

BERR

Department for Business
Enterprise & Regulatory Reform

**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

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Executive Summary

Aim of this Consultation

- 1** The Strategic Siting Assessment (SSA) is a process for identifying and assessing sites which are strategically suitable for the deployment of new nuclear power stations by the end of 2025. The aim of this consultation is to present, and seek the views of interested parties on, the proposed:
 - process for inviting and accepting nominations for sites;
 - process for assessing nominated sites; and
 - criteria for assessing sites for potential new nuclear power stations (“the SSA criteria”).
- 2** The list of suitable sites identified through the SSA will be published in a policy statement for the purposes of providing guidance to the planning system. The Government currently expects to do so by means of a National Policy Statement for nuclear power (“the Nuclear NPS”) which the Government will publish under the new planning regime to be established under the Planning Bill.
- 3** As part of the process of developing the SSA criteria, the Government has undertaken a study of the environmental and sustainability effects of constructing new nuclear power stations on sites which have been identified through the application of the proposed SSA criteria set out in this consultation document. The Government is publishing that study alongside this consultation¹ and is seeking views on it. The Government has included a high-level summary of the main findings of the study in paragraphs 2.142 to 2.152 of this consultation document.

Background

- 4** In the White Paper on Nuclear Power (January 2008),² the Government set out its belief that it is in the public interest that new nuclear power stations should play a role in the UK’s future energy mix alongside other low-carbon sources of electricity. The Government also stated its belief that it would be in the public interest to allow energy companies the option of investing in new nuclear power stations. The Government also set out a number of “facilitative actions” that it would undertake to reduce the regulatory and planning risks associated with investment in new nuclear power stations.

¹ BERR, *Towards the draft Nuclear National Policy Statement: Applying the draft Strategic Siting Assessment criteria: A study of the potential environmental and sustainability effects*, July 2008
<http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

² BERR, *Meeting the energy challenge: a white paper on nuclear power*, URN 08/525, January 2008
<http://www.berr.gov.uk/files/file43006.pdf>

- 5** As set out in the White Paper on Nuclear Power, the facilitative actions in respect of planning and siting include:
- Improving the planning system for major electricity generating stations in England and Wales, including nuclear power stations, by ensuring it sets a framework for development consents that gives full weight to policy and regulatory issues that have already been subject to debate and consultation at a national level, and does not reopen these issues in relation to individual applications.
 - Running a Strategic Siting Assessment (SSA) process to develop criteria for determining the suitability of sites for new nuclear power stations and then assessing nominated sites against the criteria. The results of the SSA will inform the development of the proposed National Policy Statement (NPS) for new nuclear power (the Nuclear NPS). Under the proposed new planning regime set out in the Planning Bill, the NPS is the statement of national policy that an independent Infrastructure Planning Commission (IPC) would use as the framework for its decision on an individual planning application.
 - Consideration of the wider environmental effects of applying the proposed SSA criteria in a Strategic Environmental Assessment (SEA) in accordance with the European SEA Directive.³
- 6** The White Paper on Nuclear Power also summarised comments received in response to the Nuclear Consultation (May 2007)⁴ on the proposed SSA process. In its Response Document, *The Future of Nuclear Power: Analysis of consultation responses*,⁵ the Government acknowledged the issues raised regarding development and use of the criteria and the site nomination process and planning system. The Government took on board comments, for example, by describing a closer integration of the Nuclear NPS and the SSA in the White Paper on Nuclear Power. Some respondents felt that early guidance was needed on the details of the nominations process. This SSA consultation takes that on board by providing details of the nominations process in this document. In addition, some respondents felt that the exclusionary criteria should be limited to a few that are truly exclusionary, and to treat those issues which could be mitigated as discretionary criteria. These comments have also been taken on board in this consultation document.

Purpose of the Strategic Siting Assessment

- 7** The purpose of the SSA is to identify sites which are strategically suitable for deployment of new nuclear power stations by the end of 2025. The list of sites identified through the SSA will be included in an NPS for nuclear power

³ Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (O.J. L197, 21.7.2001, p.30) implemented by the Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633).

⁴ BERR, *The Role Of Nuclear Power In A Low Carbon UK Economy*, URN 07/970, May 2007
<http://www.berr.gov.uk/files/file39197.pdf>

⁵ BERR, *The Future of Nuclear Power: Analysis of consultation responses*, URN 08/534, January 2008
<http://www.berr.gov.uk/files/file43206.pdf>

to be published under the new planning regime (to be established under the Planning Bill).

- 8 The process will comprise four key stages:

Stage 0

- Views on the SEA Scoping Report sought from statutory SEA consultation bodies and other bodies with a role in regulating nuclear facilities (completed).

Stage 1

- The Government will consult on the SSA process and on the exclusionary and discretionary criteria for assessing the suitability of sites.⁶

Stage 2

- The Government will publish the final SSA criteria.
- The Government will invite third parties to nominate sites.
- The Government will assess nominated sites against the exclusionary and discretionary criteria.

Stage 3

- The Government will consult on a draft list of sites as part of a consultation on a draft Nuclear NPS.
- The Government will publish the final list of suitable sites as part of the Nuclear NPS.

- 9 The Government is conducting a Strategic Environmental Assessment for the proposed Nuclear NPS which will include an assessment of the list of strategically suitable sites.

Background to Planning Reforms

- 10 In May 2007, the Department for Communities and Local Government (CLG), the Department for Business, Enterprise and Regulatory Reform (BERR), the Department for Transport (DfT) and the Department for the Environment, Food and Rural Affairs (Defra) jointly published the *Planning for a Sustainable Future: White Paper*⁷ which set out changes to the planning process for major infrastructure developments, including power stations over 50MW. Following this White Paper, in November 2007, the Government introduced a Planning Bill⁸ that is currently being considered by Parliament. In informing the drafting of the proposed Nuclear NPS, the SSA process will provide important input to the revised planning process as it applies to nuclear power.
- 11 The proposals in the Planning Bill will require the IPC to decide applications for development consent in accordance with any relevant National Policy

6 This is the purpose of the current document.

7 Communities and Local Government (May, 2007), *Planning for a Sustainable Future: White Paper*
<http://www.communities.gov.uk/publications/planningandbuilding/planningsustainablefuture>

8 <http://services.parliament.uk/bills/2007-08/planning.html>

Statement except in certain circumstances. For instance, where this would breach any international obligations or where the IPC is satisfied that the adverse impacts of the proposed development outweigh the benefits. The Planning Bill will create some important changes to improve the planning system for large infrastructure projects, such as new nuclear power stations.

SSA and the Proposed Nuclear NPS

- 12** The Government is committed to taking active steps to facilitate the development of new nuclear power stations, and will produce a policy statement within the prevailing planning system to make this happen, focusing on, *inter alia*, siting issues.
- 13** The Government currently expects to do so by means of a National Policy Statement. That policy statement will include a list of sites which Government considers are strategically suitable for the deployment of new nuclear power stations by the end of 2025. The SSA is the process for identifying and assessing those sites.
- 14** The Government will include in the Nuclear NPS nominated sites that have been screened against the SSA criteria and are identified as being strategically suitable for the deployment of new nuclear power stations by the end of 2025. The sites listed in the Nuclear NPS will not specify the nominator of the site.
- 15** The SSA is not a process by which the Government will select or rank candidate sites for new nuclear power stations. Rather, it will allow the Government to conduct a strategic assessment of sites that third parties have nominated.
- 16** The nominations process will form a key part of the SSA and is intended to identify and assess those sites in England and Wales which are potentially strategically suitable and credible for the deployment of new nuclear power stations by the end of 2025, so that the assessment by the Government is as geographically thorough and complete as possible. In particular, the process is intended to ensure that the sites which might be considered to be potential alternatives to those listed in the Nuclear NPS have been identified and assessed at a strategic level.
- 17** The list of sites which have been assessed by the Government and found to be strategically suitable will be included in the Nuclear NPS. That list of sites will set the framework for the IPC to determine the appropriateness of the siting of any proposal for development and will reduce the need – as far as possible – for the IPC to consider alternative sites since the suitability of alternative sites will already have been considered through the SSA. Under domestic and EU law,⁹ the IPC may need to consider alternative sites but it is expected that the IPC will be able to rely to a large extent on the assessment

of alternative sites for the Nuclear NPS and will not need to revisit the question of alternative sites in detail.

- 18** In considering individual planning applications, the Government expects the IPC to approve only those applications for sites approved through the SSA process and included in the Nuclear NPS. Applications for development consent on sites listed in the Nuclear NPS will not, however, guarantee planning consent.
- 19** After considering responses to this consultation, the Government intends to publish the finalised criteria for accepting sites and the process for the SSA. It will also invite nominations for sites.
- 20** Although the reforms to the planning system are designed to make it more efficient and effective, the SSA does not preclude developers from making an application under Section 36 of the Electricity Act 1989¹⁰ at any time before the new planning regime is established. In the event that such an application was made before the completion of the SSA, the Secretary of State for Business, Enterprise and Regulatory Reform (BERR) would need to consider any such application on its merits.

Environmental study of SSA criteria and the SEA of the NPS

- 21** The Government is conducting a Strategic Environmental Assessment in relation to the proposed Nuclear NPS. SEA is a process for identifying and assessing the impacts of proposed plans or programmes and ensuring that those effects are considered during the development of a plan or programme.
- 22** On 13 March 2008, the Government sought views on the SEA Scoping Report¹¹ from both statutory SEA consultation bodies¹² and other bodies with a role in regulating nuclear facilities and their development. The Government also placed the SEA Scoping Report on the BERR website. It consulted on how the SEA would be undertaken, the level and type of information that the Environmental Report would cover and how the SEA would be integrated into the development of the proposed Nuclear NPS. It was proposed from the outset that the SEA would be designed to provide the appraisal of sustainability to which the Government is committed for all NPSs, through the Planning Bill.¹³ The SEA Scoping Report consultation closed on 21 April 2008 and the Government will publish an Environmental Report assessing the environmental impacts of the NPS when it consults on the draft Nuclear NPS next year.
- 23** As part of the process for developing the SEA, the Government has produced a study into the environmental and sustainability effects of constructing

¹⁰ An application for development consent in relation to a new nuclear power station under the existing planning consent regime (section 36 Electricity Act 1989).

¹¹ BERR, *Consultation on strategic environmental assessment scoping report for proposed national policy statement for new nuclear power*, URN 08/680, March 2008 <http://www.berr.gov.uk/files/file45240.pdf>

¹² Environment Agency, English Heritage, Natural England, the Department of the Environment (Northern Ireland), Historic Scotland, Scottish Natural Heritage, the Scottish Environment Protection Agency, Cadw, Countryside Council for Wales and the Environment Agency Wales

¹³ <http://services.parliament.uk/bills/2007-08/planning.html>

new nuclear power stations on sites which have been identified through the application of the proposed SSA criteria set out in this consultation document. The Government has published the study alongside this consultation and has included a short summary of some of the key findings on paragraph 2.142 and an explanation of how the main findings have been addressed. The Government is also seeking views on the environmental study. The results of the earlier SEA Scoping Report have been taken into account in the environmental study and are included of Annex 2 of the study.

- 24** The environmental study sets out an assessment of the environmental and sustainability impacts of applying the proposed SSA criteria. The main purpose of the assessment is to allow a consideration of the potential environmental impacts of applying the proposed SSA criteria to influence the development of the criteria.
- 25** The environmental study finds that certain features of the criteria, including the discretionary nature of some of the criteria, mean that adverse environmental and sustainability impacts cannot be wholly ruled out.
- 26** However, the study also found that using the proposed SSA criteria to identify suitable sites for new nuclear power stations is likely to lead to outcomes which are broadly in line with the principles of sustainability and environmental protection. Respondents may find it helpful to refer to the full study for a more detailed description of the impacts of the criteria. Section 2 of the study provides further information about the assessments of the main alternative proposals considered and the impacts of these alternatives. Section 2 also includes an assessment of the impacts of the choice of classification for each criteria (i.e. exclusionary/discretionary/flag for local consideration).
- 27** The environmental assessments summarised in Chapter 2, Box 2 have been taken into account in the development of the SSA criteria and, whilst there are a number of areas where the criteria do not fully address each of the SEA objectives, the Government believes that the proposed SSA criteria strike the right balance between the need for environmental protection and the pressing challenges of delivering the UK's energy policy objectives.
- 28** Where the SSA criteria do not address or fully address the SEA objectives, there remains scope for such environmental issues to be considered at the local level and in some cases it is more appropriate for such environmental issues to be considered at the local level. Environmental issues in relation to sites nominated through the SSA will be considered in the Environmental Report for the Nuclear NPS. Such issues would also be considered at project level through an Environmental Impact Assessment ("EIA") in the event of site specific applications for development consents.
- 29** The Government is also publishing alongside this consultation a Habitats Regulations Assessment (HRA) Screening Report in relation to the criteria.

Proposals in this consultation

- 30** This section summarises the proposals we are consulting on and describes:
- The proposals for the nominations process;
 - The proposals for the assessment process; and
 - The proposed criteria for assessing sites.

Proposals for the nomination and assessment process

- 31** Anyone can nominate a site for consideration in the SSA. However, the Government considers it to be in the public interest to ensure that nominated sites are credible candidates for new nuclear build by the end of 2025. For this reason, nominations must fulfill the following conditions:

- **Condition 1** The site nomination must either be accompanied by a letter of support from a “Credible Nuclear Power Operator” (see below for definition) **or** the nominator must be able to demonstrate that it is a credible site for deploying¹⁴ new nuclear power stations by the end of 2025.

CNPO is defined below. The letter of support from the CNPO must demonstrate that the CNPO considers the site to be a credible site for deploying new nuclear power stations by the end of 2025. This requirement is to ensure that nominators only propose those sites with reasonable technical and commercial prospects for a new nuclear power station.

A Credible Nuclear Power Operator (CNPO) is one which:

- Currently operates a nuclear power plant anywhere in the world; **and**
 - Currently operates an electricity generating station subject to UK health, safety and environmental regulation, **or**, which has made a public commitment to become an operator of an electricity generating station (with a capacity in excess of 50MW) by 2016-2025 in a market subject to UK health, safety and environmental regulation.
- **Condition 2** The nominator must be able to demonstrate that they or, where applicable, the CNPO have taken steps to engage local communities living in the vicinity of the nominated site (including the owner(s) of the nominated sites), and inform them of the intention to nominate the site. Such engagement might for example involve publicising the proposed nomination and inviting views from local communities or holding meetings to discuss the proposed nomination. In respect of existing nuclear sites this might include the site stakeholder group. With a view to timing, it may be appropriate for this engagement to precede the formal nomination period. In respect of existing nuclear sites this might include the site stakeholder group.

¹⁴ 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.

- 32** Further details of these conditions, are set out in paragraphs 1.22 to 1.28.
- 33** In order to assist the assessment of sites, nominators will be expected to set out against each discretionary criterion, specific information to support their nominated sites. However, the Government does not expect nominators to have conducted detailed Environmental Impact Assessments by the time of making a nomination.
- 34** The Government will publish final SSA criteria and invite nominations after considering responses to this consultation. The window for making site nominations will be open for 8 weeks.

Proposals for the assessment process

- 35** The purpose of the assessment will be to test the nominated sites against the SSA criteria. The assessment is intended to:
- be technically robust;
 - take the views of appropriate regulators;
 - be open and transparent; and
 - be capable of identifying those sites in England and Wales that could be suitable for the deployment of new nuclear power stations by the end of 2025.
- 36** The reasons for focusing on sites which could be suitable for deployment by the end of 2025 are set out further below.
- 37** The Government proposes two types of criteria (as set out in Table 2) to allow the assessment of the strategic suitability of nominations:
- Exclusionary criteria** are those criteria that for safety, regulatory or other reasons will exclude a site from further consideration in the SSA.
- Discretionary criteria** are those that the Government considers for various reasons may, at a strategic level, make a site unsuitable for the development of a new nuclear power station.
- 38** In developing the SSA criteria, the Government has identified a number of criteria which, largely due to the need for detailed site-specific investigations and data, are more appropriately assessed at the local level. These **local criteria**¹⁵ will be highlighted as important local considerations in the Nuclear NPS. In this document, the Government highlights these criteria “Flag for local consideration” and it expects that the IPC will consider these criteria alongside other potentially adverse impacts of a particular planning application.

¹⁵ Whilst these local criteria will not affect the decision making in the SSA, throughout this document and the environmental study we refer to them as local criteria/criterion for ease of reference.

- 39** The Nuclear NPS will explain the criteria against which the sites it lists have been assessed.
- 40** The assessment of nominated sites against the exclusionary and discretionary criteria will involve a number of steps (see Table 1).¹⁶ An indicative timetable of the SSA process is set out in Chapter 1. The proposed assessment process is set out in the table below.

Table 1 – Process for assessing sites (Details of all stages of the SSA Process can be found in Chapter 1, Paragraph 1.3)

	No.	SSA Step	SEA Step
SSA STAGE 2	1	Following consultation, publish final SSA criteria and issue call for nominations – eight week window for making nominations.	Consider potential environmental impacts and sustainability effects of final SSA criteria.
	2	Nominations close. The Government assess nominated sites against the exclusionary criteria.	Data collation on nominated sites for Environmental Report.
	3	Where the assessment indicates that a nominated site breaches one or more of the exclusionary criteria, the Government will inform the nominator and provide an opportunity for them to make representations and/or amend the nomination – where the nomination can easily be amended – to avoid breaching the criteria The Government considers any representations made by the nominator, and informs them of the outcome.	
	4	The Government assesses sites that do not breach the exclusionary criteria against the discretionary criteria. Inform nominators of provisional decision. The Government provides nominators with the opportunity to make representations to the Government within four weeks.	Information compiled for Environmental Report on nominated sites will be available to support assessment of nominated sites which have not been excluded as a result of applying the exclusionary criteria.
	5	Prepare the draft Nuclear NPS for public consultation and Parliamentary scrutiny.	Finalise Environmental Report on the effects of the draft Nuclear NPS

¹⁶ This process is premised on the proposals in the Planning Bill

	No.	SSA Step	SEA Step
SSA STAGE 3	6	The Government consults the public, including local communities potentially affected by proposals, on the draft Nuclear NPS. This will include the proposed list of potentially suitable sites. Draft Nuclear NPS is laid before Parliament and Parliamentary scrutiny is expected to begin.	The Environmental Report will be published to accompany the draft Nuclear NPS alongside this consultation.
	7	Consultation closes. Parliamentary scrutiny may continue within a specified period.	Environmental Report to accompany Nuclear NPS.
	8	The Government considers any Parliamentary resolution or report, and revises the draft Nuclear NPS as appropriate. BERR Secretary of State lays a statement before Parliament setting out his response to any Parliamentary resolution or recommendation within a specified period. BERR Secretary of State designates Nuclear NPS.	Final update of Environmental Report to reflect designated Nuclear NPS.

- 41** Nominators should note that the SSA is a key part of the development of the Nuclear NPS and as such it is important to ensure that they nominate any sites they believe to be suitable for deployment by the end of 2025. In exceptional circumstances, the Government may consider late nominations.
- 42** The assessment process the Government has outlined will be conducted by BERR, drawing on expertise from across the Government, regulators and, as necessary, independent specialists who will advise the Secretary of State for BERR.
- 43** The Secretary of State for BERR will make a final decision on those sites which would form part of the draft Nuclear NPS. The draft Nuclear NPS containing this draft list of sites will be subject to an appraisal of sustainability (as part of the SEA), public consultation and Parliamentary scrutiny.

