



Department for
Business, Energy
& Industrial Strategy

CONSULTATION ON THE SITING CRITERIA AND PROCESS FOR A NEW NATIONAL POLICY STATEMENT FOR NUCLEAR POWER WITH SINGLE REACTOR CAPACITY OVER 1 GIGAWATT BEYOND 2025.



December 2017

The consultation can be found on the BEIS section of GOV.UK:

<https://www.gov.uk/beis> [<https://www.gov.uk/government/consultations/national-policy-statement-for-new-nuclear-above-1gw-post-2025-siting-criteria-and-process>]

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Any enquiries regarding this publication should be sent to us at newnuclearnps@beis.gov.uk

Foreword

The overarching National Policy Statement for Energy (EN-1), published in 2011, made clear the Government's view that nuclear power generation is a low-carbon, proven technology which will play an important role as we move to diversify and decarbonise our sources of electricity and increase the resilience of the UK's energy system.

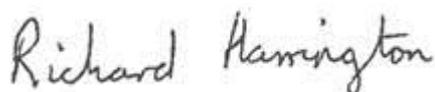
Taken together, EN-1 and the nuclear National Policy Statement (EN-6) provide the framework for development consent decisions on applications for new nuclear power stations expected to deploy by the end of 2025. They set out the need for nuclear power, whilst also providing planning guidance for developers and for the Planning Inspectorate and Secretary of State in their consideration of applications. The sites listed in EN-6 were originally nominated to Government in 2009 and were assessed at a strategic level as potentially suitable for the deployment of new nuclear power stations in England and Wales. These sites are: Hinkley Point C, Wylfa, Sellafield (more commonly known as Moorside), Sizewell, Bradwell, Oldbury, Hartlepool and Heysham.

EN-6 successfully facilitated the granting of a Development Consent Order for a new nuclear power station at Hinkley Point C in March 2013 and further nuclear projects are planning to make applications for development consent in due course. However, nuclear power stations take a long time to progress from design conception to operation. As such, it is necessary to designate a new nuclear National Policy Statement to facilitate nuclear power stations at sites capable of deployment between 2026-2035.

Government continues to believe that new nuclear power has an important role to play in the UK's future energy mix, alongside other low-carbon energy sources. I am therefore delighted to launch this consultation on the process and criteria for designating potentially suitable sites in a new National Policy Statement for nuclear power projects with over 1GW of single reactor electricity generating capacity deploying between 2026-2035. In doing so we are creating a clear route for future planning decisions to be taken by producing a new National Policy Statement for the deployment of nuclear power in England and Wales.

In this consultation we are actively seeking views and suggestions to enable us to develop the criteria and process to assess which sites should be included in a new National Policy Statement as potentially suitable for the development of nuclear power between 2026-2035.

Bringing forward a new Nuclear National Policy Statement is an important part of the work my Department is doing to facilitate the further deployment of new nuclear power in England and Wales. We look forward to hearing your views and comments on this consultation.



Richard Harrington MP
Minister for Energy and Industry

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General information

Purpose of this consultation

Set out what Government is trying to achieve with the consultation and in particular whose views it is seeking.

Issued: 7 December 2017

Respond by: 15 March 2018

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Consultation reference: New Nuclear NPS Siting

Territorial extent:

This consultation relates to the exercise of powers in England and Wales.

How to respond

Your response will be most useful if it is framed in direct response to the questions posed on Citizen Space, which can be found at <https://beisgovuk.citizenspace.com/civil-nuclear-resilience/nps-new-nuclear-siting>

Additional copies:

You may make copies of this document without seeking permission. An electronic version can be found at <https://www.gov.uk/government/consultations/national-policy-statement-for-new-nuclear-above-1gw-post-2025-siting-criteria-and-process>

Confidentiality and data protection

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response to the consultation. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

We will summarise all responses and place this summary on the [GOV.UK website](#). This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the [Government's Consultation Principles](#).

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

Email: enquiries@beis.gov.uk

Executive Summary

1. The purpose of this consultation is to begin the process towards designating a new National Policy Statement, applicable to nuclear power stations expected to deploy after 2025 and capable of deployment by the end of 2035, which have over 1 gigawatt (GW) of single reactor electricity generation capacity. It proposes a list of exclusionary and discretionary strategic criteria for the selection of sites, based on those used in the original Strategic Siting Process.
2. National Policy Statements (“NPS”) establish the case for Nationally Significant Infrastructure Projects as defined in the Planning Act 2008. There are currently six NPS relevant to energy: one overarching energy NPS (EN-1) and five technology specific NPSs (EN2-6), including one on Nuclear Power (EN-6), which must be read with EN-1. Designated in 2011, EN-6 lists eight sites (Hinkley Point C, Wylfa, Sellafield (more commonly known as Moorside), Sizewell, Bradwell, Oldbury, Hartlepool and Heysham) capable of deployment before the end of 2025, as potentially suitable for new nuclear plants.
3. The period to 2025 was used to focus on the sites most likely to deploy the soonest, and to enable a realistic and manageable list of sites to be considered. EN-6 has successfully facilitated the granting of a Development Consent Order (“DCO”) for a new nuclear power station at Hinkley Point C in March 2013 and further nuclear projects are planning to make applications for DCOs in due course. Government therefore intends to publish a new NPS for Nuclear Power Generation for deployment between 2026-2035 (“the new NPS”). It is proposed the new NPS will sit outside of the 2011 Energy NPS suite. That is, it will be a standalone NPS which will set the framework for development consent decisions on applications for new nuclear power stations post 2025.
4. The first step towards the new NPS is this consultation on the process and criteria to designate potentially suitable sites for the deployment of new nuclear power stations.
5. In summary, this consultation sets out:
 - a. **Clarification on the scope of the new NPS**, making clear that it applies to sites which will host at least one nuclear reactor, with each reactor having an electricity generating capacity of above 1 GW and being deployable before the end of 2035. Government will consider planning issues related to smaller reactors separately to this process.
 - b. **The proposed strategic siting criteria**. Government proposes to use to assess whether sites listed in EN-6 should continue to be listed in the new NPS. These are those criteria used in the original strategic siting process in April 2009 which have been updated to be consistent with current law and policy. They are high level and include criteria based on nuclear safety and

security (demographics, proximity to hazardous industrial facilities, flooding etc.), environmental protection (consideration of any impacts on sites of ecological importance etc.) and operational requirements (access to cooling water, size of site etc.). These have been developed with the appropriate regulators and other statutory bodies.

- c. The proposed **process for assessing and designating potential sites, including:**
 - i. **Carrying the list of potentially suitable sites from EN-6 through to the new NPS¹**, subject to them meeting the updated siting criteria and updates of their environmental assessments.
 - ii. **No new site nominations window** until the 2020s
 - iii. **Hinkley Point C is not carried forward** as a designated site as it already has its development consent
 - d. **2035 as a new ‘capable of deployment by’ date** to focus on those sites that can help meet the need for nuclear as soon as possible
6. Alongside this consultation the Government is also publishing a scoping report on the Appraisal of Sustainability (“AoS”) for a proposed new NPS for nuclear power stations deploying between 2026-2035. It proposes how the AoS will be undertaken, the level and type of information to be covered in the AoS and how this will be integrated into the development of the proposed new NPS for Nuclear.

¹ Sites carried forward are Sellafield (Moorside), Wylfa, Sizewell, Bradwell, Oldbury, Hartlepool and Heysham.

Catalogue of Consultation Questions

Consultation Question

1.	Chapter 2 Do you agree that the proposed exclusionary and discretionary criteria are appropriate for the assessment of a site's suitability at a strategic level?
2.	Chapter 2 If not, how should the criteria be changed to achieve this objective and, specifically, are there any additional criteria that should also be used?
3.	Chapter 3 Do you have any comments on the process to designate potentially suitable sites in the new NPS for nuclear set out in paragraphs 3.1-3.14?
4.	Chapter 4 Do you have any comments on the process for future site nominations set out in paragraphs 4.4-4.18?

Chapter 1: Introduction

Purpose of this consultation

- 1.1. The purpose of this consultation is to begin the process towards designating a new National Policy Statement (“the new NPS”), applicable to nuclear power stations expected to deploy² after 2025 and capable of deployment by the end of 2035, which have over 1 gigawatt (GW) of single reactor electricity generation capacity. It proposes a list of exclusionary and discretionary strategic criteria for the selection of sites, based on those used in the original Strategic Siting Process³.
- 1.2. Subject to the outcome of this consultation and provided the sites meet the final strategic criteria⁴, Government proposes to carry forward the sites listed in EN-6 for Nuclear Power Generation as the list of sites potentially suitable for the deployment of nuclear power stations under the new NPS. The consultation also proposes a process for a future site nominations window in the 2020s and proposes how the high-level siting criteria first used in 2009⁵ for assessing suitable sites are kept consistent with current law and policy.
- 1.3. NPSs establish the case for Nationally Significant Infrastructure Projects, as defined in the Planning Act 2008 (“the Act”), and set out the framework within which the Examining Authority of the Planning Inspectorate (“PINS”) will make a recommendation to the Secretary of State, in turn, to make related planning decisions. The new NPS will provide support to decision-makers in determining development consent for new nuclear power stations which will deploy after 2025.

Background

Nuclear power in England and Wales

- 1.4. The 2008 White Paper on Nuclear Power⁶ established that new nuclear power stations should have a role to play in the UK’s future energy mix, alongside

² As is the case for the purpose of applicability of EN-6, Government considers “deployment” to mean the point when a generating station first begins to feed the electricity it generates to the national grid, noting this will likely be at a point before full commercial operation

³ Government response to consultations on the Strategic Siting Assessment process and siting criteria for new nuclear power stations in the UK; and to the study on the potential environmental and sustainability effects of applying the criteria’ <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file49865.pdf>

⁴ Set out at Chapter 2.

⁵ Consultation on the Strategic Siting Assessment Process and Siting Criteria for New Nuclear Power Stations in the UK and Government’s response to that consultation

<http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file47136.pdf>

and <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file49865.pdf>

⁶ <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file43006.pdf>

other low-carbon sources of energy and that the Government should take active steps to help facilitate the construction of new nuclear.

- 1.5 The overarching National Policy Statement (“NPS”) for Energy (“EN-1”), published in July 2011, further made clear the Government’s view that nuclear power generation is a low-carbon, proven technology which will play an important role as we move to diversify and decarbonise our sources of electricity and increase the resilience of the UK’s energy system⁷. EN-1 also carried out a detailed assessment of the future need for electricity generation and in light of that assessment made clear that new nuclear power has an important role to play in the UK’s future energy mix.
- 1.6 EN-1 noted that the Updated Emissions Projections 2010⁸, suggested that electricity demand would remain at approximately the same level until 2025. More recently the Updated Energy and Emissions Projections 2016 stated that by 2035 overall demand for electricity is expected to have increased.⁹ Furthermore, one of the key policies and proposals in the Clean Growth Strategy, published in October 2017, is to deliver new nuclear power through Hinkley Point C and progress discussions with developers to secure a competitive price for future projects in the new nuclear pipeline.¹⁰ Government has noted previously that there are technical and commercial barriers to deploying other technologies to produce the same annual generation as that of nuclear power¹¹ and deployment of some other alternative forms of generation such as carbon capture usage and storage in the UK has also been limited¹². Government considers that decarbonisation of the power sector could be achieved at lowest cost if nuclear remains a key part of the UK’s energy system.

