal erosion risk.
145. The Environment Agency has advised that it should be noted that any additional flood counter-measures would be at odds with the current Shoreline Management Plan (SMP) of managed realignment and that the predicted shoreline position is estimated to retreat by approximately 15 metres over the next 100 years. The intent is to allow natural roll back of the sand dunes, with potential habitat creation and management of tidal incursion behind the dunes. The SMP would need to be updated if any nuclear power station was developed at the site.
146. The Environment Agency advises that detailed studies of any erosion protection measures would be required at the planning stage to assess the impact on nearby designated sites. However, the Environment Agency has advised that this does not mean that the site could not be protected.
147. The Appraisal of Sustainability has noted that there are possible secondary impacts on coastal processes, hydrodynamics and sediment transport from any necessary new coastal defences. This is because the erection of more coastal defence structures could directly affect the sediment transport pathways to the south of the bay and destabilise the current stable conditions of the bay leading to possible erosion and increasing the vulnerability of coastal inundation to areas that are currently stable. However, the Appraisal of Sustainability finds that mitigation may be possible through appropriate design and construction of defences.

### Assessment

148. Based on the findings of the Alternative Sites Study and the Appraisal of Sustainability, and the advice of the Environment Agency, it is reasonable to conclude that a nuclear power station within the site could be protected against coastal erosion and other landscape chance scenarios, including the potential effects of climate change, for the lifetime of the station, taking into account countermeasures and mitigations. This site therefore passes this criterion, although should this site have been included in the Nuclear NPS and an application for development consent have come forward, the effects of mitigations identified by the Appraisal of Sustainability would require further consideration.

## D3: Proximity to Hazardous facilities and Operations

### Analysis

149. The Alternative Sites Study has noted that Druridge Bay is located on the Northumberland coastline away from any potentially hazardous facilities. Within a vicinity of 2 km, there is very little development. No known pipelines have been identified in or close to the site.
150. The Health and Safety Executive confirms that, based on its records, this site is not within the vicinity of any COMAH installations. These are establishments subject to the Control of Major Accidents and Hazards (COMAH) Regulations 1999 (which is determined by chemical type and inventory). Please see the consultation on the SSA process and criteria for more detail<sup>25</sup>).
151. If the site was considered for licensing and planning consent, the applicant would need to obtain information from the Local Planning Authority and relevant pipeline operators to confirm any pipeline routes and the properties of fluids being conveyed as a basis for further risk assessment.

### Assessment

152. The site passes this criterion given that it is not in proximity to any hazardous facilities.

## D4: Proximity to civil aircraft movements

### Analysis

153. The Alternative Sites Study has noted that the site is 20 miles to the north north east of Newcastle International Airport (NIA) and 5.5 miles to the east of Eshott Airfield. It is not located directly beneath any established airways.
154. The Study notes that flights into and out of NIA would not routinely pass overhead and any en-route over-flight of aircraft routing towards or from NIA would typically take place at altitudes well above any associated Restricted Area that might be established to encompass a nuclear power station.
155. Nuclear power stations in the UK receive some protection from aviation activity through the establishment of a Restricted Area at each individual station. This is established by regulations<sup>26</sup>. Typically, such Restricted Areas have a radius of 2 nautical miles and extend vertically to 2000 feet above the surface. Any aviation activity within a Restricted Area is limited to that specifically permitted by the regulations.

<sup>25</sup> *Towards a nuclear national policy statement: Consultation on the Strategic Siting Assessment process and criteria* URN 08/295 <http://www.berr.gov.uk/files/file47136.pdf> pp52-53

<sup>26</sup> In accordance with Statutory Instrument 2007 No 1929 (The Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007)

156. The Alternatives Study has noted that Eshott Airfield (sometimes known as Bockenfield aerodrome) can only support general aviation and microlight flying. Some of this traffic may, from time-to time, fly over the site. However, the potential damage to a nuclear power station caused by a light aircraft or a microlight is unlikely to be significant and, further, the risk could be partially mitigated by the creation of a Restricted Area.
157. In summary, the Alternative Sites Study has identified that there are unlikely to be any significant aviation problems associated with locating a new nuclear power station within the site.
158. The Government would expect any new nuclear facility to be protected by an Restricted Area. This may have an impact on Eshott Airfield. The Civil Aviation Authority is in general agreement with the Alternative Sites Study assessment. More definitive assessment of the impact upon operations associated with local aerodromes can only be provided through consultation with the relevant aerodrome licensees/operators.

### Assessment

159. This site meets this criterion. Given the advice above it is reasonable to conclude that any likely power station development within the nominated site boundary can be protected against risks from civil aircraft movement, and that the effects on air traffic and aerodromes can be potentially mitigated although final arrangements for any Restricted Area would require discussion with any potential affected facilities (in this case Eshott Airfield).

## D6: Internationally designated sites of ecological importance

### Analysis

160. The Alternative Sites Study has identified that the site, including most of the coast, is not covered by any international nature conservation designation. However, it has noted that to the south and north of the Bay, the coast is included within the Northumbria Coast Ramsar Site/SPA. All of the site lies within 5 km of this designated site, although the central point of the Bay is between 4 and 5 km from the nearest part of the designated site. Therefore, while direct impacts are not likely, the Alternative Sites Study has considered potential indirect impacts through heat plumes and considers that impacts could be avoided through an appropriate length of outfall pipe.
161. The Appraisal of Sustainability has identified the potential for adverse effects on sites and species considered to be of European nature conservation importance, particularly the North Northumbria Coast SPA/Ramsar site. This means that strategic significant effects on the biodiversity cannot be ruled out at this stage of the appraisal.
162. The Appraisal of Sustainability identifies activities which might lead to detrimental effects on internationally designated coastal, inter-tidal and marine habitats and species as of greatest concern. The North Northumbria Coast SPA/Ramsar is particularly vulnerable. This designation falls approximately 0.5km from the proposed development zone and development activities could therefore have significant impacts.

163. The Appraisal of Sustainability findings on sites of European nature conservation importance are drawn from the Habitats Regulation Assessment for Druridge Bay<sup>27</sup>.
164. Taking into account the strategic nature of the plan and the information available, the Habitats Regulation Assessment<sup>28</sup> on sites of European conservation importance cannot rule out potential adverse effects on the Berwickshire and North Northumberland Coast SAC, Northumbria Coast SAC and Coquet Island SPA, through potential impacts on water resources and quality, air quality, habitat and species loss and fragmentation/coastal squeeze and disturbance.
165. However, the Habitats Regulation Assessment for Druridge Bay has proposed a suite of avoidance and mitigation measures to be considered as part of the project level Habitats Regulation Assessment. At this stage, the Habitats Regulation Assessment concludes that the effective implementation of the proposed suite of avoidance and mitigation measures may help to address the identified adverse effects on the integrity of the European sites<sup>29</sup>, but that more detailed site level Habitats Regulations Assessment is required to reach conclusions that are in accordance with the requirements of the Habitats Directive. Further assessment at project level supported by detailed data is required to determine whether development at Druridge Bay could be undertaken without adversely affecting the integrity of the identified European sites. The Habitats Regulations Assessment finds that only at the project level can a conclusion of 'no adverse effect on site integrity' be made with confidence.

## Assessment

166. The Habitats Regulations Assessment shows that effects on the Natura 2000 network could not be ruled out, though in line with the sites listed in the draft Nuclear NPS it may be possible to mitigate the effects. At a strategic level it is not possible to determine whether these effects would be better or worse than the potential effects for the ten sites that are listed in the draft Nuclear NPS.
167. Given the scope for avoidance and mitigation identified in the Habitats Regulations Assessment for sites of international importance, and the need for more detailed studies should an application for development consent come forward, this site has the potential to pass this criterion.

<sup>27</sup> *Appraisal of Sustainability: Site report for Druridge Bay*, November 2009, <http://www.energynpsconsultation.decc.gov.uk>

<sup>28</sup> *Habitats Regulations Assessment: Site report for Druridge Bay*, November 2009, <http://www.energynpsconsultation.decc.gov.uk>

<sup>29</sup> The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance by establishing a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European sites, and comprise of Special Protection Areas (SPAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC), and Sites of Community Importance (SCIs) designated and defined under the EC Habitats Directive. It is Government policy to treat Ramsar sites, designated by the Ramsar Convention on Wetlands (1971) and potential SPAs (pSPAs) as if they are fully designated European sites for the purpose of considering any development proposals that may affect them.

168. However because the site is not credible for deployment by the end of 2025, it cannot meet the objectives of the Nuclear NPS. Therefore, although there is scope for avoidance and mitigation identified in the Habitats Regulations Assessment for biodiversity effects identified at sites of international importance, the site has not passed criterion D6. This is because, since the site could not meet the objectives of the NPS, it is difficult in the context of the SSA, to justify the potential damage to sites of international importance identified in the Habitats Regulations Assessment.

## **D7: Nationally designated sites of ecological importance**

### **Analysis**

169. The Alternative Sites Study has noted that the inland part of the site is not covered by any national nature conservation designation. However, the coastal strip forms part of the Northumberland Shore SSSI. Therefore, any development should avoid the shore itself and would need to include a design of intake and outfall culverts that avoids/ minimises damage to the designated site.
170. The Alternative Sites Study has also noted that just inland of the coast, towards the south of the bay lies Cresswell Ponds SSSI, and towards the north lies Hadston Links SSSI.
171. The Appraisal of Sustainability has identified the potential for adverse effects on sites and species considered to be of UK nature conservation importance. The Appraisal of Sustainability identifies concerns about Cresswell Ponds SSSI, which falls approximately 0.1km from the proposed development zone and Hadston Links SSSI, which is approximately 0.8km away.
172. The Appraisal of Sustainability has identified that potential exists for the mitigation of biodiversity effects on sites of UK wide importance, including the avoidance of important habitats through careful layout and identification of opportunities for positive improvements.

### **Assessment**

173. Government notes that the Appraisal of Sustainability has identified potential impacts on nationally designated sites of ecological importance. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance it is reasonable to conclude that it may be possible to avoid or mitigate impacts.
174. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance, and the different framework of regulation and policy that governs these sites, this site passes criterion D7.

## D8: Areas of amenity, cultural heritage and landscape value

### Analysis

175. The Alternative Sites Study has identified that the majority of the site is clear of amenity designations. There is one Scheduled Ancient Monument in the centre of the site. The Study notes that from an amenity designation perspective, there is no reason why the site could not be developed if these are avoided or appropriate mitigation is undertaken.
176. The Alternative Sites Study has noted that Druridge Bay is part of the Northumberland Heritage Coast although it is not within the Northumberland Coast Area of Outstanding Natural Beauty (AONB) which stops at Coquet Estuary some 5km to the north.
177. The Alternative Sites Study has highlighted that the central section of the coastal area of the site is under National Trust ownership, and that much of it has a high civic use (including Druridge Bay County park and land owned by the Northumberland Wildlife Trust) and is under direct or indirect management or planning by the local authority.
178. The Appraisal of Sustainability has identified potentially significant adverse effects on landscape at a national level. These include long lasting indirect and direct adverse landscape and visual impacts on the surrounding area, including the eastern edge of the Northumberland National Park and the north Northumberland Heritage Coast (and potential future Northumberland Coast AONB extension). These impacts will be highly likely given the existing undeveloped nature of the site, the scale of the new development, and the potential need for associated off site grid connection infrastructure. The Appraisal of Sustainability finds that direct effects on local landscape character in and alongside the site, will be significant in the short term, with some potential for mitigation in the longer term.
179. The Appraisal of Sustainability has also identified potential adverse physical and setting effects on the Scheduled monument of Low Chilburn Medieval Preceptory, with its 16th century house and World War II pill box. Setting effects arise depending on distance, sight lines and mitigations applied. The settings of other nearby scheduled monuments, listed buildings and the proposed Cresswell Conservation Area may also be affected, and there may be direct physical effects on buried archaeology and historic landscape. However, there is a possibility that these effects can be mitigated. Further detailed assessment at project level will be required<sup>30</sup>.

### Assessment

180. In making this assessment the Government has had regard to the purposes of the designation of the National Park in conserving and enhancing the natural beauty, wildlife and cultural heritage of the park and of promoting opportunities for the understanding and enjoyment of the special qualities of those areas by the public.

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<sup>30</sup> For more detail see the Appendices to Appraisal of Sustainability: Site report for Druridge Bay, November 2009, <http://www.energynpsconsultation.decc.gov.uk>



181. The Appraisal of Sustainability has identified that there are likely to be long lasting adverse indirect landscape character and visual impacts on the surrounding area, including of the setting of the Northumberland National Park, due to the scale of the proposed works during the construction and operation phases.
182. There is no nominator at this site to propose suitable mitigation of effects on the National Park. The potential for effects could only be fully assessed if detailed plans come forward. This is because they partly depend on a range of factors including the proposals for minimisation and mitigation, the cooling technology proposed and location of transmission infrastructure.
183. The site is some distance to the National Park which reduces the impact on views. However, the fact that the site is presently undeveloped increases the significance of effects. In addition, the nominated site includes land owned by the National Trust, Druridge Bay Country Park and land owned by the Northumberland Wildlife Trust and this underlines that the site is clearly of high amenity value.
184. Given the scope for some mitigation and uncertainty over precise effects this site passes this criterion, although there are some concerns as outlined above. In addition, assessment against this criterion highlights the difficulties which may complicate both site purchase and any application for development consent.

## D9: Size of site to accommodate operation

### Analysis

185. The Alternative Sites Study has identified that there is sufficient land within the site to accommodate a least one new nuclear power station. However footpaths may need to be re-sited. The Office for Civil Nuclear Security noted that there are a number of footpaths and minor roads/ tracks that encroach on the area considered worthy of further consideration. However, it has advised that there is sufficient space to accommodate at least one new nuclear power station, provided the licensee has exclusive control of these footpaths/ minor roads/ tracks or they are realigned so as not to encroach into the site.

### Assessment

186. Given the findings of the Alternative Site Study and the Office for Civil Nuclear Security, this site passes this criterion. It is reasonable to conclude that there is enough land within the boundary nominated to safely and securely operate at least one new nuclear power station, including the safe and secure storage of all the spent fuel and intermediate level waste produced through operation, and from decommissioning, on the site of the station until it can be sent for disposal in a geological disposal facility. An applicant would need to consider mitigations such as siting elements of a station away from public footpaths, or realignments, to meet the requirements of a nuclear site license. Given the size of the site it is reasonable to conclude that there is potential to mitigate these concerns.

## D10: Access to suitable sources of cooling

### Analysis

187. The Alternative Sites Study has noted that Druridge Bay, although relatively shallow and having a shoreline that is a sensitive area, could potentially receive a thermal plume from direct cooling. The outfall would therefore probably have to be placed somewhat further offshore into deeper water, equating to a bed level of -5m chart datum (CD), in order to ensure that the plume length and width were sufficiently constrained to avoid impact with the shoreline. If this is done, the Study finds that there is no reason why a new nuclear power station in the site would not have access to an appropriate source of cooling.
188. The Environment Agency has advised that there is potentially a suitable source of cooling at this site. However, it has also noted that this coastal site has a number of important fisheries. Migratory fish such as salmon, sea trout and eel frequent this coastline, as evidenced by the licensed fixed traps which operate in the intertidal zone for salmon and sea trout. There are important local pot fisheries for both lobster and crab and an important local trawl fishery for Nephrops prawns. From work elsewhere the Environment Agency has advised that it can predict that the intertidal mud and sand habitats and any saltmarsh present will be very important for a range of commercially important marine fish such as cod and flatfish species. Detailed modelling of thermal effects will be necessary to assess the impacts on fish migration routes and shallow inshore areas. The Environment Agency recommends that siting of intakes and outfalls should take this information into account and deeper water locations are likely to be preferred to minimise impacts on fish migration.
189. The Appraisal of Sustainability has identified potential significant impacts from the infrastructure requirements associated with the abstraction and return of cooling water to the sea and any marine offloading facilities. Potential thermal impacts of cooling water discharges may also affect nationally and internationally designated habitats.