Limiting the SSA to sites which are credible for deployment of new nuclear power stations by the end of 2025

- 44** The SSA process outlined in this document is intended to identify and assess those sites which are credible for the deployment of new nuclear power stations by the end of 2025.
- 45** The Government explained in the White Paper on Nuclear Power why decisions were needed quickly. The Government set out that energy companies will need to build around 30-35 GW of new electricity generating capacity over the next two decades. They will have to make around two-thirds of this investment by 2020. So investment decisions made in the next few years will affect our electricity generation infrastructure for decades to come.

Analysis¹⁷ of the implications of the Renewable Energy Strategy¹⁸ for the generation sector indicate that under a range of scenarios the UK could require up to an additional 14 GW of capacity by 2020 and up to 30 GW by 2030 compared with the estimates above.

- 46** The Government also believes that vigorous action needs to be taken on many fronts if a low-carbon energy mix and secure energy supplies are to be achieved. The decisions made by energy companies about the type of power stations they invest in to replace existing capacity will have significant implications for the level of future carbon dioxide emissions, particularly beyond 2020. For these reasons, the Government has designed the SSA process to assess only those sites that are credible for the deployment of new nuclear power stations¹⁹ by the end of 2025 and can be put forward in the first round of nominations.
- 47** The Government intends to keep the Nuclear NPS under review. Should the need arise, the Government will issue a second call for nominations for credible sites which might be deployed after 2025.

Proposed criteria for new nuclear sites

- 48** The proposed criteria on which the Government is now consulting have been developed taking account of, *inter alia*:
- Review of relevant literature – this has focused on, but was not limited to, technical reports and documents setting out national and international regulatory guidance, requirements and practices.
 - The views of the Government departments with responsibility for policies underpinning the criteria.
 - The advice of the independent regulators for nuclear safety (the Nuclear Installations Inspectorate), the environment (Environment Agency) and security (Office for Civil Nuclear Security).
 - Professional technical advice.
 - The findings of the environmental study. Further details are set out in the environmental study that accompanies this consultation.
 - Comments received during the (May 2007) consultation on the proposed process for the SSA, as set out in Annex B of the White Paper on Nuclear Power.²⁰

17 <http://www.berr.gov.uk/files/file46778.pdf>

18 BERR, *UK Renewable Strategy Consultation*, URN 08/10009, June 2008
<http://www.berr.gov.uk/files/file46799.pdf>

19 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.

20 BERR, *The Role Of Nuclear Power In A Low Carbon UK Economy*, URN 07/970, May 2007 <http://www.berr.gov.uk/files/file39179.pdf>

- 49 Table 2 lists the proposed criteria for assessing sites for nuclear new build nominated to BERR in the SSA process and Table 3 lists the local criteria which would be flagged for IPC consideration.

Table 2 – SSA Proposed criteria

Criteria related to nuclear safety		Status
1.1	Seismic risk (vibratory ground motion)	Exclusionary
1.2	Capable faulting	Exclusionary
1.4	Flooding	Discretionary
1.5	Tsunami, storm surge and coastal processes	Discretionary
1.7	Proximity to hazardous industrial facilities and operations	Discretionary
1.8	Proximity to civil aircraft movements	Discretionary
1.10	Demographics	Exclusionary
1.12	Proximity to military activities	Exclusionary and Discretionary
Criteria related to environmental protection		
2.1	Internationally designated sites of ecological importance	Discretionary
2.2	Nationally designated sites of ecological importance	Discretionary
Criteria related to societal issues		
3.1	Areas of amenity, cultural heritage and landscape value	Discretionary
Criteria related to operational requirements		
4.1	Size of site to accommodate construction, operation and decommissioning	Discretionary
4.2	Access to suitable sources of cooling	Discretionary

- 50 The Government will consider the criteria listed in Table 2 to be the key issues for assessing the strategic suitability of sites at a national level.

Table 3 – Local criteria

Issues related to nuclear safety		Status
1.3	Non-seismic ground conditions	Flag for local consideration
1.6	Meteorological conditions	Flag for local consideration
1.8	Proximity to civil aircraft movements	Flag for local consideration
1.9	Proximity to mining, drilling and other underground operations.	Flag for local consideration
1.11	Emergency planning	Flag for local consideration
Societal issues		
3.2	Significant infrastructure/resources	Flag for local consideration
Issues related to operational requirements		
4.3	Access to transmission infrastructure	Flag for local consideration

51 The local criteria in the SSA are not intended to be an exhaustive list of issues that the IPC or the safety, security or environmental regulators will consider at a site-specific planning application stage. The Government draws attention to them here because the Nuclear NPS will set out the Government’s view on how these local criteria should be viewed by the IPC when they consider planning applications.

Next steps

- 52** After considering the responses and evidence gathered during this consultation, the Government will:
- publish the final exclusionary and discretionary criteria to be used in the SSA and invite nominations for potential sites, which may be strategically suitable for new nuclear power stations; and
 - assess nominations against the exclusionary and discretionary criteria and consult on a list of sites strategically suitable for new nuclear power stations in a draft nuclear NPS.
- 53** The Government is committed to ensuring transparency and openness throughout this process. The assumption is therefore that the Government will make public all information provided by nominees as part of the nomination process except where there is a particular need to maintain confidentiality (for instance due to data protection, security or commercial confidentiality).
- 54** The Government would like your views on this consultation.

Consultation Questions

Question 1

Do you agree that, at this time, the SSA should focus only on sites that are nominated as being suitable candidates for deploying new nuclear power stations by the end of 2025? If not, why not?

Question 2

Do you agree that the overall SSA process provides an appropriate mechanism for identifying and assessing those sites which are strategically suitable for the deployment of new nuclear power stations by the end of 2025? If not, how should the process be changed?

Question 3

Do you have any other comments on the practicalities of the proposed SSA process, such as the timetable for nominations and the duration of the nomination period?

Question 4

Do you agree that the proposed exclusionary and discretionary criteria are appropriate for the assessment of a site's suitability at a strategic level? If not, how should the criteria be changed to achieve this objective and, specifically, are there any additional criteria that should also be used? Should the classifications of any of the exclusionary criteria, discretionary criteria, or issues for local consideration be changed?

Question 5

Do you agree that the proposed SSA is appropriate to produce a list of strategically suitable sites for the purposes of setting the framework for the Infrastructure Planning Commission's decisions? If not, how should the process be changed to achieve this objective?

Environmental study on the SSA criteria

Alongside this consultation, the Government is publishing a study of the environmental and sustainability effects of constructing new nuclear power stations on sites which have been identified through the application of the proposed SSA criteria set out in this consultation document. The Government is also seeking views on that study. For information, the Government has reproduced below the consultation question which we have included in the environmental study. The full study is available at http://www.berr.gov.uk/energy/nuclear_whitepaper/consultations/page44523.html and includes a non-technical summary. Respondents are asked to send any comments on the study together with their responses to the other questions raised in this consultation.

The question being asked is:

Do you agree with the findings of the study of the potential environmental and sustainability effects of applying the proposed SSA criteria? If not, what additional environmental and sustainability effects, if any, should be considered and how should these issues be reflected in the SSA criteria?

About this consultation

- 55** Having developed the proposed Strategic Siting Assessment (SSA) process and siting criteria for the selection of sites to be included in the Nuclear NPS, the Government now wishes to hear the views of interested parties. The purpose is to help inform and enhance the SSA process and siting criteria and process so that the selection of sites can be open, transparent and fair and based on the best technical understanding and knowledge.
- 56** In parallel with this consultation on the SSA, the Government is issuing a study on the potential environmental and sustainability effects of applying the proposed siting criteria. This will further test and inform the SSA criteria. The following documents are available:
- Environmental study²¹; and
 - Habitats Regulations Assessment Screening Report²².
- 57** While the Habitats Regulations Assessment Screening Report is not subject to public consultation, the Government will consider any comments from interested parties or members of the public.
- 58** A summary of responses to this consultation exercise will be published on the BERR website. Based on the responses and evidence gathered during this consultation, the Government will:

²¹ BERR, *Towards the draft Nuclear National Policy Statement: Applying the proposed Strategic Siting Assessment criteria: A study of the potential environmental and sustainability effects*, July 2008
<http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

²² BERR, *Habitats Regulations Assessment: Proposed National Policy Statement for New Nuclear Power Stations*, May 2008.

- publish the exclusionary and discretionary criteria to be used in the SSA and later this year invite initial nominations for potential sites, which may be strategically suitable for new nuclear power stations; and
- assess nominations against exclusionary and discretionary criteria and publish a list of sites strategically suitable for new nuclear power stations in a Nuclear National Policy Statement.

Timing of this consultation

59 This consultation began on 22 July 2008 and will close on 11 November 2008.

How to respond

60 A response can be submitted by letter, fax or email to:

SSA criteria Consultation
Nuclear Unit
Bay 135
Department for Business, Enterprise and Regulatory Reform
1 Victoria Street, London
SW1H 0ET

Tel. 020 7215 3331
Fax. 020 7215 2842
Email: SSACriteria@berr.gsi.gov.uk

Additional points about this consultation

- 61** 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.
- 62** The deadline for responses is 11 November 2008.

Confidentiality and data protection

- 63** Your response may be made public by the Government. If you do not want all or part of your response or name made public, please state this clearly in the response. Any confidentiality disclaimer that may be generated by your 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.
- 64** Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes. These are primarily the Freedom of Information

Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004 (EIR).

- 65** If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.
- 66** In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If the Government receives a request for disclosure of the information it will take full account of your explanation, but cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.
- 67** The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Additional copies

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

Help with queries

- 69** Please email SSACriteria@berr.gsi.gov.uk or call 020 7215 3331.
- If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

Vanessa Singhateh, Consultation Co-ordinator
Department for Business, Enterprise and Regulatory Reform
Better Regulation Team
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London SW1H 0ET
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A copy of the consultation code of practice criteria is set out at Appendix 2.

Chapter 1 – Consultation on the proposed process for the Strategic Siting Assessment

Introduction

- 1.1** The Government recognises the importance of decisions about siting nuclear power stations. It has therefore decided to undertake this Strategic Siting Assessment (SSA). The SSA is the process by which the Government will determine whether sites for new nuclear power stations, nominated by third parties, are strategically suitable locations for development. The SSA will be a strategic level assessment. Whilst the process is intended to be robust, transparent and based on a proper consideration of relevant information, it is being conducted at a strategic level and will not involve consideration of detailed site specific data.
- 1.2** The proposed Nuclear National Policy Statement (Nuclear NPS) will list sites that have been found to be strategically suitable through the SSA. The list of sites will not say that a site is suitable for a particular reactor design. However, we will take account of which designs are likely to be built when considering whether the site is large enough and in considering how the impact of a design configuration (if specified) could be capable of mitigation. The list of sites will also not specify who has nominated the site. The SSA will contribute to the efficiency of the planning process by assessing sites so that the independent Infrastructure Planning Commission (IPC) does not need to consider the strategic suitability of sites which have already been assessed through the SSA. The SSA will identify and assess sites in an open and transparent manner at national level. In particular:

Environmental assessment

- The Nuclear NPS including the list of sites will be subject to a Strategic Environmental Assessment (SEA) to assess the potential environmental impacts; this assessment will incorporate the appraisal of sustainability required for NPSs, which also covers economic and social implications, so that it assesses the different dimensions of sustainable development.

- The Nuclear NPS will be subject to an assessment under the Habitats Regulations²³ and we are publishing a Habitats Regulations Assessment Screening Report²⁴ alongside this consultation.

Public consultation

- We will consult on the draft Nuclear NPS (including the list of sites).
- As part of the public consultation on the draft Nuclear NPS, we will consult local communities in areas near to those sites which are included in the draft Nuclear NPS.

Parliamentary scrutiny

- The Nuclear NPS (including the list of sites) will be subject to Parliamentary scrutiny, as is required for all National Policy Statements. Under the proposed arrangements for Parliamentary scrutiny, examination would be either by one of the relevant existing Select Committees or by a single new committee drawn from the membership of the relevant existing Select Committees. The committee would examine the draft Nuclear NPS largely in parallel to the public consultation, but with a period after the closure of the public consultation of four to six weeks to consider any major points emerging at the end of the public consultation. It would then produce a report with recommendations to the Secretary of State for BERR. The Government would make available time for debate as part of the scrutiny process, where the committee recommended it.

Overview of the Strategic Siting Assessment Process

1.3 The process will comprise four key stages:

Stage 0

- Views on the SEA Scoping Report sought from statutory SEA consultation bodies and other bodies with a role in regulating nuclear facilities (completed).

Stage 1

- The Government will consult on the SSA process and on the exclusionary and discretionary criteria for assessing the suitability of sites.²⁵

Stage 2

- The Government will publish the final SSA criteria.
- The Government will invite third parties to nominate sites.

²³ *The Conservation (Natural Habitats, & c.) Regulations 1994* http://www.opsi.gov.uk/si/si1994/Uksi_19942716_en_1.htm

²⁴ BERR, *Towards a Nuclear National Policy Statement: Habitats Regulations Assessment Screening Reports*, URN 08/926 July 2008

²⁵ This is the purpose of the current document.

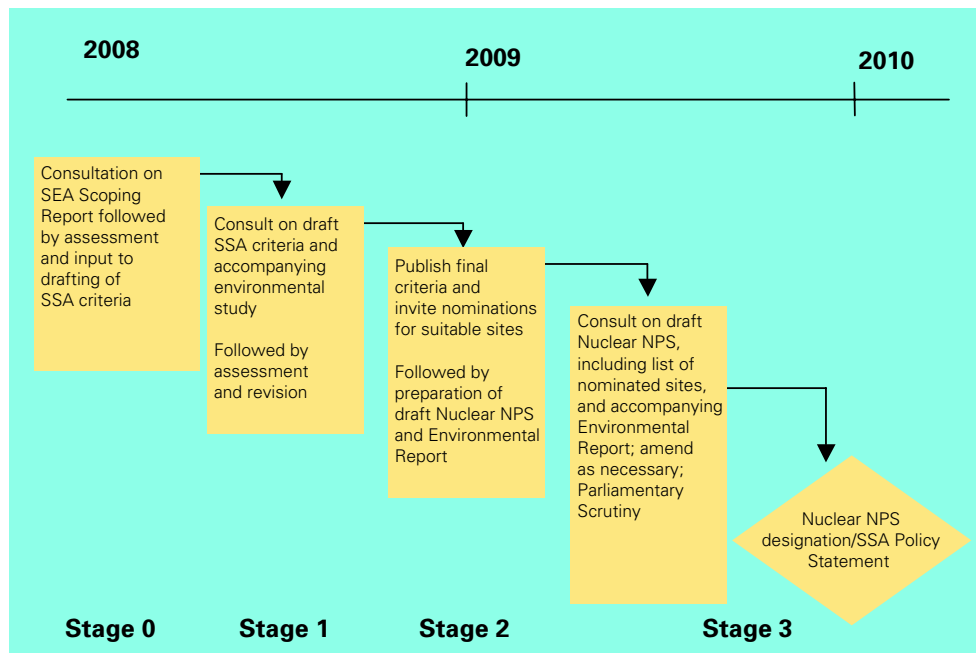
- The Government will assess nominated sites against the exclusionary and discretionary criteria.

Stage 3

- The Government will consult on a draft list of sites, as part of a consultation on a draft Nuclear NPS.
- The Government will publish the final list of suitable sites as part of the Nuclear NPS.

1.4 The proposed process is described in further detail below. The Government is also conducting a Strategic Environmental Assessment (SEA) in accordance with the Environmental Assessment Directive²⁶ alongside the SSA process and alongside the development of the proposed National Policy Statement for Nuclear Power. The Government consulted on the scope of the proposed SEA from March to April this year and, as an early step in the development of the SEA, is publishing an environmental study alongside this consultation.

Figure 1 – Strategic Siting Assessment Process – with indicative timeline



²⁶ Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (O.J. L197, 21.7.2001, p.30) implemented by the Environmental Assessment of Plans and Programmes Regulations 2004 (S.I. 2004/1633)

Policy Context

The Planning reforms

- 1.5** The Government published *Planning for a Sustainable Future: White Paper*²⁷ in 2007, setting out its proposals for reforming the planning regime in England and Wales for nationally significant infrastructure projects, including electricity generating stations. These proposals are now being implemented through the Planning Bill²⁸ introduced in November 2007 and which is currently before Parliament. The key elements of the reforms are:
- At present, applications for development consent for major infrastructure projects are decided by Ministers, under different regimes. In the future, an independent Infrastructure Planning Commission (IPC) will consider applications on the basis of a unified single consenting regime for all nationally significant infrastructure. Where there is a relevant NPS, the IPC will take planning decisions, in other cases, it will make a recommendation to the Secretary of State for BERR.
 - The Government will produce National Policy Statements (NPSs), following appraisal of sustainability, public consultation and Parliamentary scrutiny that will establish the national case for infrastructure development and set the primary policy framework for IPC decisions.
 - The IPC will decide applications for development consent in accordance with any relevant NPS except in certain circumstances, for instance, where this would involve a breach of international obligations or domestic law.
 - The Planning Bill imposes a requirement to consult on any proposal to designate a policy statement as a NPS.
 - The Planning Bill enables the Secretary of State with responsibility for the relevant policy to designate a policy statement as an NPS for the purposes of the new planning regime.

The proposed National Policy Statement for new nuclear power stations

- 1.6** The Government proposes that there will be an NPS which would address nuclear power. It also expects the Nuclear NPS to make clear that the Government has conducted a process to identify those sites which are strategically suitable for deploying new nuclear power stations by the end of 2025.

²⁷ Communities and Local Government, *Planning for a Sustainable Future: White Paper* (May 2007) <http://www.communities.gov.uk/publications/planningandbuilding/planningsustainablefuture>

²⁸ <http://services.parliament.uk/bills/2007-08/planning.html>

- 1.7** The Government expects that the Nuclear NPS will set out:
- The policy background to the NPS including details of the Government's policy in relation to nuclear power, as set out in the White Paper on Nuclear Power.
 - The SSA criteria, which will comprise exclusionary and discretionary criteria. The Nuclear NPS will describe the SSA criteria and will indicate how they have been applied as exclusionary or discretionary criteria.
 - A list of sites which, after assessment at a strategic level, meet the SSA criteria.
 - A description of the nominations and assessment process that has been used to arrive at this list of sites.
 - The White Paper on Nuclear Power made clear that it is the Government's policy that, before development consents for new nuclear power stations are granted, it will need to be satisfied that effective arrangements exist or will exist to manage and dispose of the waste the stations will produce. The Government currently expects the Nuclear NPS to set out whether it is satisfied that such arrangements exist or will exist and it would expect the SEA for the Nuclear NPS to take the relevant aspects of new build radioactive waste management into account at the strategic level and provide further details in the Environmental Report.
- 1.8** The Nuclear NPS will be subject to public consultation and will also be scrutinised by Parliament. The Government intends to consult on the draft Nuclear NPS as part of the SSA. It expects that this consultation on the SSA criteria – combined with the forthcoming consultation on the draft list of suitable sites and other aspects of the Nuclear NPS – will meet the requirements of the Planning Bill to consult on the proposed Nuclear NPS.

