

# **Managing Radioactive Waste Safely: Government response to the consultation on desk-based identification and assessment of potential candidate sites for geological disposal**

March 2012

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# Executive summary

1. Published in June 2008, the White Paper ‘Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal’<sup>1</sup> set out the Government’s six stage approach to implementing the geological disposal of higher activity radioactive waste (see Figure 1 for a diagram of the stages of the MRWS process).
2. The staged siting process for a geological disposal facility begins with communities voluntarily ‘expressing an interest’ in the process with regards to a specific area. Subsequently an initial, high level, sub surface unsuitability test is undertaken, using existing information to rule out those rock volumes in that area which would be clearly unsuitable for a facility. Following local engagement, the local authority Decision Making Body/ies that had expressed an interest would then make a decision whether or not to participate in the next stage of the siting process, Stage 4.
3. Stage 4 of the siting process is concerned with desk based studies in participating areas. Their purpose is to:
  - identify Potential Candidate Sites in the participating areas. A Potential Candidate Site is defined as a combination of a volume of rock for the underground facility (sub-surface area) and a surface area for the surface facility;
  - assess those sites that are identified in order to allow decisions to be made about which might go forward for more detailed investigation in Stage 5: Surface Based Investigations.
4. In June 2011, the Government issued a consultation document<sup>2</sup> that set out proposals for how, in Stage 4, Potential Candidate Sites in England could be identified and assessed. Forty five responses were received.
5. The consultation sought views on the site identification and assessment process including the nature and use of the proposed criteria. It outlined a framework for how Potential Candidate Sites for a geological disposal facility could be identified using the proposed high level criteria and any local criteria identified and agreed by the Community Siting Partnership and Decision Making Body/ies. The consultation then explained how Potential Candidate Sites, once identified, could be assessed, again using proposed high level criteria. It explained that as desk-based site assessment would need to be consistently applied to any volunteer area that reached this stage, a repeatable process is required at a national level. Using an approach based on Multi Criteria Decision Analysis (MCDA), Potential Candidate Sites, once identified, would be evaluated against set criteria, using set scoring scales. These would then be combined with a weighting process, based on stakeholders’ views, to show how the evaluation of sites changes depending on the relative importance of the criteria.

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<sup>1</sup>White Paper available at <http://mrws.decc.gov.uk/assets/decc/mrws/white-paper-final.pdf>

<sup>2</sup> Consultation document available at [http://www.decc.gov.uk/en/content/cms/consultations/mrws\\_siting/mrws\\_siting.aspx](http://www.decc.gov.uk/en/content/cms/consultations/mrws_siting/mrws_siting.aspx)

6. Government welcomes all the comments made by respondents to the consultation. We have carefully considered all the views expressed and conclude that there was support, on balance, for the proposed approach. Respondents also suggested improvements to the process and some of these are summarised below.
7. The consultation exercise and the comments we have received have allowed us to reflect upon and improve our proposals for site identification and assessment and to finalise the national criteria which will be used. We have set out the process and criteria in the *Framework for the Desk Based Identification and Assessment of Potential Candidate Sites for Geological Disposal*, which accompanies this Government Response.
8. This Government Response document covers site identification (questions 1 – 4 in the consultation document); site assessment (questions 5 - 7); and decision making. The Government's response on each is summarised below. We also received a number of points from respondents that were outside the scope of the consultation. The main themes of these points are summarised in Part 5.

## Identification of Potential Candidate Sites

9. There was broad support for the process of site identification. In line with respondents' suggestions, the Government recognises the importance of effective stakeholder engagement and wants to encourage community flexibility in the application of national and any local criteria, It has also included text in the Framework to emphasise the importance of geology in the process, including the use of 3D geological modelling.
10. Following the consultation exercise, Government has also incorporated into the Framework a number of additions and clarifications to the criteria for site identification.