### Assessment

190. Based on the findings of the Alternatives Study and the Appraisal of Sustainability, and the advice of the Environment Agency, it is reasonable to conclude that there is access to suitable sources of cooling at this site. This site therefore passes this criterion. Should the site have been considered suitable and listed in the Nuclear NPS, the impact of cooling technology on designated habitats would have needed to be carefully considered at the local level should plans for the site have come forward. The Environment Agency has advised that any potential impacts would be assessed during detailed design and considered in any application for a consent to make discharges. This would require the discharges to meet regulatory standards for the protection of the quality of estuarine or coastal waters in line with future requirements of the Water Framework Directive<sup>31</sup>.

<sup>31</sup> The Water Framework Directive 2000/60/EC

## Appraisal of Sustainability and Habitats Regulations Assessment for Druridge Bay

191. The Planning Act (2008)<sup>32</sup> requires an Appraisal of Sustainability to be carried out for all National Policy Statements. The purpose of an Appraisal of Sustainability is to consider the social, economic and environmental impacts of the policy and to suggest possibilities for improving the sustainability of the NPS. The purpose of the Appraisal of Sustainability for Druridge Bay is to examine the potential positive and negative effects of the site, identify the significance of these effects and suggest any mitigation possibilities.
192. The draft Nuclear NPS has also been assessed in accordance with the European Habitats Directive. That assessment (the “Habitats Regulations Assessment”) tests whether a plan or project could have an adverse effect on the integrity of European Sites of nature conservation importance. A Habitats Regulations Assessment was carried out on the Druridge Bay site.
193. The key findings of the Druridge Bay Appraisal of Sustainability and Habitats Regulations Assessment highlight areas of significance on, amongst other things:
- i) nationally and internationally protected sites of ecological importance;
  - ii) potential effects on supporting infrastructure, including transport, conventional and radioactive waste and basic services;
  - iii) potential effects on erosion and visual appearance of the coastline following upgrade of existing defences;
  - iv) potential landscape effects at a national level, including on the surrounding area (which is currently undeveloped) including the eastern edge of the Northumberland National Park and the North Northumberland Heritage Coast (and potential future Northumberland Coast AONB extension). In turn, potential setting effects upon nearby scheduled monuments and the nearby proposed Cresswell Conservation Area.
194. Key findings i, iii and iv are taken into account in the summaries of the SSA criteria above.
195. The potential impacts identified on supporting infrastructure are on transport, conventional and radioactive waste, and basic services. For instance, the Appraisal of Sustainability has identified that negative effects are likely to arise at a local scale due to the increased pressure on the already busy A1 and A19/A189 from construction traffic and operational employee transport. New or improved road infrastructure would also be required to accommodate the large loads vehicles to the site as there are currently only access minor roads. The Appraisal of Sustainability should be referred to for more detail. The Appraisal of Sustainability has found that these effects are generally of local significance and a range of mitigation options are likely to be available.

<sup>32</sup> Planning Act (2008) [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

## Health

196. The Appraisal of Sustainability for Drudridge Bay has also considered strategic effects on human health and well being. The Appraisal of Sustainability looks at a range of different factors and should be referred to for a more in depth assessment.
197. One factor of particular interest to the public is incidence of cancer. COMARE is a scientific advisory committee providing independent authoritative expert advice on all aspects of health risk to humans exposed to natural and man-made radiation. It has, for over twenty years, investigated the incidence of childhood cancer and other cancers around nuclear sites. COMARE has published eleven reports on topics related to exposure to radiation. Its view is that there is no evidence for unusual aggregations of childhood cancers in populations living near nuclear power stations in the UK.
198. COMARE's tenth report<sup>33</sup> considered the incidence of childhood cancer around nuclear installations. These were divided into nuclear power generating stations and other nuclear installations. The results for the power generating stations supported the conclusion that 'there is no evidence from this very large study that living within 25 km of a nuclear generating site in Britain is associated with an increased risk of childhood cancer'.
199. The tenth report did however state that for other nuclear sites the situation was more complicated. The study did demonstrate corresponding results to previously published studies that showed excesses of some types of childhood cancer. These results (excess childhood cancers in Seascale near Sellafield; in Thurso near Dounreay and around Aldermaston, Burghfield and Harwell) have been extensively discussed in previous COMARE reports.
200. In its eleventh report<sup>34</sup> COMARE examined the general pattern of childhood leukaemia within Great Britain and concluded that 'the search for increased risk levels near to nuclear power generation sites shows no pattern of excess cases of childhood cancer close to the sites of these types of nuclear installations'. Among its recommendations, the report said that the incidence of childhood leukaemia and other cancers in the vicinity of Sellafield and Dounreay was raised and should be kept under surveillance and periodic review. COMARE is undertaking this work with the aim of producing an update report.
201. In addition Part 4 of the draft Nuclear NPS (Human health and wellbeing) sets further information on health which should be referred to for further guidance.

<sup>33</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2005). Tenth Report. *The incidence of childhood cancer around nuclear installations in Great Britain*, June 2005.

<sup>34</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2006). Eleventh Report. *The distribution of childhood leukaemia and other childhood cancer in Great Britain 1969-1993*. Health Protection Agency, July 2006.

### Druridge Bay location map



## Kingsnorth

### Overview

202. The Alternative Sites Study identified Kingsnorth as worthy of further consideration. Kingsnorth was not nominated and there is no credible nuclear power operator (CNPO) letter of support for the site.

### Summary

203. **Having given Kingsnorth further consideration the Government has come to the view that it is reasonable to conclude that Kingsnorth is not credible for deployment by the end of 2025. The preliminary conclusion reached by Government is therefore that Kingsnorth is not potentially suitable and should not be included in the Nuclear NPS.**
204. **In coming to this view the Government has principally considered the difficulties of creating extendable emergency plans at the site and the impact the decommissioning of the existing Kingsnorth power station could have on the timescales of deploying a new nuclear power station on the site.**
205. **The Government notes that, should other current planning applications be consented and land developed in line with these applications, the future land use of the site identified by the Alternatives Study could become complicated, and potentially create significant problems in relation to the deployment of a nuclear station on the site. The potential future land use of the area could impact both on the proximity to hazardous facilities (D3) and the land available for any new nuclear power station (D9), and could risk increasing the impact of a new development on the sites of international ecological importance (D6), which surround the site identified by the Alternative Sites Study.**
206. **In addition, the Government notes that the inclusion of this site in the Nuclear NPS would conflict with separate government objectives on plans for the Thames Gateway Development (see ‘Other issues arising in the assessment’, below, for details).**
207. The Government has considered this site against the SSA criteria to ensure that it has been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria. Whilst the site may meet the SSA criteria, because it is not credible for deployment by the end of 2025 it has not been included in the draft Nuclear NPS.

### Description of the site

208. The Kingsnorth site is situated some 2km east of Hoo St Werburgh, and surrounding villages include Chattenden, High Halstow, St Mary Hoo and Stoke. Strood and Rochester are the nearest sizeable urban area, located approximately 8km to the west. Gillingham is located on the southern shores of the Medway Estuary. A map of the site is included at the end of this section.
209. The site is located at the site of, and surrounding, the existing Kingsnorth power station. Kingsnorth power station is a 1940MW dual-fired power station owned by E.On. Each of its four main units are capable of using both coal and oil. It also has the capability to burn biomass products, which can replace up to 10% of the coal.

### Deployability by the end of 2025

210. The Government does not find this site credible for deployment by the end of 2025. The Government has concerns under criterion C1 (Demographics). Whilst the site meets the demographic criterion, the Alternative Sites Study has noted that there may be significant problems with the development of sites with such a high surrounding population. This is because under guidance issued by the Nuclear Emergency Planning Liaison Group (NEPLG)<sup>35</sup>, the “extendibility scenario” of emergency planning requires the consideration of various emergency arrangements out to approximately 15km from a site (and evacuation out to 4km). NEPLG recommends that emergency planners should have regard to these distances, and the scenario and timescales on which they are based, in their decisions on the extent and nature of extended emergency planning (i.e. accidents which are less likely than the reasonably foreseeable scenarios used for detailed emergency planning). The extendibility distances recommended by the NEPLG are intended as a guide which along with local considerations and other aspects of NEPLG’s guidance should be taken into account in decisions on extendibility planning.
211. At Kingsnorth, the Alternative Sites Study has identified that from distances beyond 12 km, the population in each radial band is considered to be sufficiently high to suggest that extendibility of emergency plans may present significant difficulties in the event of an emergency, casting doubt over its ability to be deployed by the end of 2025.
212. The Government considers that on the basis of population data, planning and agreeing workable extendable emergency plans will be challenging. An application for development at this site may present difficulties in securing a nuclear site licence and in meeting the requirements for emergency planning, which affects the ability to deploy the site by the end of 2025.
213. The Government also notes that the site is adjacent to an operating coal fired power station. This station is expected to cease operations in 2015. Developing plans for a new nuclear power station close to what may be a major decommissioning project is also a complicating factor which, whilst not necessarily insurmountable, would increase the complexity of deploying a nuclear power station on the site by the end of 2025 and could lead to delays.

<sup>35</sup> <http://www.berr.gov.uk/energy/sources/nuclear/key-issues/emergency/neplg/page31040.html>

214. In addition, the Government has some concerns around criterion D6, on sites of international ecological importance. The Kingsnorth site is surrounded by sites which have been recognised internationally for their ecological importance. These are largely offshore and could therefore be affected by the intake and outfall of cooling water. This is discussed further under criteria D6. Whilst it is assessed that the effective implementation of the proposed avoidance and mitigation measures may help to address the identified adverse effects on the integrity of the European sites, the unusually high number of designated sites in close proximity which could be affected does create challenges for licensing and permitting which could impact on the timescales for deployment and this could be intensified depending on the progress of the other proposals in this area.
215. The Government has considered this site against the SSA criteria to ensure that it has been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria. Whilst the site may meet the SSA criteria, because it is **not credible for deployment by the end of 2025 it has not been included in the draft Nuclear NPS. The Government would welcome comments on this or any aspect of the assessment.**

## Assessment of suitability against the SSA criteria

### C1: Demographic risk

#### Analysis

216. The Alternative Sites Study has assessed that this site passes the demographic criterion.
217. The Health and Safety Laboratory, which supported Health and Safety Executive in the SSA process, has peer reviewed the Alternative Sites Study, including the work on demographics. Health and Safety Executive has therefore advised DECC that it sees no reason to challenge the Alternative Sites Study conclusion that this site passes the demographic criterion.

#### Assessment

218. The site passes the demographic criterion. However, there are concerns (see “deployability by the end of 2025”) that the demographic profile of the area would present difficulties regarding the extendability of emergency planning.

### C2 and D5: Proximity to military activities

#### Analysis

219. The Alternative Sites Study has identified that there are no significant military activities within this site. The site is not in proximity to any Tactical Training sites or Danger sites. However, the safeguarding zone protecting the radar station at Thurnam may need further investigation at a local level.



220. The Ministry of Defence has noted that the site occupies the statutory height safeguarding zone (a 45.7m height consultation zone) protecting the Meteorological radar station at Thurnam. Although structural dimensions are not provided at this stage it is not anticipated that this would inhibit or prevent a power station facility from being built at this location.
221. The Ministry of Defence has also noted that the site is approximately 3.5km southeast of the Lodge Hill Army Training Area, and approximately 7.6km southwest of the Yantlet Demolition Range on the Isle of Grain. It is not thought by the Ministry of Defence that these would impose any constraint on the development of this site.

### Assessment

222. Given the findings of the Alternative Sites Study and the advice of the Ministry of Defence, it is reasonable to conclude that:
- the site does not occupy any Ministry of Defence areas which would give rise to the site being excluded in whole or in part from the assessment;
  - the site is not in proximity to or may affect any Ministry of Defence assets or activities to an extent that would suggest that it should be ruled out;
  - the development of a new nuclear power station at the site will not affect the capabilities of the armed forces to carry out essential training and operations throughout its lifetime. However, the effects of an Restricted Area associated with a nuclear power station at this location would need to be considered further in the event this site was considered in the future for development;
  - any likely power station development within the site boundary can be protected against the risk of external hazards created by neighbouring military activities, throughout its lifetime.
223. This site therefore passes these criteria.

## D1: Flooding, tsunami and storm surge

### Analysis

224. The Study has identified that around 20% of the site is located in Flood Zone 1 (land assessed as having a low flood risk). The remainder of this site, the coastal floodplain around the existing Kingsnorth Power Station, lies predominantly within Flood Zone 3 (land assessed as being at high flood risk). The Study has noted that flood defences offer protection to the existing conventional Kingsnorth Power Station from tidal flooding.
225. The Alternative Sites Study has found that it is reasonable to assume that good engineering practice could reduce flood risk sufficiently to make a new nuclear power station safe in this location.

226. The Environment Agency has also noted that the current power station is defended from tidal flooding by a substantial earth embankment designed to provide a 1 in 1000 year flood event standard of protection. This defence requires continual management. As protection must be afforded for the lifetime of the development there may be a need to upgrade/improve the current defences depending on the impacts of the UKCP09<sup>36</sup> predicted tide levels. The Environment Agency has noted that any future works to construct a hard defence to replace the earth embankment however, would increase coastal squeeze.
227. The Environment Agency has advised that it is likely that a tidal breach/overtopping of the existing defence would result in access and egress to the site being impeded. However, the Environment Agency have noted that based on the current understanding of the flood risk in this area the Agency believe that it is reasonable to conclude, at the strategic level, that the site can potentially be protected from flooding.
228. The Appraisal of Sustainability<sup>37</sup> has identified potential adverse effects relating to flood risk arising from predicted rising sea levels caused by climate change, particularly during the later stages of operation and decommissioning. Possible secondary impacts on coastal processes, hydrodynamics and sediment transport from any necessary new or upgraded coastal defences have also been identified. Mitigation may be possible through appropriate design and construction of defences.

## Assessment

229. This site passes this criterion. This is because, based on the findings of the Alternative Sites Study and the advice of the Environment Agency, it is reasonable to conclude that a nuclear power station within the nominated site could potentially be protected against flood risks throughout its lifetime, including the potential effects of climate change, storm surge and tsunami. Although the majority of the site is within an area of high flood risk, it appears from the findings of the Alternative Site Study, the Appraisal of Sustainability and the advice of the Environment Agency that potential impacts could be mitigated.

## D2: Coastal processes

### Analysis

230. The Alternative Sites Study has identified that the shoreline is currently fixed by significant defence structures (especially around Kingsnorth Power Station) and is unlikely to show any major change over the next 100 years. Accretion is occurring along the frontage with the establishment of areas of saltmarsh. It does not believe there are any reasons not to consider the site further on the basis of coastal erosion risk.
231. The Environment Agency has advised that whilst there is currently accretion at some locations within the estuary, in the longer term due to sea level rise there will be increased potential for erosion of intertidal areas. In this scenario coastal squeeze would become a greater problem as channel processes are restricted by defences and sediment supply decreases.

<sup>36</sup> See <http://ukclimateprojections.defra.gov.uk>

<sup>37</sup> *Appraisal of Sustainability: Site report for Kingsnorth*, November 2009, <http://www.energyngpsconsultation.decc.gov.uk>

232. The Environment Agency has advised that this site is mainly subject to estuarine as opposed to coastal processes. Based on current understanding of coastal erosion in this area the Environment Agency has advised that there is no technical reason that would prevent the site being protected/mitigated from the effects of coastal erosion.
233. The Environment Agency has advised that, as with all sites, by protecting the site from flood and coastal erosion risk now and in the future the coastline and estuary is prevented from changing and adapting naturally. It has noted that consideration should be given to mitigation of the resulting 'coastal squeeze', under the Habitats Regulations, in the form of compensatory habitat.

### Assessment

234. The site passes this criterion. Based on the advice above, it is reasonable to conclude at a strategic level that a nuclear power station within the site could be protected against coastal erosion and other landscape change scenarios, including the potential effects of climate change, for the lifetime of the station, taking into account countermeasures and mitigations.

