



Department  
of Energy &  
Climate Change

Government Response to consultation on Habitats Regulations  
Assessment of the National Policy Statement for Geological  
Disposal of Radioactive Waste: Methodology Report

Methodology Report

1 February 2016



Department of Energy and Climate Change

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# Foreword

This Habitats Regulations Assessment Methodology Report ('Methodology Report') has been produced by Amec Foster Wheeler on behalf of the Department of Energy and Climate Change (DECC). The Methodology Report sets out the proposed approach to undertaking the Habitats Regulations Assessment of the National Policy Statement for Geological Disposal of Radioactive Waste. The National Policy Statement is currently being prepared by DECC in accordance with the Government's White Paper ('Implementing Geological Disposal'), issued in July 2014.

The Habitats Regulations Assessment will be undertaken by Amec Foster Wheeler on behalf of DECC and in accordance with the Regulation 102(1) of The Conservation of Habitats and Species Regulations 2010 (as amended). It will consider the likely significant effects on European designated nature conservation sites (Special Areas of Conservation, Special Protection Areas and Ramsar Sites) of delivering the Government's policy of implementing geological disposal for higher level radioactive waste through the National Policy Statement.

This Final Methodology Report has been produced following a consultation exercise between the 4<sup>th</sup> August and the 25<sup>th</sup> September 2015 to enable consultees to comment on the proposed scope of the Habitats Regulations Assessment of the National Policy Statement. While the focus of this exercise was obtaining feedback from technical experts on the Methodology Report, any other interested organisations and members of the public were welcome to respond. In all six responses were received to the consultation and details of these are given in Appendix A; these responses were analysed and considered in the production of the Final Methodology Report as described.

The Final Methodology Report will now be used by Amec Foster Wheeler (on behalf of DECC) as the basis for undertaking the Habitats Regulations Assessment itself. Once completed, the Habitats Regulations Assessment Report will be published as part of the formal public consultation on the draft National Policy Statement in spring 2016.

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# Executive Summary

## Overview

The Department of Energy and Climate Change (DECC) has begun work on developing a National Policy Statement (NPS) for Geological Disposal of Radioactive Waste. The NPS will apply to geological disposal facilities (GDF), and the deep boreholes required to investigate potential sites for these facilities, in England only. If circumstances were to arise requiring planning consideration of a GDF elsewhere in the UK, planning decisions and environmental assessments would be pursued through the relevant, devolved planning system.

The NPS itself is to be subject to the provisions of Article 6(3) of the "Habitats Directive" (92/43/EEC) and the requirements of Regulations 102 and 103 of the Conservation of Habitats and Species Regulations 2010 (as amended) (the 'Habitats Regulations')<sup>1,2</sup>. These provisions require an assessment of whether there are any 'likely significant effects' (LSE) on any European site<sup>3</sup> as a result of the implementation of the NPS (either on its own or 'in combination' with other plans or projects) and, if so, whether these effects will result in any adverse effects on that site's integrity.

In accordance with the requirements of the Habitats Regulations, a Habitats Regulations Assessment (HRA) is to be undertaken to consider the effects of the NPS on European sites and to identify and assess alternative solutions to remove or compensate for those effects.

## Purpose of this Methodology Report

The purpose of this Methodology Report is to set out the proposed approach to undertaking the HRA of the NPS for Geological Disposal of Radioactive Waste, consistent with current European Commission guidance<sup>4</sup> and covering:

- screening;
- appropriate Assessment;
- assessment of alternatives; and

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<sup>1</sup> SI 2010 No. 490; available at <http://bit.ly/1DaYWjr>.

<sup>2</sup> Regulations 102 and 103 apply the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC to land-use plans in England and Wales; these are applied to land-use plans by Regulations 85A – 85E of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (SI 1994 No. 2716) in Scotland; and by Regulation 64B of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) (SI 1995 No. 380) in Northern Ireland.

<sup>3</sup> Strictly, 'European sites' are: any Special Area of Conservation (SAC) from the point at which the European Commission and the UK Government agree the site as a 'Site of Community Importance' (SCI); any classified Special Protection Area (SPA); any candidate SAC (cSAC); and (exceptionally) any other site or area that the Commission believes should be considered as an SAC but which has not been identified by the Government. However, the term is commonly used when referring to potential SPAs (pSPAs), to which the provisions of Article 4(4) of Directive 2009/147/EC (the 'new wild birds directive') apply; and to listed Ramsar Sites, to which the provisions of the Habitats Regulations are typically applied a matter of Government policy (e.g. NPPF para. 118; EN-1 para. 5.3.9). "European site" is therefore used in this report in its broadest sense, as an umbrella term for all of the above designated sites. The protection provided by the Habitats Regulations is sometimes (but not always) explicitly extended to include possible SACs (pSACs) by Government policy (e.g. the NPPF specifically includes pSACs in para. 118; EN-1 does not).

<sup>4</sup> *Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC 2002).

- assessment of Imperative Reasons of Overriding Public Interest (IROPI) and identification of compensatory measures.

DECC has consulted statutory and other selected consultees on this HRA Methodology Report (alongside a separate Appraisal of Sustainability Scoping Report).

Using the approach set out in this report, as amended on the basis of consultation responses where appropriate, the potential effects of the draft NPS will then be assessed against Regulation 102 of the Habitats Regulations

Once completed, the Habitats Regulations Assessment Report will be published as part of the formal public consultation on the draft National Policy Statement in spring 2016.

# 1. Introduction

## 1.1 Overview

The 2014 White Paper ‘Implementing Geological Disposal’<sup>5</sup> set out the UK Government’s intention to amend the Planning Act 2008<sup>6</sup> to bring Geological Disposal Facilities (GDFs) for radioactive waste, and the deep boreholes required to investigate potential sites for these facilities, within the definition of Nationally Significant Infrastructure Projects (NSIPs) in England, and to designate a National Policy Statement (NPS) to guide future decision making. The Infrastructure Planning (Radioactive Waste Geological Disposal Facilities) Order 2015<sup>7</sup>, which came into force on 27<sup>th</sup> March 2015, subsequently amended the Planning Act 2008 to extend the categories of NSIPs to include development relating to geological disposal. In consequence, work has begun to develop the NPS for Geological Disposal of Radioactive Waste (as defined by section 30A of the Planning Act 2008), which is being led by the Department of Energy and Climate Change (DECC) as part of its work in managing the UK nuclear legacy and radioactive waste safely and cost effectively.