## Assessment of Potential Candidate Sites

11. The Government welcomes the support for an approach based on Multi Criteria Decision Analysis (MCDA) to assess Potential Candidate Sites and agrees that it is only an aid to decision making and will not itself determine the decision to proceed to Stage 5. It also agrees that expert judgement will be important in this process. The Framework more fully describes the MCDA process, including the next steps in its development.
12. Government welcomes the suggestions made by respondents for additional criteria and for amendments to the proposed criteria and consequently has made a number of amendments and clarifications to the Framework.

## Decision Making

13. The Government agrees that the MCDA will be but one input into the decision making process and will be considered alongside other evidence including the results of any stakeholder engagement and environmental and other assessments. This is clearly stated in the Framework document.

## Next steps

14. The Framework contains the agreed national criteria for identifying and assessing Potential Candidate Sites following a community Decision to Participate. It also sets out a high level description of the national process that the Nuclear Decommissioning Authority (NDA)<sup>3</sup>, the local community and other parties will follow in order to identify and assess the sites. There will however be further work done by the NDA and others to develop the detail of the Framework including:

- Work to develop proposals for how the Potential Candidate Sites will be evaluated using the criteria and what information should be used. Following a community Decision to Participate in the site selection process more detailed discussions will need to take place at a local level to enable communities to develop local criteria to be included in the site identification, should they wish to do so.
- More detailed plans for implementing a MCDA process for site assessment will be developed in consultation with national stakeholders, including the development of scoring scales. This will include consideration of how experts can be involved in the process and how the MCDA model should be structured. Once the implementation of the MCDA process has been agreed within a particular volunteer area then a series of local workshops will be conducted to undertake the MCDA process at an appropriate time during MRWS Stage 4.

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<sup>3</sup> See Glossary

# 1. Introduction

## Purpose of this document

- 1.1. This document sets out the Government's response to the consultation "Managing Radioactive Waste Safely: Desk-based Identification and Assessment of Potential Candidate Sites for Geological Disposal". The consultation and the Government's response have informed a Framework document that confirms the high-level criteria and process for site identification and assessment that will be undertaken in Stage 4 of the Managing Radioactive Waste Safely (MRWS) process. The Framework has been published alongside this consultation response and is available at:  
[http://www.decc.gov.uk/en/content/cms/consultations/mrws\\_siting/mrws\\_siting.aspx](http://www.decc.gov.uk/en/content/cms/consultations/mrws_siting/mrws_siting.aspx)

## Territorial extent

- 1.2. The consultation was in England only. For the purpose of this document the term "Government" refers to the UK Government unless the context indicates otherwise.