Policy background to the Strategic Siting Assessment

- 1.9** A number of issues relating to the siting of nuclear power stations are national in nature rather than site specific. For example, the HSE's Safety Assessment Principles set out technical safety issues at a national level. We will also be considering over-arching environmental issues at a strategic level.
- 1.10** In order to ensure that these national issues are considered at the appropriate level, the Government is carrying out this SSA to identify sites which are strategically suitable for the deployment of new nuclear power stations by the end of 2025. It has also produced an environmental study to assess the environmental and sustainability impacts of SSA criteria. The Government has published the study alongside this consultation and has included a short summary of some of the key findings from paragraph 2.142 and an explanation of how the main findings have been addressed. It is also seeking views on the environmental study. This SSA will also assess the high-level environmental impacts of building on those sites through a Strategic Environmental Assessment.

- 1.11** The Government recognises the importance of decisions about the location of new nuclear power stations. The SSA will provide an opportunity for the Government to assess the suitability of proposed sites at the national level. The Government will consult on the list of sites which have been assessed as being suitable at national level, and have been included in the draft Nuclear NPS. It will also consult with local communities in the vicinity of those sites. Finally, since the list of sites will be included in the Nuclear NPS, Parliament will have an opportunity to scrutinise the list. The list of sites will also have been subject to a Strategic Environmental Assessment and assessment under the Habitats Regulations, where appropriate.

The effect of the Strategic Siting Assessment and list of sites in the Nuclear NPS

- 1.12** The Government will set out in the Nuclear NPS that the sites it lists have been assessed as being suitable for new nuclear power stations at a strategic level. However, the Nuclear NPS will also make it clear that the IPC will still need to consider local criteria in relation to applications to build on these sites. Also, where the SSA has identified potential adverse impacts in relation to the areas covered by the discretionary criteria, the Nuclear NPS will make clear that the IPC should assess whether it will be possible to avoid, minimise or mitigate any adverse impacts.
- 1.13** Because the SSA will have assessed the sites in the Nuclear NPS at a strategic level, the Government does not expect the IPC will need to reconsider this aspect of sites. Instead, the IPC will focus on issues related to specific proposals to build on a site listed in the Nuclear NPS.

Limiting the Strategic Siting Assessment to sites which are credible for deployment of new nuclear power stations by the end of 2025

- 1.14** The White Paper on Nuclear Power²⁹ made clear that the Government would take active steps to facilitate the construction of new nuclear power stations and would establish a framework to enable energy companies to begin construction of the first new nuclear power stations around 2013. As explained in the Nuclear Consultation Document³⁰ and in the White Paper on Nuclear Power, energy companies will need to build around 30-35GW of new electricity generating capacity over the next two decades.
- 1.15** Energy companies will have to make around two-thirds of this investment by 2020. So, investment decisions made in the next few years will affect our electricity generating infrastructure for years to come. Equally, of the 22GW of capacity that is likely to close over the next two decades, just over half is from carbon-intensive fossil-fuel generation and about 10GW is from nuclear

²⁹ BERR, *Meeting the Energy Challenge*, A White Paper on Nuclear, January 2008, URN 08/525 page 10, paragraph 1.

³⁰ BERR, *The Role of Nuclear Power in a Low Carbon Economy*, Consultation Document, URN 07/970, May 2007.

power and therefore low carbon. In view of this, the decisions made by energy companies about the type of power stations they invest in to replace existing capacity will have significant implications for the level of future carbon dioxide emissions, particularly beyond 2020.³¹ Analysis of the implications of the Renewable Energy Strategy for the generation sector³² indicate that under a range of scenarios the UK could require up to an additional 14GW of capacity by 2020 and up to 30GW by 2030 compared with the estimates above.

- 1.16** The White Paper on Nuclear Power made clear that there is an urgent need for vigorous action on many fronts if the Government is to achieve a low-carbon energy mix and secure energy supply, and that the Government would take forward the facilitative steps set out in the White Paper on Nuclear Power. It set out an indicative timeline showing the fastest practical route to the construction of new nuclear power stations and made clear that it is confident that it can deliver a framework that would enable energy companies to begin construction of the first new nuclear power station in the period 2013-2014.³³ In view of the need for significant investment in electricity generating capacity over the next two decades, and in view of the fact that the choice of new generating capacity will affect future carbon emissions and security of supply, the Government considers it appropriate for this SSA to focus on those sites which are credible sites for deployment by the end of 2025 so that new nuclear power stations can begin to contribute to our goals on climate change and energy security. Additionally, this focus will allow the Government to concentrate its resources on those sites which are capable of being deployed by the end of 2025.
- 1.17** Bearing in mind the UK's new electricity generating capacity requirements, the Government considers 2025 to be a realistic timeframe for new nuclear power stations, taking a staged approach based on the availability of, *inter alia*, construction materials, skills availability and investment. This is predicated on the first new nuclear power station commencing construction in 2013. In addition, the cost-benefit analysis conducted for the Energy and Nuclear White Papers was based on generation by 2025.
- 1.18** In considering individual planning applications, the Government would expect the IPC to approve only applications for sites designated within the Nuclear NPS. The Nuclear NPS will make it clear that the Government would not expect developers to apply for planning consent for sites which have not been considered in the SSA process and included in the Nuclear NPS. This is because only those sites will have been subject to assessment at national level with the eventual list having also been considered by Parliament. If, in the future, developers indicate an interest in sites other than those assessed as part of this SSA, then the Secretary of State for BERR will consider whether it is appropriate to conduct a further SSA, including SEA assessment, for additional sites, as part of a review of the Nuclear NPS. Where appropriate,

31 BERR, *Meeting the Energy Challenge*, A White Paper on Nuclear Power, January 2008, URN 08/525 page 10, paragraph 1.

32 <http://www.berr.gov.uk/files/file46778.pdf>

33 BERR, *Nuclear White Paper*, January 2008, URN 08/525 pages 35-36.

the Government would also expect to update the list of sites in the Nuclear NPS and to add any sites which had been assessed through any second SSA.

Question 1

Do you agree that, at this time, the SSA should focus only on sites that are nominated as being suitable candidates for deploying new nuclear power stations by the end of 2025? If not, why not?

Geographical scope of the Strategic Siting Assessment

- 1.19** The legal power to consent to the construction of power stations in excess of 50MW capacity has been executively devolved to Scottish Ministers and is also devolved in Northern Ireland.
- 1.20** The remit of the IPC will be limited to England and Wales, except in the limited case of cross-border pipelines where the remit will also extend to Scotland. The Nuclear NPS will therefore have effect only in relation to England and Wales. However, the underlying policy set out in the Nuclear NPS will cover the entire UK.
- 1.21** In view of the above, the SSA's application in Scotland and Northern Ireland will be limited. In particular, not all of the siting criteria will be expressed as applying to Scotland and Northern Ireland. Chapter 2 of this consultation document details which criteria are applicable to England and Wales and which are applicable to Scotland and Northern Ireland. Finally, the process for nominating sites will not extend to Scotland and Northern Ireland.

The proposed process for the Strategic Siting Assessment

- 1.22** The Government is seeking views on the proposed SSA process, which is described below. This section deals with the following aspects of the process:
- Who can nominate a site.
 - How to nominate a site.
 - When to nominate a site.
 - Use of exclusionary and discretionary criteria.
 - The process for assessing sites.

Proposals for the nomination process

Who can nominate a site

1.23 Anyone can nominate a site provided that they can satisfy the following conditions:

- **Condition 1** The site nomination must either be accompanied by a letter of support from a “Credible Nuclear Power Operator (CNPO)” (see below for definition) **or** the nominator must be able to demonstrate that it is a credible site for deploying³⁴ new nuclear build by the end of 2025.

CNPO is defined below. The letter of support from the CNPO must demonstrate that the CNPO considers the site to be a credible site for deploying new nuclear build by the end of 2025. This requirement is to ensure that nominators only propose those sites with reasonable technical and commercial prospects for a new nuclear power station.

A CNPO is one which:

- Currently operates a nuclear power plant anywhere in the world; **and**
 - Currently operates an electricity generating station subject to UK health, safety and environmental regulation, **or**, which has made a public commitment to become an operator of an electricity generating station (with a capacity in excess of 50MW) by 2016-2025 in a market subject to UK health, safety and environmental regulation.
- **Condition 2** The nominator must be able to demonstrate that they or, where applicable, the CNPO have taken steps to engage local communities living in the vicinity of the nominated site (including the owner(s) of the nominated sites), and inform them of the intention to nominate the site. Such engagement might, for example, involve publicising the proposed nomination and inviting views from local communities or holding meetings to discuss the proposed nomination. In respect of existing nuclear sites, this might include the site stakeholder group. With a view to timing it may be appropriate for this engagement to precede the formal nomination period. In respect of existing nuclear sites this might include the site stakeholder group.

How to nominate a site

1.24 The Nuclear NPS will define clear boundaries for strategically suitable sites. Nominators must therefore be confident that the sites they propose are large enough to allow for the construction, operation and decommissioning of the site. However, to reduce the possibility of planning blight – and to allow the necessary environmental issues to be considered for each site as part of the SEA – nominations must focus on sites for deployment rather than broad geographical areas. The Government may need to adjust site boundaries as appropriate in discussion with nominators, such as in instances where two nominations overlap.

³⁴ 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.

- 1.25** Nominators are expected to indicate the outline of their proposed sites during construction, operation and decommissioning, using a combination of maps, Ordnance Survey grid references and, where possible, appropriate Geographic Information Systems (GIS) data. However, the SSA is high level and the Government does not require a footprint of specific designs, unless this is material to the impact on one or more criteria, in which case information should be provided on how those impacts could be mitigated by a different configuration.
- 1.26** To support the assessment of sites, nominators will be expected to set out specific information against each discretionary criterion, along with details of their approach to mitigation to make the proposed site suitable. If further information is required to complete the SSA, the Government will request this during the assessment process. Nominators should also identify any other supporting documentation that can be made available if required.
- 1.27** In inviting nominations, the Government will require nominators to complete a detailed pro-forma, based on the criteria and guidance we set out in Chapter 2.
- 1.28** The Government would expect nominators to support proposed sites with robust evidence, which may include technical and environmental expert opinion. While it does not expect them to have conducted, for example, full site-specific Environmental Impact Assessments at this point, the Government does expect that the nominator or the CNPO will have given due consideration to the likely safety, environmental and social issues associated with development at a particular site and will have formed a reasonable opinion on the suitability of that site.

When to nominate a site

- 1.29** After considering responses to this consultation, the Government intends to publish the final criteria for the SSA and to invite nominations for sites to be considered.
- 1.30** The window for making nominations will be open for eight weeks. A full nomination will be required by the end of the nomination period. After the close of the nomination period, the Government will assess nominated sites as described in Table 4.
- 1.31** The Government intends to keep the Nuclear NPS under review. Should the need arise, the Government will issue a second call for nominations for credible sites which might be suitable for deployment after 2025. The Strategic Environmental Assessment would be extended to take account of these future nominations as appropriate.

Proposals for the assessment process

- 1.32** The purpose of the assessment will be to test the nominated sites against the SSA criteria. The assessment is intended to:
- be technically robust;
 - take the views of appropriate regulators;
 - be open and transparent; and
 - identify and assess those sites in England and Wales which are potentially strategically suitable and credible for the deployment of new nuclear power stations by the end of 2025.

Use of exclusionary and discretionary criteria

- 1.33** The Government is consulting in this document on **exclusionary and discretionary criteria**. We will use these criteria to assess nominated sites. The criteria will also be included in the Nuclear NPS and will be considered by the IPC insofar as they are relevant at the site-specific planning application level. We are also consulting on a range of **local criteria** which we think the IPC will need to address alongside other relevant issues that they identify when they are considering specific planning applications for development consent on sites listed in the Nuclear NPS. These criteria will also be listed in the Nuclear NPS because of their relevance to final decisions on siting of new nuclear power stations. The criteria are described further below. In Chapter 2, the Government seeks views on the detail of the criteria.
- 1.34** **Exclusionary criteria** are those criteria that, for safety, regulatory, environmental or other reasons, will categorically exclude a site from further consideration in the SSA as being a strategically suitable site for a new nuclear power station.
- 1.35** The Government will assess nominated sites against these criteria first, and we will exclude sites that breach any of these criteria.
- 1.36** **Discretionary criteria** are those criteria that the Government considers, for various reasons, could, either singly or in combination, make a site unsuitable for a new nuclear power station but which need to be considered in order to come to a conclusion as to the site's strategic suitability. These criteria will address issues such as flood risk, impact on protected sites or suitable cooling. BERR will assess these issues at a strategic level through the SSA. It is important to note that, through the SSA process, the Government will be conducting a high-level strategic assessment that will not involve site-specific investigations or detailed site-specific data, unless this is material to the impact on one or more criteria in which case information should be provided on how those impacts could be mitigated. Detailed site-specific information will need to be considered by the IPC and would be identified, for example, in the Environmental Impact Assessment accompanying any proposal for development. In reaching a decision on whether to include a site that relates

to one or more discretionary criteria in the list in the Nuclear NPS, BERR will consider, *inter alia*:

- whether the nominator has demonstrated that there is a reasonable prospect of appropriately mitigating (wholly or in part) any potential adverse impacts in relation to the relevant discretionary criterion or criteria;
- where any potential adverse impact(s) cannot be appropriately mitigated, whether the potential adverse impact should prevent the site from being considered suitable at a strategic level taking account of the White Paper on Nuclear Power.

1.37 The Government does not expect to form a conclusive view as to the viability of detailed proposals for mitigation or the precise extent of any potential adverse impact. Rather, this will be a matter for the IPC to assess when it receives a specific planning application to build on a site listed in the Nuclear NPS. However, the Government would expect the Nuclear NPS to make clear that the IPC, when examining an application, would need to consider the mitigation measures above in more detail before making its decision in relation to the granting of development consent for a specific application to build on a site included in the list in the Nuclear NPS.

1.38 The Government will also consider the cumulative impact of the discretionary criteria in relation to a nominated site. Where a site significantly breaches a large number of discretionary criteria, it may be appropriate to exclude it from the Nuclear NPS.

1.39 Local Criteria. In developing the SSA criteria, the Government has identified a number of issues which cannot be appropriately assessed at a strategic level, largely due to the need for detailed site-specific investigations and data. Nonetheless, the Nuclear NPS will highlight these local criteria as important considerations for the IPC alongside its consideration of other adverse impacts of a particular application that are pertinent to a decision. The local criteria in the SSA, identified as “Flag for local consideration”, are not intended to be an exhaustive list of issues for consideration at the planning application stage by the IPC or by the safety, security or environmental regulators.

Question 2

Do you agree that the overall SSA process provides an appropriate mechanism for identifying and assessing those sites which are strategically suitable for the deployment of new nuclear power stations by the end of 2025? If not, how should the process be changed?

The process for assessing sites

1.40 Table 4 outlines the process the Government expects to follow for the purpose of assessing sites.

Table 4 – Process for assessing sites

	No.	SSA Step	SEA Step
SSA STAGE 2	1	Following consultation, publish final SSA criteria and issue call for nominations – eight week window for making nominations.	Consider potential environmental impacts and sustainability effects of final SSA criteria.
	2	Nominations close. The Government assesses nominated sites against the exclusionary criteria.	Data collation on nominated sites for Environmental Report.
	3	Where the assessment indicates that a nominated site breaches one or more of the exclusionary criteria, the Government will inform the nominator and provide an opportunity for them to make representations and/or amend the nomination – where the nomination can easily be amended – to avoid breaching the criteria The Government considers any representations made by the nominator, and informs them of the outcome.	
	4	The Government assesses sites that do not breach the exclusionary criteria against the discretionary criteria. Inform nominators of provisional decision. The Government provides nominators with the opportunity to make representations to BERR within four weeks.	
	5	Prepare the draft Nuclear NPS for public consultation and Parliamentary scrutiny.	Finalise Environmental Report on the effects of the draft Nuclear NPS
SSA STAGE 3	6	The Government consults the public, including local communities potentially affected by proposals, on the draft Nuclear NPS. This will include the proposed list of potentially suitable sites. Draft Nuclear NPS is laid before Parliament and Parliamentary scrutiny is expected to begin.	The Environmental Report will be published to accompany the draft Nuclear NPS alongside this consultation.
	7	Consultation closes. Parliamentary scrutiny may continue within a specified period.	Environmental Report to accompany Nuclear NPS.
	8	The Government considers any Parliamentary resolution or report, and revises the draft Nuclear NPS as appropriate. BERR Secretary of State lays a statement before Parliament setting out his response to any Parliamentary resolution or recommendation within a specified period. BERR Secretary of State designates Nuclear NPS.	Final update of Environmental Report to reflect designated Nuclear NPS.

Question 3

Do you have any other comments on the practicalities of the proposed SSA process, such as the timetable for nominations and the duration of the nomination period?

Relationship between the Strategic Siting Assessment and the associated Strategic Environmental Assessment

- 1.41** The White Paper on Nuclear Power stated that the Government would subject proposals for new nuclear power stations to a number of environmental assessment processes. Specifically, the White Paper stated that the Government would consider environmental impacts through a formal Strategic Environmental Assessment (SEA) in accordance with the SEA Directive. The Planning White Paper also requires National Policy Statements to be subject to an appraisal of sustainability which, in this case, will be integrated with the SEA.
- 1.42** The SEA process ensures that, before implementing plans or programmes that are likely to have a significant effect on the environment, decision makers carry out a formal environmental assessment. The Government is conducting an SEA in relation to the proposed Nuclear NPS.
- 1.43** As part of the SEA for the Nuclear NPS, the Government has produced an environmental study to assess the environmental and sustainability effects of siting new nuclear power stations in accordance with the SSA criteria. It is publishing this study alongside this consultation and is also seeking views on it. (See page 17 in this consultation document). The Government has included a brief summary of the key findings of the study from paragraph 2.142 of this consultation document and an explanation of how some of the key requirements have been addressed. However, readers may find it helpful to read the full study (which includes a non-technical summary). The Government is proposing to publish an Environmental Report alongside publication of the draft Nuclear NPS as part of the SEA for that NPS. The environmental study of the SSA criteria is an important step in the development of the SEA for the Nuclear NPS. The study itself provides further background information in relation to the SEA for the Nuclear NPS.
- 1.44** The Government consulted on the scope of the proposed SEA earlier this year.³⁵ As part of that consultation, the Government proposed to publish two Environmental Reports in relation to the Nuclear NPS: a First Environmental Report alongside the SSA consultation and a Second Environmental Report at the time of consulting on the draft Nuclear NPS in 2009. The Scoping Consultation stated that the First Environmental Report would be issued alongside the consultation on the SSA criteria and would document the

³⁵ BERR, *Consultation on Strategic Environmental Assessment Scoping Report for Proposed National Policy Statement for New Nuclear Power*, March 2008 <http://www.berr.gov.uk/files/file45240.pdf>

consideration of the alternatives considered as well as an assessment of the draft SSA Exclusionary and Discretionary Criteria. The Scoping Report also explained that a Second Environmental Report would be issued alongside a final draft of the NPS which would document the assessment of all relevant elements of the NPS including the nominated sites.