The purpose of the NPS will be to guide the Secretary of State, Planning Inspectorate and developer of the site<sup>8</sup> in the consideration of any applications for development consent in relation to GDF-related NSIPs, including deep boreholes. Once the NPS has been designated, the Secretary of State will be required to determine any applications for development consent in accordance with it, unless certain other criteria (set out in the Planning Act 2008) apply. The NPS is intended to be non-site specific, focussing on the high level assessment principles against which development consent order applications will be considered, rather than identifying specific sites. In this regard, the proposed NPS will be similar to the other non-nuclear energy infrastructure NPSs already designated by DECC<sup>9</sup>.

Both radioactive waste management and planning are devolved issues. Therefore, the Welsh Government, Northern Ireland Executive and Scottish Government each have responsibility for these issues in or as regards their respective countries. The NPS will apply to England only.

The NPS is subject to the provisions of Article 6(3) of the ‘Habitats Directive’ (92/43/EEC) and the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended) (the ‘Habitats Regulations’). These provisions require an assessment of whether there will be any ‘likely significant effects’ on any European site as a result of the plan/project’s implementation (either on its own or ‘in combination’ with other plans or projects) and, if so,

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<sup>5</sup> DECC (July 2014), Implementing Geological Disposal - A Framework for the long-term management of higher activity radioactive waste

<sup>6</sup> 2008 c.29.

<sup>7</sup> S.I. 2015 No. 949.

<sup>8</sup> In the instance of GDF construction and operation, unlike other NSIPs anticipated by existing NPSs, the developer is known. It is Radioactive Waste Management (RWM) Limited, a wholly owned subsidiary of the Nuclear Decommissioning Authority (NDA)

<sup>9</sup> Energy NPSs designated on 19th July 2011. Non nuclear cover EN-1 Overarching Energy NPS to EN-5 Electricity Networks Infrastructure NPS

whether these effects will result in any adverse effects on the site's integrity. This process is generally known as Habitats Regulations Assessment (HRA).

## 1.2 Purpose of this Methodology Report

DECC has commissioned Amec Foster Wheeler to undertake the HRA of the NPS for the Geological Disposal of Radioactive Waste. This Methodology Report provides a brief overview of the HRA process and sets out the approach for the HRA of the NPS.

An initial version of the report supported early discussions with statutory consultees and provided information to other potentially interested stakeholders during a consultation exercise which ran from 4<sup>th</sup> August and the 25<sup>th</sup> September 2015 (see Section 1.5).

## 1.3 Geological Disposal – An Overview

The UK has accumulated a legacy of higher activity radioactive waste. More will arise as existing nuclear facilities are decommissioned, cleaned up, and through the operation and decommissioning of any new nuclear power stations.

In 2001, the UK Government and devolved administrations began a programme<sup>10</sup> to find a practical long-term management solution for the UK's higher activity radioactive waste. A wide range of options were considered by the independent Committee on Radioactive Waste Management (CoRWM) in a process which involved extensive consultation with the public and expert groups. In July 2006, CoRWM recommended that geological disposal, alongside safe and secure interim storage, was the best available approach for the long-term management of the UK's legacy of higher activity radioactive wastes<sup>11</sup>.

Since then, the UK Government has been committed to the policy of geological disposal and favours an approach to siting a GDF that is based on the willingness of local communities to participate in the siting process. A 2008 White Paper established a policy framework and national siting process. The 2014 Implementing Geological Disposal White Paper<sup>12</sup> set out a revised policy framework and a set of initial actions that will inform a new national siting process.

### What is Geological Disposal?

Geological disposal involves isolating radioactive waste deep inside a suitable rock volume to ensure that no harmful quantities of radioactivity ever reach the surface environment. This is achieved through the use of multiple barriers that work together to provide protection over hundreds of thousands of years. The multiple barriers that provide safety for geological waste disposal are a combination of the:

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<sup>10</sup> Managing Radioactive Waste Safely: Proposals for Developing a Policy for Managing Solid Radioactive Waste in the UK, September 2001 <http://bit.ly/15Rum8m>

<sup>11</sup> Managing our Radioactive Waste Safely – CoRWM's Recommendations to Government, July 2006 <http://bit.ly/15R4QpL>