⁷ Based on independent analyses, the Government believes that carbon emissions from a new nuclear power station are likely to be within the range of 7-22g/kWh. This is in line with research published by the Sustainable Development Commission and the IAEA. It is similar to the lifecycle CO₂ emissions from wind power and much less than fossil fuelled plant.

⁸ <http://webarchive.nationalarchives.gov.uk/20130106105028/http://decc.gov.uk/assets/decc/statistics/projections/67-updated-emissions-projections-june-2010.pdf>

⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/599539/Updated_energy_and_emissions_projections_2016.pdf

¹⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47613/3702-the-carbon-plan-delivering-our-low-carbon-future.pdf
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/651916/BEIS_The_Clean_Growth_online_12.10.17.pdf

¹¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/556917/3_-_Value_for_Money_Assessment.pdf It should be noted that the Hinkley Point C VFM assessment examined alternative sources of energy out to 2050. It does not capture the cost of a like-for-like replacement of Hinkley Point C as a provider of firm or ‘reliable’ capacity as far out as 2080s or the value of diversity in the generation base. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/556917/3_-_Value_for_Money_Assessment.pdf

¹² Globally there is recognition of the role that carbon capture usage and storage can play in decarbonising energy systems and there has been an increase in the understanding of the barriers to deployment. The Government has set out its approach to carbon capture usage and storage most recently through the Clean Growth Strategy setting an ambition of deploying carbon capture usage and storage at scale during the 2030s, subject to costs coming down sufficiently. As referenced in paragraph 1.6 the Clean Growth Strategy also makes clear the continued role for nuclear in the UK’s energy mix.

- 1.7 The Government's view is that the assessment of the need for new electricity generation carried out to support EN-1 remains valuable and continues to be relevant. Currently, all but one of the existing fleet of nuclear reactors are due to cease generating before 2030, so the need for new nuclear power remains significant.
- 1.8 Furthermore, the need for the UK to continue its efforts in transitioning to a low carbon electricity market is underlined by the 2015 United Nations Framework Convention on Climate Change ("UNFCCC") Paris Agreement. The Government is therefore of the view that new nuclear power is important in making the transition to a low carbon economy. Therefore it is important that there is a strong pipeline of new nuclear power to contribute to the UK's energy mix and security of supply in the future.
- 1.9 A key way in which Government intends to facilitate new nuclear power stations is through the designation of a new NPS for the deployment of nuclear power stations between 2026 and 2035.

National policy statements

- 1.10 The Act¹³ states that the construction of any onshore generating station (other than one which generates electricity from wind) with a capacity of more than 50 megawatts (MW)¹⁴ is a Nationally Significant Infrastructure Project ("NSIP"). NPSs set the framework for determining Development Consent Orders ("DCO") for developments categorised as NSIPs.
- 1.11 EN-1, in conjunction with five technology-specific NPSs¹⁵, sets out Government policy for the delivery of major energy infrastructure EN-6, taken together with EN-1, provides the framework for development consent decisions on applications for new nuclear power stations which will deploy by the end of 2025.
- 1.12 The sites listed in EN-6 were originally nominated to Government in 2009 and were assessed at a strategic level (via the Strategic Siting Assessment¹⁶) against exclusionary and discretionary criteria prior to being listed as potentially suitable sites in the draft nuclear NPS¹⁷. Draft EN-6 underwent public consultation as well as parliamentary scrutiny prior to designation.
- 1.13 The eight sites listed in EN-6 as potentially suitable for the deployment of new nuclear power stations in England and Wales are: Hinkley Point C, Wylfa, Sellafield (more commonly known as Moorside), Sizewell, Bradwell, Oldbury, Hartlepool and Heysham. The listing of a site as potentially suitable in EN-6 does not guarantee that applications for development consent on that site will

¹³ http://www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga_20080029_en.pdf

¹⁴ Following the commencement of the relevant sections of the Wales Act 2017 the threshold will be 50MW in England and 350MW in Wales.

¹⁵ <https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>

¹⁶ 'Government response to consultations on the Strategic Siting Assessment process and siting criteria for new nuclear power stations in the UK; and to the study on the potential environmental and sustainability effects of applying the criteria' <http://webarchive.nationalarchives.gov.uk/+http://www.berr.gov.uk/files/file49865.pdf>

¹⁷ <http://webarchive.nationalarchives.gov.uk/20110302182042/https://www.energynpsconsultation.decc.gov.uk/nuclear>

be granted but provides a clear framework within which PINS should make its recommendation before the Secretary of State takes the eventual DCO decision.

EN-6 and post 2025 deployment

EN-6 and need for a new NPS for post 2025 deployment

- 1.14 The period to 2025 was used in the original siting process to focus on the sites most likely to deploy the soonest, and to enable a realistic and manageable list of sites to be considered. It represented an anticipated timeframe for new nuclear to come on stream as soon as possible, based on the availability of construction materials and skills, as well as expected timescales for investment decisions and appropriate licensing.
- 1.15 EN-6 has successfully facilitated the granting of a DCO for a new nuclear power station at Hinkley Point C in March 2013 and further nuclear projects are planning to make applications for DCOs in due course.
- 1.16 However, nuclear power stations take a long time to progress from design conception to operation. Data published by the International Atomic Energy Agency (“IAEA”) indicates that the average period between commencing construction of a nuclear power station and the start of commercial operations is between 7-10 years¹⁸. As has been seen since the designation of EN-6 in 2011 given the scale of the investment decisions required the overall timeline can be longer.
- 1.17 As such, it is necessary to designate a new NPS to facilitate nuclear power stations at sites capable of deployment between 2026 and the end of 2035. It is proposed that it will sit outside of the 2011 Energy NPS suite. That is, it will be a standalone NPS which will set the framework for development consent decisions on applications for new nuclear power stations deploying between 2026-2035.
- 1.18 This consultation begins the process towards the new NPS. Government is of the view that, subject to the outcome of this consultation, the exclusionary and discretionary criteria by which the sites for the new NPS should be chosen should remain substantially the same as those used for the EN-6 process. If that is to be the case, then Government’s preliminary view is that the sites listed in EN-6 are likely to be those which can deploy the soonest and are the only sites capable of deploying a nuclear power station¹⁹ by 2035. This is consulted on in Chapter 3. Following consultation this would be subject to confirmation from the developers associated with each potentially suitable site

¹⁸ <https://www.iaea.org/PRIS/CountryStatistics/CountryDetails.aspx?current=GB> – IAEA PRIS database

¹⁹ A station comprising at least one nuclear reactor, with each reactor having a generating capacity of above 1 gigawatt

at that time²⁰ that they wished it to remain listed. It would also be subject to the sites meeting the updated siting criteria, (to be consistent with current law and policy), proposals for which are set out in Chapter 2. The consultation also proposes a process for future site nominations.

- 1.19 Following the consultation Government will also undertake an exercise to update the relevant Appraisals of Sustainability (“AoS”) and Habitats Regulations Assessments (“HRA”)²¹.

Future site nominations window

- 1.20 As explained further in Chapter 4, Government proposes that the next nomination window for new sites would be in the 2020s. This is because Government believes that it is right to focus on those sites which are most likely to deploy soonest to contribute to our goals on climate change and energy security.
- 1.21 It is proposed that the siting criteria outlined in this consultation will also be used in any future site nominations window, subject to being brought into line with relevant law and policy at that time. This consultation includes a proposed process for future site nominations.

Position of EN-6

- 1.22 EN-6 remains in force in its entirety for use in development consent applications for new nuclear power stations on sites listed in EN-6 that are capable of deployment²² before the end of 2025. Sites listed in EN-6 on which a new nuclear power station is anticipated to deploy after 2025 will continue to be considered appropriate sites and retain strong Government support during the designation of the new NPS.
- 1.23 The owners of such sites are able to make development consent applications, and a decision on whether to grant consent will be made under section 105 of the Act²³. Government is confident that both EN-1 and EN-6 incorporate information, assessments and statements which will continue to be important and relevant to the Secretary of State’s development consent decision for projects which will deploy after 2025. This includes statements of the need for nuclear power, as well as environmental and other assessments that continue to be relevant for projects which will deploy after 2025. As such, in deciding whether or not to grant consent to such a development the Secretary of State would, under section 105(2)(c) of the Act, have regard to the content of EN-1 and EN-6. Where there is no relevant change in

²⁰ For the purposes of this consultation developer should be read as referring to or site owners as applicable. This mirrors the approach used for the development of EN-6.

²¹ The AoS for EN-6 is available at <https://www.gov.uk/government/publications/appraisal-of-sustainability-of-the-revised-draft-nuclear-national-policy-statement>. The new NPS will be a “plan” for the purposes of the Habitats Regulations Assessment (HRA). The HRA of EN-6 is available <https://www.gov.uk/government/publications/habitats-regulations-assessment-of-the-revised-draft-nuclear-national-policy-statement>. Further detail on the environmental assessments are at Chapter 2, paragraph 2.7.

²² For the definition of “deployment” see footnote 1 above.

²³ <http://www.legislation.gov.uk/ukpga/2008/29/section/105>

circumstances it is likely that significant weight would be given to the policy in EN-1 and EN-6.

- 1.24 Furthermore, a published new NPS in draft form would be an important and relevant consideration under section 105(2)(c) of the Act 2008 when a decision is taken on an application for Development Consent.

Scope of this consultation

- 1.25 This consultation (and the eventual new NPS) applies to sites which will host at least one nuclear reactor, with each reactor having an electricity generating capacity of above 1 GW and being deployable before the end of 2035. Government will consider planning issues related to smaller reactors separately to this process.

- 1.26 This consultation relates to the exercise of powers in England and Wales. Energy policy is generally a matter reserved to UK Ministers but the powers relevant to this consultation do not apply in Scotland and Northern Ireland because the legal power to consent to the construction of power stations in excess of 50MW capacity has been executivevely devolved to Scottish Ministers and is also devolved in Northern Ireland. Upon the commencement of the relevant provisions in the Wales Act 2017, Welsh Ministers will have responsibility to consent the construction of power stations of a capacity up to and including 350MW.

Exiting the European Union

- 1.27 On 23 June 2016, the people of the United Kingdom voted to leave the European Union. Until exit negotiations are concluded, the UK remains a full member of the European Union and all the rights and obligations of European Union membership remain in force. During this period the Government will continue to negotiate, implement and apply EU legislation. The outcome of these negotiations will determine what arrangements apply in relation to EU legislation in future once the UK has left the EU.

Next steps

- 1.28 The proposed process of carrying forward sites into the new NPS comprises four key stages:

Stage 1 (Autumn 2017)

- Government will consult on the exclusionary and discretionary criteria for assessing the strategic suitability of sites and on the strategic siting process.
- Consultation on the AoS Scoping Report with statutory consultation bodies as listed in the Environmental Assessment of Plans and Programmes Regulations 2004 and other bodies with a role in regulating nuclear facilities (issued in parallel with this consultation).