- 1.45** This study sets out an assessment of the potential environmental and sustainability effects of building new nuclear power stations on sites that have been screened through the use of the SSA criteria. It also considers alternatives to those criteria. However, it does not assess the impacts of the proposed Nuclear NPS as a whole since the Nuclear NPS is still at an early stage in its development and we do not think it would be possible to undertake a meaningful assessment of the impacts of applying the Nuclear NPS at this time and to set this out in a First Environmental Report.
- 1.46** This study is referred to as an “environmental study” rather than a “First Environmental Report” to make clear that it is not intended to assess the Nuclear NPS as a whole, but rather focuses on the SSA criteria. The Government expects to produce an Environmental Report for the Nuclear NPS as work on the NPS progresses and expects to publish that Environmental Report alongside the consultation on the draft Nuclear NPS. That Environmental Report will continue the assessment of the high-level impacts of siting new nuclear power stations in accordance with the SSA criteria. This assessment study reported in this document, and any comments received on it in the course of the consultation on the SSA criteria, will thus be an important step in the development of the Environmental Report to be published alongside the draft National Policy Statement on nuclear power.
- 1.47** The environmental study assesses the criteria against a range of “SEA objectives” which are set out in the study. These objectives are aspirational rather than setting out binding targets and they provide a mechanism for assessing environmental impacts in relation to 13 environmental topic areas³⁶. The study sets out the extent to which the application of the proposed suite of SSA criteria contribute to the achievement of the SEA objectives. The SEA objectives which were used to assess the criteria were developed through the Scoping Consultation referred to above and are listed below:

³⁶ These are derived from the Strategic Environmental Assessment Directive: biodiversity, population, human health, flora, fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between these topics.

Table 5 – SEA objectives as set out in the environmental study³⁷

SEA objectives	
1	To avoid adverse impacts on the integrity of wildlife sites of international and national importance
2	To avoid adverse impacts on valuable ecological networks and ecosystem functionality
3	To avoid adverse impacts on Priority Habitats and Species, including European Protected Species
4	To create employment opportunities
5	To encourage the development of sustainable communities
6	To avoid adverse impacts on physical health
7	To avoid adverse impacts on mental health
8	To avoid adverse impacts on the function and efficiency of the strategic transport infrastructure
9	To avoid disruption to basic services and infrastructure
10	To avoid adverse impacts on property and land values and to avoid planning blight
11	To avoid the loss of access and recreational opportunities, their quality and user convenience
12	To avoid adverse impacts upon air quality
13	To minimise greenhouse gas emissions (including coastal and marine water quality) and assist achievement of Water Framework Directive objectives
14	To avoid increased flood risk (including coastal flood risk) and seek to reduce risks where possible
15	To avoid adverse impacts on surface water hydrology and channel geomorphology (including coastal geomorphology)
16	To avoid adverse impacts on surface water quality
17	To avoid adverse impacts on the supply of water resources
18	To avoid adverse impacts on groundwater quality, distribution and flow and assist achievement of Water Framework Directive objectives
19	To avoid damage to geological resources
20	To avoid the use of greenfield land and encourage the re-use of brownfield sites
21	To avoid the contamination of soils and adverse impacts on soil functions
22	To avoid adverse impacts on the internationally and nationally important features of the historic environment
23	To avoid adverse impacts on the setting and quality of built heritage, archaeology and historic landscapes
24	To avoid adverse impacts on nationally important landscapes
25	To avoid adverse impacts on landscape character, quality and tranquillity, diversity and distinctiveness

³⁷ BERR, *Towards a Nuclear National Policy Statement – Applying the proposed Strategic Siting Assessment criteria: a study of the potential environmental and sustainability effects*, 2008, URN 08/926

- 1.48** At an early stage in the development of the SSA, we assessed the environmental and sustainability effects of the draft SSA criteria set out in this consultation. We have set out the results of this assessment in the environmental study which accompanies this consultation.
- 1.49** We will assess the environmental impact of constructing new nuclear power stations on the sites assessed as part of the SSA. That assessment will be part of the Strategic Environmental Assessment of the Nuclear NPS. Further details of the assessment of the SSA criteria and reporting are set out in the SEA Scoping Report³⁸ and the environmental study.
- 1.50** Planning applications for specific development proposals on individual sites included on the list in the Nuclear NPS will be subject to an Environmental Impact Assessment (EIA) under EU and domestic law.³⁹ The EIA and SEA are separate processes and, whilst it will be for the developer rather than the Government to carry out the EIA, the SEA can help to identify environmental effects and can highlight key considerations and mitigation measures that will assist in the preparation of EIAs.

³⁸ BERR, *Consultation on strategic environmental assessment scoping report for proposed national policy statement for new nuclear power*, March 2008, URN 08/680
<http://www.berr.gov.uk/files/file45240.pdf>

³⁹ The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000 (S.I. 2000/1927); there is equivalent legislation for Scotland and Northern Ireland. <http://www.opsi.gov.uk/si/si2000/20001927.htm>

Chapter 2 – Consultation on the proposed criteria for the Strategic Siting Assessment

Development of the criteria

- 2.1** This chapter sets out the proposed criteria that the SSA will use to assess sites nominated as locations for new nuclear power stations.
- 2.2** Following the publication, in May 2007, of a technical consultation on the proposed processes for Justification and the SSA⁴⁰, work began on a contingency basis (pending the outcome of the Consultation on *The Future of Nuclear Power*),⁴¹ to develop the details of the criteria and processes set out in this consultation.
- 2.3** The proposed criteria have been developed taking account of, *inter alia*:
- Review of relevant literature – this has focused on, but was not limited to, technical reports and documents setting out national and international regulatory guidance, requirements and practices.
 - The views of the Government departments with responsibility for policies underpinning the criteria.
 - The advice of the independent regulators for nuclear safety (the Nuclear Installations Inspectorate), the environment (Environment Agency) and security (Office for Civil Nuclear Security).
 - Professional technical advice.
 - Comments received during the (May 2007) consultation on the proposed process for the SSA, as set out in Annex B of the White Paper on Nuclear Power.⁴²
 - The findings of the environmental study. Further details are set out in the environmental study that accompanies this consultation.

40 BERR, *The Future of Nuclear Power, The role of nuclear power in a low carbon UK economy: consultations on the proposed processes for justification and strategic siting assessment*, URN 07/972, May 2007. <http://www.berr.gov.uk/files/file39199.pdf>.

41 *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/file43006.pdf>.

42 BERR, *The Role Of Nuclear Power In A Low Carbon UK Economy*, URN 07/970, May 2007 <http://www.berr.gov.uk/files/file39197.pdf>

2.4 Taking each of these in turn:

Literature Review

2.5 A wide range of regulatory and technical documents were reviewed in the early stages of the development of the criteria. The following documents were particularly useful in identifying potential SSA criteria:

- NII Safety Assessment Principles (SAPs) and Technical Assessment Guides (TAGs). The SAPs provide NII inspectors with a framework for making consistent regulatory judgements on nuclear safety cases. The principles are supported by Technical Assessment Guides (TAGs), and other guidance, to further assist decision making by the nuclear safety regulatory process. The SAPs also provide nuclear site licencees with information on the regulatory principles against which their safety provisions will be judged. However, the SAPs are not intended, or sufficient, to be used as design or operation standards, reflecting the non-prescriptive nature of the UK's nuclear regulatory system. In most cases, the SAPs are guidance to inspectors, but where guidance refers to legal requirements they can be mandatory, depending on the circumstances. Further information on the regulatory process, along with copies of key reference documents, appears on the HSE website.⁴³
- U.S. Nuclear Regulatory Commission (U.S. NRC) 10CFR100. Document 10CFR100 sets out the siting requirements for nuclear power station licensing in the USA. It is part of a suite of requirements making up Title 10 of the US Code of Federal Regulations which form the basis for the regulation of nuclear safety matters by the US Nuclear Regulatory Commission (NRC). The focus of 10CFR100 is on external hazards to plant safety.⁴⁴
- International Atomic Energy Agency (IAEA) Safety Standards Guides and Safety Requirements. The IAEA Safety Standards establish a common international framework for the regulation of nuclear safety. These standards are implemented through the NII's SAPs (see above).⁴⁵
- Electric Power Research Institute (EPRI) Siting Guide (referenced to 10CFR100). The EPRI siting guide is a guide to developers in selecting suitable sites for nuclear development. The safety aspects of this guide are referenced against the requirements of U.S. NRC 10CFR100.

Consultation with other Government departments

2.6 The development of the SSA has been led by the Department for Business, Enterprise and Regulatory Reform (BERR). However, to ensure that the SSA criteria and assessment are consistent with other areas of government policy

43 <http://www.hse.gov.uk/nuclear/index.htm>

44 <http://www.nrc.gov/reading-rm/doc-collections/cfr/>

45 <http://www-ns.iaea.org/standards/>

(such as planning, environment and public expenditure and transport), BERR has sought input from other Government departments as appropriate.

Consultation with regulators

- 2.7** Throughout the process of developing the proposed SSA criteria, the Government has consulted the regulators responsible for safety, security and the environment (NII, Office for Civil Nuclear Security (OCNS) and EA) to ensure that the criteria and assessment process are consistent with regulatory practice. In many areas, the regulators are also experts in the technical aspects of nuclear power plant siting and the Government has sought their advice in these respects – this is particularly the case with criterion number 1.10 relating to demographics.

Professional technical advice

- 2.8** The Government's work to date in developing the proposed criteria, assessment process and the associated SEA, has been supported by professional technical and environmental consultants. The Government anticipates that the need for professional technical support will continue through the future stages of the SSA and SEA as site nominations are made and assessed.

Responses to The Future of Nuclear Power: The Role of Nuclear Power in a Low-Carbon UK Economy (Technical Consultations)

- 2.9** In the Technical Consultation, some respondents felt that the exclusionary criteria should be limited to a few that are truly exclusionary, and that the Government should treat as discretionary criteria those issues which could be mitigated. The Government has taken these comments on board in developing the criteria set out in this consultation.

Strategic Environmental Assessment

- 2.10** As part of the SEA for the Nuclear NPS, the Government has produced a study of the environmental and sustainability effects of constructing new nuclear power stations on sites which have been identified through the application of the proposed SSA criteria set out in this consultation document. In this study, the Government has assessed the proposed SSA criteria to ensure that they are consistent with SEA objectives which have been developed as part of the SEA for the proposed Nuclear NPS (the study has been published alongside this SSA consultation⁴⁶). As a result of the iterative environmental assessment

⁴⁶ BERR, *Towards a Nuclear National Policy Statement – Applying the proposed Strategic Siting Assessment criteria: a study of the potential environmental and sustainability effects*, URN 08/926, July 2008. <http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

process, the Government has incorporated a number of environmental considerations into the proposed SSA criteria.

Testing the Strategic Siting Assessment criteria

2.11 In establishing whether a site is suitable for a new nuclear power station, a developer will take a wide range of issues into consideration. As the Government is conducting this process at a national, strategic level, it has applied a number of tests to ensure that the process does not duplicate work that a developer would undertake. Each criterion was tested against the following parameters before it became part of the Government's proposal on SSA criteria.

- **Fit with international and national regulation/practice** As described above, the Government has sought to ensure that the criteria are consistent with the well established regulatory framework for nuclear power stations.
- **Whether it is strategic** The NPS is intended to provide strategic guidance to the IPC, the criteria must therefore represent only issues which are important at a national level and must leave local, project-specific planning issues for the IPC's consideration.
- **Practicality of assessment/decision-making** It is important that the Government can make appropriate decisions about the suitability of nominated sites at a high-level without considering information which is more appropriately assessed through the planning process (for instance, detailed site investigations). The process has therefore been designed to be a strategic level assessment.
- **Avoid developer cost issues** Certain aspects of site selection, such as the availability of grid connection and choice of cooling technology, depend on the developers' assessment of the economic viability of a site. It is expected that developers will take these issues into account during their site selection processes: the SSA is not intended to second-guess these judgments.
- **Environmental study** The environmental study of the SSA (as the early phase in the development of the SEA of the Nuclear NPS) has tested the potential strategic environmental impacts of the SSA process. The SEA objectives have been reflected in the development of the proposed criteria.

Structure of the criteria

2.12 The SSA criteria has been grouped into four themes; nuclear safety, environmental protection, societal issues and operational requirements.

2.13 Each criterion is classed as **exclusionary, discretionary** or, where appropriate, is **flagged for local consideration by the IPC**. The classification of criteria is set out in paragraphs 1.33–1.39 in Chapter 1.

Strategic Siting Assessment criteria

2.14 Chapter 1 describes how, due to the planning powers of the devolved administrations, some SSA criteria will be limited to England and Wales. The status and geographic scope of each criterion is set out in Table 6

Table 6 – Proposed criteria for the SSA

Criteria related to nuclear safety		Status	Geographic Scope
1.1	Seismic risk (vibratory ground motion)	Exclusionary	UK
1.2	Capable faulting	Exclusionary	UK
1.4	Flooding	Discretionary	UK
1.5	Tsunami, storm surge and coastal processes	Discretionary	UK
1.7	Proximity to hazardous industrial facilities and operations	Discretionary	UK
1.8	Proximity to civil aircraft movements	Discretionary	UK
1.10	Demographics	Exclusionary	UK
1.12	Proximity to military activities	Exclusionary and Discretionary	UK
Criteria related to environmental protection			
2.1	Internationally designated sites of ecological importance	Discretionary	England and Wales only
2.2	Nationally designated sites of ecological importance	Discretionary	England and Wales only
Criteria related to societal issues			
3.1	Areas of amenity, cultural heritage and landscape value	Discretionary	England and Wales only
Criteria related to operational requirements			
4.1	Size of site to accommodate construction, operation and decommissioning	Discretionary	UK
4.2	Access to suitable sources of cooling	Discretionary	UK

Table 7 – Local criteria

Issues related to nuclear safety		Status	Geographic Scope
1.3	Non-seismic ground conditions	Flag for local consideration	UK
1.6	Meteorological conditions	Flag for local consideration	UK
1.8	Proximity to civil aircraft movements	Flag for local consideration	UK
1.9	Proximity to mining, drilling and other underground operations	Flag for local consideration	UK
1.11	Emergency planning	Flag for local consideration	UK
Issues related to societal issues			
3.2	Significant infrastructure/resources	Flag for local consideration	England and Wales only
Issues related to operational requirements			
4.3	Access to transmission infrastructure	Flag for local consideration	UK

2.15 Further details on these criteria are set out in the remainder of this chapter. The issue number in the left hand column corresponds to the number of the criteria or issue in the headings in this chapter.

Criteria related to nuclear safety

Background

2.16 As described in the White Paper on Nuclear Power, the Government believes that new nuclear power stations would pose very small risks to safety, security, health and weapons proliferation. The Government also believes that the UK has an effective regulatory framework that ensures that these risks are minimised and sensibly managed by industry.

2.17 The UK has strict independent regimes covering safety and environmental protection for nuclear power: these fulfil the requirements of the Euratom Treaty with regard to radiation protection.⁴⁷ Any new nuclear power station will be subject to safety licensing conditions and the operator will have to comply with the safety and environmental conditions set by the regulators. The UK's safety regulatory framework is non-prescriptive. No absolute threshold values

⁴⁷ Council Directive 96/29/Euratom of 13 May 1996, laying down the basic safety standards for the health protection of the workforce and general public against the dangers of ionising radiation, Official Journal of the European Communities (L159 29.6.1966, p.1). http://ec.europa.eu/energy/nuclear/radioprotection/doc/legislation/9629_en.pdf

are used to define an acceptable level of risk, rather nuclear power station operators are required to satisfy the regulator that the levels of risk are “as low as reasonably practicable” (ALARP⁴⁸).

- 2.18** The International Atomic Energy Authority (IAEA) is responsible for international conventions, standards and expert guidance for the safety and security of nuclear installations. For the SSA, the Government has aligned the proposed safety criteria to relevant international standards and best practice.
- 2.19** In the UK, the Nuclear Installations Inspectorate (NII) of the Health and Safety Executive (HSE) regulates the safety of civil nuclear facilities. The Government will continue to rely on the NII as the authority on matters of nuclear safety. The criteria established for the SSA are not intended to replace the conditions of the nuclear site licence or the powers of the NII. For any site to proceed to construction, the NII must first address the design of the proposed development before it grants a licence to construct. Hence, sites considered to be suitable through the SSA will still need to satisfy further assessments before planning consent can be granted and construction can begin.
- 2.20** The safety criteria the Government has arrived at for the SSA are focused upon taking a strategic national view of location dependent safety requirements of new nuclear power stations. The SSA will consider those aspects of siting that can, at a national level, avoid hazards to nuclear power stations and to public health.

Seismic risk (vibratory ground motion) – exclusionary criterion 1.1

- 2.21** Seismic risk is a critical issue in the siting and safety assessment of all nuclear facilities and, alongside some of the other issues addressed below, it is a key feature of the UK and international regulatory regimes which ensure the safety of nuclear power stations.
- 2.22** The UK, along with the rest of the world, is exposed to a level of seismic risk. In assessing potential sites for new nuclear power stations two types of seismic hazard need to be considered:^{49 50}
- earthquake ground motions; and
 - faults capable of rupture at the ground’s surface (set out in criterion 1.2).
- 2.23** The effect of earthquake induced ground movements upon nuclear facilities depends both on the peak values of the ground motion (i.e. the peak ground acceleration), the frequency of the motion and its duration. The peak values

48 Further information about the ALARP principle is given on the HSE website
<http://www.hse.gov.uk/risk/theory/alarp.htm>

49 IAEA (2004), Safety Standards, Safety Guide No. NS-G-3.6 *Geotechnical aspects of site evaluation and foundations for nuclear power plants*
http://www-pub.iaea.org/MTCD/publications/PDF/Pub1195_web.pdf

50 EPRI NP-4726 (1989-1991), *Probabilistic seismic hazard evaluations at nuclear power plant sites in the central and eastern United States*

depend on the earthquake's magnitude, the distance of the earthquake's epicentre from the site and the site's geological profile.

- 2.24** The UK's existing nuclear power stations have either been assessed and where necessary retrofitted or designed to withstand the effects of an earthquake with an annual probability of occurrence of 1 in 10,000. (This is often referred to as the 1 in 10,000-year earthquake.) Site-specific hazard studies have yielded peak ground accelerations of between 0.14g and 0.26g for such events. The NII, as part of routine regulatory activities, have determined that the levels of risk as a result of seismic hazard at the existing stations are acceptable. This acceleration is relatively small when compared with seismic events in other parts of the world such as California and Southern Europe, for example.
- 2.25** The low seismic hazard in the UK means that ground motion due to earthquakes is unlikely to be a barrier in the selection of sites for new nuclear power stations. All designs under consideration as part of the HSE's Generic Design Assessment (GDA)⁵¹ are designed to withstand the effects of an earthquake generating a peak ground acceleration of at least 0.25g.⁵²
- 2.26** Mapping by the British Geological Survey as part of a recent study⁵³ for the implementation of Eurocodes shows that, at a national level, the levels of seismic risk are generally low. Extrapolation of the data in that study suggests that an earthquake with an annual probability of exceedance of 10^{-4} (often referred to as the 1 in 10,000 year event) would be unlikely to exceed 0.25g over the majority of the UK. Studies undertaken by existing nuclear site licencees on a site specific basis over the past 15 years have also furnished values less than or equal to 0.25g.
- 2.27** ***On this basis, the Government proposes that it is appropriate to exclude areas in the UK that have a higher than 1 in 10,000 year risk of incurring greater than 0.25g ground acceleration. However, the seismic hazard levels due to ground motions are modest across the UK and we do not expect that any areas of the UK will be excluded from consideration at a strategic level on the basis of this exclusionary criterion. We will also state in the Nuclear NPS that the IPC should consider seismic risk at a local level.***

Capable faulting – exclusionary criterion 1.2

- 2.28** Similar to seismic risk, capable faulting is a key feature of the regulatory regimes in the UK and internationally which ensure the safety of nuclear power stations. Active geological faults undergo repeated rupture over time as the

51 The designs being considered in the GDA are EPR from Areva, ESBWR from GE-Hitachi, and AP1000 from Toshiba-Westinghouse Electric Company. The ACR1000 design was withdrawn by AECL in April 2008.