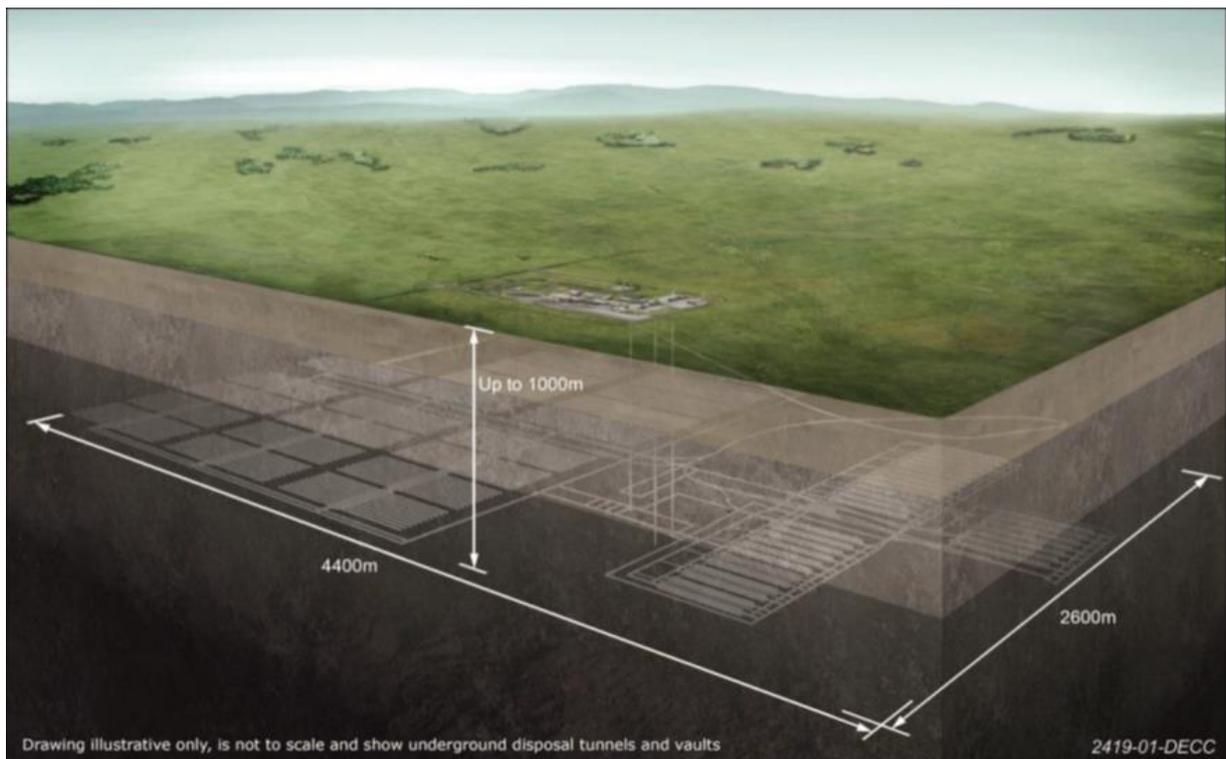
<sup>12</sup> DECC (2014), Implementing Geological Disposal - A Framework for the long-term management of higher activity radioactive waste, July 2014 <http://bit.ly/1rF6xQn>

- form of the radioactive waste itself - for example, high level waste that arises initially as a liquid is converted into a durable, stable solid glass form before storage and disposal;
- packaging of the waste;
- engineered barriers (buffer) that protect the waste packages and limit the movement of radionuclides if they are released from the waste packages;
- engineered features of the facility that the waste packages are placed in;
- stable geological setting (rock) in which the facility is sited.

The geological formations around the engineered facility will isolate and contain the radioactivity for a very long period, thus preventing any harmful amounts of radioactivity being released into the environment in the future.

**Figure 1.1** provides an illustrative diagram of a GDF.

**Figure 1.1 Illustrative Diagram of a Geological Disposal Facility**



### National Policy Statement for Geological Disposal of Radioactive Waste

In March 2015, The Infrastructure Planning (Radioactive Waste GDF) Order 2015<sup>13</sup> amended the Planning Act 2008 to extend the categories of Nationally Significant Infrastructure Projects (NSIPs) to include GDFs and the deep boreholes required to investigate potential sites for

<sup>13</sup> S.I. 2015 No. 949.

these facilities. In consequence, work has begun to develop the draft NPS which is being led by DECC.

The draft NPS will be non-site specific, focusing on the high level assessment principles against which development consent order applications will be examined for any GDFs and related deep boreholes projects in England. The NPS is likely to contain information concerning:

- the policy context for the GDF;
- the need for the GDF;
- development principles;
- generic impacts and siting considerations, including generic mitigation measures.

Both radioactive waste management and planning are devolved issues and the Welsh Government, Northern Ireland Executive and Scottish Government each have responsibility for these issues in or as regards their respective countries. The NPS will therefore apply to GDFs and deep borehole infrastructure projects in England only.

## 1.4 Habitats Regulations Assessment

Regulation 106 of the Habitats Regulations<sup>14</sup> applies the provisions of Regulations 102 and 103 of the Habitats Regulations to National Policy Statements<sup>15</sup>. Regulation 102(1) states that if a land-use plan “(a) is likely to have a significant effect on a European site<sup>16</sup> or a European offshore marine site<sup>17</sup> (either alone or in combination with other plans or projects); and (b) is not directly connected with or necessary to the management of the site” then the plan-making authority must “...make an appropriate assessment of the implications for the site in view of that site’s conservation objectives” before the plan is given effect. The plan-making authority may agree to the plan only if it has determined that it will not adversely affect the integrity of the European site; or, where this is not the case, that the project meets the provisions of Regulation 103 (that there is no satisfactory alternative; and that the plan must be authorised

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<sup>14</sup> SI 2010 No. 490; available at <http://bit.ly/1DaYWjr>.

<sup>15</sup> Regulations 102 and 103 apply the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC to land-use plans in England and Wales; these are applied to land-use plans by Regulations 85A – 85E of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (SI 1994 No. 2716) in Scotland; and by Regulation 64B of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) (SI 1995 No. 380) in Northern Ireland.

<sup>16</sup> Strictly, ‘European sites’ are: any Special Area of Conservation (SAC) from the point at which the European Commission and the UK Government agree the site as a ‘Site of Community Importance’ (SCI); any classified Special Protection Area (SPA); any candidate SAC (cSAC); and (exceptionally) any other site or area that the Commission believes should be considered as an SAC but which has not been identified by the Government. However, the term is commonly used when referring to potential SPAs (pSPAs), to which the provisions of Article 4(4) of Directive 2009/147/EC (the ‘new wild birds directive’) apply; and to listed Ramsar Sites, to which the provisions of the Habitats Regulations are typically applied a matter of Government policy (e.g. NPPF para. 118; EN-1 para. 5.3.9). “European site” is therefore used in this report in its broadest sense, as an umbrella term for all of the above designated sites. The protection provided by the Habitats Regulations is sometimes (but not always) explicitly extended to include possible SACs (pSACs) by Government policy (e.g. the NPPF specifically includes pSACs in para. 118; EN-1 does not).