## D3: Proximity to Hazardous facilities

### Analysis

235. The Alternative Sites Study has noted that the site is located approximately 6.5km from the Isle of Grain. It has commented that the hazard from Kingsnorth Power Station, which is a dual-fired oil and coal power station, is greatly reduced as oil- and coal-fired power stations do not release hazardous vapours that are likely to ignite. Similarly, the current hazard from the Damhead Creek Combined Cycle Gas Turbine (CCGT) power station is low and unlikely to pose a significant risk. The Study has also noted that a GPSS multiproducts pipeline runs from Walton to the Isle of Grain about 5km from the site.
236. The Alternatives Study concludes that the pipeline is adequately distanced from the proposed site. It is not anticipated that there are any hazardous facilities in the area that would prohibit the site from being considered or developed further.
237. Health and Safety Executive confirms that, based on its records, this site is not currently within the vicinity of any COMAH installations. These are establishments subject to the Control of Major Accidents and Hazards (COMAH) Regulations 1999 (which is determined by chemical type and inventory). Please see the consultation on the SSA process and criteria for more detail<sup>38</sup>).
238. The Health and Safety Executive has noted that if the site was considered for licensing and planning consent, the applicant would need to obtain information from the Local Planning Authority and relevant pipeline operators to confirm any pipeline routes and the properties of fluids being conveyed as a basis for further risk assessment.

<sup>38</sup> BERR, *Towards a nuclear national policy statement : Consultation on the Strategic Siting Assessment process and criteria* URN 08/295 <http://www.berr.gov.uk/files/file47136.pdf> pp52-53

239. If a new station was consented at Damhead Creek which required carbon capture and storage, there would be a need to carefully consider whether this might constitute a hazard which could affect potential nuclear new build (see “other issues”).

### Assessment

240. The Government Response to the consultation on the SSA Process and Criteria<sup>39</sup> set out that a nominated site may be unsuitable, on a discretionary basis, if it is within the consultation distance of an existing or proposed hazardous facility.
241. The Government has carefully considered this criterion at this site. Given the proximity to hazardous facilities at present, the site passes this criterion although the Government has concerns that, should plans for stations using CCS be approved at Kingsnorth or Damhead Creek, it is likely that planning restrictions would be imposed around the site which could significantly limit the ability to deploy a nuclear power station at an adjacent site.

## D4: Proximity to civil aviation activity

### Analysis

242. Nuclear power stations in the UK receive some protection from aviation activity through the establishment of a Restricted Area at each individual station. This is established by regulations<sup>40</sup>. Typically, such Restricted Areas have a radius of 2 nautical miles and extend vertically to 2000 feet above the surface. Any aviation activity within a Restricted Area is limited to that specifically permitted by the regulations.
243. The Alternative Sites Study has noted that the site is located to the South of Ashford, Kent and beneath airspace that is routinely used by aircraft departing from, or positioning to approach Lydd Airport and directly under the northern sector of the Lydd Hold. The Study notes that the airport operators have plans to extend the runway but the status of this programme is not currently established. Lydd operations are currently limited by airspace restrictions to the south west and north east (by military ranges) and to the south (by Dungeness Nuclear Power Station). The Study believes that the Restricted Area would also create an East-West funnel for Lydd traffic condensing the space available for air traffic.
244. The Study also finds that there are two smaller general aviation airfields, one to the east of the site and one to the west of the site. Activity at the eastern airfield, Hamilton Farm, appears to be very limited or non-existent. However, the western airfield, Woodchurch, is home to the ‘Woodchurch Warbirds’, a collection of vintage military aircraft. The creation of a Restricted Area could restrict activity at both the smaller airfields and further investigation will be needed to determine the impact of these restrictions.

<sup>39</sup> BERR, *Towards a nuclear national policy statement: Government response to the consultation on the Strategic Siting Assessment process and criteria*, January 2009, <http://www.berr.gov.uk/files/file47136.pdf>\_URN09/581

<sup>40</sup> In accordance with Statutory Instrument 2007 No 1929 (The Air Navigation (Restriction of Flying) (Nuclear Installations) Regulation 2007)

245. The Civil Aviation Authority is in general agreement with the Alternative Sites Study assessment. It has commented that more definitive assessment of the impact upon operations associated with local aerodromes can only be provided through consultation with the relevant aerodrome licensees/operators.

### Assessment

246. Whilst there are concerns against this criterion, there appears to be scope to mitigate against potential impacts on civil aviation whilst protecting any nuclear power station at Kingsnorth. However, it is not clear that impacts could be mitigated entirely and questions of flight safety may arise. This site passes this criterion but had the site been included in the Nuclear NPS, it is likely that the IPC would be instructed to consider these questions at site licensing.

### For D5 see C2

## D6: Internationally designated sites of ecological importance

### Analysis

247. The Alternative Sites Study has noted that the Medway Estuary & Marshes SPA/Ramsar site surrounds the site on three sides and is downstream of the site, so there is a potential mechanism for harm through heat effects, although specialist studies have not been undertaken as part of the Alternative Sites Study. Thames Estuary & Marshes SPA/Ramsar site lies downstream to the north.
248. The Study has also noted that demonstrating that a new nuclear power station can operate without there being an adverse impact on these international designations may prove challenging. However, the site is still deemed as worthy of further consideration as there is an existing power station, of the scale of Kingsnorth, currently operating alongside these designations.
249. The Alternative Sites Study has noted that it may be easier to make the case that a new nuclear power station within the site may be developed without any adverse impact on these internationally designated sites if the cooling water is taken from and discharged to the same locations due to better understanding of the impacts in this area. However, any impacts (or lack of them) cannot be confirmed without a detailed assessment and the Alternative Sites Study has noted that if the existing power station continues to operate alongside any proposed new nuclear power station, then any assessment would need to include the potential for cumulative impacts.
250. The Alternative Sites Study has also noted that the cooling water intake is on the shoreline, immediately to the south of the existing power station and the cooling water discharge is via concrete outlet culverts to a shoreline outfall structure built into the head of Damhead Creek. There are narrow gaps within the designated site, but assessment has not been undertaken to determine whether inflow and outflow pipes could actually be installed there. However, the designated area is also relatively narrow in places, so there may be potential for approaches such as directional drilling to avoid direct damage to the designated site.

251. The Appraisal of Sustainability site level report has identified that there is potential for adverse effects on sites and species considered to be of European nature conservation importance<sup>41</sup> and that this means that significant strategic effects on the biodiversity cannot be ruled out at this stage of the appraisal. The Appraisal of Sustainability findings on sites of European nature conservation importance are drawn from the Habitats Regulations Assessment for Kingsnorth.
252. Taking into account the strategic nature of the plan and the information available, the Habitats Regulations Assessment<sup>42</sup> on sites of European nature conservation importance cannot rule out potential adverse effects on the Medway Estuary and Marshes SPA/Ramsar, Swale SPA/Ramsar, Benfleet and Southend Marshes SPA/Ramsar, Thames Estuary and Marshes SPA/Ramsar, Foulness SPA/Ramsar and Essex Estuary SAC through impacts on water resources and quality, air quality, habitat and species loss and fragmentation/ coastal squeeze and disturbance.
253. However, the Habitats Regulations Assessment for Kingsnorth has proposed a suite of avoidance and mitigation measures to be considered as part of the project level Habitats Regulations Assessment. At this stage, the Habitats Regulations Assessment concludes that the effective implementation of the proposed avoidance and mitigation measures may help to address the identified adverse effects on the integrity of the European site, but that a more detailed site level Habitats Regulations Assessment is required to reach conclusions that are in accordance with the Habitats Directive.
254. It is assessed that further assessment at project level supported by detailed data is required to determine whether development at Kingsnorth could be undertaken without adversely affecting the integrity of the identified European sites. Only at the project level Habitats Regulations Assessment can a conclusion of 'no adverse effect on site integrity' be made with confidence.

## Assessment

255. The current existence of a relatively large operating conventional station suggests that co-existence of a station with the designated sites may be possible. However, this would have needed detailed assessment should this site have been on the draft Nuclear NPS and an application come forward.
256. More significantly, there is a possibility that detailed assessment would find that the cumulative effects of existing and potential coal-fired stations at the site combined with further cooling water intake at a conventional station could render the potential impacts unacceptable.

<sup>41</sup> The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance by establishing a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European sites, and comprise of Special Protection Areas (SPAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC), and Sites of Community Importance (SCIs) designated and defined under the EC Habitats Directive. It is Government policy to treat Ramsar sites, designated by the Ramsar Convention on Wetlands (1971) and potential SPAs (pSPAs) as if they are fully designated European sites for the purpose of considering any development proposals that may affect them.

<sup>42</sup> Habitats Regulations Assessment: Site report for Kingsnorth, November 2009, [www.energynpsconsultation.decc.gov.uk](http://www.energynpsconsultation.decc.gov.uk)

257. However, the Habitats Regulations Assessment has found that at this stage, it is assessed that the effective implementation of the proposed avoidance and mitigation measures may help to address the identified adverse effects on the integrity of the European sites.
258. The Habitats Regulations Assessment shows that effects on the Natura 2000 network could not be ruled out, though in line with the sites listed in the draft Nuclear NPS it may be possible to mitigate the effects. At a strategic level it is not possible to determine whether these effects would be better or worse than the potential effects for the ten sites that are listed in the draft Nuclear NPS.
259. Given the scope for avoidance and mitigation identified in the Habitats Regulations Assessment for sites of international importance, and the need for more detailed studies should an application for development consent come forward, this site has the potential to pass this criterion.
260. However because the site is not credible for deployment by the end of 2025, it cannot meet the objectives of the Nuclear NPS. Therefore, although there is scope for avoidance and mitigation identified in the Habitats Regulations Assessment for biodiversity effects identified at sites of international importance, the site has not passed criterion D6. This is because, since the site could not meet the objectives of the NPS, it is difficult at this stage, and in the context of the SSA, to justify the potential damage to sites of international importance identified in the Habitats Regulations Assessment.

## **D7: Nationally designated sites of ecological importance**

### **Analysis**

261. The Alternative Sites Study has identified that the site at Kingsnorth is not covered by any national designations. A very small section of the southern estuarine edge of the site is outside any designated site although South Thames Estuary & Marshes and Medway Estuary & Marshes SSSIs bound the remaining edges.
262. The Appraisal of Sustainability site level report has identified that there is potential for adverse effects on sites and species considered to be of UK-wide nature conservation importance and that this means that significant strategic effects on the biodiversity cannot be ruled out at this stage of the appraisal.
263. The Appraisal of Sustainability for Kingsnorth has identified that, for sites of UK ecological importance, potential exists for the mitigation or compensation of biodiversity effects, including the creation of replacement habitat.

### **Assessment**

264. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance, and the different framework of regulation and policy that governs these sites, this site passes criterion D7.

265. Government notes that the Appraisal of Sustainability has identified potential impacts on nationally designated sites of ecological importance. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance it is reasonable to conclude that it may be possible to avoid or mitigate impacts.

## D8: Areas of amenity, cultural heritage and landscape value

### Analysis

266. The Alternative Sites Study has identified that there are no national amenity designations which would be likely to preclude the development of a new nuclear power station within this site.
267. The Appraisal of Sustainability has identified a potential adverse effect upon a Grade II Listed Building. There may also be setting effects upon Scheduled Monuments, Listed Buildings, Conservation Areas and a Registered Park or Garden<sup>43</sup>. Setting effects arise depending on the distance, sight lines and mitigation applied. There is also potential for adverse physical effects upon significant buried archaeology. Further detailed assessment at project level possibly through the provision of an integrated landscape, heritage, and architectural plan, will be required.
268. The Appraisal of Sustainability has also identified potential adverse indirect effects on the local surrounding landscape. There are no significant adverse effects anticipated on nationally or local designated landscapes. However, there are likely to be indirect adverse effects on such landscapes in terms of views of the development from within these designated areas. In visual terms, the new power station would be seen in the context of existing coal fired power station facilities, prior to any decommissioning. It is predicted that there will be limited potential of these local visual impacts, given the scale of the development, until after decommissioning. Therefore, overall impacts are considered by the Appraisal of Sustainability to be of minor adverse strategic significance.

### Assessment

269. Given the likely effects and the scope for mitigation, this site passes this criterion.

## D9: Size of site to accommodate operation

### Analysis

270. The Alternative Sites Study has identified that there is sufficient land within the site to accommodate a least one new nuclear power station. However footpaths may need to be re-sited. It has also noted that the location of the pylons supporting the transmission lines may also need to be re-sited, if they are too close to the nuclear licensed site perimeter and could potentially compromise security.

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<sup>43</sup> For more detail see the Appendices to *Appraisal of Sustainability: Site report for Kingsnorth*, November 2009, <http://www.energy-nps-consultation.decc.gov.uk>



271. The Office for Civil Nuclear Security has noted that there is sufficient land within the site to accommodate at least one new nuclear power station. It has noted that if development occurred in some parts of the site there may need to be some re-alignment of the footpaths and the pylons supporting the transmissions lines. In addition, some parts of the site are “tight in terms of defence in depth”<sup>44</sup>, but given the overall size of the site there is sufficient space to accommodate a new nuclear power station in the remainder. The Office for Civil Nuclear Security has also noted that one part of the site contains a cutting or embankment, the significance of which (for the security of the site) would need to be considered if plans for the site were progressed.

### Assessment

272. It is reasonable to conclude that there is enough land within the boundary nominated to safely and securely operate at least one new nuclear power station, including the safe and secure storage of all the spent fuel and intermediate level waste produced through operation, and from decommissioning, on the site of the station until it can be sent for disposal in a geological disposal facility. An applicant would need to consider mitigations such as siting elements of a station away from public footpaths, or realignments, to meet the requirements of a nuclear site license. Given the size of the site it is reasonable to conclude that there is potential to mitigate these concerns.
273. This site passes this criterion. However, it is noted elsewhere in this assessment that if plans for carbon capture and storage were approved at the site or at nearby Damhead Creek, the likely available land would be severely restricted, and a further assessment at site licensing would be necessary to establish whether a nuclear power station in conjunction with a carbon capture and storage facility would be workable, which may be unlikely.

## D10: Access to suitable sources of cooling

### Analysis

274. The Alternative Sites Study has identified that there is sufficient cooling water for at least one new nuclear power station.
275. The Appraisal of Sustainability has identified potential indirect effects on nationally and internationally designated habitats, including from the thermal impact of cooling water discharges. They conclude that this is of potential wider significance because of indirect effects on national and European designated habitat sites.
276. The Environment Agency noted that the Medway Estuary supports recovering populations of sea trout, smelt and twaite shad. The Estuary supports a commercial eel fishery and recreational fisheries for eel, flounder, bass cod and whiting. The estuary is an important nursery ground for flatfish and bass. Detailed modelling of thermal effects will be necessary to assess the impacts on fish migration routes and shallow inshore areas. Siting of intakes and outfalls should take this information into account and

<sup>44</sup> For regulator advice see <http://www.energyngpsconsultation.decc.gov.uk>

deeper water locations are likely to be preferred to minimise impacts on fish migration. Cumulative effects from new and existing power stations would have to be considered.

## Assessment

277. It is noted that an application is pending for consent for a proposed 1000MW CCGT generating station at Damhead Creek (adjacent to the Kingsnorth site) which would be the second CCGT station at Damhead Creek. The cumulative effects of development would have to be considered under the Environment Agency's stringent regulatory regime. However, at this point this site passes this criterion as based on the findings of the Alternatives Study and the Appraisal of Sustainability, and the advice of the Environment Agency, it is reasonable to conclude that there is access to suitable sources of cooling at this site.

## Appraisal of Sustainability and Habitats Regulations Assessment for Kingsnorth

278. The Planning Act (2008)<sup>45</sup> requires an Appraisal of Sustainability to be carried out for all National Policy Statements. The purpose of an Appraisal of Sustainability is to consider the social, economic and environmental impacts of the policy and to suggest possibilities for improving the sustainability of the NPS. The purpose of the Appraisal of Sustainability for Kingsnorth is to examine the potential positive and negative effects of the site, identify the significance of these effects and suggest any mitigation possibilities.
279. The draft Nuclear NPS has also been assessed in accordance with the European Habitats Directive. That assessment (the "Habitats Regulations Assessment") tests whether a plan or project could have an adverse effect on the integrity of European Sites of nature conservation importance. A Habitats Regulations Assessment was carried out on the Kingsnorth site.
280. The key findings of the Kingsnorth Appraisal of Sustainability and Habitats Regulations Assessment highlight areas of significance on, amongst other things:
- i) potential negative effects on national and internally protected nature conservation sites, namely the Medway Estuary and Marshes SPA/Ramsar; Thames Estuary and Marshes SPA/Ramsar; the Swale SPA/Ramsar; Benfleet and Southend Marshes SPA/Ramsar; Foulness (Mid-Essex Coast) SPA/Ramsar; and the Essex Estuaries SAC. These could be affected by the thermal impact of cooling water discharges;
  - ii) the majority of the site is at high risk from coastal flooding and there are defences already in place but these may require upgrading should a new power station be built. This could also have potential effects on erosion and visual appearance of the coastline;

<sup>45</sup> Planning Act (2008) [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

- iii) although any new power station would be set in the context of the existing power stations in the immediate vicinity and within the general area, the surrounding landscape is generally undeveloped and there is limited potential for mitigation of adverse impacts on the local landscape. There are no significant adverse effects anticipated on nationally designated landscapes;
- iv) potential for positive cumulative effects associated with long term employment and enhanced prosperity for communities at the sub-regional level, associated with existing and proposed new/replacement power station developments within the area.