52 EPR Fundamental Safety Overview, Sub-Chapter C.3 (paragraph 2.3)
GE ESBWR Preliminary Safety Report (section 2.3)

Westinghouse UK AP1000 Safety, Security, and environmental report (section 3.7.1)

53 http://www.seced.org.uk/news/UK_seismic_hazard_report-issue3.pdf

stresses in the Earth's crust build up and are released by fault movement. Ground-breaking or "capable" faults are faults that have moved at or near the ground surface at least once within a significant period of time. Capable faults pose significant risk to the structural integrity of even the most robust structures. A site with a capable fault would be unsuitable for siting nuclear facilities.⁵⁴ The general opinion of nuclear safety regimes in the UK and internationally is that we should site and design nuclear facilities to avoid the possibility of damage due to capable faults.

- 2.29** The US Nuclear Regulatory Commission adopts a criterion of movement in the past 35,000 years, or recurrent movements within the past 500,000 years, to define a capable fault. Previous siting exercises on nuclear facilities in the UK did not consider this criterion in great detail, with the exception of Sizewell B and Hinkley Point C, where considerable effort went into understanding the historical context of local faults.
- 2.30** However, the general professional view of earthquake specialists is that there is little evidence that capable faults exist in the UK.
- 2.31** At a site-specific level, detailed site investigations may reveal local faulting that could affect the safety of a nuclear facility. We expect that the NII will address this issue in its detailed assessment of site safety in considering applications for Nuclear Site Licences. In many cases, changes to the site layout and foundation engineering design can address safety issues associated with local faulting.
- 2.32** ***On this basis, the Government proposes to exclude a site which is intersected by one or more active capable faults that can be identified at a national level. However, as with seismic risk, it is unlikely that any areas of the UK will need to be excluded from consideration at a strategic level on the basis of this exclusionary criterion.***

Non-seismic ground conditions – flag for local consideration 1.3

- 2.33** Geological and geotechnical conditions in the UK are generally benign when compared with some other parts of the world. The UK does not have deep tropically weathered soils, permanently frozen ground, volcanoes or high mountains, for example. However, within its small land area, the UK has a very varied geology and earth-surface processes that create some particular (non-seismic) hazards that could be considered in assessing the relative merits of nuclear power station sites. Some examples of such geological and geotechnical hazards (see below) are consistent with the issues listed by the IAEA:⁵⁵
- undulating terrain necessitating major cut and fill slopes;
 - soft and compressible superficial deposits (e.g. river or coastal alluvium);

⁵⁴ IAEA (2003), Site evaluation for nuclear installations, IAEA Safety Standards Series, Safety Requirements No. NS-R-3. http://www-pub.iaea.org/MTCD/publications/PDF/Pub1177_web.pdf

⁵⁵ IAEA (2004), Safety Standards, Safety Guide No. NS-G-3.6 Geotechnical aspects of site evaluation and foundations for nuclear power plants. http://www-pub.iaea.org/MTCD/publications/PDF/Pub1195_web.pdf

- naturally cavernous bedrock (“karst” in limestone, gypsum and rock salt deposits); and
- complex bedrock conditions, for example, in some of the ancient rocks of the north and west of the UK.

2.34 Although the list of geological and geotechnical hazards relevant to nuclear power stations is long, they are common considerations in the siting of a wide range of structures in the UK, and are generally amenable to resolution by appropriate design and construction works, with some sites costing more to develop than others. Indeed, some of the UK’s existing nuclear power stations are on sites where it was necessary to engineer solutions to mitigate certain geological and geotechnical hazards. It should be noted that the GDA addresses only the envelope of site conditions that the Requesting Parties have used as the design basis. The regulators will not assess designs against nominated sites until they have site-specific licence applications to consider. The Government anticipates that these will be submitted after the GDA process has been completed. The SSA will not, therefore, focus on specific designs. Rather, this will be a matter for the regulators and the IPC once specific applications for development consent and site licences have been made.

2.35 For these reasons, the Government proposes not to use a criterion related to non-seismic ground conditions in the SSA. However, it is an important consideration for detailed site-specific investigations and for the planning and regulatory assessment processes.

Flooding – discretionary criterion 1.4

2.36 Flooding from rivers and coastal waters is a natural process which plays an important role in shaping the natural environment. Flooding can threaten lives and can cause substantial damage to property and infrastructure. The possible effects of flooding may have a major bearing on the safety of a nuclear power station and the presence of water may be a common cause of failure for safety-related systems.⁵⁶

2.37 The flooding around Gloucester in July 2007 highlighted the risks of surface water flooding. A recent inquiry by the Environment, Food and Rural Affairs Committee of the House of Commons concluded that “a specific duty should be placed on utilities to ensure their critical assets are protected from flooding and that they have adequate business continuity plans in the event of a flood”.⁵⁷

2.38 In June 2008, the Government published the report⁵⁸ of an independent review, chaired by Sir Michael Pitt, into lessons learned from the summer

⁵⁶ IAEA (2003), Flood Hazard for Nuclear Power Plants on Coastal and River Sites

⁵⁷ House of Commons, Environment, Food and Rural Affairs Committee (2007/08), 5th Report Flooding <http://www.publications.parliament.uk/pa/cm200708/cmselect/cmenvfru/49/49.pdf>

⁵⁸ http://www.cabinetoffice.gov.uk/thepittreview/final_report.aspx

floods of 2007. This report emphasised the need for development control to play a central part of the process of managing flood risk, by avoiding development in risk areas where possible and, where such building does take place, by ensuring that risk is reduced both to the development itself and for those living nearby.

- 2.39** The report also highlighted the importance of essential infrastructure, such as power generation and transmission asset, and called for a new national framework to ensure that risks to essential infrastructure are reduced and managed.
- 2.40** For these reasons, the Government believes that issues relating to flood risk and flood protection should receive national level consideration in the SSA. The assessment of nominated sites will therefore consider flooding issues from two perspectives. Firstly, the possible threats to safety of siting in an area exposed to flood risk and, secondly, the wider impacts of flood protection countermeasures on areas surrounding potential new nuclear power station sites.
- 2.41** Flooding can come from rivers and the sea, directly from rainfall on the ground surface and from rising groundwater, overwhelmed sewers and drainage systems. The design of a new nuclear power station should take account, as appropriate, of the combined effects of these sources of flooding and of the possible effects of climate change on these factors over the lifetime of the site.
- 2.42** All new developments in England, including infrastructure such as new nuclear power stations, must take due account of the policies set out in Planning Policy Statement 25 (PPS 25).⁵⁹ PPS 25 outlines how flood risk should be considered in making planning decisions. This guidance has been prepared to allow Regional Planning Bodies and Local Planning Authorities to develop their spatial strategies and decision-making processes in line with national objectives on sustainable development. The policy's aim is to make development safe without increasing flood risk elsewhere and, where possible, to reduce flood risk overall.
- 2.43** PPS 25 describes five classes of development (Less Vulnerable, More Vulnerable, Highly Vulnerable, Water Compatible and Essential Infrastructure) and four classes of flood risk (Zone 1: Low probability, Zone 2: Medium Probability, Zone 3a: High Probability and Zone 3b: Functional Floodplain). PPS 25 uses a matrix to assess the compatibility of different types of development with different flood risk zones (see Figure 2).

⁵⁹ Communities and Local Government (Dec, 2006), Planning Policy Statement 25: Development and Flood Risk
<http://www.communities.gov.uk/documents/planningandbuilding/pdf/planningpolicystatement25.pdf>

Figure 2 – Flood Risk Vulnerability and Flood Zone ‘Compatibility’

Flood Risk Vulnerability Classification		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Food Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b ‘Functional Floodplain’	Exception Test required	✓	✗	✗	✗

Key:

✓ Development is appropriate

✗ Development should not be permitted

2.44 In parallel with this compatibility matrix, two assessment principles are outlined:

- the Sequential Test – this test requires developments to be located in the lowest possible flood-risk zone unless there is no “reasonable alternative”.
- the Exception Test – where indicated by the compatibility matrix, and only after the application of the Sequential Test, developments must also pass the Exception Test which requires a development to demonstrate to the planning authority that it “provides wider sustainability benefits to the community that outweigh the flood risk”.⁶⁰ A Flood Risk Assessment must also demonstrate that “the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall”.

2.45 In terms of vulnerability to flood risk, PPS 25 classifies power stations as Essential Infrastructure. This means that, following demonstration of the Sequential Test, if a proposed site is located in Flood Zones 3a or 3b, the developer will also have to demonstrate the Exception Test.

2.46 In Wales, there is a separate Planning Policy Wales Technical Advice Note (TAN) 15: Development and Flood Risk.⁶¹ TAN 15 outlines various flood-risk zones, development categories and tests, which are used to assess the planning proposal. TAN 15 states that development of power stations is not advised in the highest risk flood zones.

2.47 Climate change over the coming decades is likely to mean milder, wetter winters and hotter, drier summers in the UK, while sea levels continue to rise.⁶² Climate change is a key consideration for the future viability of sites for

⁶⁰ Communities and Local Government (Dec. 2006), Planning Policy Statement 25: Development and Flood Risk <http://www.communities.gov.uk/documents/planningandbuilding/pdf/planningpolicystatement25.pdf>

⁶¹ <http://www.planningportal.gov.uk/wales/professionals/en/1105619050728.html>

⁶² DEFRA <http://www.defra.gov.uk/environment/climatechange/about/index.htm>

new nuclear power stations. The developers of new nuclear power stations should be mindful of the latest predictions of climate change. The design and layout of the nuclear power stations should be able to accommodate the impacts of climate change, while maintaining an appropriate level of protection for the site.

2.48 *The Government proposes that sites nominated in the SSA process may be unsuitable (on a discretionary basis), unless nominators are able to:*

- ***confirm that they can protect the site against flood-risk throughout the lifetime of the site, including the potential effects of climate change; and***
- ***outline the countermeasures they would take to protect the site from flood risk, as far as practicable***

In addition, the Government would expect nominators to take into account the wider impacts of their flood protection countermeasures on areas surrounding potential power station sites. We do not propose to apply the PPS 25 tests at strategic level in the SSA as we do not expect the necessary detailed site-specific information to be available for this assessment. For specific planning applications, the planning authorities with the regulators will need to take into account the requirements of PPS 25.

Guidance to nominators

2.49 Where a site falls within an area of high flood-risk, the Government expects its nominators to indicate how their site can be protected against those flood risks, including the potential effects of climate change, throughout the life of the station. In particular, the Government will require nominators to outline:

- the protection measures that they believe would be appropriate to protect the site against flooding;
- the assumptions they have made about off-site flood protection and water management and, in particular, the reliance on flood protection measures which are in the control of other parties, such as neighbouring landowners or government bodies;
- the potential for flooding to impede access to the site in respect of both normal operations and emergency services; and
- whether the proposal is likely to increase flood-risk elsewhere.

Tsunami, storm surge and coastal processes – discretionary criterion 1.5

2.50 Low-lying land adjacent to the coastline or an estuary can be at risk of coastal flooding caused by high tides, storm surges and extreme waves. Coastal processes, such as erosion, can also pose potential risks to nuclear power stations over their long lifecycle.

- 2.51** The volume of water associated with tidal flooding means that flooding from the sea can be more hazardous and cause more damage than fluvial⁶³ flooding. Whilst some areas of the UK's coast are at higher risk, we believe that marine civil engineering works and coastal management activities can limit the risks to an acceptable level, in accordance with the requirements of the regulators. All existing operational nuclear power stations in the UK are either on the coast or on river estuaries.
- 2.52** As with the criterion on flood risk, under PPS25 operators are prevented from implementing mitigating measures that could cause adverse impacts to neighbouring areas and would have to take additional measures to compensate for such impacts.
- 2.53** Given the nature of nuclear power stations, it is reasonable to expect that the impacts of coastal processes, including potential effects of climate change, should be considered over a minimum time horizon of 100 years.
- 2.54** The cross-Government programme *Making Space for Water* (MSW), which covers a range of topics, takes forward the development of a new strategy for risk management of flooding and coastal erosion in England. MSW, with a dedicated Defra website to outline progress,⁶⁴ is considering the ways in which it can assess the hazard and risks associated with coastal erosion and illustrate this in a map for the entire coastline of England. In consultation with the Welsh Assembly Government, MSW has been extended to incorporate Wales. Ultimately, the project will publish national data and maps. The Government proposes to use these maps, as appropriate, when assessing sites against this discretionary criterion.
- 2.55** There is no formal policy for considering tsunami risk in the planning process. The IAEA advises that any nuclear power stations in an area that could be subjected to tsunamis should be designed to withstand the probable maximum tsunami.⁶⁵ This is consistent with the UK's regulatory practice which, at a project level, would require the tsunami risk to be included in the design-basis risk consideration for a nuclear facility.
- 2.56** The 2005 DEFRA report *The threat posed by tsunami to the UK*⁶⁶ concluded that there are a number of possible, though rare, circumstances in which seismic activity or landslide could generate tsunami-type events in the UK. The report suggests that, for most credible scenarios, wave heights produced at the coast by tsunami-type events are unlikely to exceed those anticipated for major storm surges. All major centres of development on coasts and estuaries have defences that are designed to withstand such surge waves.

63 The word fluvial is used in geography and earth science to refer to all topics related to flowing water. Fluvial usually refers to rivers, streams and sometimes through flow, overland flow and percolation. Fluvial may also refer to glaciers and oceans, though these are usually known as glacial, oceanic and coastal.

64 Defra (2008), Making Space for Water homepage <http://www.defra.gov.uk/environ/fcd/policy/strategy.htm>

65 IAEA (2003), *Flood Hazard for Nuclear Power Plants on Coastal and River Sites*

66 DEFRA (June, 2005), *The threat posed by tsunami to the UK*
<http://www.defra.gov.uk/environ/fcd/studies/tsunami/tsurp.pdf>

2.57 *The Government proposes that the SSA process should include a discretionary criterion for risk caused by tsunami, storm surge and coastal processes. Sites nominated in the SSA process may be unsuitable, on a discretionary basis, unless nominators can confirm that they are able to mitigate the effects of tsunami, storm surge and coastal processes throughout the lifetime of the site, including the potential effects of climate change, and outline the countermeasures they might take, as far as practicable. In addition, the Government would expect nominators to take into account the wider impacts of any coastal protection countermeasures on areas surrounding potential nuclear power station sites.*

Guidance to nominators

2.58 For all sites on or near the coast, the Government expects nominators to indicate how their site can be protected against the risks of tsunami, storm surge and other coastal processes, including the potential effects of climate change, for the duration of the life of the station. In particular, nominators will be required to outline:

- the coastal protection measures that they believe would be appropriate to protect the site against these risks;
- the dependencies on coastal protection measures which may be out of the nominator's control; and
- the potential for these risks to impede access to the site in respect of both normal operations and emergency services access.

Meteorological conditions – flag for local consideration 1.6

2.59 National and international safety regulation considers various extreme meteorological conditions which can pose a threat to the safety of a nuclear installation. Such conditions include, for example:

- strong winds (e.g. hurricanes, tornadoes) and wind-blown debris
- extreme rainfall/sleet
- heavy snow
- heatwaves
- forest or wild-land fires
- sandstorms
- drought

2.60 Existing nuclear power stations operate globally, in areas which are exposed to extremes of weather far in excess of those experienced in the UK. However, the Government does not believe it is practicable, for the purposes of the SSA, to distinguish meaningfully between different areas of the UK on the grounds of meteorological risk.

2.61 *For these reasons the Government proposes not to use a criterion related to meteorological conditions in the SSA. However, it is specifically noted as an important consideration for the detailed site-specific investigations and planning/regulatory assessment processes.*

Proximity to hazardous industrial facilities and operations – discretionary criterion 1.7

2.62 The safety regulation of nuclear power stations requires that the risks posed by external hazards are minimized, consistent with the ALARP principles. These considerations extend beyond the natural hazard issues described above to include a requirement to consider the man-made external hazards to the nuclear power station’s safety.

2.63 The HSE’s methodology for assessing development near to hazardous installations is set out in the Planning Advice for Developments near Hazardous Installations (PADHI). This approach gives guidance to planning authorities in considering the suitability of domestic, institutional and industrial developments within a series of zones forming a Consultation Distance around hazardous installations.

2.64 Whilst the PADHI land-use planning methodology was not developed for application to nuclear power station developments, it is the only existing high-level methodology for identifying these risks. It is, therefore, a useful guide to identifying potential areas of risk at a strategic level.⁶⁷

2.65 The PADHI system is a decision support software tool which allows planning authorities to assess whether or not a development is acceptable or whether further consultation with the HSE is required in granting consent.

2.66 The PADHI methodology uses an assessment matrix to determine the suitability of developments based on the distance from a major hazard installation and the “sensitivity” of the proposed development.⁶⁸

Level of Sensitivity	Development in Inner Zone	Development in Middle Zone	Development in Outer Zone
1	DAA	DAA	DAA
2	AA	DAA	DAA
3	AA	AA	DAA
4	AA	AA	AA

DAA – Do Not Advise Against
AA – Advise Against

⁶⁷ <http://www.hse.gov.uk/landuseplanning/nuclear.htm>

⁶⁸ HSE’s (Website reference April 2008), Current Approach to Land Use Planning <http://www.hse.gov.uk/landuseplanning/lupcurrent.pdf>

2.67 The PADHI approach determines the sensitivity levels by assessing the type of development and the potential risk to local inhabitants and the users of the development. This assessment is based, in part, on the ease of evacuation of inhabitants and users.

2.68 The “sensitivity levels” in PADHI are based on imposing progressively more severe restrictions as the sensitivity of the proposed development increases. There are four sensitivity levels:

- Level 1 – based on normal working population;
- Level 2 – based on the general public (at home and involved in normal activities);
- Level 3 – based on vulnerable members of the public (children, those with mobility difficulties or those unable to recognise physical danger); and
- Level 4 – large examples of Level 3 and large outdoor examples of Level 2.

2.69 *The Government proposes to use a discretionary criterion on proximity to hazardous industrial facilities and operations. While the PADHI approach was not designed for application to nuclear power stations and does not categorically rule out developments even within the Inner Zone, this is clearly an important safety consideration. In assessing any site nominated within the consultation zone of a recognised hazardous installation, we will seek explicit guidance from the HSE as part of the SSA process. Sites nominated in the SSA process may be unsuitable, on a discretionary basis, if they are within the consultation distance of an existing or proposed hazardous facility. Evidence of how suitable countermeasures could mitigate the risks from this will, however, be taken into account in reaching any such decisions.*

Proximity to civil aircraft movements – discretionary criterion 1.8

2.70 There is a risk to all nuclear facilities related to an aircraft crashing on or near to the site. Large aircraft crashes are a rare event in the UK, however the risk across the country is not uniform. Certain higher risk areas and zones are defined to protect infrastructure and human casualties from such an event. These are outlined below.

Public Safety Zones

2.71 Over 75% of air accidents occur during take-off, initial climb, initial approach, final approach or landing.⁶⁹ Consequently, the areas under the runway approaches have a higher risk of suffering an aircraft crash. In response to this issue, Public Safety Zones (PSZs) around commercial aerodromes with large volumes of traffic were established.

⁶⁹ UK Health and Safety (1997), Criteria for the rapid assessment of the aircraft crash rate onto major hazards according to their location

2.72 Thirty of the UK's 150 licensed aerodromes currently have a PSZ. Inside these zones, planning guidance, issued to local planning authorities by the Department for Transport, makes a general presumption against new developments.⁷⁰ The guidance would probably rule out approval of a new nuclear site within a PSZ.