Stage 2 (Early 2018)

- Government will finalise the strategic criteria following careful consideration of the responses to this consultation. These criteria will be published as part of the response to this consultation.
- Government will write to developers of the sites listed in EN-6 asking them to confirm that they wish to remain listed in a new NPS and to provide information in line with the finalised criteria.
- Government will assess sites against the exclusionary and discretionary criteria.
- An AoS and HRA will be undertaken (including one for each site).

Stage 3 (estimated autumn 2018)

- Government will consult on a draft list of sites, as part of a consultation on a draft Nuclear NPS.
- Government will consult on the draft AoS.

Stage 4 (estimated autumn 2019)

- Government will publish the final list of potentially suitable sites as part of the final nuclear NPS.
- Government will lay the final NPS in parliament, as per sections 5(4) and 9 of the Planning Act 2008.

1.29 Stages 1 and 2 are explained in further detail in Chapters 2 and 3.

Chapter 2: Proposed criteria for the siting of nuclear power

- 2.1 This Chapter sets out the strategic criteria Government proposes to use to assess whether sites listed in EN-6 should continue to be listed in the new NPS. It is also expected these criteria would be used to assess sites nominated in any future nominations window as potential locations for new nuclear power stations²⁴.
- 2.2 The strategic criteria set out at paragraph 2.15 represent matters which have been identified as strategically important and capable of assessment at a national level. These criteria identify key matters to consider when deciding potential sites for nuclear power stations and to determine if they are potentially suitable for development. They do not pre-judge the stringent planning and regulatory processes that developers must undertake before beginning development, but act as an initial and high-level sift to ensure sites are broadly suitable from a safety, environmental and operational perspective.
- 2.3 The proposed strategic criteria are based on those used in the original strategic siting assessment process in April 2009 and have been updated to be consistent with current law and policy. The 2009 criteria were developed taking into account international experience and guidance; the advice of the independent regulators; the views of Government departments with responsibility for policies underpinning the criteria; professional technical advice; relevant environmental data; literature reviews and comments from consultations²⁵.
- 2.4 This consultation also proposes, in paragraph 2.15, matters to be flagged for more detailed consideration by PINS and the Office for Nuclear Regulation (“ONR”). These are matters identified through the original strategic siting assessment process in April 2009 which (usually due to the need for detailed site-specific investigations and data) are more appropriately assessed at the project level. They are a representation of some of the important issues that will be assessed in depth at the planning and licensing stage by PINS and ONR. Further information on these matters is set out at paragraph 2.14.
- 2.5 Once Government has considered the responses to this consultation, the criteria will be updated as appropriate, and final criteria will be published as part of Government’s response to this consultation.

²⁴ See

http://webarchive.nationalarchives.gov.uk/20110302182042/https://www.energynpsconsultation.decc.gov.uk/nuclear/nominated_sites for information on how nominated sites were assessed in 2009/10 for inclusion in EN-6.

²⁵ See SSA condoc for further int. Consultation as set out in Annex B of the White Paper on Nuclear Power; and Response to the SSA consultation 2009 (links).

Assessment of sites against the strategic criteria

- 2.6 As outlined in Chapter 3, once Government has finalised the criteria against which the list of sites for the new NPS will be considered, it proposes to invite developers of sites currently designated in EN-6 which have yet to apply for a DCO, to indicate whether they wish the sites to be considered for inclusion in the new NPS. The developers will also be asked to provide updated information to demonstrate that they continue to meet the updated criteria. The assessment will be undertaken by Government, based on the advice of the relevant nuclear, environmental and other regulators. The relevant AoS and HRA will be updated. .
- 2.7 All assessments against the strategic criteria, both for the new NPS and in a future nominations window, will cover the lifetime of the site. That is the operation and decommissioning and the safe and secure storage of all the spent fuel and intermediate level waste produced from operation and decommissioning until it can be sent for final disposal in a geological disposal facility (“GDF”).

Use of the strategic criteria in a nomination window

- 2.8 The criteria make clear that the regulations and guidance that nominations will be assessed against at the time of a nominations window should be the most recent at that time. Therefore, nominators within a nomination window will need to have regard to the most up to date documentation or regulations. Similarly, nominators should be aware that data sets underpinning the assessment of the strategic criteria may change in the intervening period between strategic site assessment and the planning and licensing stages. This will not mean the strategic site assessment needs to be reopened as it will be something which will necessarily be assessed in greater detail during the planning and licensing stages.
- 2.9 Government proposes a further site nomination window in the 2020s (see Chapter 4) at which point the sites initially included in the new NPS should have progressed further towards deployment. Nominated sites will then undergo Government assessment against the strategic criteria which will reflect any changes to law and policy in the intervening period. In future, Government intends that the strategic criteria will be published at the start of a new nominations window.

Exclusionary and discretionary criteria

- 2.10 As in 2009, to assess the strategic suitability of sites, Government proposes two types of criteria, exclusionary and discretionary, and these are grouped into three themes; nuclear safety and security, environmental protection and operational requirements.
- 2.11 **Exclusionary criteria** are those that, if breached, will categorically exclude a site from further consideration. **Discretionary criteria** are those criteria that the Government considers could, either singly or in combination, make all or

part of a site unsuitable for a new nuclear power station but which need to be carefully considered in order to come to a conclusion as to the site's strategic suitability. In reaching a decision on whether to include a site that relates to one or more discretionary criteria in the new NPS site list, the Government will consider, for example:

- 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 overall need for nuclear

2.12 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. This will be a matter for PINS to assess and the Secretary of State decide when it receives a specific application for development consent to build on sites listed in the new NPS.

2.13 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 new NPS.

Matters flagged for detailed consideration by PINS and/or ONR

2.14 The Government also identified important matters which are more appropriately assessed at the planning and licensing stages because of the need for detailed site-specific investigations and data. These will be highlighted as important considerations in the new NPS. They do not represent a less onerous test for the nominator to satisfy but their inclusion in this way recognises that assessment at a strategic level is not capable of adequately addressing these issues. It is not an exhaustive list but a representation of some the issues that will be considered in detail at the Development Consent stage.

Proposed criteria

2.15 The proposed criteria are set out in the table and accompanying text below.

National Criteria		
Nuclear Safety and Security	<ul style="list-style-type: none"> • Flooding, tsunami and storm surge* 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Coastal processes* 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Proximity to hazardous industrial facilities and operations 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Proximity to civil aircraft movements 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Demographics 	<ul style="list-style-type: none"> • Exclusionary + discretionary
	<ul style="list-style-type: none"> • Proximity to military activities 	<ul style="list-style-type: none"> • Exclusionary + Discretionary
Environmental Protection	<ul style="list-style-type: none"> • Internationally designated sites of ecological importance 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Nationally designated sites of ecological importance 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Areas of amenity, cultural heritage and landscape value 	<ul style="list-style-type: none"> • Discretionary
Operational requirements	<ul style="list-style-type: none"> • Size of site to accommodate operation 	<ul style="list-style-type: none"> • Discretionary
	<ul style="list-style-type: none"> • Access to suitable sources of cooling 	<ul style="list-style-type: none"> • Discretionary

*As well as nuclear safety and security these criteria also include important elements of environmental protection.

Matters flagged for detailed consideration by PINS and/or ONR / Environment Agencies

Nuclear Safety and Security	• Seismic risk (vibratory ground motion)
	• Capable faulting
	• Non-seismic ground conditions
	• Meteorological conditions
	• Proximity to civil aircraft movements
	• Proximity to mining, drilling and other underground operations
	• Emergency planning
Societal Issues	• Significant infrastructure / resources
Operational requirements	• Access to transmission infrastructure
	• Size of site to accommodate construction and decommissioning

Criteria related to nuclear safety and security

2.16 The Government believes that the UK has an effective and robust regulatory framework. Within the strategic criteria, the Government has aligned the proposed safety criteria to relevant international standards and best practice. The strategic criteria will consider those aspects of siting that can, at a national level, avoid hazards to nuclear facilities and to public health. This includes reducing accident risk as a result of external hazards and utilising an established approach to identifying safe distances between new nuclear power stations and existing populations. This helps to avoid risks to human health²⁶.

2.17 The UK has strict independent regimes covering safety and environmental protection for nuclear power. In the UK, the ONR regulates the safety and security of civil nuclear facilities. Any new nuclear power station will be subject to safety licensing conditions and the operator will have to comply with the

²⁶ The criteria under the nuclear safety and security section will also be assessed from an environmental perspective by the Environment Agency, Natural Resources Wales and any other relevant regulators and statutory bodies.

safety, security and environmental conditions set by the regulators. The strategic criteria are not intended to replace the conditions of the nuclear site licence or the powers of the ONR. Sites considered to be potentially suitable in the NPS will need to undergo much more detailed assessments before development consent can be granted and construction can begin.

Flooding, tsunami and storm surge

Discretionary

2.18 Sites nominated in this process may be considered unsuitable, if at a strategic level nominators are not able to:

- a. confirm that they can protect the site against flood-risk throughout the lifetime of the site, including the potential effects of climate change, without increasing flood risk elsewhere;
- b. outline the countermeasures they would take to protect the site and its occupants from flood risk, as far as practicable;
- c. take into account the wider impacts of their flood protection countermeasures on areas surrounding potential power station sites; and
- d. Outline how they will meet the requirements of the Sequential Test for sites in England (and equivalent tests set out in the planning policy for Wales).

2.19 Based on advice from the Environment Agency, Natural Resources Wales (“NRW”) and ONR, and using relevant information including the Environment Agency flood maps in England and Development Advice Maps in Wales, Government will assess nominated sites at a strategic level and will apply the relevant policy tests as set out in the relevant planning framework at that time (currently National Planning Policy Framework (“NPPF”²⁷) in England and Planning Policy Wales²⁸ and Technical Advice Note (“TAN”) 15²⁹ for Wales) where practical.

Information from nominators/points to note:

2.20 Nominators will be expected to outline:

- a. the protection measures they believe would be appropriate to protect the site against flooding;
- b. whether the protection measures would affect other designated ecological areas;

²⁷ The NPPF does not contain specific policies for NSIPs but is a relevant and important document when making planning decisions.

²⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

²⁹ <http://gov.wales/topics/planning/policy/tans/tan15/?lang=en>

- c. the assumptions that have been 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;
- d. the potential for flooding to impede access to the site in respect of both normal operations and emergency services;
- e. whether the development of a new nuclear station on the site (including any likely mitigation measures) is likely to increase flood risk elsewhere, and if so potential mitigation to the increased flood risk; and
- f. the predicted effects of the development and any flood protection measures on coastal and fluvial processes and subsequent impacts on communities and the environment.

2.21 For nominations in England, nominators will be expected to use the relevant flood maps³⁰ publicly available on the Environment Agency website to provide a strategic overview of flood risk for the site.

2.22 Nominators in Wales should also provide the publicly available flood maps for the site at that time, currently those on the NRW website and copies of the development advice map published by the Welsh Government.