281. The key findings of the Appraisal of Sustainability and the Habitats Regulation Assessment on significant effects i) to iii) are taken into account in the summaries of the SSA criteria above. The Appraisal of Sustainability for Kingsnorth should be referred to for more detail on iv).

## Other issues arising in the assessment

### Carbon capture and storage (CCS)

282. The site of the existing Kingsnorth power station is one of the entrants to a Government competition to demonstrate Carbon Capture and Storage (CCS). Successful demonstration of CCS would be a major contribution by the UK to global efforts to tackle climate change. One objective for the competition is to demonstrate CCS from 2014. If CCS were installed at the site then it is likely to be designated as a hazardous installation, and it is unlikely that a nuclear power station could be built adjacent to it.
283. The outcome of the CCS competition is not yet known. However, listing Kingsnorth as a potential site for a nuclear power station in the Nuclear National Policy Statement would increase the risk of potentially conflicting demands on one of the entrant sites (whilst this is not a reason why the site is not deployable by the end of 2025, it is a detraction to this site).
284. The site is also close to a further Section 36 application at Damhead Creek for a Combined Cycle Gas Turbine (CCGT) plant<sup>46</sup>. If that application were to be granted consent then it is likely that an area to the east of the generating station would have to be reserved for the possible future installation of a CCS plant. In that case, the availability of land would severely decrease, leaving as little as around 100 hectares remaining which would constrain the building of a new nuclear power station. As noted against criterion D3, if CCS should be installed at the site then it is likely to be designated as a hazardous installation, and it is unlikely that a nuclear power station could be built adjacent to it. An assessment would have to be carried out at the time.

<sup>46</sup> In addition, the nominated Kingsnorth site also includes land which is subject to an application by E.On under Section 36 of the Electricity Act. This application is currently on hold. Should this application be progressed and approved, there may still be sufficient land at the site to accommodate both a new coal power station and a new nuclear power station.

285. It is also noted that the logistics of constructing new plants or stations simultaneously, whilst possibly decommissioning the existing plant, would put a significant strain on local population and services (as well as on the site area itself). This suggests that there would be practical difficulties with construction which would have to be carefully considered before a new nuclear power station were consented. Given the sensitive habitats around the site (see criterion D7) there is also a possibility that the cumulative effects of existing and potential coal and CCGT stations at the site combined with further cooling water intake for a nuclear station would render the potential impacts unacceptable.

### Thames Gateway Delivery Plan

286. The deployment of a new nuclear power station at Kingsnorth could also have potential impact on the Thames Gateway Delivery Plan. This arises through the Government policy on population control around nuclear installations that the Health and Safety Executive, through the Nuclear Installations Inspectorate, administers on behalf of the Government.
287. Under this policy, once a new power station is given planning consent and a nuclear site licence, arrangements will be put in place with Local Planning Authorities and nuclear site licensees. These arrangements are likely to place constraints on development around nuclear sites which are designed to ensure that residential, industrial and commercial developments are so controlled that the general characteristics of the area around the site are preserved, and remain similar to those characteristics which existed at the time of licensing throughout the entire life cycle of the nuclear site and do not undermine the basis on which the site is licensed.
288. The Alternative Sites Study assessment has indicated that there are areas around Kingsnorth where the population density is approaching the upper limit against the semi-urban limit. Given that elements of a nuclear power station which have the potential to cause radiological release should not, as a rule, be housed in an area which exceeds this limit, this is likely to be a population control limit throughout the station lifetime. If a nuclear power station were to be constructed at Kingsnorth, there may be certain areas around the site (where the exclusionary limit is already approached), where growth of population will be severely constrained.
289. Under Government plans for the Thames Gateway Development there are around 12 strategic housing sites identified along the Medway estuary from Hoo St Werbergh to Rochester (ranging from approximately 2 to 10 miles from Kingsnorth) capable of accommodating nearly 14,000 new homes. The closest sites to Kingsnorth are Hoo St Werbergh (550 homes) and Chattenden Barracks (5,000 homes). Across the estuary there are plans for 2,000 new homes at Queenborough and Rushenden, near Sheerness (approx 10 miles away). Whilst a nuclear power station at the site would not necessarily preclude these developments, there is a risk that some could be curtailed. The Thames Gateway is a key part of the 2003 Sustainable Communities Plan and one of the key Government ambitions for the project is to see a sustainable increase in the number and quality of dwellings, primarily on brownfield locations, to support growth in the Gateway and relieve housing pressures, both in the Gateway and outside.

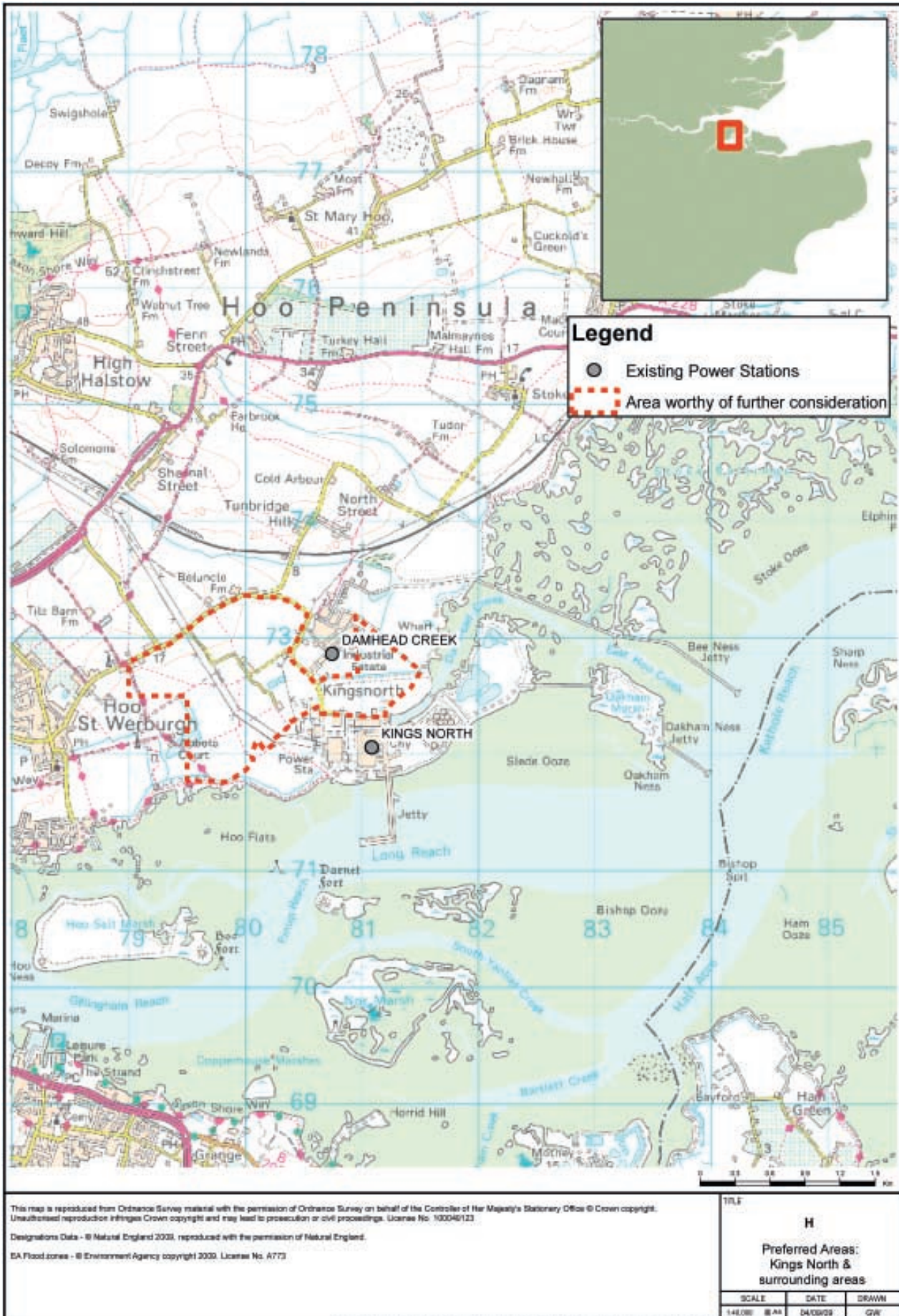
## Health

290. The Appraisal of Sustainability for Kingsnorth has also considered strategic effects on human health and well being. The Appraisal of Sustainability looks at a range of different factors and should be referred to for a more in depth assessment.
291. One factor of particular interest to the public is incidence of cancer. COMARE is a scientific advisory committee providing independent authoritative expert advice on all aspects of health risk to humans exposed to natural and man-made radiation. It has, for over twenty years, investigated the incidence of childhood cancer and other cancers around nuclear sites. COMARE has published eleven reports on topics related to exposure to radiation. Its view is that there is no evidence for unusual aggregations of childhood cancers in populations living near nuclear power stations in the UK.
292. COMARE's tenth report<sup>47</sup> considered the incidence of childhood cancer around nuclear installations. These were divided into nuclear power generating stations and other nuclear installations. The results for the power generating stations supported the conclusion that 'there is no evidence from this very large study that living within 25 km of a nuclear generating site in Britain is associated with an increased risk of childhood cancer'.
293. The tenth report did however state that for other nuclear sites the situation was more complicated. The study did demonstrate corresponding results to previously published studies that showed excesses of some types of childhood cancer. These results (excess childhood cancers in Seascale near Sellafield; in Thurso near Dounreay and around Aldermaston, Burghfield and Harwell) have been extensively discussed in previous COMARE reports.
294. In its eleventh report<sup>48</sup> COMARE examined the general pattern of childhood leukaemia within Great Britain and concluded that 'the search for increased risk levels near to nuclear power generation sites shows no pattern of excess cases of childhood cancer close to the sites of these types of nuclear installations'. Among its recommendations, the report said that the incidence of childhood leukaemia and other cancers in the vicinity of Sellafield and Dounreay was raised and should be kept under surveillance and periodic review. COMARE is undertaking this work with the aim of producing an update report.
295. In addition Part 4 of the draft Nuclear NPS (Human health and wellbeing) sets out further information on health which should be referred to for further guidance.

<sup>47</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2005). Tenth Report. *The incidence of childhood cancer around nuclear installations in Great Britain*, June 2005.

<sup>48</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2006). Eleventh Report. *The distribution of childhood leukaemia and other childhood cancer in Great Britain 1969-1993*, July 2006.

## Kingsnorth location map



## Owston Ferry

### Overview

296. The Alternative Sites Study identifies the site at Owston Ferry as “worthy of further consideration” by the Government. There is no credible nuclear power operator (CNPO) letter of support for the site at Owston Ferry, and the Alternative Sites Study has noted that, in their discussions with energy companies about river-based sites, some ruled out their development completely and even the most positive regarded them as a low priority.

### Summary

297. **Having given Owston Ferry further consideration the Government has come to the view that Owston Ferry is not credible for deployment by the end of 2025. The preliminary conclusion reached by Government is therefore that Owston Ferry is not potentially suitable and should not be included in the Nuclear NPS. This takes into account in particular that lack of precedent in the UK for a river based site would make Owston Ferry more complex to construct and licence; that transport of components reduces the likelihood that this site could be deployed by 2025; and also the potential risk of periodic shutdowns due to drought which could be exacerbated by the potential effects of climate change and the challenges this might pose. In addition, it is noted that no work has commenced to progress this site.**
298. Even though the site is not credible for deployment by the end of 2025, the Government has considered this site against the SSA criteria to ensure that it has been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria.
299. The assessment against the SSA criteria has shown that the site passes the SSA criteria, although there would be particular concerns around cooling and the impacts that this might have on a river environment, and whether the effects of climate change might make these issues worse. Notwithstanding the assessment against the criteria, the issues with deployability are such that the site is not potentially suitable.
300. Whilst the site may meet the SSA criteria, because it is not credible for deployment by the end of 2025 it has not been included in the draft Nuclear NPS.

### Description of the site

301. Owston Ferry is located within the Isle of Axholme, an ‘inland island’ formed by the River Trent to the east, the old River Don to the north and north west, and the rivers Tome and Idle to the west, with Bykerdyke (or Vicar Dyke) completing the island. The site lies within the Yorkshire and the Humber region of England, and is in close proximity to the regional border with the East Midlands region.

302. The site at Owston Ferry has two identified locations, Area A (north of the Owston Ferry village) and B (South of the Owston Ferry village). Area A generally comprises agricultural arable farmland. Area B generally comprises agricultural arable farmland. Warping Drain is located to the south of the site, south of Station Road, connecting to the River Trent in the east (a map is at the end of this summary). There is no existing nuclear power station at Owston Ferry.

### Deployability by the end of 2025: Generic issues with river based sites

303. The Alternative Sites Study has highlighted that the lack of preparatory work done to date means that Owston Ferry would take significantly longer to develop than most of the nominated sites. This and other complicating factors set out below suggests that development by the end of 2025 is not credible.
304. Owston Ferry is a river based site. The Alternative Sites Study has concluded that river based sites for nuclear power stations are technically feasible and noted that they do operate in other countries. However, they highlight that there are a number of significant drawbacks associated with them which may make them unattractive from the perspective of development.
305. There are no river-based nuclear power station sites currently operating in the UK, so the development of safety cases and other consents documentation could be more problematic and time-consuming than for coastal or estuarine sites, for which precedents already exist in the UK.
306. In addition, exacerbated by the potential effects of climate change, there is a risk over the lifetime of a station there would be periods when river flow rates decrease such that the station would need to shut down because of a lack of sufficient water to operate. This means that river based sites may prove less reliable in achieving security of energy supply which is a key aim of the Nuclear National Policy Statement, and it is more difficult for a developer to plan adaptability over their lifetime. The Appraisal of Sustainability for Owston Ferry finds that during the long operational life of the site climate change is likely to have an increasing influence. Impacts due to climate change are likely in this respect to be more pronounced at Owston Ferry than at sites located on the coast.
307. If any proposal for a UK river based site came forward the Nuclear Installations Inspectorate would need to consider whether the cooling provided either directly by the river, or indirectly via forced or natural draught cooling towers was adequately reliable to address the demands of safety under all operating and shutdown conditions. Looking at river based sites overseas, except for the very largest rivers, indirect cooling (i.e. cooling towers) is used worldwide, with natural and/or forced draught systems providing the necessary cooling<sup>49</sup>.

<sup>49</sup> It should be noted that for all but one of the sites that were nominated for SSA, the expectation of the nominators was that the cooling for any reactor on the site would be direct, rather than employing cooling towers. The exception is Oldbury, where the nominator believes that cooling towers are likely to be needed.



308. Natural and forced draft cooling systems are likely to increase the cost of a station, and cooling towers can reduce the efficiency. Depending on the different types of cooling tower used, it is estimated that indirect cooling can be within 0.5 and 2% less efficient than direct cooling, which reduces the net output of a station.
309. The combination of reduced efficiency from cooling towers plus potential periodic closures due to river flow amounts to significant potential economic loss. These issues do not arise at coastal and estuarine sites such as those nominated (apart from Oldbury) predominantly because of the availability of very substantially greater volumes of water and the use of the sea as a much more effective heat sink.