Aerodrome safeguarding plan

2.73 All licensed aerodromes and many unlicensed airports have the airspace immediately surrounding the aerodrome protected by prescribed zones to allow safe operation into, out of and around the aerodrome. To prevent the possibility that construction within these areas will create a hazard to aircraft operations, a safeguarding plan for each licensed aerodrome is lodged by the aerodrome operator with the relevant local planning authority (LPA).

2.74 The aerodrome safeguarding plan could be used to define limits for the construction of nuclear power stations in the environs of an aerodrome. The safeguarding plans for larger aerodromes usually cover a larger area than those of smaller ones. Any planning application to build in this area is subject to an independent collision risk assessment. It must also meet the aerodrome safeguarding requirements.

Unlicensed aerodromes

2.75 Unlicensed aerodromes, such as some helicopter landing sites, are encouraged to lodge plans for an aerodrome safeguarding plan but cannot be forced so to do by the Civil Aviation Authority. However, most unlicensed aerodromes do lodge plans as this protects their ability to operate safely.

Air Traffic Control Areas

2.76 A number of aerodromes in the UK have surrounding areas where traffic is controlled into and out of that aerodrome and potentially others in the immediate area (e.g. London Terminal Movement Area). It may be that a site for a proposed nuclear power station is in an area of high density flying because of the way aircraft are directed into and out of the surrounding aerodromes. Such a location would increase the risk to the nuclear power station from an aircraft crash. Furthermore, air exclusion zones around nuclear power stations, established by the Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007, would affect the safe operations of the aerodrome.

2.77 ***All of the issues related to the proximity of proposed sites for new nuclear power stations to civil aircraft movements will be considered as discretionary criteria for the purposes of the SSA. In considering nominated sites, the Government will consult with the relevant regulatory bodies to establish the potential impact of a nuclear power station development at a strategic level. In the case of unlicensed aerodromes that have not lodged aerodrome safeguarding plans, this will be flagged as an issue for detailed local consideration.***

⁷⁰ Department for Transport (July 2002), Control of Development in Airport Public Safety Zones
<http://www.dft.gov.uk/pgr/aviation/safety/controlofdevelopmentinairpor2984>

Proximity to mining, drilling and other underground activities – flag for local consideration 1.9

- 2.78** Mining, drilling and other underground activities can pose a number of risks to nearby nuclear power stations. The planning process will need to assess these risks. The activities that can cause potential risks include:
- Mineral and aggregate extraction from open gravel and claypits which have been restored with inert and/or hazardous waste materials, aggregate and building-stone quarries, and open-cast coal and ironstone workings.
 - Mineral and aggregate extraction from underground mines, including shafts and galleries from the mining of, for example, ores (such as tin, lead, zinc), coal, ironstone, limestone, gypsum and rock salt.
 - Mineral, hydrocarbon and water extraction from boreholes such as cavities and ground settlement from extraction of gas, oil, water, gypsum and rock salt.
 - Waste tips, for example from mines, quarries and industrial and domestic sources.
- 2.79** When building near or upon any of these sites, the potential for collapse, subsidence or uplift of the site surface needs to be evaluated. If this evaluation shows that this activity could affect the safety of a nuclear installation, then practicable engineering solutions will need to be implemented. Full and proper assessment of any prospective sites will require site- and design-specific investigations.
- 2.80** **Building new nuclear power stations near to mining, drilling and other underground activities poses numerous risks. There will have to be a full evaluation of these issues at a local level. While the SSA will not include this issue as an exclusionary or discretionary criterion, it is specifically noted as an important local consideration for the detailed site-specific investigations and planning and regulatory assessment.**

Demographics – exclusionary criterion 1.10

- 2.81** The Government has a longstanding policy regarding local demographics which would limit the radiological consequences to the public in the unlikely event of a serious nuclear accident. This policy is a measure of prudence over and above the stringent regulatory requirements imposed on nuclear operators to prevent such accidents.

- 2.82** The HSE, through the NII and on behalf of the Secretary of State for Business, Enterprise and Regulatory Reform, administers the Government's policy on the control of population around licensed nuclear sites. The NII fulfils this function by advising planning authorities whether proposed developments near to nuclear facilities are consistent with Government policy. Planning authorities take this advice into account in considering whether or not to approve planning applications.
- 2.83** The acceptability of the UK's existing nuclear power station sites was determined by reference to two sets of demographic criteria relating to Magnox power stations and to the Advanced Gas-cooled Reactor (AGR) stations. The siting criteria for Magnox and AGR nuclear power stations are commonly termed "Remote" and "Semi-Urban" siting criteria respectively. Remote sites have a much lower allowable population density than the semi-urban sites and are those sites where the UK's 'first generation' Magnox reactors were conservatively sited. Box 1 sets out existing policy on the Remote and Semi-Urban siting criteria.
- 2.84** The criteria include weighting factors to determine the acceptable population limits in sectors around the site. The weighting factors take account of the fact that local weather patterns will influence the dispersal of radioactive material around the site. Although primarily intended to allow the NII to influence planning decisions in the vicinity of existing nuclear power stations, these criteria can also be used to inform decisions regarding the suitability of sites for installing new nuclear power stations. This approach to determining site suitability was examined in the 1980s in the public inquiries into Sizewell B and Hinkley Point C.
- 2.85** In parallel with the Government's facilitative actions in relation to new nuclear power, the NII has been reviewing its approach to providing advice on population limits around nuclear sites to ensure that the approach is appropriate to different types of nuclear facilities including modern reactors such as those being considered in the GDA.

Box 1 – Hansard (1988) Demographic siting criteria

Mr Michael Spicer

I am advised by the HSE’s Nuclear Installations Inspectorate that the current demographic criteria for assessing potential AGR sites were developed in the late 1960s. These and more restrictive criteria of a similar type are used as guidelines for controlling development in the vicinity of existing AGR and Magnox stations respectively. Once a site has been accepted for a nuclear station arrangements are made to ensure that residential and industrial developments are so controlled that the general characteristics of the site are preserved, and therefore local authorities consult the inspectorate with regard to any proposed development which might lead to an increase in population close to the site and on larger developments further from the site. Limiting criteria based upon population distribution are used only for guidance and the inspectorate would not necessarily insist on rigid adherence to them. Other unquantifiable factors are also taken into account.

The limiting criteria are in the form of cumulative weighted population out to various distances all around the site and in any 30 deg. sector. To assess a site against the criteria at a certain distance, the population for a given distance band is multiplied by the appropriate weighting factor and the values up to the distance being evaluated are added together. The weighting factors and limiting criteria for Magnox and AGR sites are:

Distance (km)	Weighting Factor	Cumulative Weighted Population Criteria	
		Magnox	AGR
Population all around site			
0-2	32.0	45,000	290,000
2-3	15.0	69,000	520,000
3-5	7.7	120,000	870,000
5-8	4.0	180,000	1,300,000
Population in 30 deg. sector			
0-2	26.0	23,000	96,000
2-3	12.0	37,000	170,000
3-5	5.6	48,000	290,000
5-8	2.8	56,000	430,000

Magnox reactors in concrete pressure vessels such as Oldbury and Wylfa would be allowed some relaxation of the general Magnox criteria if necessary.

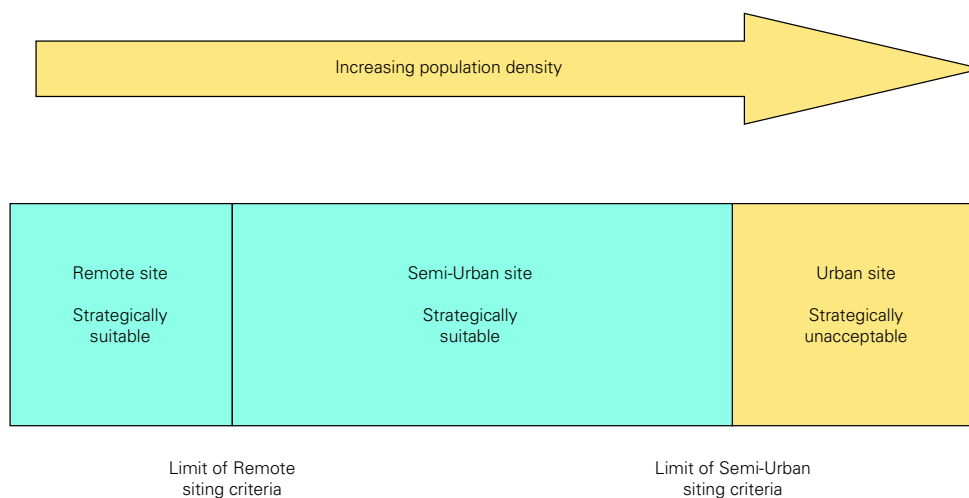
Demographic Criteria to be applied as part of the SSA

- 2.86** As part of the review, NII has concluded that regardless of proposed reactor designs, it is appropriate for the Semi-Urban population density criterion to remain the upper limit for siting new nuclear power stations, and it has advised the Government that this would be an appropriate exclusionary criterion for the purposes of the SSA.⁷¹

Reasons for applying the Semi-Urban criteria as part of the SSA

- 2.87** When a pressurised water reactor was proposed for Sizewell B, and a similar design was proposed for construction at Hinkley Point in the 1980s, the Government adopted a precautionary policy which stated that reactors of a type new to the UK (as opposed to the UK developed Magnox and AGR designs) should, regardless of their particular design, be sited in conformity with the Remote siting criterion. The Sizewell B reactor has now operated safely for over 10 years, and in the almost 30 years since it was originally proposed, there has been significant growth in world operational experience of this and other modern designs from which the reactors proposed for the UK in the GDA have evolved. Furthermore, the UK regulators have in the intervening years developed and refined their assessment approach to reflect international experience of regulation of such designs, to ensure that risks are reduced so far as is reasonably practicable.
- 2.88** On the basis of this, the Government considers that it is no longer necessary to apply the Remote siting criterion to designs such as the modern designs of reactors in the GDA, and that such a precautionary policy does not need to be applied for future siting of international modern designs.
- 2.89** This position is supported by the NII, who consider that modern reactor designs which are consistent with IAEA safety expectations and the NII's Safety Assessment Principles should present a sufficiently low level of public risk that the application of the Remote siting restriction is not warranted. The demonstration of the acceptability of that public risk would be confirmed as part of NII's detailed assessment of a site licence application based on a specific design.
- 2.90** For the purposes of the SSA, therefore, the Government intends to use the existing Semi-Urban criterion set out in Box 1 as an exclusionary criterion. When presented with site nominations in the next stage of the SSA, the Government will assess whether the demographic characteristics of the nominated sites meet the Semi-Urban criterion (as set out in Box 1). The Government will exclude from consideration in the SSA areas where the local population density exceeds the Semi-Urban criterion described in this document, and as shown by Figure 3.

Figure 3 – How sites will be assessed against these criteria



Assessment of demographics through the planning and licensing process

2.91 When carrying out an assessment of a nuclear site licence application (at or around the time of a site specific planning application), the NII will consider the population characteristics of the proposed site in order to establish the acceptability of the risks posed by the proposed nuclear power station to the local population. In carrying out this assessment, NII will apply its own demographic criteria, as amended by its recent review and which can be found on the HSE website.⁷² NII's assessment of site licence applications will be specific to the details of the reactor design and, in certain circumstances, could lead to the NII refusing to grant a licence to construct the nuclear power station on the proposed site, or may lead to a requirement for design changes to reduce the health risk to a tolerable level. It is therefore possible that a site which meets the proposed SSA demographic criteria could be rejected at a later stage in the development process.

2.92 *The Government proposes that areas that meet the Semi-Urban and Remote criteria will, for the purposes of the SSA, be considered strategically suitable for the development of new nuclear power stations, subject to meeting all other relevant criteria. It should be noted that although a site may have demographic features which fall below the SSA exclusionary criteria, this does not mean that the demographic features will be acceptable to the NII following its detailed regulatory assessment at the time of considering a nuclear site licence application.*

⁷² <http://www.hse.gov.uk/newreactors/latest.htm>

Emergency planning – flag for local consideration 1.11

- 2.93** To satisfy the conditions of a nuclear site licence, all nuclear operators are required to make and implement adequate arrangements for dealing with an incident or emergency arising on the site and its effects. They prepare, in consultation with local authorities, the police, health authorities and other bodies, emergency plans for dealing with a radiological emergency at the site. These plans are regularly tested in exercises under the supervision of the NII.
- 2.94** In complying with the conditions of the nuclear site licence, operators will generally satisfy their obligations under the Radiation Emergency Preparedness and Public Information Regulations 2001 (REPPPIR) which implement in Great Britain the articles in Council Directive 96/29/Euratom on intervention in cases of radiation (radiological) emergency, except where they apply to transport by road, rail, air, sea or inland waterway. REPPPIR also places duties on local authorities to have off-site plans for dealing with radiation emergencies.
- 2.95** REPPPIR also partly implements Council Directive 89/618/Euratom on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiation emergency.
- 2.96** REPPPIR establishes a framework of measures for off-site emergency preparedness to ensure that members of the public are:
- properly informed and prepared, in advance, about what to do in the unlikely event of a radiation emergency; and
 - provided with information if a radiation emergency actually occurs.
- 2.97** Development of appropriate emergency plans in accordance with the nuclear site licence and REPPPIR requires a detailed understanding of the nature of the local residential and working population, the capability and redundancy of local infrastructure and the capability of local emergency services.
- 2.98** ***For the purposes of the SSA, the Government does not believe it is possible to determine, at a national level, the suitability of a site to meet emergency planning obligations. However, emergency planning is an important consideration for nuclear safety and, based on their experience as nuclear operators, the Government would expect nominators to give a high-level description of the practicality of developing appropriate emergency planning arrangements at any site that they nominate for the SSA.***

Proximity to military activities – exclusionary and discretionary criteria 1.12

- 2.99** This criterion has the dual purpose of seeking to avoid the potential external hazards to nuclear power station safety that could be created by military training and to ensure that the capabilities of the armed forces to carry out essential training and operations are not adversely affected by the siting of new nuclear power stations.
- 2.100** To limit the potential for the inadvertent close approach of aircraft to nuclear facilities, air exclusion zones have been established to protect the immediate airspace around nuclear power stations. These air exclusion zones vary from site to site but typically cover a radius of approximately two nautical miles to an altitude of around 2,000 feet. These air exclusion zones are established by the Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007.
- 2.101** Such air exclusion zones can significantly affect military training. For this reason, the Government will reject sites which have been nominated within low flying Tactical Training Areas or Aerodrome Safeguarding Plan areas around military aerodromes.
- 2.102** The airspace around military airbases is protected in a similar manner to civilian aerodromes. As with civilian aerodromes, the Ministry of Defence (MOD) is encouraged, but not required, to lodge aerodrome safeguarding plans with the relevant local planning authority. If no aerodrome safeguarding plan has been lodged for a military aerodrome, there is no immediate reference point against which we can exclude sites nominated for the SSA. The Government will ensure that MOD are consulted further during the discretionary assessment of nominated sites.
- 2.103** In addition to the issues the Government has noted related to airbases and low flying, MOD is a statutory planning consultee and has powers to safeguard defence assets in order to protect the capability of defence organisations to carry out essential training and operations. The SSA will therefore include criteria relating to other defence assets such as training areas, firing ranges and technical sites. The Government sets out the designations of the various military areas and their status for the purposes of the SSA in Table 8.

Table 8 – Proximity to military activities

	Criterion	Exclusionary/ Discretionary
1	<p>Military Low Flying Tactical Training Areas and Air Weapon Ranges</p> <p>The Government will reject sites nominated in the SSA process, on an exclusionary basis, if they are within Tactical Training Areas 7T, 20T and 14T and LFA13.</p>	Exclusionary
2	<p>MOD/Defence aerodrome with Military Air Traffic Zone (MATZ)</p> <p>The Government will reject sites nominated in the SSA process, on an exclusionary basis, if they are within the air space surrounding a MOD aerodrome or an aerodrome used for defence activities contained within a designated MATZ. In this respect MOD will be consulted further during the assessment of nominated sites.</p>	Exclusionary
3	<p>MOD/Defence Aerodromes with Air Traffic Zones (ATZ)</p> <p>The Government will reject sites nominated in the SSA process on an exclusionary basis, if they are within the air space surrounding a MOD aerodrome or an aerodrome used for defence activities contained with a designated Air Traffic Zone. In this respect, MOD will be consulted further during the assessment of nominated sites.</p>	Exclusionary
4	<p>Military ranges and training areas</p> <p>The Government will reject sites nominated in the SSA process, on an exclusionary basis, if they are within or affect the use of the areas used for live firing or other military training activities. These include (but are not limited) to the following areas: Aldershot and Minley Training Area, Hankley and Elstead Commons Training Area, Leek and Upper Hulme Training Area, Longmore Range and Training Area, Otterburn Training Area, and Salisbury Plain Training Area.</p> <p>In this respect, MOD will be consulted further during the assessment of nominated sites.</p>	Exclusionary
5	<p>Proximity to other military activities</p> <p>The Government may reject sites nominated in the SSA process, on a discretionary basis, if they are in close proximity to, or would affect, MOD assets or activities including, but not limited to, technical sites and transmitters, offshore danger areas, and nuclear facilities (including ports used by military vessels).</p> <p>During the assessment of nominated sites MOD will be consulted regarding the potential impact of any nominated site on defence activities.</p>	Discretionary
6	<p>Proximity to MOD Explosive Storage Sites</p> <p>The Government will reject sites nominated in the SSA process, on an exclusionary basis, if they are within the explosive safeguarding zones surrounding MOD explosive storage facilities.</p> <p>In this respect MOD will be consulted further during the assessment of nominated sites.</p>	Exclusionary

Criteria related to environmental protection

Background

- 2.104** The conservation of biological diversity is an important objective, both for the UK and globally. The loss and degradation of habitat, particularly due to agriculture and infrastructure development, and global warming are the most important threats to species and habitats. Many internationally and nationally designated sites and species in the UK have the highest levels of protection under domestic, European or international law. These sites include principally, Special Areas of Conservations, Special Protection Areas, wetlands under the Convention of Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest, National Nature Reserves and Marine Nature Reserves. In addition, many European Protected Species occur in the UK.
- 2.105** Protecting the natural environment should be an important consideration when developing new nuclear power stations. The Government expects developers to avoid, mitigate and offset environmental impacts and, where possible, to enhance the environment.
- 2.106** The high-level environmental effects of nuclear power stations, during construction, operation or decommissioning can include adverse impacts upon:
- hydrology and hydrogeology
 - landscape
 - air quality and climate
 - soils, geology and geomorphology
 - surface water quality and drainage
 - ecology – terrestrial and freshwater
 - coastal ecology and geomorphology
 - groundwater
- 2.107** At the strategic level, it is inappropriate to provide siting criteria for many of these issues. They are more appropriately addressed at the development consent stage when Environmental Impact Assessments (EIA) are undertaken. Before they can approve development on a site listed in the Nuclear NPS, the IPC and relevant regulators⁷³ need to consider the site's detailed EIA.⁷⁴ Developers will have produced the EIA to give a thorough description of how a development will affect the environment. To prepare these analyses, developers will need a detailed understanding of their proposed sites, the design of the facility they wish to develop and a methodology for construction

⁷³ Environment Agency in England and Wales and Scottish Environment Protection Agency in Scotland

⁷⁴ Communities and Local Government (January 2000), A Guide to Procedures

<http://www.communities.gov.uk/publications/planningandbuilding/environmentalimpactassessment>

and operation. The level of detail required in an EIA means that developers usually have to conduct detailed site investigations.