2.23 Consideration of flooding and storm surges as discretionary criteria does not take away the responsibility of PINS, when considering a specific application for development consent, to consider risks based on detailed site-specific plans and mitigation measures and consult relevant regulators as detailed in 2.19. In doing this, the Government expects PINS to take into account any statements made in the new NPS and Government planning policy on flood risk and development at that time, currently [Section 10 of the NPPF](#) and supporting [Planning Practice Guidance](#) for England and Planning Policy Wales and TAN 15 for Wales.

2.24 A Sequential Test will need to be carried out for sites in England (and the equivalent tests in TAN 15 for sites in Wales). Therefore, nominators should explain why it is reasonable to conclude that the nominated site is likely to pass the relevant tests in the planning framework applicable at that time (currently, the Sequential Test in NPPF paragraph 101 for sites in England and the tests in TAN 15 for Wales). This requires developments to be located in areas with the lowest probability of flooding, unless there is no reasonable alternative appropriate for the proposed development. If the nominated site is in an area with a high probability of flooding then the Exception Test is required. In these cases, nominators should explain why it is reasonable to conclude that the nominated site is likely to pass the relevant test in the planning framework

³⁰ Flood Map for Planning (rivers and the sea) and the Long Term Risk of Flooding Map

applicable at that time (currently, the Exception Test in NPPF paragraph 102 for sites in England). (Note the Exception Test will be required in the site specific Development Consent Order application once designs have been progressed further).

2.25 Nominators should consider the most up to date UK climate projections and guidance as available at nomination. Currently this is UK Climate Projections 2009 (UKCP09) and associated guidance³¹ but the Government has announced the UK Climate Projections 2018 (UKCP18) project to upgrade the UK Climate Projections. The capacity of new nuclear power stations to withstand the potential impacts of climate change will be reviewed in more detail as part of any site licensing process and as part of the Flood Risk Assessment (for Wales, a Flood Consequence Assessment) that applicants will undertake in conjunction with any development consent applications to PINS. Nominators should identify the potential effects of the credible maximum scenario in the most recent projections of marine and coastal flooding. Nominators must then be able to demonstrate that they could achieve further measures for flood management at the site in the future, if future climate change predictions show they are necessary.

Tsunami and storm surges

2.26 The UK's regulatory practice requires the tsunami risk to be included in the design-basis risk consideration for a nuclear facility.

2.27 For all sites on or near the coast, we will expect nominators to indicate how their site can be protected against the risks of tsunami and storm surges, including the potential effects of climate change, for the duration of the life of the station. In particular, nominators should outline:

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

³¹ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances-and-https://www.gov.uk/government/publications/adapting-to-climate-change-for-risk-management-authorities-and-http://gov.wales/topics/planning/policy/policyclarificationletters/2016/cl-03-16-climate-change-allowances-for-planning-purposes/?lang=en>

Coastal processes

Discretionary

- 2.28 The strategic criteria will consider whether it is reasonable to conclude, at a strategic level, that the nominated site can be protected against coastal erosion and other landscape change scenarios, including the potential effects of climate change, for the lifetime of the station, taking into account possible countermeasures and mitigating actions. It will also consider, at a strategic level, effects that a development of a nominated site could have on coastal processes and communities elsewhere.
- 2.29 Government will assess nominated sites at a strategic level against the most up to date UK climate projections as available at nomination. Currently this is UKCP09. Government will also assess nominations against the planning framework in force at that time (currently, NPPF for England and TAN 15 for Wales). Environment Agency and NRW flood and coastal erosion maps will also be used.
- 2.30 An assessment will also be based on the advice of the Environment Agency on the risk of coastal erosion at sites, of historical coastal events in the region and the most current Shoreline Management Plan policy. For any nominated sites which are adjacent to existing licensed sites, there will also be a considerable wealth of information on the prevailing coastal performance and local management arrangements which will inform the judgements made. Estimates for the coastal erosion in the vicinity of nominated sites will also be considered for their reasonableness. In Wales, advice will be sought from NRW and.

Information from nominators/points to note:

- 2.31 Nominators should outline:
- a. the countermeasures that could be taken to protect any new nuclear power station within the nominated site from the effects of coastal erosion or other landscape change scenarios, and the likely impact of these on flood risk and coastal processes elsewhere;
 - b. the dependencies on coastal protection measures that may be under the control of other parties, such as neighbouring landowners or government bodies; and
 - c. the potential for these risks to impede access and egress to/from the site in respect of both normal operations and emergency services;
- 2.32 The practicability of the proposed mitigation measures will be reviewed along with the implications for areas beyond the immediate site boundary where reliance was placed on defences potentially without the control of the site.

2.33 In addressing these points, or otherwise, nominators should demonstrate that they have taken account of:

- a. the wider impacts of any coastal protection countermeasures on areas surrounding the development of a new nuclear power station in particular any designated habitats;
- b. interaction with the local and regional plans for coastal change management and protection and watercourse management; and
- c. any reliance on third party schemes for protection that is being assumed.

Proximity to major hazard sites and major hazard pipelines

Discretionary

2.34 Based on the advice of the Health and Safety Executive (“HSE”), the ONR and the Environment Agency or NRW, Government will assess a nominated site to ensure it could be protected against potential risk arising from proximity to major hazard sites throughout its lifetime, taking into account suitable counter measures and mitigating actions.

2.35 The assessment will give regard to major hazard sites and pipelines as subject to the most current regulations and practice at the time of nomination. Currently these are establishments subject to the Control of Major Accidents and Hazards (“COMAH”) Regulations 2015 and sites in possession of Hazardous Substance Consent³² for which HSE and the Environment Agency are statutory consultees. HSE sets consultation distances (“CD”) around major hazard sites and major hazard pipelines and then must be consulted on certain proposed developments within that zone. HSE has a methodology for assessing development near to such sites, this gives guidance to planning authorities in considering the suitability of domestic, institutional and industrial developments within the CD.³³ Planning Authorities considering a development within the CD of a major hazard site or major hazard pipeline must consult HSE using the Planning Advice Web App.

2.36 A nominated site may be unsuitable for the development of new nuclear power stations if it is within the CD of an existing or proposed hazardous facility or major accident hazard pipeline. Government will also consider any combined effects at local level. This will be a discretionary criterion and evidence of how suitable countermeasures could mitigate the risks from this will be taken into account in reaching any such decisions.

³² The Planning (Hazardous Substances) Regulations 2015 and The Planning (Hazardous Substances) (Wales) Regulations 2015

³³ <http://www.hse.gov.uk/landuseplanning/methodology.pdf>

2.37 A nominated site may be unsuitable if it is found that the risks (alone/in combination with other relevant sites in the area) would pose a serious risk to human health and the environment.

2.38 Existing nuclear power stations or sites undergoing decommissioning, may be major hazard sites, depending on the nature of the existing site, including the presence of hazardous materials. Whether a site requires hazardous substances consent is a matter for the site operator to agree with the Hazardous Substances Authority ("HSA"). Where it has been determined by the operator and the HSA that the site is indeed a major hazard site, HSE will determine the level of consultation zone that may be appropriate. This will depend on the nature of the existing site, including the presence of hazardous materials. It is unlikely that such proximity will rule out a nominated site from further consideration, provided that appropriate mitigation measures can be put in place. Assessment could also include strategic consideration of any potential security implications to existing nuclear facilities³⁴. The Government will draw on advice from HSE, Environment Agency and ONR in considering the level of hazard and whether, recognising that these criteria are at a strategic level, suitable counter measures should be able to mitigate any risk.

Information from nominators/points to note:

2.39 Nominators will not be requested to provide any further information, beyond the description and location of the site, to support the consideration of this discretionary criterion. They will, however, be encouraged to check the proximity of hazardous facilities to any nominated site, which are available in the public domain and may wish to put forward arguments for countermeasures or mitigations, if they think that the nominated site may be affected.

Proximity to civil aircraft movements

Discretionary

2.40 Issues related to the proximity of proposed sites for new nuclear power stations to civil aircraft movements will be considered as discretionary criteria. An assessment will consider whether it is reasonable to conclude that:

- a. any likely nuclear power station development within the nominated site boundary can be protected against risks from civil aircraft movement³⁵; and
- b. the effects on air traffic and aerodromes can potentially be mitigated.

³⁴ Although more likely this will be a matter for more detailed local consideration at any future licensing stage

³⁵ This may involve a consideration of the application of the Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007, or more recent regulations, to the nominated site.

- 2.41 Nominators will be asked to assess proximity to Public Safety Zones (“PSZ”)³⁶. Inside these zones, current planning guidance, issued to local planning authorities by the Department for Transport, makes a general presumption against new developments³⁷. The guidance would probably rule out approval of a new nuclear site within a PSZ. Aerodrome safeguarding plans could be used to define limits for the construction of nuclear power stations in the environs of an aerodrome as planning applications must meet the aerodrome safeguarding requirements. Any planning applications are also subject to an independent collision risk assessment.
- 2.42 Unlicensed aerodromes that have not lodged aerodrome safeguarding plans will be flagged as an issue for detailed local consideration by PINS and any relevant regulators.
- 2.43 Nominators should have regard to the fact that 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. 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 would affect the safe operations of the aerodrome. Air exclusion zones are those established by the Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2007, or the most recent set of regulations.

Information from nominators/points to note:

- 2.44 The Government recognises that not all the information for this criterion will be in the public domain and therefore it will not be reasonable to require nominators to provide this themselves; rather the assessment of this criteria will be undertaken by the ONR and the Civil Aviation Authority (“CAA”) for the area within the site provided by the nominator.
- 2.45 Nominators will not need to provide any further information, beyond the description and location of the site, to support the consideration of this discretionary criterion. However, they will be encouraged to check the proximity of civil aircraft movements to the nominated site, where information is available in the public domain. This information can be obtained from the CAA and UK Aeronautical Information Service. Nominators may also put forward arguments for countermeasures or mitigations, if they think that the nominated site may be affected.

³⁶ or the equivalent zones in place at the time of nomination

³⁷ Department for Transport (July 2002), Control of Development in Airport Public Safety Zones <http://www.dft.gov.uk/pgr/aviation/safety/controlofdevelopmentinairpor2984> or more recent guidance.

Demographics

Exclusionary

2.46 The Government has a longstanding policy regarding local demographics which would limit the radiological consequences to the public in the unlikely event of an accident involving the spread of radioactive materials beyond the site boundary. The ONR administers the Government's policy on the control of population around licensed nuclear sites.

2.47 Sites will be assessed against the "semi-urban" demographic criterion that was used to assess the sites listed in EN-6³⁸. This is assessed as follows:

Distance (km)	Weighting Factor	Cumulative Weighted Population Criteria for the semi-urban demographics
Population all around site		
0-2	32.0	290,000
2-3	15.0	520,000
3-5	7.7	870,000
5-8	4.0	1,300,000
Population in 30 deg. Sector		
0-2	26.0	96,000
2-3	12.0	170,000
3-5	5.6	290,000
5-8	2.8	430,000

2.48 Given the complexity of this calculation it is not reasonable to expect nominators to carry it out themselves; rather the calculations will be undertaken by the ONR for the area of the nominated site.