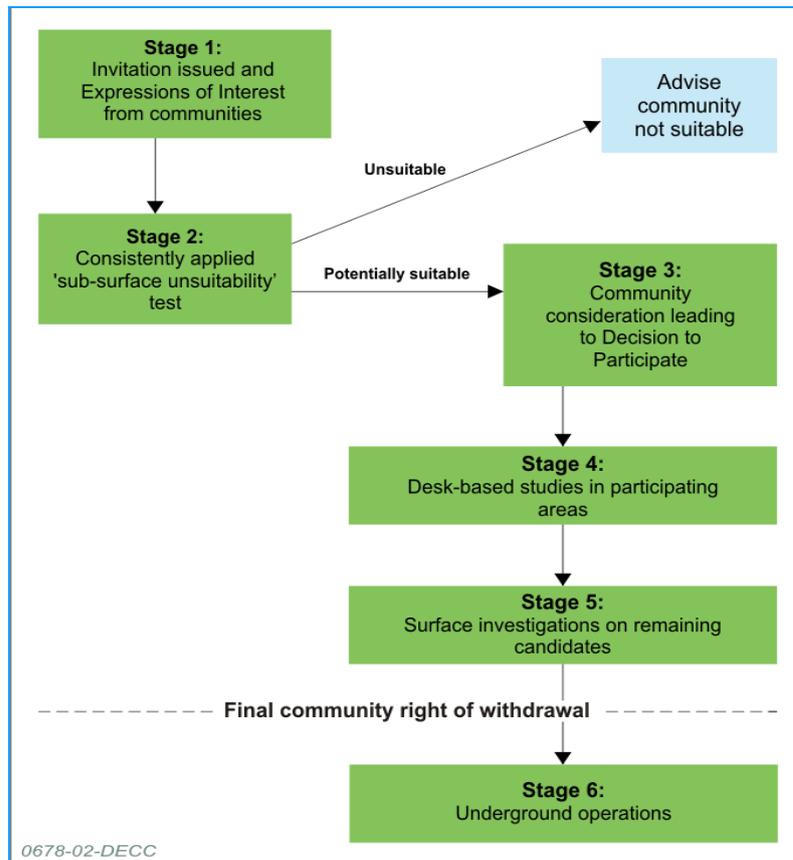
## Consultation proposals

- 1.3. The consultation document set out the Government's proposals for the desk-based identification and assessment of Potential Candidate Sites for geological disposal of higher activity radioactive waste. This represents Stage 4 of 6 in the Managing Radioactive Waste Safely (MRWS) process and will begin once a local community has made a Decision to Participate. (See Figure 1 for a diagram of the stages of the MRWS process). The Decision to Participate is not a decision to host a geological disposal facility; it is a decision by a local community or communities to continue with the process as set out in the 2008 White Paper<sup>4</sup> and allow desk based studies to be carried out to evaluate suitability within their area to host a geological disposal facility.

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<sup>4</sup> <http://mrws.decc.gov.uk/assets/decc/mrws/white-paper-final.pdf>

**Figure 1 Stages in the Site Selection Process**



- 1.4. The consultation outlined a proposed framework for how Potential Candidate Sites for a geological disposal facility could be identified, including proposed high-level criteria. Potential Candidate Sites can only be identified from within an area covered by the Decision to Participate. Once a Potential Candidate Site has been identified it can be assessed.
- 1.5. The consultation also included a proposed framework for the assessment process, again outlining proposed high-level criteria to be used. The proposed assessment process is a 'desk-based' exercise applied at the national level, given the need to ensure that assessment is applied consistently to any Potential Candidate Site regardless of its geographic location. The proposed approach to assessment will be based on Multi-Criteria Decision Analysis (MCDA), whereby Potential Candidate Sites would be evaluated against set criteria, using set scoring scales; those criteria and scoring scales would then be combined with a weighting process, based on stakeholders' views, to show how the evaluation of Potential Candidate Sites might change depending on the relative importance of the criteria. The consultation made clear that the MCDA process would not produce a decision on site suitability but would only be used as an aid to decision making.

## Consultation process

1.6. The consultation ran from 28 June to 30 September 2011. Copies of the consultation document can be found on the Department of Energy and Climate Change (DECC) website<sup>5</sup>.

1.7. Notification of the launch of the consultation was sent to:

- people registered to receive e-mail alerts from DECC;
- people registered to receive e-mail alerts from NDA;
- people registered to receive e-mail alerts from the Radioactive Waste Management Directorate (RWMD)<sup>6</sup>.

1.8. The consultation document was also made available on the DECC website, and any individual or organisation could respond by post, e-mail or online. There were forty-five responses to the consultation, divided across constituencies as follows:

- Consultancy organisations (1);
- Individual members of the public (10);
- Local Government (8);
- National Government (2);
- Non-governmental organisations (9);
- Nuclear industry (4);
- Regulatory and Consultation Bodies (4);
- Research, educational and academic institutions (4);
- Site Stakeholder Group (1);
- Trade Union (1);
- Other (1).