<sup>17</sup> ‘European offshore marine sites’ are defined by Regulation 15 of *The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007* (as amended).

for imperative reasons of overriding public interest (IROPI)). The process by which Regulations 102 and 103 of the Habitats Regulations are met is generally known as HRA<sup>18</sup>.

In accordance with the Habitats Regulations, there is a need for DECC to consider whether the NPS for the Geological Disposal of Radioactive Waste is likely to have a significant effect on any specified European sites. If this screening were to show that such effects were likely, DECC should make an appropriate assessment of the implications for these sites. The need for these actions arises because the NPS is not directly connected with or necessary for the management of any European sites.

DECC notes that all development consent order applications which may be made pursuant to the NPS, once designated, will be subject to the requirements of the planning system under the Planning Act 2008.

## 1.5 Consultation and Stakeholder Engagement

The initial Methodology Report was issued for consultation to statutory and other selected consultees between the 4<sup>th</sup> August and the 25<sup>th</sup> September 2015. The report was issued directly to the UK statutory HRA and other bodies identified in **Box 1.1** for comment. Whilst this technical consultation was primarily aimed at a number of statutory and selected consultees, DECC also made the initial Methodology Report publicly available.

Box 1.1 Specific Consultees	
<p><b>UK HRA Statutory Consultation Bodies</b></p> <ul style="list-style-type: none"> <li>• Natural England</li> <li>• Scottish Natural Heritage</li> <li>• Natural Resources Wales</li> <li>• Department of the Environment's 'Environment and Heritage Service', Northern Ireland</li> </ul>	<p><b>Additional Consultees</b></p> <ul style="list-style-type: none"> <li>• Nuclear Legacy Advisory Forum (on behalf of Local Government Association)</li> <li>• Radioactive Waste Management Limited</li> <li>• Nuclear Decommissioning Authority</li> <li>• Office of Nuclear Regulation</li> <li>• Environment Agency</li> <li>• Scottish Environment Protection Agency</li> <li>• Scottish Government</li> <li>• Welsh Government</li> </ul>

<sup>18</sup> The term 'Appropriate Assessment' has been historically used to describe the process of assessment; however, the process is now more typically termed 'Habitats Regulations Assessment' (HRA), with the term 'Appropriate Assessment' limited to a specific stage within the process.

Comments on any aspect of the initial Methodology Report were welcomed although views were particularly sought in response to the following questions:

1. Do you think that the proposed approach to assessing the NPS against the Habitats Regulations is proportionate, and would provide a suitable level of information about potential habitats impacts on which to assess the NPS itself? If not, how do you think the intended approach should be amended, and why?
2. Do you think that the HRA Methodology Report sets out sufficient information to establish the context for the screening report and later appropriate assessment? If not, which areas do you think have been missed and where is information on available from?

A total of 6 responses were received from the following bodies:

- Above Derwent Parish Council;
- Northern Ireland Environment Agency;
- Natural England;
- Nuclear Decommissioning Authority and Radioactive Waste Management Limited;
- EDF Energy; and
- Nuclear Legacy Forum.

Responses related to all aspects of the initial Methodology Report but particularly concerned:

- requests for further clarification on statutory consultees;
- requests to revise references to guidance;
- the approach to assessment, including screening, in combination effects and access to information;
- a request for a clear statement on whether the NPS would have any likely significant effects on European sites.

**Appendix A** contains a schedule of the consultation responses received on the initial Methodology Report.

The draft NPS, and accompanying HRA Report, will be made available in 2016 and be subject to consultation at that point.

## 1.6 Appraisal of Sustainability

Concurrent with the HRA, and in fulfilment of Section 5(3) of the Planning Act 2008, an Appraisal of Sustainability (AoS) of the NPS for the Geological Disposal of Radioactive Waste is also being completed. The AoS will ensure that the likely environmental and socio-economic effects of the NPS are identified, described and evaluated. The AoS will also need to satisfy the requirements of the European Union Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (commonly referred to as the

Strategic Environmental Assessment (SEA) Directive) and relevant implementing regulations<sup>19</sup> (the SEA Regulations).

The AoS of the NPS will be undertaken alongside the HRA with the findings presented in an AoS Report that will be published alongside the draft NPS and HRA Report for consultation in spring 2016. The findings of the HRA will be used to inform the appraisal and in particular with respect to the consideration of the effects of the draft NPS on biodiversity.

## 1.7 Structure of this Methodology Report

This report is structured as follows:

- **Executive Summary** - Provides a summary of the report;
- **Section 1: Introduction** - Includes a summary of the draft NPS, an overview of HRA, report contents and an outline of how to respond to consultation;
- **Section 2: Habitats Regulations Assessment of the National Policy Statement for Geological Disposal of Radioactive Waste** - Provides a brief summary of the HRA process, and discusses some of the key challenges when undertaking a HRA of a high-level policy document such as the NPS;
- **Section 3: Proposed Approach** - Provides detail on the intended approach to the HRA of the NPS;
- **Section 4: Next Steps** - Details the next steps in the HRA process.