### Deployability by the end of 2025: Issues specific to Owston Ferry

310. In addition, there are specific issues at Owston Ferry which could affect its potential suitability. Firstly, the construction of nuclear power stations requires very large components (such as pressure vessels) for which transport by road or rail is often impossible. Such components are usually transported by sea. Transport on the River Trent may be problematic, and the fact that the site is set back by some distance from the river may also make transfer of components difficult. Secondly, the roads in the area are particularly narrow and the development of an acceptable transportation plan (to include personnel and materials) is likely to be challenging without significant investment in infrastructure, and could engender delay to consenting any proposal.
311. The difficulty of transport of components reduces the likelihood that this site could be constructed and deployed by the end of 2025. The risk of periodic reductions in power or shutdown due to drought and lack of precedent in addition make Owston Ferry more complex to construct and licence, and the increasing risk of reduced availability due to drought-enforced shutdown which may be exacerbated by climate change make this site less able to meet one of the Government's key objectives of security of supply.
312. It is also noted that the loss of efficiency and increase of cost and complexity reduce attractiveness of the site to a potential developer.
313. The Government has considered this site against the SSA criteria to ensure that it has been assessed in line with the nominated sites, albeit without the information provided by a nomination or the comments from the public which were provided on nominated sites. Preliminary conclusions have been reached against the criteria. **Whilst the site may meet the SSA criteria, because it is not credible for deployment by the end of 2025 it has not been included in the draft Nuclear NPS. The Government would welcome comments on this or any aspect of the assessment.**

## Assessment of suitability against the SSA criteria

### C1: Demographic risk

#### Analysis

314. The Alternative Sites Study has assessed that this site passes the demographic semi-urban criterion.
315. The Health and Safety Laboratory, which supported the Health and Safety Executive in the SSA process, has peer reviewed the Alternative Sites Study, including the work on demographics. The Health and Safety Executive has therefore advised the Government that it sees no reason to challenge the Alternative Sites Study conclusion that this site passes the demographic criterion.

#### Assessment

316. This site passes this criterion.

### C2 and D5: Proximity to military activities

#### Analysis

317. The Alternative Sites Study has identified that the site does not occupy any Ministry of Defence statutory safeguarding zone and is not in proximity to any Tactical Training Areas or Danger Areas. However, should the site have been in the Nuclear NPS and plans brought forward, the Alternative Site Study finds that further investigation would be needed at a local level, in consultation with the Ministry of Defence.
318. The Restricted Area established around a new nuclear power station at this locality could impose a significant constraint on the movement of military air traffic because of the limited amount of unregulated airspace available over this site.
319. The Ministry of Defence agrees with the initial assessment of the proximity of the site to defence activities.

#### Assessment

320. Based on the advice of the Nuclear Installations Inspectorate and the Ministry of Defence it is reasonable to conclude that:
- the site does not occupy any Ministry of Defence areas which would give rise to the site being excluded in whole or in part from the assessment;
  - the site is not in proximity to or may affect any Ministry of Defence assets or activities to an extent that would suggest that it should be ruled out;
  - the development of a new nuclear power station at the site will not affect the capabilities of the armed forces to carry out essential training and operations throughout its lifetime;

- any likely power station development within the site boundary can be protected against the risk of external hazards created by neighbouring military activities, throughout its lifetime.

321. This site passes these criteria given the potential for mitigation. However, this site does cause some concern and it is likely that should the site have been in the Nuclear NPS it is likely that the IPC would be guided to consult with the Ministry of Defence and consider the impact on military air traffic.

## D1: Flooding, tsunami and storm surge

### Analysis

322. The Alternative Sites Study has noted that this site is located in Flood Zones 1 and 2 (land assessed as having low and moderate flood risk) and that flood defences offer protection from flooding from the Trent. Development of a new nuclear power station at this site may be possible if application of the Sequential Test<sup>50</sup> could demonstrate that there are no other reasonable available sites appropriate for development at a lower flood risk.

323. The Study has flagged that there are issues over whether safe access could be secured during an extreme flood event and whether a new nuclear power station could be built in such a way as to not increase flood risk to others. However, on balance, it is reasonable to assume that good engineering practices could overcome these issues and that flood risk could be managed in a way that would make a new nuclear power station safe in this location.

324. The Environment Agency has advised that based on current understanding of the flood risk in this area it is reasonable to conclude, at the strategic level, that the site can potentially be protected from flooding.

325. The Environment Agency has noted that due to the topography of the area, the flood cells behind the defences are extremely large, stretching for a number of miles and any defence raising proposals would have to take this into account. Analysis of the impacts and effects on the affected communities would be required. Flood mitigation measures might unavoidably increase flood risk elsewhere. If so, it has noted that this would not be consistent with current Government policy.

326. The Environment Agency has advised that access to the site would be via minor roads which cross extensive flood risk areas. The routes will need to be designed to ensure they do not increase the flooding risk impact elsewhere and the Environment Agency has advised that this might be difficult to achieve.

<sup>50</sup> See *Planning Policy Guidance 25: Development and Flood Risk* (PPG25), July 2001 <http://www.communities.gov.uk/publications/planningandbuilding/pps25floodrisk> for guidance

327. The Appraisal of Sustainability<sup>51</sup> has identified potential adverse effects relating to flood risk from both existing and predicted future flood risk. In order to defend the site from current and future flood risk, the mitigation mechanisms required to manage the various mechanisms of flooding are likely to significantly increase flood risk to the local area.

### Assessment

328. This site passes this criterion. This is because, based on the findings of the Alternative Sites Study and the advice of the Environment Agency, it is reasonable to conclude that a nuclear power station within the nominated site could potentially be protected against flood risks throughout its lifetime, including the potential effects of climate change, storm surge and tsunami. This takes into account the potential identified by the Environment Agency to protect the site and to mitigate risks although, as with all sites, the potential effects of any mitigation on the surrounding area will have to be carefully considered as part of a flood risk assessment.
329. However, the assessment does give rise to concerns, in particular that there is a risk that mitigations could unavoidably cause flood risk elsewhere. Should this site have been in the Nuclear NPS and proposals have been brought forward, the impact of flood defences on other areas would have required careful consideration by the IPC.

## D2: Coastal processes

### Analysis

330. As the site is inland, the Alternative Sites Study has considered whether there are any other significant causes of landscape change other than coastal erosion. The primary risk of landscape change is from migration of the river. Assuming current Environment Agency flood defences along each bank of the river are maintained then it is not expected that there will be any natural migration of the river from its current course. Providing that the current strategy is to maintain the standard of protection offered by defences, the Alternative Sites Study note that no significant landscape change is expected over the next 100 years.
331. The Environment Agency has noted that based on current understanding of erosion in this area there is no technical reason that would prevent the site being protected or mitigated from the effects of erosion.

### Assessment

332. The site passes this criterion. Based on the advice above, it is reasonable to conclude at a strategic level that a nuclear power station within the site could be protected against coastal erosion and other landscape change scenarios, including the potential effects of climate change, for the lifetime of the station, taking into account countermeasures and mitigations.

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<sup>51</sup> *Appraisal of Sustainability: Site report for Owston Ferry*, November 2009, <http://www.energy-nps-consultation.decc.gov.uk>

### D3: Proximity to Hazardous facilities

#### Analysis

333. The Alternative Sites Study has identified that a TOTAL pipeline running from Buncefield to the Lindsey Oil Refinery in Humberside passes through Lincolnshire. However, without detailed local information it is assumed that its route is almost due North-South, in which case it must pass around 20km to the East of Owston Ferry. A GPSS pipeline running from Misterton to Lincoln passes around 15 km to the East of the site and another GPSS pipeline running from Misterton to Tattershall runs approximately 5 -10km East of Owston Ferry. Both are multiproduct pipelines operating at a pressure of 725 psi. However, the Alternative Sites Study does not anticipate that these render the site unsuitable or that there are any hazardous facilities in the area which would prohibit the site from being considered further.
334. The Health and Safety Executive confirms that, based on its records, this site is not within the vicinity of any COMAH installations. If the site was considered for licensing and planning consent, the applicant would need to obtain information from the Local Planning Authority and relevant pipeline operators to confirm any pipeline routes and the properties of fluids being conveyed as a basis for further risk assessment.

#### Assessment

335. This site passes this criterion. Given that the site is not in proximity to hazardous facilities, it is reasonable to conclude that a new nuclear power station at the nominated site could be protected against risk arising from proximity to hazardous facilities throughout its lifetime.

### D4: Proximity to civil aviation

#### Analysis

336. Nuclear power stations in the UK receive some protection from aviation activity through the establishment of a Restricted Area at each individual station. This is established by regulations<sup>52</sup>. Typically, such Restricted Areas have a radius of 2 nautical miles and extend vertically to 2000 feet above the surface. Any aviation activity within a Restricted Area is limited to that specifically permitted by the regulations.
337. The Alternative Sites Study has noted that the Owston Ferry lies on the northern edge of the Lincolnshire Area of Intense Air Activity. The site is sufficiently far from any large civil airport or military airfield so as not to impinge on any of these activities. However, the Study finds that although siting a new nuclear power station on this stretch of the River Trent causes less impact in terms of air risk than the region further south between Gainsborough and Gunthorpe, anywhere along this portion of the River Trent is likely to be problematic to the light aviation (and military) aviation community. This is because the Restricted Area associated with a new nuclear power station at Owston Ferry would therefore be contained within airspace which is already congested

<sup>52</sup> In accordance with Statutory Instrument 2007 No 1929 (The Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007)

and increasingly restricted. The Alternative Sites Study notes that this is a significant complication that does not need to be addressed at other potential sites.

338. It has also noted that the site is located to the North East of Doncaster Sheffield (Robin Hood) Airport and some 7 nm to the Southeast of Sandtoft Airport. Traffic out of Doncaster Sheffield should not be impeded by the creation of an exclusion zone which is outside its Control Zone. None of the instrument approaches or the missed approach paths pass close to the site. However, should the site be in the draft Nuclear NPS and plans ever come forward, the Alternative Sites Study finds it would be prudent to include Doncaster Sheffield Airport on the list of consultees for a planning application. The Alternative Sites Study has also found that normal traffic into and out of Sandtoft should not be affected by the creation of the Restricted Area but the Restricted Area might have some impact on flying training activities. Similarly, should plans ever come forward, the Alternative Sites Study recommends that the airport should be consulted on the planning application.
339. The Civil Aviation Authority is in general agreement with the assessment in the Alternative Sites Study. It has noted that more definitive assessment of the impact upon operations associated with local aerodromes can only be provided through consultation with the relevant aerodrome licensees/operators.

### Assessment

340. Given the scope for some mitigation and further discussion at the project level, this site passes this criterion, although there is some cause for concern about the impact on civil aviation. Should the site have been in the Nuclear NPS and applications for consent come forward, this issue would require further consideration and consultation with affected aerodromes.

### For D5 see C2

## D6: Internationally designated sites of ecological importance

### Analysis

341. The Alternative Sites Study has noted that Owston Ferry is adjacent to the River Trent. This flows into the Humber Estuary SAC/SPA/Ramsar site. The site is some twelve kilometres upstream of this international designation. The Alternative Sites Study has noted that cooling water would presumably be abstracted from and discharged to the River Trent and detailed studies would be required to analyse and model the any impact on designations downstream, particularly heat impacts and any water loss resulting from the abstraction and cooling process. However, at this distance, the Alternative Sites Study has found that it seems reasonable to conclude that, from the perspective of international designations, the site is worthy of further consideration.
342. The Appraisal of Sustainability site report has identified that there is potential for adverse effects on sites and species considered to be of European nature conservation importance (the Humber estuary SAC/ SPA/ Ramsar/ EMS (European Marine Site)) means that significant strategic effects on the biodiversity cannot be ruled out at this

stage of the appraisal. The Appraisal of Sustainability finds that these strategic effects are likely to be similar regardless of which of the identified areas development took place in.

343. The Appraisal of Sustainability has also noted that climate change is likely to result in less water available in the area and much lower flows in the River Trent over the summer months. The Appraisal of Sustainability notes that the reduction in availability of water will compromise the capacity of the River Trent to accommodate an abstraction. Water levels in groundwater bodies may also be reduced due to climate change which will compromise their capacity to provide an alternative source of water and cause knock-on effects to groundwater-fed watercourses. A reduction in water levels in the River Trent due to climate change coupled with existing industrial abstractions and planned abstractions at the site could result in detrimental impacts on water quality, further hindering the ability of the catchment to meet Water Framework Directive good ecological status targets. Further water quality impacts may result from the discharge of cooling waters into a River Trent with reduced water levels; with less dilution potentially leading to a greater thermal impact.
344. Against criterion D10, the Environment Agency has advised that although the river and sea lamprey populations which form part of the Humber SAC have not been found in this reach of the Trent, this does not preclude their presence. They are both found in the adjacent tidal freshwater Ouse. The Environment Agency has advised that any formal application to develop a new power station at these locations would require detailed new local fish surveys to a design defined by the Environment Agency so that the potential impact on fish life can be fully assessed. Cumulative effects would also have to be considered.
345. The Appraisal of Sustainability findings on sites of European nature conservation importance are drawn from the Habitats Regulations Assessment for Owston Ferry<sup>53</sup>. Taking into account the strategic nature of the plan and the information available, the Habitats Regulations Assessment on sites of European nature conservation importance<sup>54</sup> cannot rule out potential adverse effects on Humber Estuary cSAC/ Ramsar, Humber Flats, Marshes and Coast SPA, Thorne Moor SAC, Thorne and Hatfield Moors SPA through potential impacts on water resources and quality, habitat (and species) loss and fragmentation, disturbance and air quality.

<sup>53</sup> *Habitats Regulations Assessment: Site report for Owston Ferry*, November 2009, <http://www.energyngpsconsultation.decc.gov.uk>

<sup>54</sup> The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance by establishing a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European sites, and comprise of Special Protection Areas (SPAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC), and Sites of Community Importance (SCIs) designated and defined under the EC Habitats Directive. It is Government policy to treat Ramsar sites, designated by the Ramsar Convention on Wetlands (1971) and potential SPAs (pSPAs) as if they are fully designated European sites for the purpose of considering any development proposals that may affect them.

346. To address the uncertainties inherent in a strategic level Habitats Regulations Assessment, the assessment has proposed a suite of avoidance and mitigation measures to be considered as part of any project level Habitats Regulations Assessment should proposals be forthcoming for this site. At this stage, it is assessed that the effective implementation of the proposed suite of avoidance and mitigation measures may help to address the identified adverse effects on the integrity of the European sites, but that more detailed site level Habitats Regulations Assessment is required to reach conclusions that are in accordance with the requirements of the Habitats Directive.

### Assessment

347. The Habitats Regulations Assessment shows that effects on the Natura 2000 network could not be ruled out, though in line with the sites listed in the draft Nuclear NPS it may be possible to mitigate the effects. At a strategic level it is not possible to determine whether these effects would be better or worse than the potential effects for the ten sites that are listed in the draft Nuclear NPS.
348. Given the scope for avoidance and mitigation identified in the Habitats Regulations Assessment for sites of international importance, and the need for more detailed studies should an application for development consent come forward, this site has the potential to pass this criterion.
349. However because the site is not credible for deployment by the end of 2025, it cannot meet the objectives of the Nuclear NPS. Therefore, although there is scope for avoidance and mitigation identified in the Habitats Regulations Assessment for biodiversity effects identified at sites of international importance, the site has not passed criterion D6. This is because, since the site could not meet the objectives of the NPS, it is difficult at this stage and in the context of the SSA, to justify the potential damage to sites of international importance identified in the Habitats Regulations Assessment.

## D7: Nationally designated sites of ecological importance

### Analysis

350. The Alternative Sites Study has identified that there are no nationally designated sites within the site itself. To the West there are two small SSSIs: Rush Furlong and Hewson's Field.
351. The Appraisal of Sustainability site report has identified that there is potential for adverse effects on sites and species considered to be of UK wide nature conservation importance (a number of SSSIs including Hewson's field and Rush Furlong) means that significant strategic effects on the biodiversity cannot be ruled out at this stage of the appraisal. These strategic effects are likely to be similar regardless of which of the identified sites development took place in. However, it has noted that the potential exists for the mitigation or compensation of biodiversity effects, including the creation of replacement habitat.



## Assessment

352. Government notes that the Appraisal of Sustainability has identified potential impacts on nationally designated sites of ecological importance. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance it is reasonable to conclude that it may be possible to avoid or mitigate impacts.
353. Given the scope for mitigation of biodiversity effects identified in the Appraisal of Sustainability for sites of national importance, and the different framework of regulation and policy that governs these sites, this site passes criterion D7.