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<sup>5</sup> [http://www.decc.gov.uk/en/content/cms/consultations/mrws\\_siting/mrws\\_siting.aspx](http://www.decc.gov.uk/en/content/cms/consultations/mrws_siting/mrws_siting.aspx)

<sup>6</sup> See Glossary

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## Structure of the document

- 1.9. This document summarises responses to the consultation and sets out the Government's response for each part of the process. Part 2 covers site identification (questions 1 – 4 in the consultation document); Part 3, site assessment (questions 5- 7); and Part 4, decision making. There is also a short section (Part 5) that addresses other issues that were raised by respondents and which were outside the scope of the consultation. A glossary is also included to explain terms used in the document.
- 1.10. The summary of responses focuses on the main issues and themes that respondents highlighted, often addressing these as groups of issues. It does not include a response from Government on every point raised, although all responses have been analysed. Where respondents provided an answer to a particular question that was of more relevance to another question, that response has been addressed under the more relevant question.

## 2. Identification of Potential Candidate Sites

2.1. This section first summarises responses to the consultation questions on site identification (questions 1– 4) and then gives the Government’s response to these collectively.

### Summary of responses

#### Question 1: Do you agree with the proposed process to identify Potential Candidate Sites? If not, why not?

##### Summary statistics

- 19 respondents agreed with the proposal;
- 14 respondents disagreed with the proposal;
- 1 respondent gave an answer which neither agreed nor disagreed with the proposal;
- 11 respondents did not provide an answer to the question.

2.2. Nineteen respondents agreed with the proposed process to identify Potential Candidate Sites and welcomed the transparency in the decision-making process set out in the consultation document. Several respondents welcomed the level of flexibility in the proposed process whereby local stakeholders will have a role in adapting or developing local criteria to support the identification of Potential Candidate Sites.

2.3. Several respondents welcomed the fact that Government has not set a timescale for the process, emphasising the importance of volunteer communities being comfortable with it. For example, it will take time and resources for local stakeholders to develop a Community Siting Partnership following any Decision to Participate.

2.4. Some respondents wanted more detail about how local communities would decide which sites should go forward for desk-based assessment at the end of the identification process, with one respondent suggesting that the Framework could usefully clarify the respective roles of the Community Siting Partnership and local Decision Making Body/ies in recommending Potential Candidate Sites for assessment and deciding which should ultimately be taken forward for assessment.

2.5. Some respondents wanted more emphasis on geology in the site identification process, arguing that it is perhaps the most important criterion.

2.6. Of the respondents who disagreed with the proposed process, some had concerns that the proposed framework focused too much on the technical aspects and did not sufficiently emphasise voluntarism and partnership. One felt that the Community Siting Partnership described in the consultation document was different from that described in the MRWS White Paper and therefore that there had been a departure from the policy set out in 2008.

**Question 2: Is there anything that could be included to improve the proposed process to identify Potential Candidate Sites, bearing in mind that physical site investigations will not start until later in the process?**

**Summary statistics**

- 25 respondents provided responses, with 22 suggesting improvements;
- 20 respondents did not provide an answer to the question.

- 2.7. There were a number of potential improvements to the site identification process raised by respondents. Several felt that potential host communities – for example, a village or town in the vicinity of a Potential Candidate Site – should have the opportunity to volunteer to take part in the site selection process at the start of Stage 4, irrespective of whether their council wished to do so. Some felt that the process of volunteering should be clarified and that local communities should have a right to veto a siting decision using the Right of Withdrawal described in the MRWS White Paper.
- 2.8. A couple of respondents commented specifically on Geological Information Systems (GIS) and 3D geological modelling, suggesting that when using GIS to capture and analyse information as part of the site identification process, there should be a way of incorporating uncertainties. There was also a suggestion that digital 3D geological models should be included as part of the methodology for helping local communities visualise and understand the geology of the area and that, as part of the supporting documentation for British Geological Survey (BGS) mapping, scientific papers and reports on regional geology should be included.
- 2.9. There was a suggestion that geophysical investigations should be undertaken before the Stage 4 assessment, to avoid the possibility of this work (currently planned for Stage 5 – surface-based investigations) invalidating the assessment at a later stage. One respondent felt that expert judgement and peer review of any assessment was important.