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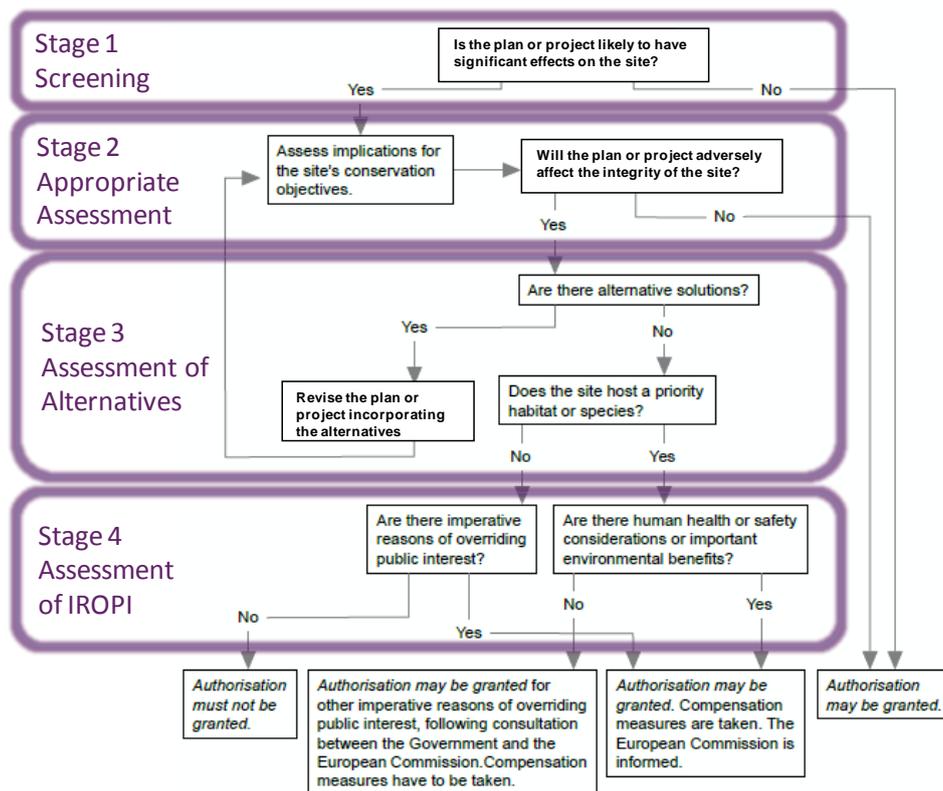
<sup>19</sup> The Environmental Assessment of Plans and Programmes Regulations 2004 S.I. 2004 No. 1633

# 2. Habitats Regulations Assessment of the National Policy Statement for Geological Disposal of Radioactive Waste

## 2.1 Overview

Current European Commission guidance<sup>20</sup> suggests a four-stage process to carry out an HRA, although not all stages are necessarily required. These stages, and the assessment process, are summarised in **Figure 2.1** below.

**Figure 2.1 Summary of HRA Process and Stages**



\*IROPI – Imperative Reasons of Overriding Public Importance

Regulation 102 of the Habitats Regulations essentially provides a test that the final plan must pass; there is no statutory requirement for HRA to be undertaken on draft plans or similar

<sup>20</sup> Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC 2002). Available at: <http://bit.ly/1LXRR8Z>

developmental stages. However, it is accepted best-practice for the HRAs of strategic plans or policy documents to be run as an iterative process alongside their development. This helps ensure that policies that plan positively for the environment are developed from the outset of the plan-making process, rather than the HRA being a purely retrospective assessment exercise applied towards the end of a plan's development.

## 2.2 Guidance on HRA

There is little specific guidance on the application of HRA to National Policy Statements, particularly as similar high-level policy documents are often excluded from the HRA process<sup>21</sup>. However, the HRA of the NPS for Geological Disposal of Radioactive Waste will be based on case-practice established through the HRAs of similar National Policy Statements (for example, NPSs EN-1 – EN-5) and the following general guidance:

- DTA Publications (2013) *The Habitats Regulation Handbook* [online]. Available at: <http://www.dtapublications.co.uk/handbook/>. Accessed 11.06.15.
- European Commission (2002). *Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Commission, Brussels;
- European Commission (2001). *Assessment of plans and projects significantly affecting Natura 2000 sites*. European Commission, Brussels;
- European Commission (2000). *Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/433/EEC*. European Commission, Brussels.
- European Commission (2007/2012) *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the Concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion Of The Commission*. European Commission, Brussels.

## 2.3 Key Issues for the HRA of the NPS

### Purpose and Scope of the NPS

The NPS for Geological Disposal of Radioactive Waste will set out the need for NSIPs related to the geological disposal of higher activity radioactive waste, and the Government's policies to deliver them. It will be used as the primary basis for the examination by the Examining Authority, and decisions by the Secretary of State, on development consent order applications for geological disposal facility infrastructure that falls within the definition of a NSIP as defined in the Planning Act 2008.

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<sup>21</sup> European Commission guidance on the application of Article 6(3) (*Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC* (EC, 2000) states that "...a distinction needs to be made with 'plans' which are in the nature of policy statements, i.e. policy documents which show the general political will or intention of a ministry or lower authority. An example might be a general plan for sustainable development across a Member State's territory or a region. It does not seem appropriate to treat these as 'plans' for the purpose of Article 6(3), particularly if any initiatives deriving from such policy statements must pass through the intermediary of a landuse or sectoral plan. However, where the link between the content of such an initiative and likely significant effects on a Natura 2000 site is very clear and direct, Article 6(3) should be applied."

## Infrastructure to be covered by the NPS

The definitions for nationally significant infrastructure that are related to the geological disposal of higher activity radioactive waste are set out in section of 30A of the Planning Act 2008.

Applications for the following types of projects, and decisions on them, will be made under the Planning Act and will be covered by the NPS:

- Construction of facilities in England where the main purpose of the facility is expected to be the final disposition of radioactive waste, where:
  - the part of the facility where radioactive waste is to be disposed of is expected to be constructed at a depth of at least 200 metres beneath the surface of the ground or seabed; and
  - the natural environment which surrounds the facility is expected to act, in combination with any engineered measures, to inhibit the transit of radionuclides from the part of the facility where radioactive waste is to be disposed of to the surface.
- Construction of one or more boreholes, and any associated excavation, construction or building work, in England or waters adjacent to England up to the seaward limits of the territorial sea, where:
  - the borehole is expected to be constructed to a depth of at least 150 metres beneath the surface of the ground or seabed; and
  - the main purpose of constructing the borehole is to obtain information, data or samples to determine the suitability of a site for the construction or use of a radioactive waste GDF.