2.49 ONR consider that modern reactor designs which are consistent with IAEA safety expectations and the ONR's Safety Assessment Principles should present a sufficiently low level of public risk to allow the application of the semi-urban criterion. The demonstration of the acceptability of that public risk would be confirmed as part of ONR's detailed assessment of a site licence application based on a specific design.

2.50 Where areas of a nominated site might exceed the cumulative weighted population criteria for the semi-urban demographics further advice from the regulators will be considered to see whether the site remains viable. Such flexibility is possible as regulators will need to be satisfied that only those parts

³⁸ For details of the ONR's implementation of the Government's demographic siting policy and the subsequent control of development around nuclear sites see: <http://www.hse.gov.uk/aboutus/meetings/iacs/nusac/030708/p12-sittingpaper.pdf> and <http://www.hse.gov.uk/landuseplanning/nuclear.htm>

of the power station which contribute a radiological hazard can be located in areas which do not exceed the semi-urban criterion during the licensing process. If the area that exceeded the semi-urban criterion would be required for siting those elements which have a direct potential to cause radiological hazard, the site would be excluded.

2.51 Areas that meet the semi-urban criteria will, for the purposes of the strategic criteria, be considered suitable, subject to meeting all other relevant criteria. It should be noted that although a site may meet the semi-urban criterion as part of the strategic criteria, this does not guarantee that the demographic features of a site will be acceptable to the ONR following its detailed regulatory assessment at the time of considering a nuclear site licence application. It is therefore possible that a site which meets the proposed strategic demographic criteria could be rejected at a later stage in the development process.

Information from nominators/points to note:

2.52 Nominators will not be asked to provide any further information, beyond the description and location of the site, to support the assessment of this exclusionary criterion. However, for new nominations, they will be encouraged to consider demographic and proximity to population issues when deciding where to locate the site that they nominate.

Discretionary

2.53 Safety is the Government's overriding priority and emergency planning, which is closely linked with demographics, will be a critically important consideration at the site licensing and development consent stages. Therefore, based on their experience as nuclear operators, we 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 strategic criteria.

Proximity to military facilities

Exclusionary

2.54 Based on the advice of the Ministry of Defence and the ONR, Government will assess any nominated sites to:

- seek to avoid the external hazards to nuclear power station safety that could be created by neighbouring military activities; and
- 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.

2.55 Sites will be rejected (in whole or in part) if the site is:

- a. within certain Military Low Flying Tactical Training Areas (currently Tactical Training Areas 7T, 20T and 14T) and Air Weapon Ranges (currently LFA13);
- b. within the air space surrounding a Ministry of Defence aerodrome or an aerodrome used for defence activities contained within a designated Military Air Traffic Zone (MATZ)³⁹;
- c. within the air space surrounding a Ministry of Defence aerodrome or an aerodrome used for defence activities contained within a designated Air Traffic Zone (ATZ)⁴⁰;
- d. within or affects the use of the areas used for live firing or other military training activities; and
- e. within the explosive safeguarding zones surrounding Ministry of Defence explosive storage facilities.

Discretionary

2.56 More broadly, any nominated sites will be assessed against their proximity to other Ministry of Defence assets or activities and whether it is reasonable to conclude, at a strategic level, that such proximity should or should not rule out the site for consideration for a new nuclear power station. Consideration will be given to whether there is evidence that impacts could potentially be adequately mitigated without compromising the Ministry of Defence facility or the nuclear installation.

2.57 This will include consideration of whether any likely nuclear power station development within the nominated site boundary would adversely affect the capabilities of the armed forces to carry out essential training and operations throughout its lifetime and whether it could be protected against the risk of external hazards created by neighbouring military activities. Ministry of Defence assets or activities to be considered under this criterion include (but are not limited to) technical sites and transmitters, offshore danger areas and nuclear facilities (including ports used by military vessels).

Information from nominators/points to note:

2.58 No specific information will be required from nominators about the proximity of the site to military activities as it will be assessed by the Ministry of Defence on the basis of the description of the site and nominated site boundary as outlined in the site nomination.

³⁹ Or an equivalent designation being used in future.

⁴⁰ Or an equivalent designation being used in future.

2.59 However, if a nominator is aware that the site is in close proximity to or may affect any other Ministry of Defence assets or activities, which are in the public domain and not covered in the exclusionary list above, the Government will expect nominators to indicate why, at a strategic level, this proximity should not rule out the site for consideration for a new nuclear power station. Nominators may wish to put forward arguments for countermeasures or mitigations, if they think that the nominated site may be affected.

Criteria related to environmental protection

2.60 Protecting the natural environment, areas of amenity, cultural heritage and landscape are important considerations when developing new nuclear power stations. We expect developers to avoid, minimise or mitigate any impacts and, where possible, to enhance the environment.

2.61 The high-level environmental effects of nuclear power stations, during construction, operation or decommissioning can include adverse impacts upon:

- hydrology and hydrogeology;
- landscape;
- historic environment;
- air quality and climate;
- soils, geology and geomorphology;
- surface water quality and drainage;
- ecology – estuarine and marine, terrestrial and freshwater;
- coastal ecology and geomorphology; and
- groundwater.

2.62 At the strategic level, it is inappropriate to provide siting criteria for many of these issues as they are more appropriately addressed at the development consent stage when Environmental Impact Assessments (“EIA”) are undertaken. The focus of the siting criteria is on nationally and internationally designated features, rather than on-design or site-specific matters. The strategic criteria 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.

Internationally Designated Sites of Ecological Importance

Discretionary

2.63 The Government’s view is that where possible, taking into account all the strategic criteria, it would be preferable for sites to be nominated in areas unlikely to cause an adverse effect on the integrity of any internationally

designated sites⁴¹ of ecological importance. However, proximity to internationally designated sites should not rule out nominated sites from consideration and where there is potential for an adverse effect the nominator will need to set out what they are able to do to avoid, minimise or mitigate these effects and to respect the integrity of these sites.

2.64 Habitats Regulations Assessment and Appraisal of Sustainability reports will be undertaken on any nominated site at a strategic level to assess whether European Sites (defined below) would be directly or indirectly affected by the deployment of a new nuclear power station on the site; the likely significant effect and whether it would be reasonable to conclude, at a strategic level, that the plan would or would not have an adverse effect on the integrity of designated sites⁴² (including a consideration of whether it should be possible to avoid or mitigate any effects) in line with the standards set by the Habitats Directive.

2.65 European Sites, or Natura 2000 sites⁴³, are a network of internationally important sites designated for their ecological status⁴⁴ to protect habitats and species of European nature conservation importance. They comprise of Special Protection Areas⁴⁵ (“SPAs”), Special Areas of Conservation (“SACs”), candidate Special Areas of Conservation (“cSAC”), and Sites of Community Importance (“SCIs”) designated and defined under the Habitats and Birds Directives. It is also Government policy to treat Ramsar sites, designated by the Ramsar Convention on Wetlands (1971) and potential SPAs (pSPAs) and SACs as if they are fully designated European Sites for the purpose of considering any development proposals that may affect them⁴⁶.

2.66 In line with the requirements of the Habitats Directive, the assessment will consider whether it is possible to deliver the plan in ways that mitigate or avoid the adverse impacts on the integrity of the European Sites considered in the Habitats Regulations Assessment process. If it is not possible at the strategic level of the Habitats Regulations Assessment to rule out potential adverse effects on the integrity of European Sites it will be necessary to comply with the requirements of Article 6(4) of the Habitats Directive, and to consider whether there is an absence of alternative solutions for delivering the plan or project and that there are Imperative Reasons of Overriding Public Interest (“IROPI”) for still progressing the plan or project. In such circumstances there also needs to be compensation measures for the adverse impacts on the

⁴¹ This includes both candidate and proposed sites

⁴² This includes both candidate and proposed sites

⁴³ More information can be found here: <http://www.magic.gov.uk/> and here: <https://data.gov.uk/dataset/sssi-impact-risk-zones>

⁴⁴ The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna.

⁴⁵ Classified under the EC Birds Directive 1979 (codified as amended in the European Directive 2009/147/EC).

⁴⁶ ODPM, Planning Policy Statement 9 Biodiversity and Geological Conservation; Government Circular: Biodiversity & Geological Conservation – Statutory Obligations and their impact within the planning system (ODPM, 2005); WAG, Technical Advice Note (TAN) 5 Nature Conservation and Planning (2009) or most recent guidance.

adversely affected site. Where the site hosts a priority habitats type or species, then the case for Imperative Reasons of Overriding Public Interest is limited to the following criteria (unless an opinion is sought from the Commission on other, wider, grounds):

2.67

- the protection of human health;
- public safety; and
- overriding beneficial consequences of primary importance for the environment

2.68 Government will consult statutory consultees⁴⁷ on the Habitats Regulations Assessment and Appraisal of Sustainability reports and their advice will inform the Government assessment.

Information from nominators/points to note:

2.69 Nominators will be expected to identify any Natura 2000 and Ramsar sites (including their qualifying features and specific vulnerabilities) that have the potential to be either directly impacted (e.g. land take) or indirectly impacted (e.g. discharge of cooling water from river or sea on bird prey availability) by the development of a new nuclear power station on a nominated site. If Natura 2000 and Ramsar sites were impacted in this way, the Government would expect nominators to comment on the likely level of impact and indicate why, at a strategic level, it should be possible to avoid or mitigate any such impact in line with the standards set by the Habitats Directive.

2.70 Nominators will also be encouraged to share the results of discussions they might have had with statutory consultees and other nature conservation bodies responsible for overseeing the management of the areas in response to this criterion.

Nationally Designated Sites of Ecological Importance

Discretionary

2.71 The Government's view is that where possible, taking into account all the strategic criteria, it would be preferable for sites to be nominated in an area unlikely to cause adverse impact on any Nationally Designated Sites of Ecological Importance. However, proximity to Nationally Designated Sites of Ecological Importance should not rule out nominated sites from consideration and where there is potential for an adverse effect the nominator will need to set

⁴⁷ Natural England, Environment Agency, NRW

out what they are able to do to avoid, minimise or mitigate these effects.

2.72 Nominations will be assessed using in particular the Appraisal of Sustainability reports. The Government will assess the potential impact of deployment of a new nuclear power station on nationally designated sites of ecological importance, the likely level of impact and whether it is reasonable to conclude, at a strategic level, that it may be possible to avoid or mitigate such impact. Nationally designated sites of ecological importance include:

- Sites of Special Scientific Interest (“SSSI”), some of which are also Natura 2000 or Ramsar sites and are therefore covered by the Internationally Designated Sites of Ecological Importance criterion above;
- National Nature Reserves;
- Marine Nature Reserves;
- Marine Conservation Zones/Marine Protection Area;
- Areas of Special Protection Wales and Wildlife Refuges;
- Natural Heritage Areas; and
- Areas subject to Limestone Pavement Orders.

2.73 It should be noted that an assessment will be at a strategic level and it will not always be possible to rule out adverse impacts at this stage. If this is the case, it will not necessarily result in a site being considered unsuitable, but Government might ensure certain matters will receive further consideration through guidance to PINS as part of the designated new NPS.