**Question 3: Do you agree with the proposal to use local and national criteria to identify Potential Candidate Sites? If not why not?**

**Summary statistics**

- 17 respondents agreed with the proposal;
- 6 respondents disagreed with the proposal;
- 2 respondents provided an answer which neither agreed nor disagreed with the question;
- 20 respondents did not provide an answer to the question.

- 2.10. Of the respondents who agreed with the proposal to use both national and local criteria in the site identification process, several commented that national criteria were needed to ensure consistency in the process and that they must be balanced with appropriate local

criteria. Some respondents felt that identifying the right balance between national and local criteria would be difficult.

2.11. Some respondents suggested changing 'national criteria' to 'generic criteria' to avoid giving the impression that a national process is being 'imposed'.

#### Question 4: Do you agree with the proposed criteria for identifying Potential Candidate Sites? If not, why not?

##### Summary statistics

- 11 respondents agreed with the proposed criteria;
- 11 respondents disagreed with the proposed criteria;
- 6 respondents provided an answer which neither agreed nor disagreed with the proposed criteria;
- 17 respondents did not provide an answer to the question.

2.12. Half the respondents who gave a definitive answer to the question were supportive of the proposed criteria for identifying Potential Candidate Sites and half were not. Among the concerns of those who disagreed with the proposed criteria were a lack of safeguards against dominant interests within the community who might wish to push the process forward. One respondent suggested there would be a benefit in developing criteria for the surface facilities and the underground facilities separately. Some felt that the proposed criteria were too vague and wanted more detail; and one suggested that the proposed criteria ignore internationally agreed criteria for appropriate geology. Some respondents mentioned the need to ensure that there was agreement on the interpretation of the criteria.

2.13. There were a number of suggestions for additional criteria or additional elements to proposed criteria:

- **Geological setting:** some respondents suggested additional aspects of the geological setting that should be taken into account when considering potential host rocks, such as faults and hydrogeological properties. One felt that geological and hydrogeological criteria should be given special status compared to other criteria and another that 3D geological models would be helpful;
- **Potential impact on the natural environment & landscape:** one respondent suggested that additional features should be taken into account for ancient monuments and National Heritage Sites, particularly to address potential impacts on the natural environment and landscape;
- **Socio-economic criteria:** several respondents expressed support for the use of socio-economic criteria. One commented that potential socio-economic impacts on other industries such as tourism and agriculture should be taken into account;
- **Potential impact on people:** one respondent felt that this criterion did not address the long-term impact on people from any future discharge of radionuclides from a facility. Two respondents commented that safety assessments should be considered;

- **Exclusionary criteria:** some respondents suggested that particular criteria should be considered as exclusionary and others should be considered constraints. They specifically mentioned that National Parks should be excluded and that the impact of the surface facilities on the landscape should be viewed as a constraint. One respondent suggested that when combinations of surface and sub-surface areas are considered, Potential Candidate Sites should only be excluded from further consideration on the basis of failing some fundamental criteria, which should be identified in the first part of the identification process.