## Waste to be Managed by a GDF

The types of higher activity radioactive waste (and nuclear materials that could be declared as waste) to be received and disposed of in a GDF covered by the NPS are identified in the 2014 White Paper<sup>22</sup> as:

- HLW arising from the reprocessing of spent nuclear fuel at Sellafield;
- ILW arising from existing nuclear licensed sites, and defence, medical, industrial, research and educational activities;
- the small proportion of LLW that is not suitable for disposal in the national LLW Repository;
- spent fuel from existing commercial reactors (yet to be declared waste) and research reactors that is not reprocessed;

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<sup>22</sup> DECC (July 2014) Implementing Geological Disposal: A Framework for the long-term management of higher activity radioactive waste, paragraph 2.17

- spent fuel (yet to be declared waste) and ILW from a new build programme up to a defined amount;
- plutonium stocks - residual plutonium not re-used in new fuel manufacture (yet to be declared waste);
- uranium stocks – including that arising from enrichment and fuel fabrication activities (yet to be declared waste);
- irradiated fuel and nuclear materials (yet to be declared waste) from the UK defence programme.

The volumes of these wastes (known as the ‘inventory for disposal’) have been made publicly available as part of the Radioactive Waste Management (RWM) Geological Disposal: The 2013 Derived Inventory<sup>23</sup>.

## GDF Design

**Figure 1.1 (Section 1)** provides an indicative design for a GDF. It will have both surface and underground facilities linked by access tunnels and / or shafts, depending on the layout of these facilities. The underground facilities do not need to be located directly below the surface facilities – they could be separated by a distance of several kilometres.

The surface facilities could cover an area of approximately 1 square kilometre, although the layout of these facilities will be tailored to the site (or sites). The primary purpose of the surface facilities will be to receive waste packages from the rail and road network, and transfer them to the underground disposal facilities.

The underground facilities are expected to comprise a system of vaults for the disposal of ILW, and an array of engineered tunnels for the disposal of HLW and spent fuel. HLW and spent fuel require different disposal structures because they generate heat.

The precise layout and design of the facilities will depend on the inventory for disposal and the specific geological characteristics at the site in question.

Site investigations, including the drilling of boreholes, will be undertaken to improve understanding of the local geology and to identify potential sites prior to the construction of a GDF.

## Geographical Coverage of the NPS

The NPS will provide the framework for decision making on development consent order applications for the construction of new radioactive waste geological disposal facilities and deep boreholes in England.

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<sup>23</sup> Available from <http://www.nda.gov.uk/publication/2013-derived-inventory/> [Accessed October 2015].

The NPS will be non-site specific and so will not include candidate sites. It is therefore analogous to the non-nuclear Energy NPSs (EN-1 to EN-5) rather than the approach taken in the Energy NPS for new nuclear infrastructure (EN-6).

In Scotland, Wales and Northern Ireland, planning consents for all radioactive waste projects are devolved to the Scottish Government, Welsh Government and Northern Ireland Executive respectively. The Secretary of State will not decide applications in these territories and the NPS will not apply. Notwithstanding, relevant Scottish and Welsh plans and programmes and baseline information have been considered in the preparation of this Scoping Report, given the early assumption that a GDF and related deep boreholes sited in England could potentially have effects in Scotland or Wales due to their shared borders, and geographical proximity, with England.

### **Indicative Contents of the NPS**

Critically, the NPS for the Geological Disposal of Radioactive Waste will be a high-level policy document that is unlikely to be site-specific, given that current Government policy to siting a GDF is non-site-specific and voluntarist in principle. It is assumed that the NPS will not identify candidate sites and, at this early stage of development of the NPS, it is considered unlikely that it will constrain potential locations for a GDF (either explicitly or implicitly) such that siting options are limited to a few discrete areas only. The NPS will also not provide specific designs for a GDF or specific constraints on generic designs. The NPS is therefore likely to contain information concerning:

- the policy context for the GDF;
- the need for the GDF;
- development principles;
- generic impacts and siting considerations, including generic mitigation measures.

## **2.4 What can be Assessed, and How?**

As set out above, the NPS for the Geological Disposal of Radioactive Waste will be a high-level policy document, without a spatial component. The principal mechanisms by which European sites could be affected will therefore be indirect, through the policies that control the future development of a GDF and related deep boreholes. The HRA, which will be an ongoing assessment undertaken alongside the development of the NPS, will therefore assess the likely effects and outcomes of the NPS with a particular focus on:

- the overarching objectives of the NPS;
- the development principles; and
- the generic impacts and siting considerations, including generic mitigation measures.

As potential sites will not be identified in the NPS, any European site in England (and several in adjacent countries) could be affected by the activities to which the NPS will relate. However, attempting to identify and assess specific effects on specific sites is not appropriate where no potential development site has been identified. It is more appropriate for the assessment to focus instead on identifying the protective measures that can be included in the development of the NPS in order to safeguard European sites generally.

# 3. Proposed Approach

## 3.1 Data Collection and Scope

### European sites

The spatial scope of any HRA should be based on the likely outcomes of the plan and its ‘zone of influence’; and the interest features of the European sites that may be affected and their potential vulnerabilities<sup>24</sup>. The NPS for the Geological Disposal of Radioactive Waste will apply to England only, but several European sites in adjacent countries (most notably sites in Wales or Scotland given their common borders with England) may be vulnerable to its outcomes due to the risk of cross-border impacts.

In the UK there are currently:

- 652 SACs / SCIs / cSACs<sup>25</sup>;
- 270 SPAs<sup>26</sup>;
- 1 potential SPA (pSPA); and
- 148 Ramsar sites<sup>27</sup>.

Since a GDF and related deep boreholes could be located anywhere in England, it is proposed that information on all of the above European sites, plus European offshore marine sites, will initially be collected to minimise the risk of sites or features being overlooked. Information on the European sites (citations; boundaries; etc), their interest features, and their sensitivity to potential effects associated with the NPS will be obtained from the Joint Nature Conservation Committee (JNCC); Natural England (NE); Natural Resources Wales (NRW); and Scottish Natural Heritage (SNH). It may be possible to later exclude some sites from assessment (see ‘screening’ below) on the basis of their location and the absence of potential impact pathways.