## D8: Cultural heritage, landscape value and civic amenity

### Analysis

354. The Alternative Sites Study has noted that there is a significant Scheduled Monument immediately to the West of the boundary of the northern of the two sites. Adjacent to Low Melwood Farm and Melwood Park is Axholme Carthusian Priory and post-Dissolution garden earthworks.
355. The Alternative Sites Study has also found that there is also a significant Scheduled Monument immediately to the East of the southern of the two sites, on the South West side of Owston Ferry (marked 'B' on the map at the end of this summary). This is Kinaird Motte and Bailey Castle. The monument includes part of the buried and earthwork remains of a Norman earthwork castle.
356. The Alternative Sites Study has noted that depending on the distance of the proposed development from the Scheduled Monument, stringent conditions may be attached to any Scheduled Monument Consent and/or planning permission in order to ensure protection and, where appropriate, recording, either to record possible damage, or to make a historical record of the Scheduled Monument.
357. The Appraisal of Sustainability has identified potentially significant adverse effects on site landscape features and the setting of local Isle of Axholme Special Historic Landscape area which is approximately 1km to the east of the site<sup>55</sup>. These landscape and visual impacts are highly likely to be long lasting and both direct and indirect. These impacts will be highly likely given the existing undeveloped nature of the alternative site, the scale of the new development and the potential need for associated off site grid connection infrastructure. Direct effects on local landscape character in and alongside the alternative site will be significant in the short term with some limited potential for mitigation in the longer term.

<sup>55</sup> For more detail see the Appendices to *Appraisal of Sustainability: Site report for Owston Ferry*, November 2009, <http://www.energyngpsconsultation.decc.gov.uk>

358. The Appraisal of Sustainability has also found that depending on the location of the site boundaries there is potential for adverse physical affects upon two Scheduled Monuments and a Listed Building. There may also be setting effects upon the Scheduled Monuments, Listed Buildings and a Conservation Area. There is also potential for adverse physical effects upon significant buried archaeology and historic landscape and disturbance in this site may lead to permanent and irreversible effects in buried archaeological resource and historic landscape at a local level. The Appraisal of Sustainability notes that further detailed assessment at project level, possibly through the provision of an integrated landscape, heritage and architectural plan, will be required.

### Assessment

359. The Government notes that it is very probable that any proposal for this site would require cooling towers which could exacerbate any potential effects depending on design and mitigation. After careful consideration, as there is scope for mitigation and the need for further investigation, this site passes this criteria.

## D9: Size of site to accommodate operation

### Analysis

360. The Alternative Sites Study notes that there is sufficient land in both parts of the site to accommodate a least one new nuclear power station. However footpaths and minor roads may need to be re-sited. In the southern area, it finds that transmission lines may also need to be re-sited.
361. The Office for Civil Nuclear Security has confirmed the Alternative Sites Study assessment at this stage in terms of the Northern Area. It is considered that there is sufficient space to accommodate one new nuclear power station, but the Office for Civil Nuclear Security expresses doubt that a second could be built in the site.
362. The Office for Civil Nuclear Security has also agreed with the Alternative Sites Study assessment of the southern site at this stage. It has noted that there is sufficient space to accommodate one new nuclear power station and probably a second, provided the licensee has exclusive control of the tracks, or they are realigned so as not to encroach into the area considered worthy of further consideration. The location of the pylons supporting the transmission lines may also require to be re-sited, if they are close to the nuclear licensed site perimeter and could potentially compromise security or siting of security fences will be constrained by the present location of the pylons.

### Assessment

363. Given the findings of the Alternative Sites Study and the advice of the Office for Civil Nuclear Security, this site passes this criterion. It is reasonable to conclude that there is enough land within the boundary nominated to safely and securely operate at least one new nuclear power station, including the safe and secure storage of all the spent fuel and intermediate level waste produced through operation, and from decommissioning,

on the site of the station until it can be sent for disposal in a geological disposal facility. An applicant would need to consider mitigations such as siting elements of a station away from public footpaths, or realignments, to meet the requirements of a nuclear site license. Given the size of the site it is reasonable to conclude that there is potential to mitigate these concerns.

## D10: Access to suitable source of cooling

### Analysis

364. The Alternative Sites Study has identified that there is sufficient cooling water for at least one new nuclear power station within the site. However, as set out under 'Deployability by the end of 2025', above, a river location may require additional potential cooling technology.
365. The River Trent at Owston is relatively narrow, meaning the cooling water intake and outfalls would be relatively obvious in within easy reach of the banks. This would be more of an issue for river based traffic and might raise security issues not present at coastal and major estuarine sites although there is no evidence that these would be insurmountable.
366. The Appraisal of Sustainability has found that there will also be direct effects on local water quality and indirect effects on nationally and internationally designated habitats from the thermal impact of cooling water discharges. It has noted that water would be abstracted from and discharged to the River Trent. Depending on the cooling process adopted, the Appraisal of Sustainability has found that there is the potential for some consumptive loss of the abstracted water. It has noted that when the source of the water is coastal this may not be a significant issue, however in this case the source of water is a river which has its own Catchment Abstraction Management Strategy (CAMS) and specified Hands-Off Flow (HOF) limits. If there is a consumptive loss during the process this may add to water demand pressures within the CAMS area.
367. The Environment Agency has advised that any formal application to develop a new power station at these locations would require detailed new local fish surveys to a design defined by the Environment Agency so that the potential impact on fish life can be fully assessed. Cumulative effects would also have to be considered.
368. The Appraisal of Sustainability has found that if direct cooling, using water from the River Trent, is the preferred option for the site, then the impact of abstraction and return of cooling waters should be minimised, to avoid, reduce or mitigate impacts on designated ecological sites from dispersion of thermal plume. The tidal nature of the River Trent at this location will mean that timing of abstraction and discharge should be carefully managed. It has also noted that Keadby gas power station, operating approximately 12km downstream of the site, may have its own cooling water abstraction and discharge requirements which may lead to cumulative impacts.

369. The Environment Agency has advised that there is potentially a suitable source of cooling at this site. The Environment Agency has noted that although the river and sea lamprey populations which form part of the Humber SAC have not been found in this reach of the Trent, this does not preclude their presence. They are both found in the adjacent tidal freshwater Ouse. The Environment Agency notes that fish survey data from this reach is scarce, given the challenging conditions present but fish impingement data is available for Keadby power station. Salmon are recovering to the Trent and this reach will contain a mix of freshwater and estuarine fish. Such a fish community would be predicted for this location based on Water Framework Directive surveys on other similar estuaries.

### Assessment

370. Whilst river based sites may be technically feasible, there are many drawbacks which have been noted under 'Deployability by the end of 2025', above. Some of these are related to cooling technology. For instance, river sites in other countries have had forced shut downs in times of drought, affecting both efficiency and profitability, and impeding the ability to deliver security of supply. In addition, it is likely that indirect cooling (i.e. cooling towers) would be used to supplement cooling from river based sites. As described, these bring consequent losses of efficiency, and would also need to be assessed for visual impact.
371. This site passes this criterion given that the flow rate of this stretch of the Trent appears able to support this size of station, and given the findings of the Environment Agency and the Alternatives Study that there is potentially access to a suitable source of cooling (which the Government notes is likely to involve indirect cooling).

### Appraisal of Sustainability and Habitats Regulations Assessment for Owston Ferry

372. The Planning Act (2008)<sup>56</sup> requires an Appraisal of Sustainability to be carried out for all National Policy Statements. The purpose of an Appraisal of Sustainability is to consider the social, economic and environmental impacts of the policy and to suggest possibilities for improving the sustainability of the NPS. The purpose of the Appraisal of Sustainability for Owston Ferry is to examine the potential positive and negative effects of the site, identify the significance of these effects and suggest any mitigation possibilities.
373. The draft Nuclear NPS has also been assessed in accordance with the European Habitats Directive. That assessment (the "Habitats Regulations Assessment") tests whether a plan or project could have an adverse effect on the integrity of European Sites of nature conservation importance. A Habitats Regulations Assessment was carried out on the Owston Ferry site.

<sup>56</sup> *Planning Act (2008)* [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080029\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1)

374. The key findings of the Owston Ferry Appraisal of Sustainability and Habitats Regulations Assessment highlight areas of significance on, amongst other things:
- i) potential negative effects on the habitats and species of neighbouring SSSIs and local nature reserves (LNRs);
  - ii) the Trent and Humber estuary could be affected by the thermal impact of cooling water discharges;
  - iii) an archaeological site is known within the south-western corner of the part of the site which is South of the Owston Ferry village and other sites are known in close vicinity;
  - iv) potential effects on the surface water and groundwater quantity and quality at the site that could result in indirect effects on nationally and internationally designated habitats;
  - v) potential significant impacts from the infrastructure requirements associated with the abstraction and return of cooling water and any marine offloading facilities; Impacts on coastal processes and sediment transport, as well as potential thermal impacts of cooling water discharges may also affect nationally and internationally designated habitats;
  - vi) possible secondary impacts on coastal processes, hydrodynamics and sediment transport from any necessary new coastal defences have also been identified, although mitigation may be possible;
  - vii) the Humber sub region is below high tide level and sea level where adverse effects relating to rising sea levels, especially during the later stages of operation and decommissioning;
  - viii) the site to the south of Owston village is identified by the Appraisal of Sustainability has bring resulting increase in flood risk likely to have a greater impact on the communities of Owston Ferry and East Lound.
375. The key findings are taken into account in the summaries of the SSA criteria above.

## Other issues raised during the assessment

### Health

376. The Appraisal of Sustainability for Owston Ferry has also considered strategic effects on human health and well being. The Appraisal of Sustainability looks at a range of different factors and should be referred to for a more in depth assessment.
377. One factor of particular interest to the public is incidence of cancer. COMARE is a scientific advisory committee providing independent authoritative expert advice on all aspects of health risk to humans exposed to natural and man-made radiation. It has, for over twenty years, investigated the incidence of childhood cancer and other cancers around nuclear sites. COMARE has published eleven reports on topics related to exposure to radiation. Its view is that there is no evidence for unusual aggregations of childhood cancers in populations living near nuclear power stations in the UK.

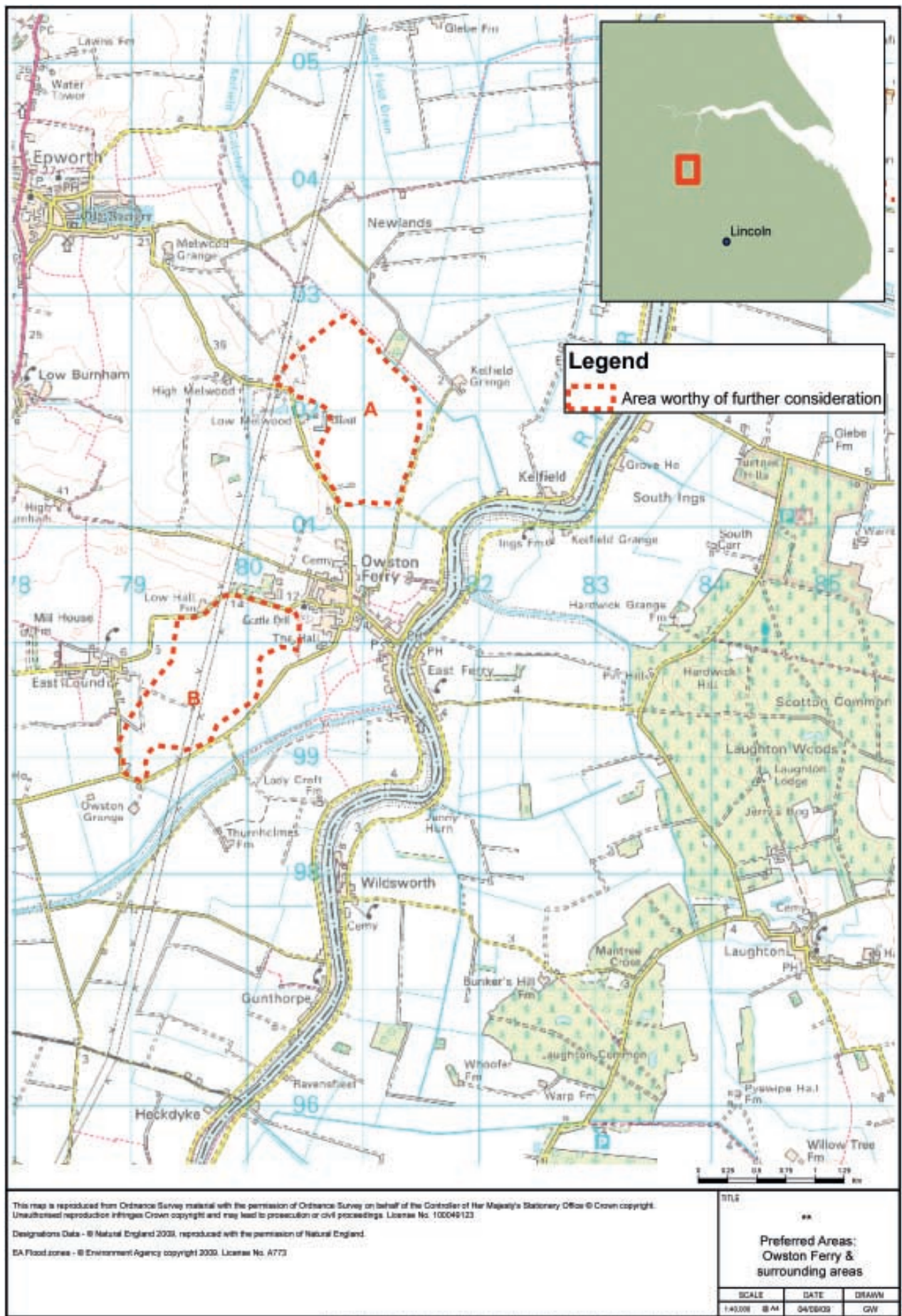
378. COMARE's tenth report<sup>57</sup> considered the incidence of childhood cancer around nuclear installations. These were divided into nuclear power generating stations and other nuclear installations. The results for the power generating stations supported the conclusion that 'there is no evidence from this very large study that living within 25km of a nuclear generating site in Britain is associated with an increased risk of childhood cancer'.
379. The tenth report did however state that for other nuclear sites the situation was more complicated. The study did demonstrate corresponding results to previously published studies that showed excesses of some types of childhood cancer. These results (excess childhood cancers in Seascale near Sellafield; in Thurso near Dounreay and around Aldermaston, Burghfield and Harwell) have been extensively discussed in previous COMARE reports.
380. In its eleventh report<sup>58</sup> COMARE examined the general pattern of childhood leukaemia within Great Britain and concluded that 'the search for increased risk levels near to nuclear power generation sites shows no pattern of excess cases of childhood cancer close to the sites of these types of nuclear installations'. Among its recommendations, the report said that the incidence of childhood leukaemia and other cancers in the vicinity of Sellafield and Dounreay was raised and should be kept under surveillance and periodic review. COMARE is undertaking this work with the aim of producing an update report.
381. In addition Part 4 of the draft Nuclear NPS (Human health and wellbeing) sets out further information on health which should be referred to for further guidance.

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<sup>57</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2005). Tenth Report. *The incidence of childhood cancer around nuclear installations in Great Britain*. Health Protection Agency, June 2005.

<sup>58</sup> Committee on Medical Aspects of Radiation in the Environment (COMARE) (2006). Eleventh Report. *The distribution of childhood leukaemia and other childhood cancer in Great Britain 1969-1993*. Health Protection Agency, July 2006.

### Owston Ferry location map



# Annex G: Management and disposal of waste from new nuclear power stations

## Introduction

1. Part 3 of the draft Nuclear NPS set out the Government’s preliminary conclusion that it is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK. This Annex sets out the key points that the Government has taken into account in reaching its preliminary conclusion.
2. This Annex considers the management and disposal of “higher activity” wastes in particular. For new nuclear power stations, in the absence of reprocessing, higher activity wastes will be spent fuel and intermediate level waste (ILW).
3. New nuclear power stations will also produce other waste streams: low level waste (LLW), liquid and gaseous discharges, and non-radioactive wastes. However, the Government considers that arrangements already exist for the effective management and disposal of wastes in these categories, as demonstrated by the experience of dealing with such wastes from existing nuclear power stations. These arrangements, and the transportation of radioactive wastes, are considered briefly below.
4. Further background information on the evidence that the Government has considered is set out in the paper *The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence*, which is being published alongside this consultation.
5. Views on the Government’s preliminary conclusion on waste are sought as part of the consultation on the draft Nuclear NPS. Question 19 of the consultation asks:

### Consultation question

- |     |                                                                                                                                                                                                    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19. | Do you agree with the Government’s preliminary conclusion that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK? |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Higher activity wastes

6. Geological disposal is the way higher activity waste will be managed in the long term. This will be preceded by safe and secure interim storage until a geological disposal facility can receive waste. The Government set out a framework to implement this policy in the *Managing Radioactive Waste Safely* (MRWS) White Paper published in June 2008<sup>1</sup>.
7. There are three key issues to be resolved for the successful implementation of geological disposal:
  - (a) Whether geological disposal of higher activity radioactive waste, including waste from new nuclear power stations, is technically achievable;
  - (b) Whether a suitable site can be identified for the geological disposal of higher activity radioactive waste; and
  - (c) Whether safe, secure and environmentally acceptable interim storage arrangements will be available until a geological disposal facility can accept the wastes.