## Government Response

### Process to identify Potential Candidate Sites (question 1)

- 2.14. Government notes the support for the site identification process outlined in the consultation document and recognises the importance of proceeding at a pace that local stakeholders find comfortable – an important point that has been reflected in the Framework.
- 2.15. Furthermore, Government understands the importance of effective local stakeholder engagement and recognises that resources need to be available to facilitate appropriate engagement and to provide access to expertise. Government has put in place an engagement package for those communities who have to date expressed an interest – as it will for any new communities – and will continue to provide those resources, including community access to independent experts, for communities who make a Decision to Participate and enter Stage 4 (desk-based studies).
- 2.16. Government acknowledges that some respondents wanted more detail about how local communities would reach agreement on which sites should be carried forward for desk-based assessment. Government does not wish to constrain community flexibility in this regard and considers that the Local Decision Making Body/ies must agree a mechanism with which they are comfortable.
- 2.17. Responses calling for greater emphasis on geology in the site identification process were noted. A geological disposal facility can and will only become operational if the geology of the site in question is found to be appropriate to support the necessary environmental safety cases. Text has been added to the Framework to emphasise the importance of geology in the identification and assessment processes.
- 2.18. Government also wants to encourage community flexibility in respect of how any local criteria are developed and applied for the purpose of identifying Potential Candidate Sites in a way that recognises local knowledge and issues of local importance.
- 2.19. Government considers that the site identification and assessment process described in the consultation document is consistent with the 2008 White Paper and is firmly based on voluntarism and partnership and text has been added to the Framework to further clarify this important issue. Going forward, the Government will continue to ensure that the process is undertaken in an open and transparent way that encourages wide involvement and is based on sound science, as outlined in the 2008 White Paper.

## Improvements to the process to identify Potential Candidate Sites (question 2)

- 2.20. Government considers that engagement with potential host communities will be an essential part of the process to identify Potential Candidate Sites. However, Government does not believe it is appropriate to be prescriptive, at a generic level, about how potential host communities should be involved in the site identification and assessment process. This is an issue that should be considered and agreed locally, in line with local needs and within the broad framework set out in the 2008 White Paper. The leadership role and democratic accountability of local government means that it should be responsible for major local decisions within the siting process and accordingly it is local government that is the Decision Making Body. On the point about Right of Withdrawal (RoW): as set out in the White Paper a community can withdraw from the MRWS process up until the point where underground construction of the facility is due to begin. As with other key local decisions in the siting process, the Decision Making Body/ies will be responsible for exercising the RoW based on advice and recommendations from the local Community Siting Partnership.<sup>7</sup> All parties in a Partnership would be expected to work positively to seek to avoid the need to exercise the RoW.
- 2.21. 3D Geological modelling has been included in the Framework. The assessment of each rock type's potential as a host rock will have associated uncertainty due to the likely limited information regarding their characteristics at depth at this stage. It is likely that their potential and the uncertainty in this potential will be estimated from the characteristics of the same or similar rock types elsewhere at similar or shallower depths, using expert geoscientific judgement. This would, of course, be something to be considered further through physical investigations in any area that proceeded to later stages of the MRWS process.
- 2.22. It is also recognised that the BGS 3D model represents a single structural interpretation of the geology and it is likely that there will be alternative structural interpretations for any given area which are still consistent with the available data. It is therefore proposed that a high level structural analysis of any areas considered in MRWS Stage 4 would be undertaken by independent experts using the same base data to identify the alternative understandings and calibrate the uncertainty in the BGS model for that specific area. The sensitivity to the host rock, structural and other uncertainties can then be assessed.
- 2.23. Government recognises the consideration of the geological setting criterion will need to be sufficiently robust and independently reviewed to provide stakeholders with the confidence that there is an appropriate level of geoscientific understanding. In particular, given the limited geoscientific information at depth, a clear presentation of the uncertainty in the geological setting will be required. Information has been added to the Framework to address these issues.
- 2.24. The Framework also provides for the possible need for targeted geophysical surveys at Stage 4 to be undertaken to provide useful information for site identification and assessment. If the Government and the NDA consider these assessments could be

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<sup>7</sup> The NDA's delivery organisation would be a member but would not be directly involved in decisions on community related issues.

beneficial the NDA would discuss with the Community Siting Partnership whether such surveys should be carried out in specific areas at Stage 4 or reserved for a possible wider application in Stage 5.