### ‘In combination’ plans and programmes

Regulation 102 of the Habitats Regulations requires that potential effects on European sites must also be considered “*in combination with other plans or projects*”. The ‘in combination’ assessment must also consider within-plan effects (i.e. between different aspects of the policy) to ensure that there are no internal conflicts that may affect European sites. Consideration of ‘in combination’ effects is not a separate assessment but is integral to the screening and appropriate assessment stages and the development of avoidance/ mitigation measures. There is limited guidance available on the scope of the ‘in combination’ element, particularly

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<sup>24</sup> The vulnerability of an interest feature will depend on its ‘sensitivity’ and ‘exposure’ to a potential effect.

<sup>25</sup> JNCC (2015) *SACs in the United Kingdom* [online]. Available at: <http://jncc.defra.gov.uk/page-1458>. [Accessed 03.07.15].

<sup>26</sup> JNCC (2015) *Special Protection Areas (SPAs): UK* [online]. Available at: <http://jncc.defra.gov.uk/page-1400>. [Accessed 03.07.15].

<sup>27</sup> JNCC (2015) *Designated and Proposed Ramsar sites in the UK and Overseas Territories & Crown Dependencies* [online]. Available at: <http://jncc.defra.gov.uk/page-1389> [Accessed 03.07.15].

regarding which plans should be considered. However, the assessment should not necessarily be limited to plans at the same level in the planning hierarchy and there is consequently a wide range of plans that could have potential ‘in combination’ effects with the NPS for the Geological Disposal of Radioactive Waste due to its national scale.

The plans identified by the AoS will form the basis for the assessment of ‘in combination’ effects; these plans will be reviewed to identify any potential effects that need to be considered (as necessary) within the screening or appropriate assessment stages. Plans or proposals likely to be considered for ‘in combination’ are identified in the topic chapters of Appendix B to the AoS Scoping Report.

## 3.2 Screening

The ‘screening’ test is a low bar: a plan should be considered ‘likely’ to have an effect if the competent authority is unable (on the basis of objective information) to exclude the possibility that it could have significant effects on any European site, either alone or in combination with other plans or projects; an effect will be ‘significant’ if it could undermine the site’s conservation objectives.

A formal screening has not yet been undertaken for the proposed NPS for the Geological Disposal of Radioactive Waste. Informally, however, it is accepted that the possibility of ‘significant’ effects cannot be easily ruled out at this stage in the policy development: the NPS will be a broad policy statement that will not identify potential locations for the construction of a GDF (explicitly or implicitly), so any European site in England (and several in adjacent countries) may be vulnerable to its outcomes; and the policy does not rule out the possibility of granting development consent for a project that may be likely to have significant effects on a European site.

As a result, it is unlikely to be possible to conclusively demonstrate that significant effects will not occur, and the NPS is clearly “*not directly connected with or necessary to the management of*” any European site. Based on this likelihood, but subject to confirmation on the scope and contents of the NPS, DECC has provisionally indicated that the NPS will be subject to an ‘appropriate assessment’. The screening stage, therefore, will focus on the collection of the baseline information likely to be necessary to complete an appropriate assessment of the NPS.

The informal screening conclusion applies, at this stage, to the anticipated NPS as a whole; depending on its contents and structure it may be possible to ‘screen out’ individual elements of the NPS to ensure that any appropriate assessment is suitably focused. It may also be possible to ‘screen out’ particular European sites from further consideration.

## 3.3 Appropriate Assessment (AA)

The emerging NPS for the Geological Disposal of Radioactive Waste will be examined to determine the best approach for the appropriate assessment stage; in particular, whether there is merit in attempting to ‘screen out’ particular European sites (if, for example, the likely

outcomes are clear enough that sites can be reliably excluded); and whether it is appropriate to undertake a detailed analysis of individual European sites, and the sensitivities of their interest features to the likely outcomes of the NPS. The AA will make use of the '*Habitats Directive Risks Matrix*', published by the Environment Agency<sup>28</sup>, to identify those features (and hence sites) potentially vulnerable to the development of a GDF and/or related deep boreholes.

Alongside this, the AA stage will focus on assessing the emerging NPS, identifying the likely effects and outcomes of the policy with a particular focus on the overarching objectives of the NPS; and the development principles and controls that the NPS will rely on. The NPS will be examined for direct effects that may occur, and for aspects that may intentionally or inadvertently constrain the delivery of a GDF or related deep boreholes, such that adverse effects on the integrity of European sites are likely to be unavoidable (e.g. by introducing development principles that effectively direct development to particular areas or particular sites). Due to the risk of effects on European sites wholly or partly in other countries, it will be necessary to consult the appropriate nature conservation body and have regard to any representations made by that body (for example, NRW or SNH).

The goal of the AA stage will be to identify any adverse effects on the integrity of European sites that may occur due to the NPS; and determine any appropriate measures for inclusion in the NPS which can ensure that adverse effects on integrity do not occur as a result of its implementation, or any NSIP development undertaken in manner consistent with it.

### 3.4 Assessment of Alternatives

If the NPS for the Geological Disposal of Radioactive Waste cannot be drafted so as to exclude the possibility of adverse effects, or uncertainty remains, it will be necessary to explore and document alternatives to the delivery of the policy of geological disposal of higher activity radioactive wastes through an NPS. In practice, most of the alternative approaches for the NPS will be identified and tested during its development using the iterative HRA process.

Alternatives regarding how higher activity radioactive waste should be disposed of have been addressed by the work carried out by the independent Committee on Radioactive Waste Management (CoRWM). CoRWM examined a wide range of options for how to deal with the UK's higher activity radioactive waste in a process which involved extensive consultation with the public and expert groups. In July 2006, CoRWM recommended that geological disposal, coupled with safe and secure interim storage, was the best available approach for the long-term management of the UK's legacy of higher activity radioactive wastes<sup>29</sup>. Since then, the UK Government has been committed to the policy of geological disposal, most recently reflected in the 2014 White Paper.