2.74 Government will consult statutory consultees⁴⁸ on the Habitats Regulations Assessment and Appraisal of Sustainability reports and their advice will inform the Government assessment.

Information from nominators/points to note:

2.75 Where a nomination might cover an area that includes, or is likely to impact, a nationally designated site of ecological importance, the Government will expect nominators to comment on the likely level of impact and indicate why, at a strategic level, it should be possible to avoid or mitigate any such impact. 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.

Cultural Heritage

Discretionary

2.75 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

⁴⁸ Natural England, Environment Agency, NRW

cause significant adverse impact on designated heritage assets, unless there are clear strategic reasons for doing so and the nominators can confirm that they are able to avoid, minimise or mitigate these effects.

2.76 The Government will assess the potential impact of deployment of a new nuclear power station on designated heritage assets, the likely level of impact and whether it is reasonable to conclude, at a strategic level, that it may be possible to avoid or mitigate such impact.

Nominations will be assessed for an impact on designated heritage assets using the Appraisal of Sustainability reports, the current planning framework (at this time, the NPPF for England and Planning Policy Wales for Wales), and the relevant statutory provisions. Historic England and Cadw will be consulted on these reports and their advice will inform the Government's assessment.

2.77 For the purposes of the strategic criteria, designated heritage assets include:

- World Heritage Sites
- Scheduled monuments⁴⁹
- Listed buildings
- Registered parks and gardens
- Registered battlefields
- Protected wreck sites
- Conservation areas
- Registered landscapes of historic interest in Wales

2.78 It should be noted that an assessment will be at a strategic level and it will not always be possible to rule out adverse impacts at this stage. If this is the case, it will not necessarily result in a site being considered unsuitable. Further guidance is available as part of planning practice guidance that accompanies the NPPF in England or Planning Policy Wales, but Government might ensure certain matters will receive further consideration through guidance to PINS as part of the designated new NPS.

Information from nominators/points to note:

2.79 If a site is nominated in an area which may affect a designated heritage asset, Government would expect nominators to outline how they could avoid, minimise or mitigate the possible effects of their site on that designated heritage asset and its setting, as well as the cumulative impacts on the area and any possible enhancement of the historic environment. Similarly, nominators would also need to consider adverse impacts, including cumulative impacts, on locally designated or non-designated heritage assets and their setting as well as any possible enhancements of these. Government will also expect nominators to outline how they intend to meet the relevant tests in the

⁴⁹ Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

planning framework at the time of nomination. For designated heritage assets paragraphs 128 to 141 of the NPPF apply. For Wales TAN 24 and PPW applies. Prior to nomination, Government would also expect the nominator of a site to take into account the views of Historic England and Cadw in considering the potential countermeasures to avoid, minimise and mitigate the effects, as well as any possible enhancement of the historic environment.

- 2.80 Nominators will be encouraged to engage with Historic England and Cadw at an early stage and will also be encouraged to share the results of these discussions, as well as those they have had with other statutory bodies responsible for overseeing the management of the areas, and Local Authorities, in response to this criterion.

Areas of amenity and landscape value

Discretionary

- 2.81 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 significant adverse impact on designated sites of amenity and landscape value, unless there are clear strategic reasons for doing so and the nominators can confirm that they are able to avoid, minimise or mitigate these effects. The likely impact of the proposed site on any Geological SSSIs and whether nominators can confirm that they are able to avoid, minimise or mitigate these impacts will also be considered under this section.
- 2.82 The Government will assess the potential impact of deployment of a new nuclear power station on designated sites of amenity and landscape value, the likely level of impact and whether it is reasonable to conclude, at a strategic level, that it may be possible to avoid or mitigate such impact. Nominations will be assessed for an impact on designated sites using the Appraisal of Sustainability reports, the current planning framework (at this time, the NPPF and Planning Policy Wales), and the relevant statutory provisions. The statutory consultees⁵⁰ will be consulted on these reports and their advice will inform the government's assessment.
- 2.83 For the purposes of the strategic criteria, sites and structures of specific amenity and landscape value include sites protected by a variety of national and local designations. These sites are:
- National scenic areas
 - National Parks
 - Areas of Outstanding Natural Beauty
 - Heritage Coast
 - Local Landscape Designations
 - National trails

⁵⁰ Environment Agency, Natural England, Historic England, Defra, Northern Ireland, Cadw, Natural Resources Wales.

- Coastal Paths (England and Wales)
- Geological Sites of Special Scientific Interest
- Areas of Best and Most Versatile land (BMV)
- Registered landscapes of historic interest in Wales

2.84 It should be noted that an assessment will be at a strategic level and it will not always be possible to rule out adverse impacts at this stage. If this is the case, it will not necessarily result in a site being considered unsuitable. Further guidance is available as part of the NPPF or Planning Policy Wales, but Government might ensure certain matters will receive further consideration through guidance to PINS as part of the designated new NPS.

Information from nominators/points to note:

2.85 If a site is nominated in an area which may affect a formally designated site of high amenity, historic or landscape value, Government would expect nominators to outline how they could avoid, minimise or mitigate the possible effects of their site on that designated area and setting as well as the cumulative impacts on the area and any possible enhancement of the natural environment, including landscape. Similarly, nominators would also need to consider adverse impacts, including cumulative impacts, on locally designated or non-designated areas of landscape value, landscape character, tranquillity and distinctiveness, as well as any possible enhancements of these. Government will also expect nominators to outline how they intend to meet the relevant tests in the planning framework at the time of nomination. For National Parks and Areas of Outstanding Natural Beauty (“AONBs”) these are currently paragraph 116 of the NPPF in England (TAN 15 is currently the relevant framework in Wales). Prior to nomination, Government would 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, as well as any possible enhancement of the natural and historic environment and setting, including landscape.

2.86 Nominators will be encouraged to engage with statutory consultees at an early stage and will also be encouraged to share the results of these discussions as well as those they have had with other environmental bodies responsible for overseeing the management of the areas, and Local Authorities in response to this criterion.

Criteria related to operational requirements

It is important that any site is of a suitable size and has the appropriate resources available to securely and safely host a new nuclear power station.

Size of site to accommodate operation

Discretionary

- 2.87 Sites will have to be large enough to safely accommodate the operation of a modern nuclear power stations. The availability of land is also of particular relevance in the context of security arrangements required for nuclear power station sites. Operators are required to adopt the concept of “defence-in-depth” in protecting nuclear power stations⁵¹. 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. Before construction may commence on land granted a nuclear site licence to install a reactor, the licensee will be required to have a security plan approved by the ONR.
- 2.88 Both the size and the shape of the area will be considered, given that shape is particularly relevant in considering whether there is sufficient room for defence-in-depth elements of the facility.
- 2.89 The Government will also consider whether the area nominated includes a provision for the safe and secure storage of all the spent fuel and intermediate level waste produced through operation and decommissioning.
- 2.90 The nominated area does not have to include land for construction and decommissioning. While an Appraisal of Sustainability will contain a high level assessment of the potential impacts of construction and decommissioning at a site, it is appropriate that detailed assessment of the environmental impacts of construction takes place at the development consent stage. Therefore construction and decommissioning will be flagged for consideration by PINS and regulators (see paragraph 2.104).
- 2.91 It is assumed a rectangular area of adequate width (approximately 30 hectares) is required to provide the effective defence-in-depth necessary for the key operational elements of the power station (infrastructure such as the reactor building (including the associated turbine hall), spent fuel and intermediate level waste stores). The most recent nuclear power station to be developed in the UK (Sizewell B) has a total site area of 26 hectares for operational facilities including spent fuel and waste storage. The site will not necessarily need to be large enough for all of the current Generic Design Assessment designs.
- 2.92 It would be unreasonable to assume that, between nominating land and proposing an application for development consent, the need for an element of additional land use may not occur (see paragraph 3.9 below). The new NPS is therefore expected to outline that should a development consent application be accepted for a site listed within the new NPS but at which it is proposed to locate any of the key operational elements (see paragraph 2.87 above) outside the boundary identified, then this should be considered as an application for a non-

⁵¹ Defence-in-depth is defined by the International Atomic Energy Agency (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”.

listed site. However, the Government would expect the new NPS to be an important and relevant consideration in determining the application under section 105 of the Act. In particular, given that the application would include land which has been assessed by the strategic siting process, the Government would expect the conclusions reached in relation to that land to be important and relevant considerations in determining the application.

Information from nominators/points to note:

2.93 Nominators should describe the area nominated and where is it expected that additional areas will be required for construction and decommissioning should provide an indication of the additional work and assessments which will need to be undertaken prior to the development consent stage.

Access to suitable sources of cooling

Discretionary

2.94 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
- air-based cooling, with minimal water requirements but utilising large heat exchangers.

2.95 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 can also have some visual impact.

2.96 An assessment will consider whether it is reasonable to conclude that there are suitable sources of cooling for a new nuclear power station at a nominated site, taking account of potential measures to counter impacts, and mitigating actions. Government's assessment will be based on advice from the relevant regulators. The findings of the Appraisal of Sustainability will also be considered as it will appraise both the biodiversity and visual impacts of potential cooling technologies.

Information from nominators/points to note:

2.97 The Government will expect nominators to offer information about cooling technologies that are feasible for likely nuclear power station developments within the nominated site. Nominators will not need to specify particular reactor designs or the number of reactors to be developed on a nominated site but will be asked to cover:

- Whether there are suitable sources of cooling for a new nuclear power station at the nominated site;
- If water-based cooling is to be employed, the nominator believes that there is sufficient water for this purpose or other measures that need to be put in place;
- What impacts (including visual impact) there are likely to be from the need for cooling and why it is reasonable to conclude that these impacts are manageable or able to be mitigated;
- Whether, at a strategic level and subject to local considerations, it is reasonable to conclude that a new nuclear power station on the nominated site will be able to be operated within normal environmental and regulatory requirements;
- Any issues that may affect cooling over the lifetime of the new nuclear station (including changes in meteorology, climate etc);
- Potential impacts on the environment, including designated and non-designated sites.

Matters to be flagged for detailed consideration by PINS and ONR at the planning and licensing stage

2.98 These matters will be considered in the rigorous process through which NSIPs must obtain a DCO as set out within the Act. Government expects the new NPS will reflect these matters and make clear which are relevant to examination undertaken by PINS and which are relevant to the regulators.

The following are flagged as examples of matters for detailed consideration by PINS:

Proximity to Civil Aircraft Movements

2.99 Large aircraft crashes are a rare event in the UK and 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 include Public Safety Zones, Aerodrome Safeguarding plans and Air Traffic Control Areas. Unlicensed aerodromes, such as some helicopter landing sites, are encouraged to lodge plans for an aerodrome safeguarding plan but cannot be forced to do so by the Civil Aviation Authority.

2.100 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.

Significant Infrastructure

2.101 Access to relevant infrastructure (e.g. road and rail networks, airports, ports, gas and electricity networks and Source Protections Zones) will be an important factor for developers in making their assessments of the practicality of site

development. However, to understand the potential impact of a new development on this infrastructure, there will need to be detailed project-specific assessments. This is therefore flagged as an issue for detailed local consideration.