### Use of local and national criteria to identify Potential Candidate Sites (question 3)

- 2.25. The Government agrees with respondents that national criteria are needed to ensure consistency in the process but that scope must also be provided for local criteria to play a part. The Framework seeks to clarify how local criteria can and should influence the identification of Potential Candidate Sites.
- 2.26. The Government will retain the term national criteria in the Framework, as it makes it clear that these criteria will apply nationally, as part of a consistent national process for Potential Candidate Site identification and assessment. However, we would encourage anyone carrying out local engagement to make it clear that these are not intended to suggest a process being imposed centrally, including through the use of clearly explained alternative terminology if helpful in a particular local context.

### Criteria for identifying Potential Candidate Sites (question 4)

- 2.27. The Government notes the support for the proposed criteria. They are derived from International Atomic Energy Agency (IAEA) guidance<sup>8</sup> on siting of facilities which covers the geological aspects of a site and from criteria suggested by CoRWM<sup>9</sup> to evaluate the suitability of potential sites. Additional criteria were derived from effects which have to be considered under the EU Directives on Strategic Environmental Assessment<sup>10</sup>, Environmental Impact Assessment<sup>11</sup> and UK practice on sustainability appraisal<sup>12</sup>. The Government is confident that they will enable a sufficiently wide range of issues to be considered when identifying Potential Candidate Sites. Government also welcomes the suggestions made for amended or additional criteria.

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<sup>8</sup> IAEA, *Siting of Geological Disposal Facilities: A safety Guide*, Safety Series No. 111-G-4 1, 1994.

<sup>9</sup> CoRWM, "Implementing a Partnership Approach to Radioactive Waste Management: Report to Governments", CoRWM Document 2146, 2007. <http://corwm.decc.gov.uk>

<sup>10</sup> European Parliament and the Council of the European Union, "*Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the Assessment of the Effects of certain Plans and Programmes on the Environment*", Official Journal of the European Communities, L197, 2001.

Office of the Deputy Prime Minister, Scottish Executive, Welsh Assembly Government and Department of Environment in Northern Ireland, "*A Practical Guide to the Strategic Environmental Assessment Directive*", 2005.

<sup>11</sup> Council of the European Communities, "Council Directive of 27 June 1985 on the Assessment of the Effects of Certain Public and Private Projects on the Environment (85/337/EEC)", as amended, Official Journal of the European Communities, C175, 1985. 28. European Commission, "Report from the Commission to the European Parliament and the Council On the Application and Effectiveness of the EIA Directive (Directive 85/337/EEC as Amended by Directive 97/11/EC)", 2003, Brussels. European Parliament and the Council of the European Union, "Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 Providing for Public Participation in Respect of the Drawing up of Certain Plans and Programmes Relating to the Environment and Amending With Regard to Public Participation and Access to Justice Council Directives 85/337/EEC and 96/61/EC", Official Journal of the European Communities, L156, 2003.

<sup>12</sup> Office of the Deputy Prime Minister, *Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents*, 2005

2.28. Following the consultation exercise, Government has incorporated into the Framework a number of additions and clarifications to the criteria for site identification:

- **Geological setting:** hydrogeology and faults and the use of 3D geological modelling have been included;
- **Potential impact on the natural environment & landscape:** additional features such as Scheduled Monuments, Protected Military Remains and Registered Parks and Gardens have been taken into account to clarify the categories of national designated heritage assets in England;
- **Effect on local socio economic conditions:** this criterion now includes the potential socio-economic impacts on other industries such as tourism and agriculture;
- **Potential impact on people:** dose risks to the public will be included in the consideration of human health using the information that is available during Stage 4. The safety of a site is paramount but at the site identification stage the consideration of safety (together with environmental and cost implications) could only be made at a very high level. This is because at this stage there will be insufficient information available to be able to carry out the safety assessments suggested. A qualitative assessment of the feasibility of developing a robust safety case will be undertaken. As the assessment of the site(s) progresses, any issues that affect the robustness of the safety case will be considered in increasing detail;
- **Exclusionary criteria:** can be either local or national. In respect of whether any of the local criteria should be exclusionary, it will be up to the local community to decide if a criterion is exclusionary or a constraint. For the national criteria, whether potential adverse effects on protected areas or features should be viewed as exclusionary criteria or constraints on the identification of a Potential Candidate Site will depend on the nature of the protected area and the potential impact a geological disposal facility might have on it. The relative importance given to local and national criteria will need to be discussed and agreed with the local Decision Making Body/ies.