2.108 The Government does not expect that this level of site-specific environmental information to be available by the time nominations are invited for consideration in the SSA. Furthermore, given that the Generic Design Assessment (GDA) is still considering a number of power station designs for potential development, the Government does not expect all developers to have reached decisions on their preferred designs by the time that the Government requests site nominations. Therefore, while the Government encourages consideration of environmental factors at this stage, the focus of the siting criteria is upon nationally and internationally designated features, rather than on design- or site-specific matters. The SSA will, through the application of the following criteria, seek to ensure that developers minimise the adverse impact of new nuclear power stations on the UK's most environmentally sensitive features.

2.109 Additionally, the SEA has developed objectives to support the development of, and to independently assess, the discretionary and exclusionary criteria in the SSA, and the nominated sites. The environmental study contains details of this assessment of the SSA criteria. The development of the SSA alongside the SEA has been an iterative process. As a result of this study, the Government has amended the SSA criteria to encourage developers to consider the value of biodiversity, flora and fauna at the earliest possible stage.

Internationally designated sites of ecological importance – discretionary criterion 2.1

2.110 There are numerous ecological sites across the UK that are, or will be, protected from development by European or international agreements. These include:

- Ramsar Sites – the Ramsar Convention is an international treaty that aims to stem the progressive encroachment on, and loss of, wetlands now and in the future
- Special Areas of Conservation – there are currently over 600 designated SACs in the UK covering over 2,500,000 hectares
- Special Protection Areas – there are currently over 250 SPAs in the UK covering over 1,500,000 hectares
- Potential Special Protection Areas (pSPA)
- Candidate Special Areas of Conservation (cSPA)
- Draft Special Areas of Conservation (dSAC)
- Possible Special Area of Conservation (pSAC)

- 2.111** Natura 2000 is the EU-wide network of protected areas, SACs and SPAs, recognised as “sites of Community importance” under the EU Habitats Directive.⁷⁵ Natura 2000 sites are given strong legal protection under legislation which transposes the directive.
- 2.112** The Government is publishing alongside this consultation a Habitats Regulations Assessment (HRA) Screening Report⁷⁶. In accordance with the requirements of the EU Habitats Directive,⁷⁷ the Government have conducted a screening exercise to determine whether the Nuclear NPS could have significant effects on designated sites of European nature conservation.
- 2.113** The Habitats Regulations Assessment (HRA) Screening Report concludes that since significant effects cannot be ruled out on the basis of current information and particularly in the absence of nominated sites, a further screening exercise should be undertaken once sites are nominated. Depending upon the outcome of that screening exercise, it may be necessary to conduct an Appropriate Assessment on the draft Nuclear NPS focusing on those sites for which significant effects cannot be ruled out. Appropriate Assessment will include the consideration of impacts the development of a nuclear power station at a nominated site might have, either alone or in combination with other projects or plans, on the integrity⁷⁸ of the Natura 2000 or Ramsar sites, with respect to their conservation objectives. This Appropriate Assessment will also look at the potential to mitigate any adverse impact that could occur in particular on Natura 2000 or Ramsar sites in relation to the development of a nuclear power station at one of the nominated sites. The Appropriate Assessment will include a high level examination of mitigation methods suggested by the nominator and will, if necessary, examine the potential for strategic alternative solutions, with particular reference to the other nominated sites.
- 2.114** The Appropriate Assessment may conclude that there are nominated sites at which adverse effects could occur, for which there may be no potential effective mitigation and where feasible strategic alternatives may not be available. In conducting the SSA assessment the Government will consider for each such site whether there is an imperative reason of overriding public interest to justify including the site in the Nuclear NPS. The Government will also consider the compensatory measures that would need to be taken if the site is to be used for development of a nuclear power station.
- 2.115** However, the Appropriate Assessment will be conducted at strategic level and the Government do not expect to include the level of detail or range of alternatives which would be required for an Appropriate Assessment of a specific project as this would be impractical and inappropriate.

⁷⁵ <http://www.defra.gov.uk/wildlife-countryside/ewd/ewd09.htm>

⁷⁶ BERR, July 2008 Habitats Regulations Assessment Screening Report, URN 08/928 <http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

⁷⁷ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive)

⁷⁸ *“The coherence of the site’s ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified”.*

2.116 Appropriate Assessment of the Nuclear NPS cannot and will not replace detailed examination of specific impacts and mitigation measures by the Infrastructure Planning Commission (IPC) in relation to an application for planning consent. The Government expects the IPC to be guided by any consideration of these matters that occurred at the strategic level assessment, but it will need to examine them all in detail in relation to the specific development proposal.

2.117 *On this basis, the Government proposes a discretionary criterion for considering internationally designated sites of ecological importance. The Government's view is that it would be undesirable to nominate a site in, or in an area likely to cause adverse impact on, any area covered by the designations described above unless the nominator can:*

- *Confirm that they are able to avoid, minimise or mitigate these effects.*
- *Outline high-level information relating to the likely nature of this impact and countermeasures that the nominator might take to avoid, minimise or mitigate these impacts.*

Even if the SSA (and related Appropriate Assessment) does allow such a site to be included in the Nuclear NPS, it will still be subject to further environmental assessments by the IPC with advice from Natural England, or other nature conservation bodies as appropriate, at the planning consent stage.

Guidance to nominators

2.118 Where nominated sites may have a negative impact on Natura 2000 or Ramsar sites, the Government will expect nominators to outline how they aim to avoid or minimise the impact. It will also expect a nominator to have taken into account the views of the nature conservation bodies responsible for overseeing the management of the areas in considering the potential mitigation measures.

Nationally designated sites of ecological importance – discretionary criterion 2.2

2.119 In line with the criterion described for internationally designated sites, the Government also intends to use the SSA assessment to help to minimise the adverse impacts of development on nationally designated sites of ecological sensitivity, including:

- Sites of Special Scientific Interest/Area of Special Scientific Interest (Northern Ireland)
- National Nature Reserves
- Marine Nature Reserves
- Marine Conservation Zones

- Area of Special Protection/Wildlife Refuges (Northern Ireland)
 - Limestone Pavement Orders
- 2.120** The current planning system does not prohibit development in these areas, providing that appropriate measures are taken to avoid or mitigate the impacts of the development.
- 2.121** As part of the SSA assessment, the Government will assess nominated sites through the SEA objectives after the nominations process has produced further site specific information. The results of this assessment will inform the SSA assessment of nominated sites and the Government intends to publish this in the Environmental Report. In addition to assessing the potential impact of a site on national-level designations, the SEA will also highlight important local-level designations such as Local Sites⁷⁹ and Biodiversity Action Plan (BAP) Habitats.⁸⁰ Where this is the case, the Government expects that the Nuclear NPS will reference the potential impact on these designated areas and will advise the IPC to give specific consideration to these issues when assessing planning applications.
- 2.122** *The Government proposes a discretionary criterion for this issue. The Government's view is that it would be undesirable for nominators to propose the development of a new nuclear power station in an area likely to cause adverse impact on any area covered by the designations described above unless nominators can:*
- *confirm that they are able to avoid, minimise or mitigate these effects; and*
 - *outline high-level information relating to the likely nature of this impact and countermeasures that the nominator might take to avoid, minimise or mitigate these impacts.*

Guidance to nominators

- 2.123** Where a site is nominated in an area that may affect a nationally designated area of high ecological importance, the Government will expect nominators to outline how they could avoid, minimise or mitigate the potential impacts of their site on that area. The Government will also expect a nominator to have taken the views of any statutory bodies responsible for the management of these designations into account in considering the potential avoidance, minimisation and mitigation countermeasures.

⁷⁹ Local Sites – Guidance on their Identification, Selection and Management, Defra 2006 (<http://www.defra.gov.uk/wildlife-countryside/ewd/local-sites/localsites.pdf>)

⁸⁰ More information about BAP Habitats can be found at <http://www.ukbap.org.uk/>

Criteria related to societal issues

Areas of amenity, cultural heritage and landscape value – discretionary criterion 3.1

2.124 The UK's planning system seeks to protect, where possible, sites and structures of specific amenity, cultural heritage and landscape value. These include:

- Unesco World Heritage Sites
- Battlefields
- Scheduled monuments
- Historic parks and gardens
- Historic garden designated landscapes
- Historic gardens
- Register of parks and gardens of special historic interest
- Protected wreck sites
- National scenic areas
- National Parks
- Areas of Outstanding Natural Beauty
- Heritage Coast
- National trails
- Long distance routes
- Listed buildings
- Areas of archaeological importance

2.125 If a nominator wishes to propose a site that is in, or could adversely affect, an area covered by these designations, they will have to provide a high-level indication of how they can appropriately avoid, manage or mitigate the effects of development. Similarly, nominators should also consider adverse impacts on locally designated or non-designated areas of landscape value, landscape character, tranquillity, distinctiveness and cultural heritage.

2.126 *The Government proposes a discretionary criterion for sites of amenity, cultural heritage and landscape value. The Government's view is that it would be undesirable for nominators to propose the development of a new nuclear power station in, or in an area likely to cause adverse impact on, any of the areas listed above unless they can:*

- *confirm that they are able to avoid, minimise or mitigate these impacts;*
- and*

- **outline high-level information relating to the likely nature of impact and countermeasures that the nominator might take to avoid, minimise or mitigate these impacts.**

Guidance to nominators

2.127 Where a site is nominated in an area which may affect a nationally designated area of high amenity, landscape or cultural heritage value, the Government will expect nominators to outline how they could avoid, minimise or mitigate the possible effects of their site on that designated area. The Government will also expect the nominator of a site to take into account the views of any statutory bodies responsible for the management of these designations in considering the potential countermeasures to avoid, minimise and mitigate the environmental effects.

Significant infrastructure resources – flag for local consideration 3.2

2.128 The UK's planning system seeks to protect, where possible, sites and structures including:

- Motorways, major highways (for example A roads)
- Strategic Rail Network
- Gas transmission network
- Electricity transmission network
- Airports
- Ports
- Water – Source Protection Zones

2.129 The Government is committed to protecting the quality and supply of drinking water and the quality of watercourses, groundwater and coastal waters. As a natural resource, groundwater is integral to the overall water environment. It provides drinking water and water for industry and agriculture. Groundwater is also important for the maintenance of wetlands and river flows and has a direct impact upon the quality of surface waters. Major infrastructure and power generation projects can affect the hydrology and quality of groundwater.

2.130 *The Government recognises access to infrastructure will be an important factor for developers in making their assessments of the practicality of site development, and that to understand the potential impact of a new development on these important infrastructures, there will have to be detailed project-specific assessments. For the purposes of the SSA, the Government proposes not to use a criterion related to the impact of new nuclear power stations on infrastructure. It will flag this as an issue for detailed local consideration.*

Criteria related to operational requirements

Size of site to accommodate construction, operation and decommissioning – discretionary criterion 4.1

- 2.131** The land-use requirements of a nuclear power station vary throughout the construction, operation and decommissioning lifecycle of the plant. Sites will have to be large enough to accommodate the construction, operation and decommissioning of modern nuclear power stations, as exemplified by the designs currently being considered in the GDA. The site will not necessarily need to be large enough for all of the GDA designs. The Government will also ask nominators for an outline of the area nominated. It expects operators of new nuclear power stations to make provision to store 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. Operators will be expected to factor the need for storage of waste and spent fuel storage into the area nominated.
- 2.132** The availability of land is of particular relevance in the context of security arrangements required for nuclear power station sites. The Government will require operators to adopt the concept of “defence-in-depth”⁸¹ in protecting nuclear power stations. This will require them to make adequate land available so that effective control over activities and access may be exercised on and around each nuclear power station.
- 2.133** The Government will seek specific guidance from the Office for Civil Nuclear Security in assessing nominated sites against this criterion.
- 2.134** ***The Government proposes a discretionary criterion for the availability of land for construction, operation and decommissioning. In submitting sites for consideration, the Government will expect nominators to confirm that their proposed sites are big enough to meet the land requirements during construction, operation and decommissioning of at least one nuclear power station.***

Access to suitable sources of cooling – discretionary criterion 4.2

- 2.135** Nuclear power stations require suitable cooling for safe and efficient operation. Feasible options for cooling include:
- direct use of sea, lake or river water without cooling towers;
 - use of cooling towers, typically combined with lake or river sites and using considerably less water than direct cooling; and

⁸¹ Defence-in-depth is defined by the IAEA as “a concept used to design security systems that require an adversary to overcome or circumvent multiple obstacles, either similar or diverse, in order to achieve his objective”.

- air-based cooling, with minimal water requirements but utilising large heat exchangers.

2.136 The environmental impacts of cooling depend largely on the environmental sensitivity of the area, the cooling requirements of the nuclear power station and the detailed design of the cooling system. Both abstraction and discharge of cooling water can affect the environment. Cooling towers will also have some visual impact.

2.137 *For the basis of the SSA, access to suitable sources of cooling is a discretionary criterion. The Government will ask nominators to provide information about the cooling technologies that are feasible for their proposed site, so that it can consider the environmental and visual impact of those technologies. Sites may be ruled out, on a discretionary basis, unless operators can identify suitable countermeasures to avoid, minimise or mitigate the potential impacts of cooling.*

Access to transmission infrastructure – flag for local consideration 4.3

2.138 New nuclear power stations will require connections to the National Grid for the distribution of the electricity that they generate. In some areas, connection to the grid will require significant upgrades to both national and local grid infrastructure.

2.139 The Government recognises that the development of new grid lines and, to a lesser extent, upgrades to existing lines, can create considerable environmental and planning blight issues. These issues will be generic to any type of power station development and will not be specific to nuclear. The Planning Bill sets out that a National Policy Statement is also planned for the installation of an electric line above ground and, in the preparation of this document, the potential environmental issues associated with transmission infrastructure will be examined.⁸² When considering planning applications for new nuclear power stations which require new and upgraded grid infrastructure, the IPC will need to reference both the Nuclear NPS and the Transmission NPS in reaching its decisions.

2.140 The operating procedures and principles governing the operations of the National Grid are set down in the Grid Code.⁸³ The Code is designed to permit the development, maintenance and operation of an efficient, co-ordinated and economical system for the transmission of electricity; to facilitate competition in the generation and supply of electricity; and to promote the security and efficiency of the power system as a whole. National Grid and users of its transmission system are required to comply with the Grid Code.

⁸² <http://www.publications.parliament.uk/pa/cm200708/cmbills/011/2008011.pdf>

⁸³ <http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/>

2.141 *The Government recognises access to electricity transmission will be an important factor for developers in making their assessments of the practicality of site development. However, an adequate mechanism already exists for dealing with the cost issues of new infrastructure. Through the separate Transmission NPS, the planning mechanism will ensure that the SSA gives proper consideration to the environmental consequences of grid developments, and the Government will, therefore, flag this issue for local consideration by the IPC.*

High-level summary of environmental study conclusions

2.142 At an early stage in the development of the SEA on the Nuclear NPS, an environmental study has been conducted which sets out an assessment of the environmental and sustainability impacts of applying the proposed SSA criteria.

2.143 The main purpose of the assessment is to allow a consideration of the potential environmental impacts of applying the proposed SSA criteria to screen nominated sites for potential new nuclear power stations in order to influence the development of the criteria.

2.144 The Government is publishing the full study alongside the SSA Consultation and we are also seeking views on the content of the study.⁸⁴ The Government is also undertaking a Strategic Environmental Assessment in relation to the proposed Nuclear NPS and will publish an Environmental Report assessing the environmental impacts of the NPS when it consults on the draft Nuclear NPS next year. The study of the impacts of applying the SSA criteria is an important step in the development of the SEA.

2.145 The study also considers various expanded and additional SSA criteria, as well as the alternatives to the classification of each individual SSA criterion as exclusionary, discretionary or a local issue.

2.146 The environmental study assesses the criteria against a range of "SEA Objectives" which are set out in the study. These objectives provide a mechanism for assessing environmental impacts in relation to 12 environmental topic areas, plus the inter-relationship between them.⁸⁵ The study sets out the extent to which the application of the proposed suite of SSA criteria contribute to the achievement of the SEA objectives. Whilst the SSA criteria will be applied collectively, the non-technical summary of the environmental study also identifies the potential environmental and sustainability impacts of applying each of the SSA criteria in turn. These analyses are set out in detail in the environmental study document. The main findings of this analyses are also outlined for convenience in Box 2.

⁸⁴ BERR (July 2008) Towards the draft Nuclear National Policy Statement: Applying the proposed Strategic Siting Assessment Criteria: A study of the potential environmental and sustainability effects <http://www.berr.gov.uk/energy/nuclear-whitepaper/consultations/page44523.html>

⁸⁵ These are derived from the Strategic Environmental Assessment Directive: biodiversity, flora and fauna, population and human health, material assets, air and climate, water, soils and geology, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between these topics.

- 2.147** In responding to the SEA Scoping Report, a number of respondents felt that the SEA objectives should not simply be expressed in terms of “to avoid adverse impact ...” Instead, they felt that the SEA objectives should take account of enhancements to bring out positive impact such as the creation of employment and the reduction of carbon dioxide. The Government believes that specific enhancements may be better dealt with at the individual application stage as more details of the effects of the proposed development will be known at that point. The SEA will identify both positive and negative effects of nuclear power stations.
- 2.148** The environmental study finds that certain features of the criteria, including the discretionary nature of some of the criteria, mean that adverse environmental and sustainability impacts cannot be wholly ruled out.
- 2.149** However, the study also found that using the proposed SSA criteria to identify suitable sites for new nuclear power stations is likely to lead to outcomes which are, on balance, broadly in line with the principles of sustainability and environmental protection.
- 2.150** The environmental assessment summarised in Box 2 has been taken into account in the development of the SSA criteria and, whilst there are a number of areas where the criteria do not fully address each of the SEA objectives, the Government believes that the proposed SSA criteria strike the right balance between the need for environmental protection and the pressing challenges of delivering the UK’s energy policy objectives.
- 2.151** Where the SSA criteria do not address or fully address the SEA objectives, there remains scope for such environmental issues to be considered at the local level and in some cases it is more appropriate for such environmental issues to be considered at the local level. Environmental issues in relation to sites nominated through the SSA will be considered in the Environmental Report for the Nuclear NPS. Such issues would also be considered at project level through an Environmental Impact Assessment (“EIA”) in the event of site specific application for development consent.

Box 2 – Summary of environmental and sustainability assessment

This Summary is intended to summarise the key findings of the environmental study to assist respondents in considering the SSA Consultation. To learn more about the environmental assessment of the criteria, respondents are invited to refer to the study itself for a full explanation of the assessment. The study includes a Non-Technical Summary which sets out the findings in greater detail than is possible here.

Summary of assessment against SEA topic areas:

The environmental study uses SEA objectives assembled in 12 topic areas as its basis for assessment. It sets out the extent to which the application of the proposed suite of SSA criteria contribute to the achievement of the aspirational SEA objectives and topics. The non-technical summary of the environmental study also identifies the potential environmental and sustainability impacts of applying each of the SSA criteria in turn. For convenience, some of the most closely related topic areas have been grouped together here.

Effects on Biodiversity, Flora and Fauna – The discretionary criteria relating to nationally and internationally designated sites of ecological importance contribute to the protection of Biodiversity, Flora and Fauna within these designated sites. However, the discretionary nature of the criteria means that adverse impacts cannot be ruled out. The protection of valuable ecological networks, Priority Habitats and Species including European Protected Species which lie outside these sites are not specifically considered in the criteria.