Access to Transmission Infrastructure

- 2.102** New nuclear power stations will require connections to the National Grid for the distribution of the electricity that they generate and in some areas, connection to the grid will require significant upgrades to both national and local grid infrastructure. This can create considerable environmental and planning issues. However, these issues will be generic to any type of power station development and will not be specific to nuclear.
- 2.103** The Government recognises that the lack of detailed information about the location of Grid connection, the technology needed and the potential for any deeper system upgrades limits the nature of environmental assessment that can be done at the strategic stage. As such, it would be difficult for nominators to provide much detail about a particular site's transmission and distribution requirements at this stage but this will be considered when detailed environmental assessment can be made at the planning stage.

Size of site to accommodate construction and decommissioning

- 2.104** Government will ask nominators to provide a description of the boundary of their proposed area as it recognises the importance of providing an appropriate level of certainty to the public, Parliament and PINSPINS on the area of land that is assessed under the strategic criteria. However, Government recognises nominators will not have detailed plans for construction or decommissioning and will therefore not know what land, beyond that required for operations, they will need for these activities. An element of flexibility of site boundary may also be required to enable meaningful detailed discussion to take place with relevant parties at the local level.
- 2.105** The environmental effects of land use for construction can be significant. However, the environmental impacts of land use for construction will differ from that for operation and the land also has the potential to be restored to its original use within a relatively short timeframe. Size of site is a discretionary criterion, but it will only cover operation. The size of site for construction and decommissioning will be flagged for local consideration, and such land will form part of the main development consent, to be considered by PINS.

The following are flagged as examples of matters for detailed consideration by the ONR:

Seismic Risk (Vibratory Ground Motion)

- 2.106** Seismic risk is a critical issue in the siting and safety assessment of all nuclear facilities and it is a key feature of the UK and international regulatory

regimes which ensure the safety of nuclear power stations. In assessing potential sites for new nuclear power stations, two types of seismic hazard will need to be considered:

- vibratory ground motions; and
- faults capable of rupture at the ground's surface⁵² (see below).

2.107 Seismic risk, however, is assessed at site licensing stage when detailed site specific and reactor design information is available. 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.

Capable Faulting

2.108 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 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.

2.109 The presence of an active or ground breaking capable fault running through a site may make it unsuitable for siting a nuclear power station.⁵³ The general professional view of earthquake specialists is that there is little evidence that capable faults exist in the UK. In order to ascertain the presence and status of any capable faults on a site, there would need to be extensive geological investigations and associated laboratory testing and this will be an important consideration at the local level.

Non-Seismic Ground Conditions

2.110 Within the UK there is a varied geology and earth-surface processes that create particular (non-seismic) hazards that could be considered in assessing the relative merits of nuclear power station sites. Some examples are consistent with the issues listed by the IAEA^{54 55} including:

⁵² IAEA (2004), Safety Standards, Safety Guide No. NS-G-3.6 *Geotechnical aspects of site evaluation and foundations for nuclear power plants* or most recent publication.
http://www-pub.iaea.org/MTCD/publications/PDF/Pub1195_web.pdf; EPRI NP-4726 (1989-1991), *Probabilistic seismic hazard evaluations at nuclear power plant sites in the central and eastern United States* or most recent publication.

⁵³ 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 or most recent publication.

⁵⁴ IAEA (2004), Safety Standards, Safety Guide No. NS-G-3.6 *Geotechnical aspects of site evaluation and foundations for nuclear power plants* or most recent publication.

http://www-pub.iaea.org/MTCD/publications/PDF/Pub1195_web.pdf

- undulating terrain necessitating major cut and fill slopes;
- soft and compressible superficial deposits (e.g. river or coastal alluvium);
- naturally cavernous bedrock (“karst” in limestone, gypsum and rock salt deposits);
- complex bedrock conditions, for example, in some of the ancient rocks of the north and west of the UK

2.111 These 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. Whilst the Government does not include a criterion related to non-seismic ground conditions in the national criteria, it is an important consideration for detailed site-specific investigations and for the planning/regulatory assessment processes.

Meteorological Conditions

2.112 National and international safety regulations consider 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; and
- drought.

2.113 Existing nuclear power stations operate globally, within areas which are exposed to extremes of weather far in excess of those experienced in the UK. For the purposes of national criteria it is not practicable, to distinguish meaningfully between different areas of the UK on the grounds of meteorological risk but this will be an important consideration at the local level.

Proximity to mining, drilling and other underground operations

2.114 Mining, drilling and other underground activities can pose a number of risks to nearby nuclear power stations. The potential for collapse, subsidence or uplift of the site surface needs to be evaluated at a local level and the planning process will need to assess these risks. If this evaluation shows that this activity could affect the safety of a nuclear installation, then practicable engineering solutions

⁵⁵ 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 or most recent publication.

will need to be implemented. This is specifically noted as an important local consideration for the detailed site-specific investigations and planning and regulatory assessment.

Emergency Planning

2.115 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. Development of appropriate emergency plans in accordance with the nuclear site licence requires a detailed understanding of the nature of the site location and access local residents and working population, the capability and redundancy of local infrastructure and the capability of local emergency services. Plans are prepared in consultation with local authorities, the police, health authorities and other bodies and are regularly tested.

Consultation Question

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

Chapter 3: Process for designating potential sites for the new NPS

Planning horizon for the new NPS

- 3.1 The Government continues to believe that it is right to focus on those sites which could potentially deploy the soonest and having a 'capable of deployment by' date helps focus on those sites that will meet the need for nuclear as soon as possible.
- 3.2 Given the scale of the investment decisions to be taken, the estimated development period for new nuclear reactors and the number of potentially suitable sites in the current pipeline, Government proposes that for the purposes of the new NPS the 'capable of deployment by' date will be 2035.

Carrying sites forward and future nomination window

- 3.3 Government's view is that those sites listed in EN-6 will continue to be those sites which can deploy the soonest and will be the only sites capable of deploying a nuclear power station⁵⁶ by 2035.
- 3.4 Government therefore proposes an approach which carries the list of potentially suitable sites in EN-6 through to the new NPS (see paragraphs 3.8 – 3.14 below). This would be subject to confirmation from the current developers⁵⁷ associated with each potentially suitable site that they wished it to remain listed in future and subject to those sites meeting the finalised version of the strategic criteria as well as demonstrating they are credible for deployment by 2035. The strategic siting criteria proposed in Chapter 2 are based on the original Strategic Siting Assessment (updated to be consistent with current law and policy).
- 3.5 Assuming that Government's preliminary view on the suitability of sites carried forward to the new NPS site list is correct, it proposes to have a further site nomination window in the 2020s, once the sites initially listed in the new NPS have progressed further towards deployment.

⁵⁶ A station comprising at least one nuclear reactor, with each reactor having a generating capacity of above 1 gigawatt

⁵⁷ For the purposes of this consultation developer should be read as referring to or site owners as applicable. This mirrors the approach used for the development of EN-6.

Proposed sites to be carried forward

3.6 The proposed sites⁵⁸ and their current associated lead developers⁵⁹ to be carried forward are:

- Sellafield⁶⁰ NuGen;
- Wylfa Horizon;
- Sizewell EDF Energy;
- Bradwell EDF Energy and China General Nuclear Power Group (CGN);
- Oldbury Horizon;
- Hartlepool EDF Energy;
- Heysham EDF Energy.

Hinkley Point C

3.7 Development Consent for the construction of a new nuclear power station at the Hinkley Point C site was granted in 2013 and as such Government considers it does not need to be included as a listed site in the new NPS. The site and the project's contribution to the country's future energy mix continue to be crucial to securing energy supplies to enable us to meet our obligations for 2050 and have been taken into consideration in assessing the continuing need for nuclear power and sites.

How sites will be carried forward

3.8 Following the closure of this consultation and the finalisation of the strategic criteria Government will write to the lead developers of the remaining EN-6 sites to ask if they wish them to remain listed in the new NPS and to ask them to submit any additional information required to update the assessment of their sites against the updated strategic criteria.

3.9 EN-6 recognised that after nomination the development of detailed layouts for proposed nuclear power station sites could alter the land required at a site⁶¹. Government therefore intends to ask developers if they wish to propose any modifications to the site boundaries as part of confirming that they wish for a site to remain listed. Government will require developers to provide updated information in respect of any such modification so they can form part of the assessment against the updated siting criteria.

⁵⁸ Full details, including maps, of potentially suitable sites are set out in 'the National Policy Statement for Nuclear Power Generation Volume II' https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47860/1943-nps-nuclear-power-annex-voIII.pdf

⁵⁹ Sites listed in the nuclear NPS are not nominator or developer specific.

⁶⁰ Also referred to as Moorside.

⁶¹ See paragraphs 2.3.3 and 2.3.4 of EN-6.

- 3.10 In confirming that there is a wish for a site to remain listed there should be an explanation of why it is reasonable to conclude that the site can be licensed, constructed and deployed by 2035. There should be an indication of the likely timescales and progress to date in relation to commissioning and site planning. Information should also be provided in relation to the potential timing of any transmission and distribution infrastructure needed to make the site operational and an explanation of the reasoning behind any estimates. The evidence provided should, as far as possible, focus on the characteristics of a particular site, rather than any generic expectation of deployability, and give as much practical detail on dates and timelines as is possible.
- 3.11 Given that planning for projects at many of the EN-6 sites is likely to be more developed than when originally nominated, and the weight this might have in demonstrating that a site is credible for deployment by 2035, confirmation from the lead developer that the site wishes to remain in the process does not have to be from, or include a letter of support from, a Credible Nuclear Power Operator (“CNPO”). If developers consider a letter from a CNPO would add weight to a site’s credibility then this could be included. Likewise given the local engagement undertaken to nominate sites into the original EN-6 process and the ongoing engagement at many of the sites Government will not require developers to undertake further specific engagement at this point. Consultation will be undertaken on any sites included in a draft new NPS later in this process.
- 3.12 Government and relevant regulators will update the assessment of the remaining sites based on the strategic criteria for the new NPS, the proposals for which are set out in Chapter 2.
- 3.13 Developers should note that Government will maintain a dialogue with them as appropriate during the assessment. This may include discussing any aspects of the nomination and requesting further information or clarification.
- 3.14 Following this, Government will include a list of potentially suitable sites as part of a draft new NPS which will then undergo consultation and Parliamentary Scrutiny prior to designation as a final NPS⁶², as required by the Act. The new NPS will also be supported by an update of the existing Appraisals of Sustainability (“AoS”) and Habitats Regulations Assessments (“HRA”) which accompanied and informed EN-1 and EN-6 (see below).

Appraisals of Sustainability (AoS) and Habitats Regulations Assessments (HRA)

- 3.15 The proposed criteria and other elements of the new NPS will be subject to an AoS to assess the potential environmental, economic and social effects of designating an NPS. An AoS is required to inform an NPS under section 5(3) of the Planning Act 2008 and incorporates the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004 that

⁶² Paragraphs 1.22 outlines the position of sites that will not deploy before the end of 2025 but who wish to make applications for development consent before the designation of an NPS for deployment of nuclear power stations post-2025.

implement the Strategic Environmental Assessment Directive. The new NPS will also be subject to an assessment under the Habitats Regulations⁶³.