## Whether geological disposal is technically achievable

8. In October 2006, following recommendations made by the independent Committee on Radioactive Waste Management (CoRWM)<sup>2</sup>, the UK Government and the devolved administrations published a response<sup>3</sup> accepting CoRWM's recommendation that geological disposal, coupled with a robust programme of safe and secure interim storage, was the best available approach to the long-term management of the UK's legacy higher activity radioactive waste<sup>4</sup>. In June 2008 the Government set out the framework to implement this policy in the MRWS White Paper. Since the CoRWM recommendations the *White Paper on Nuclear Power* set out the Government's view 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 MRWS programme.
9. The Government's response to CoRWM in October 2006 gave responsibility for planning and implementing geological disposal to the Nuclear Decommissioning Authority (NDA). The NDA and its delivery organisation will meet all relevant regulatory requirements in the delivery of geological disposal<sup>5</sup>.

<sup>1</sup> MRWS White Paper, <http://mrws.decc.gov.uk/>

<sup>2</sup> *CoRWM Report: Recommendations to Government* <http://www.corwm.org.uk/Pages/Current%20Publications/700%20-%20CoRWM%20July%202006%20Recommendations%20to%20Government.pdf>

<sup>3</sup> UK Government and the devolved administrations, *Response to the Report and Recommendations from the Committee on Radioactive Waste Management (CoRWM)* (PB 12303) October 2006. [http://mrws.decc.gov.uk/en/mrws/cms/home/what\\_is\\_the\\_Go/what\\_is\\_the\\_Go.aspx](http://mrws.decc.gov.uk/en/mrws/cms/home/what_is_the_Go/what_is_the_Go.aspx)

<sup>4</sup> "Legacy" waste is a common term used to describe radioactive waste which already exists or whose arising is committed in future by the operation of an existing nuclear power station.

<sup>5</sup> MRWS White Paper, page 38

10. The UK does not present special geological difficulties that would make successful implementation unlikely on a technological basis. The British Geological Survey reported in 2006 that “over 30% of the UK has suitable geology for siting a deep geological disposal facility”<sup>6</sup> and CoRWM found that “there is high confidence in the scientific community that there are areas of the UK where the geology and hydrogeology at 200 metres or more below ground will be stable for a million years and more into the future”<sup>7</sup>. A 2008 report on geological disposal<sup>8</sup> carried out for the NDA found that there is a wide range of geological environments that could be suitable for hosting a geological disposal facility for higher activity waste in the UK; and that a wide range of engineering solutions is available.
11. A number of geological disposal concepts, based on the use of multiple containment barriers, have been shown to be capable of meeting high standards of safety and security<sup>9</sup>. The construction requirements envisaged in disposal concepts for a range of potentially suitable geological settings are within the precedent practice of existing mining and geotechnical engineering activities<sup>10</sup>. Furthermore the capability to excavate openings to the exacting specifications for disposal of higher activity radioactive wastes has been demonstrated in underground research facilities in strong rocks such as granite (e.g. at the Swedish Äspö Hard Rock Laboratory)<sup>11</sup>, weaker sedimentary rocks (e.g. at the French Bure Underground Facility located in mudstones)<sup>12</sup> and in operating geological disposal facilities in salt formations (e.g. the Waste Isolation Pilot Plant (WIPP) facility in New Mexico, USA)<sup>13</sup>.
12. A range of disposal container designs and materials are envisaged and the ability to fabricate these containers to the required quality standards has been demonstrated by a number of programmes and in many cases uses technological capacity that is provided by UK suppliers (e.g. The Welding Institute developed “friction stir welding”, which is the Swedish preferred method to seal copper containers for spent fuel) or that is available in the UK (e.g. metallurgical drawing of copper containers)<sup>14</sup>. The materials

<sup>6</sup> UK Nirex Ltd and British Geological Survey, *A note by the British Geological Survey and Nirex on the Suitability of UK Geology for Siting a Repository for Radioactive Waste*, document 1797, March 2006.

<sup>7</sup> *CoRWM Report: Recommendations to Government*. Page 106, paragraph 28.

<sup>8</sup> <http://www.nda.gov.uk/documents/upload/Geological-Disposal-Options-for-High-Level-Waste-and-Spent-Fuel-January-2008.pdf>

<sup>9</sup> The OECD Nuclear Energy Agency, taking inputs from policy-makers, regulators and waste management organisations, has published a statement that geological disposal provides an acceptable and technologically feasible method for the long-term management of long-lived high-activity wastes such as spent fuel.  
<http://www.nea.fr/html/rwm/reports/2008/nea6433-statement.pdf>

<sup>10</sup> Nirex, *Large Underground Caverns, Precedent Experience Study: Global Survey*. Summary Index of Key Findings, Nirex Report No. 802, 1995

<sup>11</sup> SKB (Sweden), *Choice of Rock Excavation Methods for the Swedish Deep Repository for Spent Nuclear Fuel*, Report No R-04-62, 2004 [www.skb.se/upload/publications/pdf/R-04-62webb.pdf](http://www.skb.se/upload/publications/pdf/R-04-62webb.pdf)

<sup>12</sup> *Andra (France) Clay in Natural and Engineered Barriers for Radioactive Waste Confinement*, Sciences and Technology Series, No.334, *The Meuse/Haut Marne Underground research Laboratory: Seven years of Scientific Investigation*, J Delay, P L Forbes and J Roman, pp7-21, December 2008.

<sup>13</sup> <http://www.wipp.energy.gov/>

<sup>14</sup> *SKB (Sweden) Encapsulation: When, where, how and why?*  
<http://www.skb.se/upload/publications/pdf/Inka2008Eng.28.1NY.pdf>

used in the manufacture of the various proposed container designs are routinely used in other industrial applications in the UK.

13. Geological disposal concepts also include geotechnical engineered barriers, in the form of buffer material surrounding each disposal container, backfilling of access tunnels and shafts, and high integrity engineered seals to seal off key compartments. These are variously envisaged to involve the use of swelling clay (typically bentonite) and concretes (as well as other components such as rock spoil in the case of tunnel backfill). The ability to implement these various barriers has been demonstrated in various underground research facilities and the engineering methods used are well-documented<sup>15 16</sup>.
14. Although no spent fuel geological disposal facility is currently in operation, programmes in Finland and Sweden are on course to have such a facility operational by about 2020. In 2001 the Finnish Parliament agreed that spent fuel from Finnish nuclear power plants would be disposed of in Olkiluoto in the Municipality of Eurajoki. The future programme for the Finnish development<sup>17</sup> is: construction licence application to be submitted in 2012; operation licence application to be submitted in 2018; final disposal begins in 2020. Sweden has now identified a site at Forsmark, following extensive research in the Äspö underground rock laboratory and a lengthy site selection process, and will be submitting applications for permits, including an environmental impact assessment and safety analysis, in 2010. The facility is planned to be ready for operations in 2023<sup>18</sup>.
15. CoRWM's recommendations, and the Government's response, were made in relation to the existing and committed inventory of higher activity wastes<sup>19</sup>. The Government's policy with regard to wastes from new nuclear power stations was set out in the 2008 *White Paper on Nuclear Power*<sup>20</sup>. This said that based on scientific consensus and international experience, despite some differences in characteristics, waste and spent fuel from new nuclear build would not raise such different technical issues compared with nuclear waste from legacy programmes as to require a different technical solution<sup>21</sup>. The White Paper further stated that the Government considers 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 MRWS Programme<sup>22</sup>.

<sup>15</sup> SKB (Sweden) *Backfilling of KBS-3V Deposition Tunnels – possibilities and limitations* [www.skb.se/upload/publications/pdf/R-08-59webb.pdf](http://www.skb.se/upload/publications/pdf/R-08-59webb.pdf)

<sup>16</sup> SKB (Sweden) *Äspö Hard Rock laboratory: Annual report 2007* [www.skb.se/upload/publications/pdf/TR-08-10webb.pdf](http://www.skb.se/upload/publications/pdf/TR-08-10webb.pdf)

<sup>17</sup> [http://www.posiva.fi/en/final\\_disposal/general\\_time\\_schedule\\_for\\_final\\_disposal](http://www.posiva.fi/en/final_disposal/general_time_schedule_for_final_disposal) September 2009.

<sup>18</sup> [http://www.skb.se/Templates/Standard\\_\\_\\_\\_26374.aspx](http://www.skb.se/Templates/Standard____26374.aspx)

<sup>19</sup> In the *White Paper on Nuclear Power* (page 91) the Government acknowledged CoRWM's stated position that "its conclusions and recommendations are only intended to apply to committed wastes. It is important that CoRWM's views are not taken out of context".

<sup>20</sup> *White Paper on Nuclear Power* <http://www.berr.gov.uk/files/file43006.pdf>

<sup>21</sup> *White Paper on Nuclear Power*, page 90

<sup>22</sup> *White Paper on Nuclear Power*, page 99

16. The disposability assessments that have subsequently been conducted by the NDA to inform the Generic Design Assessment (GDA) process<sup>23</sup> support this view, and have concluded that compared with legacy wastes and existing spent fuel, no new issues arise that challenge the fundamental disposability of the wastes and spent fuel expected to arise from operation of the EPR and AP1000 reactors. This conclusion is supported by the similarity of the wastes to those expected to arise from the existing Pressurised Water Reactor (PWR) at Sizewell B. Given a disposal site with suitable characteristics, the wastes and spent fuel from the EPR and AP1000 are expected to be disposable<sup>24</sup>.
17. The new nuclear power stations that may be built in the UK will not be fundamentally different from many nuclear power stations that are currently operating around the world. The new reactors are considered to be “evolutionary” designs, that is designs that are improvements on current operational reactors.
18. Spent fuel from new nuclear power stations will contain a similar type and range of radionuclides to that found in the spent fuel used to generate an equivalent amount of power in current designs of light water reactors (LWRs). The specific technological challenges presented by spent fuel from new nuclear power stations have been examined by Posiva in Finland<sup>25</sup>. In particular they show that, under the conditions relevant to the Finnish geological disposal facility, the long-term safety of the facility is robust to an extreme scenario of simultaneous failure of all disposal containers and instantaneous release of all the readily releasable radionuclides in the spent fuel.
19. The Finnish Radiation and Nuclear Safety Authority, STUK, presented their preliminary safety assessment for the expansion of the disposal facility to accept spent fuel from a new nuclear power station in June 2009<sup>26</sup>. STUK did not identify any reason why the project could not move forward and the application process for the decision-in-principle will proceed so that the Government can now make its decision and the Parliament can ratify it.
20. The ILW that would be produced from new nuclear power stations would be similar to that which is currently produced, or will be produced in the future, from Sizewell B and from LWRs operated in other countries, the safe and secure disposal of which has

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<sup>23</sup> GDA, also known as pre-licensing, is intended to ensure that the technical aspects of designs for nuclear power plants are considered ahead of site-specific licence applications. More information can be found in *Generic Design Assessment Guidance to Requesting Parties* at <http://www.hse.gov.uk/newreactors/ngn03.pdf>

<sup>24</sup> *Summary Disposability Assessment for the AP-1000*. <http://www.nda.gov.uk/documents/upload/tn-17548-generic-design-assessment-summary-of-da-for-wastes-and-sf-arising-from-operation-of-appwr-october-2009.pdf>  
*Summary Disposability Assessment for the EPR*. <http://www.nda.gov.uk/documents/upload/tn-17548-generic-design-assessment-summary-of-disposability-assessment-for-wastes-and-spent-fuel-arising-from-operation-of-the-epwr.pdf>

<sup>25</sup> *Posiva Oy (Finland) Environmental Impact Assessment Report: Expansion of the Repository for Spent Fuel*, 2008  
[http://www.posiva.fi/en/nuclear\\_waste\\_management/required\\_permissions\\_and\\_procedures/environmental\\_impact\\_assessment\\_procedure](http://www.posiva.fi/en/nuclear_waste_management/required_permissions_and_procedures/environmental_impact_assessment_procedure)

<sup>26</sup> *Application for the Decision-in-Principle on the Final Disposal of the Spent Nuclear Fuel from Olkiluoto 4*. Posiva Oy. June 2009. [http://www.posiva.fi/en/nuclear\\_waste\\_management/required\\_permissions\\_and\\_procedures/decision-in-principle/application\\_for\\_the\\_decision-in-principle\\_on\\_the\\_final\\_disposal\\_of\\_the\\_spent\\_nuclear\\_fuel\\_from\\_olkiluoto\\_4](http://www.posiva.fi/en/nuclear_waste_management/required_permissions_and_procedures/decision-in-principle/application_for_the_decision-in-principle_on_the_final_disposal_of_the_spent_nuclear_fuel_from_olkiluoto_4)

been extensively researched and, in the case of operational wastes, implemented in a number of countries (e.g. Sweden<sup>27</sup>, Finland<sup>28</sup> and France<sup>29</sup>).

21. The Government has acknowledged that it is possible that there may need to be more than one geological disposal facility. The MRWS White Paper said that this could be necessary if the geology at potential sites was not suitable for a “co-located” (i.e. combined ILW and spent fuel/high level waste (HLW)) geological disposal facility, though the MRWS White Paper also set out the Government’s preference for a co-located facility should an available site prove suitable for this<sup>30</sup>. With regard to the disposal of new build wastes, the *White Paper on Nuclear Power* stated that the size of any programme of new nuclear power stations will have an impact on whether all of the new waste could be emplaced in the same geological disposal facility as legacy waste<sup>31</sup>.
22. Hence, although the Government has said that it favours a single geological disposal facility for all higher activity wastes if that proves technically possible, it has not ruled out the alternative of there being more than one facility, and the site selection process set out in the MRWS White Paper, and described below, is designed to be sufficiently flexible to accommodate this. The MRWS White Paper also recognised that whilst Government policy is to pursue the geological disposal of higher activity radioactive waste, Government recognises the need to take account of developments in storage and disposal options, as well as possible new technologies and solutions<sup>32</sup>.
23. Further research and development (R&D) may identify new options for dealing with some wastes, which under application of the waste hierarchy<sup>33</sup> could reduce the amounts of waste requiring geological disposal. As recommended by CoRWM, the MRWS White Paper commits that there will be ongoing research and development to support optimised delivery of the geological disposal programme, and the safe and secure storage of radioactive waste in the interim, and this is being taken forward by NDA through the development of an R&D strategy<sup>34 35</sup>. CoRWM’s recent R&D Report<sup>36</sup> provided a summary of the many organisations in the UK that are involved in funding and carrying out R&D relevant to the management of higher activity wastes. These include the NDA and its Site Licensed Companies, other nuclear industry organisations

<sup>27</sup> [www.world-nuclear.org/info/inf42.html](http://www.world-nuclear.org/info/inf42.html)

<sup>28</sup> [www.world-nuclear.org/info/inf76.html](http://www.world-nuclear.org/info/inf76.html)

<sup>29</sup> [www.world-nuclear.org/info/inf40.html](http://www.world-nuclear.org/info/inf40.html)

<sup>30</sup> MRWS White Paper, page 29

<sup>31</sup> *White Paper on Nuclear Power*, page 93

<sup>32</sup> MRWS White Paper, page 31

<sup>33</sup> This is the use of a hierarchical approach to minimise the amounts of waste requiring disposal. The hierarchy consists of: non-creation where practicable; minimisation of arisings where the creation of waste is unavoidable; recycling and reuse; and, only then, disposal.