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<sup>28</sup> EA (2015) *Habitats Directive Risks Matrix* [online]. Environment Agency. Available at: <https://www.gov.uk/government/publications/habitats-directive-risks-matrix>.

<sup>29</sup> Managing our Radioactive Waste Safely – CoRWM's Recommendations to Government, July 2006 <http://bit.ly/15R4QpL>

The Government's policy, in the light of the evidence, analysis and consultation already undertaken, and culminating in the 2014 White Paper, is for disposal of higher activity waste by way of geological disposal. Any assessment of alternatives as part of the HRA process will, therefore, not revisit alternatives to geological disposal itself. Rather, the focus of alternatives will be on the reasonable alternatives to delivering geological disposal through a non-site specific NPS, which could include:

- an NPS that is generic but sets exclusionary or inclusionary criteria (for example, exclusionary criteria based on areas of specific environmental concern); and
- no NPS.

(The consultation draft of the Methodology Report listed a location-specific NPS that identifies candidate sites for the GDF as a possible reasonable alternative. However, after further consideration, the Government has concluded that such an option is not possible at this stage: the geological information needed to set out a list of sites at which a GDF could be established is not yet available).

The assessment of alternatives will determine whether there are any more appropriate approaches for the NPS (including the 'zero option' of no NPS) that can ensure that adverse effects on European sites will not occur. Note that, when considering alternatives that are all likely to result in adverse effects, case-law<sup>30</sup> suggests that the 'least damaging' alternative does not inevitably need to be selected, rather that "*the choice requires a balance to be struck between the adverse effect on the integrity of [the site] and the relevant reasons of overriding public interest.*"

### 3.5 Assessment of IROPI and Identification of Compensatory Measures

If no alternatives to the NPS for Geological Disposal of Radioactive Waste are suitable it will be necessary to identify the Imperative Reasons of Overriding Public Interest (IROPI) in order to designate the NPS in a particular form. Any reliance on IROPI will be appropriately documented in the HRA, based on information provided by the Government.

Article 6(4) of the Habitats Directive and Regulation 105 of the Habitats Regulations require that any compensatory mechanisms necessary to "*ensure that the overall coherence*" of the Natura 2000 network be secured. Specific compensatory mechanisms may be difficult to identify at the NPS level since it is unlikely to be spatially specific. As such, specific adverse effects will not be identifiable (such that bespoke compensation could be determined). In this case, the NPS will need to set out the framework for ensuring that any compensatory measures that are required by a GDF or related deep boreholes meet the requirements of

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<sup>30</sup> Commission of the European Communities v Portuguese Republic (Failure of a Member State to fulfil obligations — Directive 92/43/EEC — Conservation of natural habitats and of wild fauna and flora — Article 6(4) — Castro Verde special protection area — Lack of alternative solutions) (Case C-239/04)

European Commission guidance<sup>31</sup> (i.e. that any compensation measures must be available, achievable and judged likely to be effective; and must be in place before the adverse effect occurs).

### 3.6 Outputs and Key Stages

As noted, Regulation 102 of the Habitats Regulations essentially provides a test that the final NPS for the Geological Disposal of Radioactive Waste must pass; there is no statutory requirement for HRA to be undertaken on draft versions or developmental stages of a plan, or for formal reporting at, for example, the screening stage. However, it is accepted best-practice for policy-based HRAs to be undertaken iteratively alongside policy development. As a result, the outputs during the HRA and policy development process can, to some extent, be tailored to the specific requirements and milestones of the development of the plan being assessed (in this case, the NPS).

Therefore, it is proposed that the following documents will be completed as part of the HRA of the NPS:

- **A brief screening / scoping report**, which may be used for consultation with statutory consultees; this will summarise the screening undertaken (including any 'screening out' of European sites) and hence the proposed scope of an appropriate assessment stage. This will not explicitly screen specific aspects or policies in the emerging NPS, but will allow the broad scope and content of any assessment to be agreed with the consultees.
- **A policy review technical note**, which will be provided to DECC once the NPS components (policies, controls, etc.) are drafted, and which will aim to identify any particular aspects that may require amendment to ensure that adverse effects are avoided, or mitigating measures that may need inclusion.
- **An Appropriate Assessment report**, which will summarise the assessment process and provide a formal assessment of the NPS that is intended to be adopted; this will incorporate the screening report and policy review notes as necessary. It will also identify alternatives considered during the policy development.

If it is not possible to conclude that the NPS will have no adverse effect on the integrity of any European sites, it will be necessary to document and assess the alternative solutions, and (if necessary) any IROPI arguments. In this case, the Appropriate Assessment report would be adapted to include details of the assessment of alternatives, and the Government's IROPI.

The Appropriate Assessment report (including the assessment of alternatives and any required IROPI arguments) would accompany the consultation on the draft NPS and the AoS Report. Following consultation, an analysis of any submissions received and any subsequent amendments to the NPS, the Appropriate Assessment report will be reviewed to ensure that it

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<sup>31</sup> European Commission (2007) *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the Concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion Of The Commission*. European Commission, Brussels. Available at: <http://bit.ly/1DOQ7XC>

continues to provide an objective assessment of the effects on integrity on European sites of the NPS upon designation.

## 4. Next Steps

### 4.1 Summary

This Final Methodology Report presents the proposed approach to the HRA of the NPS for Geological Disposal of Radioactive Waste.

It has been produced following a consultation exercise between the 4<sup>th</sup> August and the 25<sup>th</sup> September 2015 to enable technical experts from a number of statutory organisations, and other consultees with relevant expertise,<sup>32</sup> to comment on the proposed scope of the Habitats Regulations Assessment of the National Policy Statement.

Using the approach set out in this report, as amended on the basis of consultation responses where appropriate, the potential effects of the draft NPS will then be assessed against the Regulation 102 of the Habitats Regulations.

Once completed, the Habitats Regulations Assessment Report will be published as part of the formal public consultation on the draft National Policy Statement in spring 2016.

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<sup>32</sup> Please see Box 1.1 for a full list of specific scoping consultees.

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