3.16 If potential significant adverse effects are identified within the assessments undertaken, the AoS will recommend options for avoiding or mitigating such effects. In this way, the AoS helps inform the preparation of the NPS to promote sustainable development.

3.17 Government is launching an AoS scoping consultation alongside this consultation. In summary:

- The consultation is on the scope of the AoS for a proposed new NPS for nuclear power stations deploying between 2026-2035 (“the new NPS”). It proposes how the AoS will be undertaken, the level and type of information to be covered in the AoS and how this will be integrated into the development of the proposed new NPS for Nuclear.
- Statutory bodies will be consulted on the scope and level of detail of the information to be included in the AoS. We are also publishing this consultation on our website to give others who may wish to do so the opportunity to comment. The AoS will meet two regulatory requirements:
 - The requirement for an AoS of NPS within the Planning Act 2008⁶⁴.
 - The Environmental Assessment of Plans and Programmes Regulations 2004⁶⁵.
- The purpose of the AoS is to enable sustainability considerations (including environmental and social aspects) to be fully integrated into the development of the NPS. It facilitates the identification of potentially significant effects so that mitigation can be identified and considered within decision-making.
- The AoS will apply to policies within the new NPS. As part of the new NPS, strategic criteria will be used to determine the suitability of sites for new nuclear power stations. It is considered that the strategic criteria and draft list of potentially suitable sites will constitute the most significant elements requiring AoS assessment. The scoping stage of AoS comprises a number of tasks:
 - Task A1: Review of other relevant plans, programmes and environmental protection objectives (“PPPs”).
 - Task A2: Collecting baseline information on sustainability aspects.
 - Task A3: Identifying existing and future sustainability issues and problems.
 - Task A4: Developing an AoS Framework to appraise the new NPS.

⁶³ The Conservation of Habitats and Species Regulations 2010, www.legislation.gov.uk/uksi/2010/490/contents/made

⁶⁴ <http://www.legislation.gov.uk/ukpga/2008/29>, see section 5(3)

⁶⁵ S.I. 2004 No. 1633.

- The AoS covers a number of different topics: climate change; biodiversity and ecosystems; communities (covering population, employment and viability in addition to supporting infrastructure), health and well-being; historic environment; landscape, townscape and waterscape; air quality; soils, geology, and land use; water quality and resources; flood risk and coastal change.
- The review of PPPs and baseline information identified sustainability issues which were used to develop the following sustainability objectives for use in the appraisal of sustainability:
 - To minimise detrimental effects on the climate from greenhouse gases and ozone depleting substances and maximise resilience to climate change.
 - To protect and enhance protected habitats, species, valuable ecological networks and ecosystem functionality.
 - To promote a strong economy with opportunities for local communities.
 - To minimise detrimental impacts on strategic transport network and disruption to basic services and infrastructure.
 - To protect and enhance the physical and mental health of the population.
 - To conserve and where appropriate enhance heritage assets and the wider historic environment including buildings, structures, landscapes, townscapes and archaeological remains.
 - To promote the protection and improvement of landscapes, townscapes, waterscapes and the visual resource, including areas of tranquillity and dark skies
 - To protect and enhance air quality on local, regional, national and international scale.
 - To promote the use of brownfield land and where this is not possible to prioritise the protection of geologically important sites and agriculturally important land.
 - To protect and enhance surface (including coastal) and groundwater quality (including distribution and flow).
 - To avoid, reduce and manage flood risk (including coastal flood risk) from all sources and coastal erosion risks by locating infrastructure in lower risk areas and ensuring it is resilient over its lifetime without increasing risks elsewhere.
 - To promote the sustainable use of resources and natural assets.

Consultation Questions

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| 1. | Do you have any comments on the process to designate potentially suitable sites in the new NPS for nuclear set out in paragraphs 3.1-3.14? |
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Chapter 4: Process for nominations windows

Future site nominations

- 4.1 This Chapter looks beyond the immediate designation of potential sites for the new NPS which is addressed in Chapter 3 above, and sets out a proposed process for inviting, accepting and assessing nominated sites in any future nominations window.
- 4.2 Subject to the responses to this consultation, the government proposes to have a new site nomination window in the 2020s, once the sites initially listed in the new NPS have progressed further towards deployment.
- 4.3 The process is based on the original nomination process used in 2009/10 which had itself been designed taking into account comments received from public consultation. The process has been updated following the experience of the original round of nominations as well as to take into account the existing position in terms of current potentially suitable sites.
- 4.4 As set out above, the Government's current position is that there should not be a nomination window until the early 2020s and as such this process will be subject to relevant changes in policy and regulation and the exact process will be determined at the point of a nomination window in the early 2020s.

Future process for site nominations

Nomination window

- 4.5 Government will publicise a nomination window at least one month prior to it opening and this will remain open for 8 weeks, giving nominators sufficient time to undertake local engagement and collate the relevant information to inform the strategic assessment of a proposed site.

Who can nominate a site

- 4.6 Government will have to be satisfied that a site is credible for deployment by a date determined by Government (see paragraphs 4.9 - 4.10). If the Government is not satisfied that the site is credible, this would result in a nomination not being included for assessment against the strategic criteria for a new NPS. For proposals which are in the early stages of development, Government's preference is that nominations should be from, or include, a

- letter of support from a Credible Nuclear Power Operator (“CNPO”)⁶⁶ which demonstrates why the CNPO considers the site to be credible for deployment by the date specified by Government.
- 4.7 The CNPO nomination, or letter of support from the CNPO, should demonstrate the achievability of a timescale for deployment by the date specified by government. This statement should contain an explanation of why it is reasonable to conclude that a site can be licensed, constructed and deployed by the date specified by government. In considering this there should be an indication of the likely timescales and progress to date in relation to commissioning and site planning. Nominators should also provide information in relation to the potential timing of any transmission and distribution infrastructure needed to make the site operational and an explanation of the reasoning behind any estimates. The evidence provided should as far as possible focus on the characteristics of a particular site, rather than any generic expectation of deployability, and give as much practical detail on dates and timelines as is possible.
- 4.8 A nominator will not have to own a site, but, if the nominator is not the landowner, they will be required to demonstrate that they or third parties have raised awareness of the nomination with local communities living in the vicinity of the site, including the owner(s) of the nominated site.

Planning horizons

- 4.9 A site will need to be shown to be capable for deployment by a date specified by Government in order to be listed in a new NPS. By way of example, EN-6 was for sites that were capable of deployment by 2025 and the new NPS is proposed for sites capable of deployment by 2035. This helps focus any assessment on those sites most likely to meet the need for nuclear at that time as soon as is possible.
- 4.10 The assessment process will ensure that, as far as possible, sites which might be considered to be potential alternatives to those listed in the new NPS have also been identified and assessed at a strategic level. Being a nomination-driven process, it will be in the nominators’ best interests to thoroughly consider alternative sites and to nominate those which it believes are feasible for deployment. Nominators will therefore have considered the strategic merits of a nominated site in comparison to others before deciding to put it forward. Government will therefore ask nominators how they decided which site to nominate and Government will also carry out its own study of alternative sites which, where necessary, may be considered as part of the process.

⁶⁶ Credible Nuclear Power Operator (CNPO) is defined in the 2008 White Paper on Nuclear Power as one that 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, that has made a public commitment to become an operator of an electricity generating station (with a capacity in excess of 50MW) in a market subject to UK health, safety and environmental regulation. <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file43006.pdf>

Site Boundary

- 4.11 Nominators will be expected to describe the boundary of their proposed area in words and to indicate the outline of their proposed sites using an Ordnance Survey map at the 1:10,000 scale. Nominators will be required to demonstrate that it is reasonable to conclude there is enough land within the boundary to cover the land required for the operation of one or more new nuclear power stations at the site specified for deployment by the planning horizon date specified by government, including the safe and secure storage of spent fuel and intermediate level waste produced on the site through operation and decommissioning of the station for several decades until it can be sent for disposal in a geological disposal facility.
- 4.12 To reduce the likelihood of further land being needed, and to increase the usability of the nominated site, nominators will be encouraged to ensure that the area nominated includes within it all likely site plans and all reasonable variations to those plans. The Government expects the key operational elements of the power station, and in particular the infrastructure that has the potential to directly cause a radiological hazard such as the reactor building (including the associated turbine hall), spent fuel and intermediate level waste stores, to be located within the boundary of the site nomination. However, the Government recognises that the level of project definition may be limited at the point of nomination and that some flexibility may occasionally be required at the Development Consent application stage to enable the inclusion of land additional to the boundary of the listed site for other elements of the power station, such as car parks, access roads or marine landing facilities, or for the construction and/or decommissioning of the nuclear power station.
- 4.13 Following the nomination window and prior to any inclusion in the NPS, the Government reserves the right, in conjunction with nominators, to make changes to the area nominated, for instance so that it includes all likely actual site plans and all reasonable variations to those plans. The Government may also need to adjust the boundaries of areas nominated if two or more nominations overlap.

Local engagement at nominated sites

- 4.14 Government recognises the importance of any new decisions about the location of additional sites potentially suitable for the deployment of new nuclear power stations. A new nomination process will provide the opportunity for public consultation on the suitability of nominated sites at a national level as well as Parliamentary Scrutiny.
- 4.15 A nomination must demonstrate that the nominator or, where applicable, a third party have taken appropriate steps to raise awareness of the nomination with local communities living in the vicinity of the site, including the owner(s) of the nominated sites. There will be a number of ways in which this could be done. As a minimum, nominators should make the local authority and any land owners aware of their nomination, and have taken recent steps to publicise their nomination to the wider community through advertisements in local newspapers and in public places such as community centres, libraries

etc. Nominators should also raise awareness with any relevant existing community groups (in the case of existing nuclear sites, with any site stakeholder group) and consider specific events to raise awareness more generally within the local community.

- 4.16 Nominators should keep relevant local authorities informed of their plans for raising awareness and should deposit a hard copy of their eventual nomination with the relevant local authority/authorities. As part of the public consultation and Parliamentary Scrutiny of a draft new NPS and site list, Government will make public all information provided by nominees as part of the nomination except information where there is a particular need to maintain confidentiality (for instance due to data protection, security or commercial confidentiality).
- 4.17 If, in the Government's view, the steps taken to raise the awareness of the proposed development with local communities living in the vicinity of the site, including the owner(s) of the nominated sites, are insufficient (or suitable evidence is not provided), it may not be possible for a particular site to be considered further.

Strategic criteria

- 4.18 Nominated sites will have to be assessed against the strategic criteria outlined at Chapter 2, subject to them being updated to reflect law and policy at the time of nomination.
- 4.19 Nominators should note that Government will maintain a dialogue with nominators as appropriate during the assessment. This may include discussing any aspects of the nomination and requesting further information or clarification.

Consultation Questions

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| 1. | Do you have any comments on the process for future site nominations set out in paragraphs 4.4-4.18? |
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