<sup>34</sup> [www.nda.gov.uk/documents/upload/Draft-NDA-RWMD-Proposed-Research-and-Development-Strategy-May-2008.pdf](http://www.nda.gov.uk/documents/upload/Draft-NDA-RWMD-Proposed-Research-and-Development-Strategy-May-2008.pdf)

<sup>35</sup> [www.nda.gov.uk/documents/upload/Research-and-Development-Strategy-to-Underpin-Geological-Disposal-of-the-UK-Higher-Activity-Radioactive-Wastes-March-2009.pdf](http://www.nda.gov.uk/documents/upload/Research-and-Development-Strategy-to-Underpin-Geological-Disposal-of-the-UK-Higher-Activity-Radioactive-Wastes-March-2009.pdf)

<sup>36</sup> CoRWM. *Report on National Research and Development for Interim Storage and Geological Disposal of Higher Activity Radioactive Waste, and Management of Nuclear Materials*. July 2009. <http://www.corwm.org.uk/default.aspx>

(civil and defence), the National Nuclear Laboratory, regulators, Research Councils, universities, and consultants and contractors.

24. The costs of managing and disposing of radioactive wastes from new nuclear power stations will fall to the power station operator. The Government has put in place effective legal arrangements for ensuring the financing of the management and disposal of radioactive wastes produced by new nuclear power stations under the Energy Act 2008<sup>37</sup>.

### Identifying a suitable site

25. The MRWS White Paper confirmed the Government's commitment to a staged decision-making process for the implementation of geological disposal and set out a framework for carrying this out. Site selection is to be taken forward through voluntarism and partnership, working with potential host communities to share knowledge and address any local concerns openly and transparently.
26. The voluntarism process being applied draws on the most advanced programmes overseas, for example in Finland and Sweden, which are moving towards construction of a facility. In Belgium, pioneering work on voluntarism and partnership working, started in 1998, has been successful in taking forward their low level waste management programme. The process being followed under the MRWS programme draws lessons from these overseas successes and also from less successful processes at home and abroad, such as earlier efforts to identify a UK site for geological disposal, and efforts to site a US facility at Yucca Mountain<sup>38</sup>.
27. The MRWS process is designed to be flexible enough to accommodate local needs and future developments and will need to adapt to meet the challenges of implementing geological disposal over the long timescale involved. It is able to incorporate both robust technical site investigations and ongoing interactions between the project and the potential host community.
28. The Government has therefore not set a fixed delivery timetable, but in planning the implementation of the national policy of geological disposal, the NDA has assessed that a UK facility could be operational for the disposal of legacy ILW by about 2040<sup>39</sup>, with legacy HLW/spent fuel emplacement beginning around 2075. Disposal of legacy waste is estimated to be completed by about 2130 and it is currently anticipated that disposal of new build wastes would begin once disposal of legacy wastes is completed (though it might be possible to dispose of new build ILW somewhat earlier). In the event that geological disposal facilities are not available to accept radioactive waste in accordance with this indicative timetable, then the Government is satisfied that interim storage will provide an extendable, safe and secure means of containing waste for as long as it

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<sup>37</sup> More details on the financing arrangements for waste and decommissioning costs can be found at [www.berr.gov.uk/whatwedo/energy/sources/nuclear/whitepaper/actions/waste-decommissioning/page47722.html](http://www.berr.gov.uk/whatwedo/energy/sources/nuclear/whitepaper/actions/waste-decommissioning/page47722.html)

<sup>38</sup> More information on the Yucca Mountain project is available at [www.ocrwm.doe.gov/repository/index.shtml](http://www.ocrwm.doe.gov/repository/index.shtml)

<sup>39</sup> *GDF PIP presentation to CoRWM 17\_9\_08 issue 1*, available at [www.corwm.org.uk/Pages/Plenary%20Meetings/Forms/Meetings.aspx](http://www.corwm.org.uk/Pages/Plenary%20Meetings/Forms/Meetings.aspx)

takes to site and construct a geological disposal facility<sup>40</sup>. This is based on experience in the UK and overseas of the interim storage of spent fuel in line with requirements for safety, security and environmental protection. Interim storage is considered further below.

29. The site selection process described in the MRWS White Paper has begun. The process will take a number of years to complete due to the need for extensive technical investigations at any prospective site and the need to move at a pace consistent with maintaining public confidence. However, in the year following publication of the MRWS White Paper a number of local authorities have taken the first steps in the process (known as “Expressions of Interest”) and the Government has started working with them. At the time of writing two Borough Councils, Copeland and Allerdale in West Cumbria, have made Expressions of Interest in the MRWS site selection process. In addition Cumbria County Council has made an Expression of Interest covering the areas of Copeland or Allerdale, which lie within Cumbria County. These three Councils are now working together in partnership to take forward this process.
30. The Government continues to discuss the possibilities of involvement in the MRWS programme with local authorities in England and Wales and remains open to further Expressions of Interest. It is an early stage, but orderly progress is being made in line with the process set out in the MRWS White Paper.
31. The Government is committed to making the voluntarist and partnership approach to site selection work through the MRWS process. However, in the MRWS White Paper the Government also stated that “in the event that at some point in the future, voluntarism and partnership does not look likely to work, Government reserves the right to explore other approaches”<sup>41</sup>. The Government recognises it has a responsibility to deal with long-term higher activity waste management and is committed to geological disposal as the technical solution; such that it will seek to develop alternative ways to implement that solution if the current framework, as set out in the MRWS White Paper, ultimately proves to be unsuccessful in the UK.

### Interim storage of higher activity wastes

32. Geological disposal will be preceded by safe and secure interim storage. The first higher activity waste from a new nuclear power station is expected to arise shortly after the power station starts generating electricity, which is currently anticipated to be around 2018. All higher activity waste will have to be stored until a geological disposal facility can accept the waste. The *White Paper on Nuclear Power* said that, given the ability of interim stores to be maintained in order to hold waste safely and securely if necessary for very long periods or if necessary refurbished or replaced, the Government is satisfied that it is reasonable to proceed with allowing operators to build new nuclear power stations in advance of a geological disposal facility being available<sup>42</sup>.

<sup>40</sup> *White Paper on Nuclear Power*, page 96

<sup>41</sup> MRWS White Paper, page 47

<sup>42</sup> *White Paper on Nuclear Power*, page 91

33. More detail on the requirement for safe and secure interim storage is provided in the MRWS White Paper which said that existing interim stores will have their service lives extended as required in order to provide sufficient safe and secure interim storage throughout the geological disposal facility development programme<sup>43</sup>. Extension would be subject to regulatory approval addressing store safety, security, environmental impact and any impact on waste characteristics. Storage facilities for new nuclear power stations that met the regulators' conditions would need to be constructed and maintained by the operators.
34. The UK has considerable experience of managing higher activity wastes. Spent fuel assemblies from Advanced Gas-cooled Reactors (AGRs) and the Pressurised Water Reactor (PWR) at Sizewell B are stored underwater in cooling ponds following discharge from the reactor. This permits cooling of the fuel as the assemblies are initially thermally and radioactively hot due to decay of short-lived radionuclides. It is common practice in many overseas programmes to move to dry storage after the initial pool cooling period. Dry stores may be of the vault store or cask store variety. Experience of spent fuel dry storage is somewhat limited in the UK, although it has been used for many years at the Wylfa Magnox power station site and is now being considered for application at the Sizewell B PWR.
35. As of end-March 2009 some 45,000 ILW packages had been manufactured and were in safe and secure interim storage awaiting provision of a GDF<sup>44</sup>. The latest stores in use or about to enter service in the UK are designed with a 100-year operational life and are provided with facilities to monitor packages to confirm their continued structural integrity<sup>45</sup>.
36. With regard to experience overseas, a report from the OECD Nuclear Energy Agency (NEA)<sup>46</sup> found that spent fuel has been safely and securely stored in OECD member countries for several decades and such storage could continue for many more decades, given proper controls and supervision, as well as repackaging of some wastes and periodic refurbishment of stores. The NEA also noted that stores of modern design have typically been licensed for periods of decades, in one case (the HABOG in the Netherlands) for a century. In the USA spent fuel has been safely and securely managed on site for decades<sup>47</sup> and the US Nuclear Regulatory Commission (NRC) has formally expressed its confidence that spent fuel can be safely and securely stored on site, without significant environmental impact, for at least 100 years<sup>48</sup>.

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<sup>43</sup> MRWS White Paper, page 25

<sup>44</sup> NDA interactions with Waste Producers on plans for packaging radioactive wastes April 2008 to March 2009, Report no. NDA/RWMD/012, 2009.

<sup>45</sup> *UK Radioactive Higher Activity Waste Storage Review* page 15.  
<http://www.nda.gov.uk/documents/upload/UK-Radioactive-Higher-Activity-Waste-Storage-Review-March-2009.pdf>

<sup>46</sup> *The roles of storage in the Management of Long-lived Radioactive Waste*  
[www.nea.fr/html/rwm/reports/2006/nea6043-storage.pdf](http://www.nea.fr/html/rwm/reports/2006/nea6043-storage.pdf)

<sup>47</sup> [www.nrc.gov/reading-rm/doc-collections/commission/speeches/2008/s-08-023.html](http://www.nrc.gov/reading-rm/doc-collections/commission/speeches/2008/s-08-023.html)

<sup>48</sup> [www.nrc.gov/reading-rm/doc-collections/commission/speeches/2009/s-09-012.html](http://www.nrc.gov/reading-rm/doc-collections/commission/speeches/2009/s-09-012.html)



37. The time that will be required for the safe and secure onsite interim storage of spent fuel and intermediate level waste is contingent on a number of factors. To inform the GDA process NDA has conducted assessments of the disposability of the wastes that are proposed to be produced by new nuclear power stations. NDA has concluded that if spent fuel is produced at the highest burn-up<sup>49</sup> considered (which is 65 GWd/tU), spent fuel cooling (the combined time in wet and/or dry stores) might be required for up to 100 years before disposal<sup>50</sup>. It is therefore possible to envisage a scenario in which onsite interim storage of some spent fuel might be required for around 160 years from the start of the power station's operation, to enable an adequate cooling period for fuel discharged following the end of the power station's operation. However, this is based on some conservative assumptions and there are a number of factors that could reduce, or potentially increase, the total duration of onsite spent fuel storage.
38. The duration of storage periods prior to disposal will depend crucially on the actual level of burn-up achieved (average burn-up is likely to be considerably lower than the maximum considered by NDA, and lower burn-up fuel will require shorter periods of cooling before disposal). Storage periods will also depend in practice upon the designs of the disposal package, the final geological disposal facility design and its geological setting. The storage period may also be shortened by mitigating actions which could reduce the heat load on each disposal canister (such as putting fewer fuel bundles, or a combination of lower and higher burn-up fuel bundles, in each canister). This issue is discussed in more detail in the paper *The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence* which is being published alongside this consultation.

## Other waste categories

39. Low level waste (LLW) is the lowest category of radioactive waste and the inventory of LLW produced by new nuclear power stations is likely to be small when compared to volumes of legacy LLW. LLW storage and disposal technology is well-established, with most LLW currently sent for disposal at the LLW repository (LLWR) in West Cumbria. The Government has published its policy for the longer term management of solid LLW<sup>51</sup>, which outlines the priorities for managing LLW responsibly and safely, and NDA published a draft UK Nuclear Industry LLW Strategy for consultation in June 2009<sup>52</sup>. NDA has strategic responsibility to maintain the LLW disposal route for nuclear industry LLW under the LLW Policy Statement. This extends to pursuing capacity beyond the existing LLWR if it proves to be necessary in future decades.

<sup>49</sup> New build reactor designs are designed to extract more energy from the fuel by leaving it longer in the reactor for increased irradiation otherwise known as "burn-up". The higher burn-up of the fuel will mean that comparatively fewer spent fuel elements will require to be managed, but an individual element will have a higher heat output and external radiation dose at any given time a short period after discharge, compared with a fuel element discharged from existing light water reactor type reactors.

<sup>50</sup> Summary Disposability Assessment for the AP1000, page 5. Summary Disposability Assessment for the EPR, page 6.

<sup>51</sup> *The Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom*  
[http://www.decc.gov.uk/en/content/cms/What\\_we\\_do/uk\\_supply/energy-mix/nuclear/radioactivity/waste/low/low.aspx](http://www.decc.gov.uk/en/content/cms/What_we_do/uk_supply/energy-mix/nuclear/radioactivity/waste/low/low.aspx)

<sup>52</sup> *UK Nuclear Industry LLW Strategy*, [www.nda.gov.uk/loader.cfm?csModule=security/getfile&pageid=29908](http://www.nda.gov.uk/loader.cfm?csModule=security/getfile&pageid=29908)

40. New nuclear power stations will produce some non-radioactive hazardous wastes (such as waste pond water and fuel oils) which will need safe management and disposal. However, the quantities are expected to be small in relation to the total volumes of such wastes produced in the UK. These wastes will be managed according to regulatory requirements and current practices and will be disposed of promptly using established disposal routes.
41. New nuclear power stations will make some liquid and gaseous discharges, but these are, in general, expected to be lower than those of existing power stations in the UK. All radioactive discharges in the UK are regulated under the Radioactive Substances Act 1993 to ensure that radioactivity discharged remains well within internationally agreed levels which are designed to protect both human health and the environment. Technology<sup>53</sup> exists and is applied in the UK and internationally to reduce the radioactive discharges from operational and decommissioning nuclear power stations effectively and within regulatory limits. The Government has no reason to believe that new nuclear power stations will be so different as to necessitate new technology.

### Transport of radioactive wastes

42. The *White Paper on Nuclear Power* set out the Government's view that the risks of transporting nuclear materials are very small and there is an effective regulatory framework in place that ensures that these risks are minimised and sensibly managed by industry<sup>54</sup>.
43. The UK has robust legislative and regulatory systems in place for the transport of radioactive wastes, including higher activity wastes. Transports of radioactive wastes are, and will continue to be, required to meet a number of national and international requirements to ensure the safe and secure transportation of such materials. The requirements for the safe transport of radioactive material by road, rail and sea stem from international agreements and European Directives. These requirements have been implemented in UK legislation setting out what types of transport package are allowed, how much radioactivity they are allowed to contain, and how they should perform against specified tests. The UK and other countries have decades of experience of transporting radioactive material both within the UK and internationally in a safe and secure fashion.

### Appraisal of Sustainability

44. The Government has undertaken an Appraisal of Sustainability (AoS) in relation to the draft Nuclear NPS. The AoS has examined the impacts on sustainability if radioactive wastes from new nuclear power stations were managed in line with the policies and processes considered by the Government in reaching its conclusion on this issue. The Government has taken into account the potential impacts identified in the AoS

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<sup>53</sup> Current use of abatement technology is described in the Revised UK Discharge Strategy published in July 2009. [www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/energy\\_mix/nuclear/radioactivity/government/discharges/strategy/strategy.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/radioactivity/government/discharges/strategy/strategy.aspx)

<sup>54</sup> *White Paper on Nuclear Power*, page 82

in making its assessment, and has concluded that none of the potential sustainability impacts identified in the AoS prevent it from reaching its conclusion in this assessment.

### Devolved Administration positions

45. The UK Government’s policy for the management of higher activity radioactive wastes is set out in the MRWS White Paper.
46. The Department of the Environment in Northern Ireland (DoENI) supports the MRWS programme, in recognition that it is in the best interests of Northern Ireland that the UK’s higher activity radioactive waste is managed in the safest and most appropriate manner.
47. The Welsh Assembly Government will continue to play a full part in the MRWS programme in order to secure the long-term safety of radioactive wastes, to ensure the implementation of a framework appropriate to the needs of Wales and to ensure that the interests of Wales are taken into account in the development of policies in this area. The Assembly Government has, however, reserved its position on the proposals for taking forward geological disposal of higher level radioactive wastes.
48. The Scottish Executive does not support the MRWS policy framework for geological disposal. The Scottish Executive’s policy is to support long-term near surface near site storage facilities.
49. The UK policy for the long term management of the UK’s solid low level radioactive waste (LLW), as set out in the *Low Level Waste Policy Statement*, is supported by all Devolved Administrations.

### Conclusion

50. On the basis of the considerations set out here, the Government’s preliminary conclusion is that it is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK.
51. From time to time, new evidence and material relevant to the disposal of wastes from new nuclear power stations may come to light. The Government will therefore keep the waste assessment under review and will consider whether any significant new evidence or material provide grounds for revisiting the conclusions.