Effects on Population and Human Health – The SSA process, by facilitating the development of new nuclear power stations, is likely to lead to the creation of employment opportunities and may offer indirect benefits to communities. The SSA criteria also give specific consideration to those aspects of nuclear safety which can be influenced by national-level siting decisions. This includes reducing accident risk as a result of external hazards and an established approach to identifying safe distances between new nuclear power stations and existing populations. This helps to avoid risks to human health.

Effects on Material Assets – Criteria relating to safety issues are found to provide an indirect contribution to the protection of material assets by reducing the potential accident risk. However, SSA criterion 3.2 which relates to significant resources and infrastructure, and specifically the need to protect sites and structures such as transport links, gas and electricity networks and water sources is classed as being for local consideration only. The environmental study therefore notes that the SSA will not influence the potential impact upon important national infrastructure. Discretionary criteria also work towards avoiding impacts upon important recreational and amenity assets. The SSA criteria do not directly address the issues of planning blight and property values.

Effects on Air and Climate – By seeking to limit the risk of nuclear accidents, SSA criteria relating to nuclear safety indirectly contribute to the achievement of SEA objectives related to air quality – specifically radioactive emissions to air. In addition, the SSA process, by facilitating the development of new nuclear power stations, will make a contribution to the UK's ability to meet its commitments to the reduction of carbon emissions. However, the study also finds that the development of new nuclear power stations may have adverse impacts on air quality, particularly arising from dusts and increased vehicle activity during the construction phase. Vehicle activity would also result in greenhouse gas emissions. The SSA criteria do not address these issues. The criteria also seek to avoid flood risk at new nuclear power stations and reduce risk of the new development causing increased flood risk in neighbouring areas. The relevant criteria to flooding are discretionary.

Effects on Water – The environmental study finds that the SSA criteria have little impact on the ability to achieve SEA objectives related to water other than through the reduction of accident risk, flood risk or where sensitive water features coincide with nationally and internationally designated nature conservation sites. In particular, the proposed criteria do not seek to address issues associated with radioactive discharges to the water environment. The water environment includes surface, coastal and groundwater, water supply and geomorphology. The criteria also require that new nuclear power stations have access to a suitable supply of cooling – this may result in adverse environmental effects as a result of, for example, abstraction and warm discharges, so it is important that effects on the water environment are considered as early as possible in the process. Dependent on the choice of cooling technology, there are potential adverse environmental and visual impacts related to the abstraction and discharge of cooling water and the construction of large cooling towers.

Effects on Soils and Geology – The SSA criterion relating to nationally designated areas of ecological importance contributes to the protection of soils and geology where those features are designated for protection at a national level (for example as a SSSI). These resources may also be afforded some protection indirectly by the criteria relating to reducing accident risk. However, the SSA criteria do not directly assess all aspects of the soil and geological resource and the study concludes that there could be a risk of contamination and potential adverse effects on soil functions, particularly during the construction phase. The criteria do not specify a preference for brownfield or greenfield land to be used.

Effects on Cultural Heritage including Architectural and Archaeological Heritage – A specific SSA criterion (criterion 3.1 covering areas of amenity, cultural heritage and landscape value) seeks to avoid adverse impacts on areas of amenity, cultural heritage and landscape value and therefore directly contributes to the achievement of this SEA objective. However, the discretionary nature of this criterion means that adverse impacts cannot be wholly ruled out and the focus is on nationally designated features only.

Effects on Landscape – A specific SSA criterion (criterion 3.1 covering areas of amenity, cultural heritage and landscape value) seeks to avoid adverse impacts on areas of amenity, cultural heritage and landscape value and therefore directly contributes to the achievement of this SEA objective. However, the discretionary nature of this criterion means that adverse impacts cannot be wholly ruled out.

Assessment of each SSA criterion:

Criterion 1.1 – Seismic Risk (Exclusionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to Human health. By reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment.

Criterion 1.2 – Capable Faulting (Exclusionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to Human health. Through reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment.

Criterion 1.4 – Flooding (Discretionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to human health. This criterion also requires Government and nominators to consider the off-site impacts of flooding which may be caused by a development. Indirectly it works towards protecting other features of the natural and built environment. However, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out.

Criterion 1.5 – Tsunami, storm surge and coastal processes (Discretionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to human health. Through reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment. However, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out.

Criterion 1.7 – Proximity to hazardous industrial facilities (Discretionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to human health. However, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out. By reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment.

Criterion 1.8 – Proximity to civil aircraft movements (Discretionary and Local) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to human health. However, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out. This criterion also provides some protection against the disruption to airport operations which may result from the development of new nuclear power stations. Through reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment.

Criterion 1.10 – Demographics (Exclusionary) – Contributes directly to the reduction of risks to the public relating to nuclear accidents and is therefore consistent with SEA objectives relating to human health.

Criterion 1.12 – Proximity to military activities (Exclusionary and Discretionary) – Contributes directly to the reduction of safety risks and is therefore consistent with SEA objectives relating to human health. However, the discretionary nature of certain aspects of this criterion means that potential adverse impacts cannot be completely ruled out. This criterion also provides protection against the disruption to military activities which may result from the development of new nuclear power stations. Through reducing safety risks through the siting process, this criterion also works indirectly towards avoiding risks to other features of the built and natural environment.

Criterion 2.1 – Internationally designated sites of ecological importance (Discretionary) – Contributes directly to the protection of sensitive habitats and should therefore lead to more informed judgements about the siting of nuclear power stations in relation to these sites. However, habitats and species which are not covered by international designations are not considered in this criterion and there may therefore be a potential for adverse environmental impacts. In addition, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out.

Criterion 2.2. – Nationally designated sites of ecological importance (Discretionary) – Contributes directly to the protection of sensitive habitats and should therefore lead to more informed judgements about the siting of nuclear power stations in relation to these sites. However, habitats and species which are not covered by national-level designations are not considered in this criterion and there may therefore be a potential for adverse environmental impacts. In addition, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out.

Criterion 3.1 – Areas of amenity, cultural heritage and landscape value.

(Discretionary) – Contributes directly to the protection of areas of amenity value and should therefore lead to more informed judgements about the siting of nuclear power stations in relation to these sites which have a direct bearing on SEA objectives relating to amenity, landscape, and cultural heritage. However, the discretionary nature of the criterion means that potential adverse impacts cannot be completely ruled out.

Criterion 4.1 – Size of site (Discretionary) – The study finds that there are no significant potential environmental impacts associated with this criterion.

Criterion 4.2 – Cooling (Discretionary) – This criterion requires that suitable access to cooling technologies is available. This may involve abstractions or discharges to water features or the creation of cooling towers, both of which may result in adverse environmental effects. However, the criterion does not, in its own right, seek to reduce the environmental impacts of developments. Rather, it relies on criteria relating to the protection of environmentally sensitive sites to influence these aspects of nuclear power station siting.

Criterion 1.3 – Non seismic ground conditions (Local) – The study finds that there are no significant potential environmental impacts associated with this criterion at the strategic level as it is for local consideration only.

Criterion 1.6 – Meteorological conditions (Local) – The study finds that there are no significant potential environmental impacts associated with this criterion at the strategic level as it is for local consideration only.

Criterion 1.9 – Proximity to mining, drilling and other underground operations (Local) – The study finds that there are no significant potential environmental impacts associated with this criterion at the strategic level as it is for local consideration only.

Criterion 1.11 – Emergency Planning (Local) – This criterion directly relates to SEA objectives related to human health. However, the fact that this issue is classed as “flag for local consideration” means that it will not be used by the SSA to influence the siting of nuclear stations. Rather, this issue is expected to be addressed by regulators as part of a nuclear site licence application.

Criterion 3.2 – Significant Infrastructure/resources (Local) – This criterion directly relates to the protection of important infrastructure and material assets (such as the strategic transport infrastructure). However, SSA criterion 3.2 which relates to significant resources and infrastructure and specifically the need to protect sites and structures such as transport links, gas and electricity networks and water sources is classed as being for local consideration only and is therefore not considered to directly contribute to the achievement of the SEA Objectives.

Criterion 4.3 – Access to transmission infrastructure – (Local) – The SSA classifies this issue as being for local consideration. This means that the potential environmental, landscape and cultural heritage impacts of developing new electricity transmission lines will not be considered at a national level by the SSA. There could therefore be a potential for some adverse environmental impacts.

It should also be noted that the development of a number of new nuclear power stations may result in cumulative environmental effects which may not be significant for each site but may become significant when assessed as a whole. These issues will be discussed further in the Environmental Report which will be issued alongside the draft NPS.

2.152 The environmental study has highlighted a number of potential environmental impacts which may arise as a result of siting new nuclear power stations in accordance with the SSA criteria set out in this document. The SSA seeks to limit the potential for adverse environmental impacts through the use of criteria to protect the integrity of areas designated for their high ecological or amenity value. However, the classification of some of the proposed criteria as discretionary or “flagged for local consideration” may result in some adverse environmental impact.

2.153 In developing the SSA criteria, the Government has taken the findings of the environmental study into account and have considered a number of alternative additional or expanded criteria and/or approaches to applying the criteria. The iterative development of the environmental study alongside the SSA has identified a number of important environmental issues which have subsequently been incorporated into the proposed SSA criteria. Further details of this iterative development of the proposed SSA criteria are set out in Section 2 of the environmental study and Table 9 below describes the main alternatives which were considered but which were not included in the proposed SSA criteria.

2.154 Respondents may find it helpful to refer to Section 2 of the environmental study which provides further information about the assessment of the main alternative proposals considered and the impact of those alternatives. Section 2 also includes an assessment of the impacts of choice of classification for each criteria (ie, exclusionary/discretionary/flag for local consideration).

Table 9 – Alternatives or modifications to the criteria suggested in the environmental study

Alternative/ Modifications to criteria	Provisional Response
Development of a local criterion which addresses the need to protect Priority Habitats and Species and ecological features outside of designated sites. (i.e. outside of sites protected under EU legislation)	The SSA is intended to be a strategic assessment of the issues in relation to nuclear siting which can be appropriately influenced at a national level. Whilst the issues leading to this recommendation are important environmental considerations, the Government did not believe it was possible to take meaningful decisions at a national level without conducting detailed studies into the nature and whereabouts of these Priority Species, Habitats and other ecological features. The Government believes that it is more appropriate for these issues to be given full consideration in the Environmental Impact Assessments which will be carried out by developers when proposals for development consent for specific projects are brought forward. For these reasons, specific criterion in relation to these issues has not been included.

Alternative/ Modifications to criteria	Provisional Response
Development of a local criterion which highlights the need to consider and assess impacts upon hydrology, hydrogeology, geomorphology, soils, water quality and drainage.	Whilst the Government recognises the importance of these issues, it is our expectation that it will be possible to avoid or mitigate adverse effects through appropriate design and engineering solutions. The Government believes that these issues should therefore be given detailed consideration by developers as site- and design-specific plans are being prepared for submission to the IPC. For this reason, the Government has not proposed an SSA criterion in relation to these issues as they are more appropriately considered in the context of planning applications for specific development proposals.
Development of a local criterion which highlights the need to consider and assess impacts on geology and mineral resources that are not covered by national or international designations.	The SSA is intended to be a strategic assessment of potential sites for new nuclear power stations. Whilst the issues noted in this recommendation are important considerations, the Government did not believe it was possible to take meaningful decisions at a national level without conducting detailed studies into the nature and whereabouts of these features. The Government also believes that these issues can be given more complete consideration in the Environmental Impact Assessments which will be carried out by developers when proposals for development consent for specific projects on specific sites are brought forward. For these reasons, an SSA criterion in relation to these issues has not been included.
Development of a local criterion which highlights the importance of protecting the wider cultural heritage resource that lies outside national and international designations.	The SSA is intended to be a strategic assessment of the issues in relation to nuclear siting which can be appropriately influenced at a national level. Whilst the issues noted in this recommendation are important considerations, the Government did not believe it was possible to take meaningful decisions at a national level without conducting detailed studies into the nature and whereabouts of these resources. The Government also believes that these issues can be given more complete consideration in the Environmental Impact Assessments which will be carried out by developers when proposals for development consent for specific projects are brought forward. In particular, the Government expects that the local consultations that developers are required to carry out in advance of submitting planning applications and also that nominators will conduct in advance of submitting specific sites for consideration through the SSA process, will be helpful in identifying these issues. For these reasons, a specific criterion in relation to these issues has not been included.
Criterion 3.2, which relates to significant infrastructure/resources, should be changed from an issue for local consideration to a discretionary criterion to increase its prominence at a national level.	The Government recognises that transport issues, particularly during the construction phase of a nuclear power station development, may have significant impacts on both strategic and local infrastructure. It believes that these issues should be given detailed consideration by developers as site- and design- specific plans are being prepared for submission to the IPC. For this reason, the Government has not proposed an SSA criterion in relation to these issues as they are more appropriately considered in the context of planning applications for specific development proposals.

Alternative/ Modifications to criteria	Provisional Response
<p>The development of a criterion which seeks to limit the increase in transport movements resulting from a new power station development and to encourage the use of alternatives to road transport where practicable.</p>	<p>The main transport issues associated with new nuclear power stations are likely to be the transport of major components during the construction phase; fuel and personnel transport during the operational phase; and the transport of spent fuel and other waste materials during the operational and decommissioning phases. At this point in time, it is not known where the likely manufacturing locations for major components will be and decisions around the location of higher-activity waste management facilities have not yet been made. For this reason, the Government does not believe it will be possible for the SSA to draw any meaningful conclusions about the likely environmental impacts of transport movements resulting from power station siting decisions, and so have decided not to develop an SSA criterion covering these matters.</p>
<p>Use criteria 1.4 and 1.5 to place greater emphasis on the need for holistic approaches to flood risk issues.</p>	<p>Both criteria 1.4 and 1.5 require nominators to give consideration to the wider impacts of flood protection countermeasures on areas surrounding nominated sites.</p> <p>The Government has not included further reference to holistic approaches to flood risk management because it believes that this issue is more appropriately assessed by the IPC and relevant regulators at the time of site specific planning applications. The Government expects that these assessments will give consideration to the recommendations of relevant frameworks and water management strategies such as Planning Policy Statement 25 and the Making Space for Water programme.</p>

Alternative/ Modifications to criteria	Provisional Response
<p>Consider changing the criterion relating to electricity transmission infrastructure to discretionary to ensure that the potential landscape and environmental issues associated with the development of new transmission lines is given full consideration in the development of the Nuclear NPS.</p> <p>The Government also considered adding explanatory text to criterion 3.1 to highlight to nominators the need to consider the effects on landscape resources when thinking about potential upgrades that might be needed to provide electricity transmission upgrades.</p>	<p>Early drafts of the proposed SSA criteria did consider the development of a discretionary criterion relating to the proximity of a site to suitable electricity transmission infrastructure. However, these drafts were rejected for the following reasons:</p> <p>Firstly, the relationship between the location of a power station and its required transmission infrastructure is not straightforward. In addition to the more obvious requirements for connections between power stations and the transmission infrastructure, the development of new power stations often requires upgrades to transmission infrastructure (including the construction of new power lines) elsewhere in the transmission network. In order to understand the requirements for these “deep system upgrades”, it is necessary to conduct extensive technical assessments. These assessments require details of the capacity of the power stations and other technical operating parameters to be known.</p> <p>Secondly, the Planning Bill sets out that a separate National Policy Statement will be prepared relating to developments of electricity transmission infrastructure. The requirement for connection to the electricity transmission infrastructure is not specific to nuclear power stations and this NPS will need to be applicable to all power station developments. It is important that the Nuclear NPS is consistent with this NPS for transmission infrastructure and therefore the SSA will not include specific recommendations or criteria about issues related to transmission infrastructure. When specific proposals are brought forward for development consent, the Government anticipates that the IPC will consider the NPS for transmission infrastructure alongside the Nuclear NPS in taking decisions about the appropriateness of the proposals.</p> <p>The Government did not consider it appropriate to add explanatory text to criterion 3.1 in relation to transmission upgrades since such issues are too specific to individual projects to be included in the SSA and would be more appropriately addressed through to Electricity Networks NPS.</p>

Alternative/ Modifications to criteria	Provisional Response
<p>Use the criterion related to identification of cooling technologies to seek to avoid adverse impacts on the water environment which may result from the abstraction or discharge of cooling water.</p>	<p>This criterion seeks to identify the likely cooling technologies which nominators believe will be appropriate for each nominated site. This will allow consideration in the SSA and SEA assessment of the potential adverse environmental impacts of development on a particular site. Where there is a potential for impact on nationally or internationally designated sites of ecological importance, the SSA assessment will address these issues in consideration of criteria 2.1 and 2.2. It is clear from the environmental study that additional adverse environmental impacts may arise related to the abstraction and discharge of cooling water. However, it will be possible to avoid, minimise or mitigate a number of these issues through careful selection of cooling technology and design of outfalls. Since the Government does not expect that developers will have made reactor technology choices by the time of the SSA assessment, it does not believe it will be possible to make meaningful decisions on the basis of these issues in the SSA in the absence of detailed information about site specific cooling system designs.</p>
<p>The development of a criterion which seeks to encourage developers to use brownfield in preference to greenfield sites.</p>	<p>The use of brownfield sites in preference to greenfield sites is an important issue to be considered in taking planning decisions for all developments. However, the Government has not included a specific criterion related to this issue in the SSA because it believes that the identification of, and decision making in relation to, these sites is more appropriately carried out at the time of site specific planning applications.</p>

Question 4

Do you agree that the proposed exclusionary and discretionary criteria are appropriate for the assessment of a site's suitability at a strategic level? If not, how should the criteria be changed to achieve this objective and, specifically, are there any additional criteria that should also be used? Should the classifications of any of the exclusionary criteria, discretionary criteria, or issues for local consideration be changed?

Question 5

Do you agree that the proposed SSA is appropriate to produce a list of strategically suitable sites for the purposes of setting the framework for the Infrastructure Planning Commission's decisions? If not, how should the process be changed to achieve this objective?

Appendix 1: Abbreviations

AGR	Advanced Gas Cooled Reactor
BERR	Department for Business, Enterprise and Regulatory Reform
CLG	Communities and Local Government
CNPO	Credible Nuclear Power Operator
COMAH	Control of Major Accident Hazard Regulations supervised by HSE (http://www.hse.gov.uk/comah/)
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DPA	Data Protection Act
EA	Environment Agency
EIA	Environmental Impact Assessment
ER	Environmental Report
EU	European Union
FOIA	Freedom of Information Act
g	Acceleration due to gravity
GDA	Generic Design Assessment
HRA	Habitats Regulation Assessment
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency (http://www.iaea.org/)
IPC	Infrastructure Planning Commission The Planning White Paper for England proposed the formation of a Planning Commission to decide major infrastructure proposals. This has subsequently been carried forward in the Planning Bill introduced to Parliament in November 2007.
MW	Megawatt (million watts)
NII	Nuclear Installations Inspectorate (part of HSE)
NPS	National Policy Statement
Nuclear NPS	The proposed National Policy Statement for new nuclear power stations
OCNS	Office for Civil Nuclear Security (part of HSE)
PPS	Planning Policy Statement
SEA	Strategic Environmental Assessment The European SEA Directive "on the assessment of the effects of certain plans and programmes on the environment" requires a formal environmental assessment of certain plans and programmes that could have significant effects on the environment.
SSA	Strategic Siting Assessment

Appendix 2: The Consultation Code of Practice criteria

The six consultation criteria:

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

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