2.29. The Government agrees that there would need to be a shared understanding of and agreement on the interpretation of the criteria and this would need to be discussed with and amongst local stakeholders at the site identification stage.

2.30. In relation to the issue of dominating interests within communities that might skew the process to identify Potential Candidate Sites, the Community Siting Partnership are expected to establish a means of gauging local support that would satisfy objective observers. This will make it more difficult for any dominating interest to hold undue sway over the final decision.

2.31. Finally, the Government does not agree it would be beneficial to consider criteria for the surface and underground facilities separately. A geological disposal facility is a combination of surface and sub surface elements and therefore criteria have to be developed and assessed in parallel.

# 3. Assessment of Potential Candidate Sites

3.1. This section first summarises responses to the consultation questions on site assessment (questions 5 – 7) and then gives the Government’s response to them collectively.

## Summary of responses

**Question 5: Do you feel a multi-criteria decision analysis (MCDA) should be used to assess Potential Candidate Sites? If not, why not and what approach do you think should be used?**

### Summary statistics

- 22 respondents agreed with the proposal;
- 6 respondents disagreed with the proposal;
- 2 respondents neither agreed nor disagreed with the proposal;
- 15 respondents did not provide an answer to the question.

3.2. The majority of those who provided a response to this question supported the use of Multi-Criteria Decision Analysis (MCDA) to assess Potential Candidate Sites and agreed with the Government that it should be used as an input to decision making, rather than providing the decision itself.

3.3. Respondents also emphasised the importance of taking other information into account in the decision-making process: for example, the results of local consultation and the environmental assessments that will be undertaken during Stage 4. Some mentioned the importance of communities having access to independent expert advice in order to be able to fully engage with the MCDA process.

**Question 6: Are there any additional criteria that could realistically be considered at this stage in the process to assess Potential Candidate Sites?**

**Summary statistics**

- 18 respondents provided responses to this question; 11 of those suggested additional criteria and a further 3 thought that additional local criteria were likely to emerge during the assessment process;
- 27 respondents did not give an answer to the question.

3.4. While there was support for the proposed criteria, there were also a number of suggestions for additional criteria or additional elements to proposed criteria covering, for example, geochemistry and seismicity; risks from natural, environmental and anthropogenic hazards during construction and operation; and security and safeguards requirements.

- **Geological setting:** one respondent suggested that the geological setting criterion should include existing mineral deposits and the likelihood of their future exploitation and fault lines.
- **Potential impact on people:** one respondent suggested it would be useful to include food consumption under the sub-criterion “impacts on other other human activities”, as well as food production. Another raised political sensitivity as an issue for consideration, and a further respondent noted the absence of criteria relating to social and ethical issues of public acceptability. Some respondents thought there was a lack of clarity as to what would be covered by the sub-criterion “impact on local cultural heritage”;
- **Potential impact on the natural environment & landscape:** as above, some respondents thought there was a lack of clarity in respect of what would be covered by the sub-criterion “impacts on nationally important buildings or monuments”.
- **Cost, timing and ease of implementation:** one respondent recommended greater clarity over which aspects of the project life-cycle will be considered under this criterion e.g. from design to operations.

3.5. Some respondents cautioned against the MCDA process becoming over prescriptive and suggested that the role of professional and expert judgement in the process should be emphasised.

### Question 7: Do you have any comments on the way we propose to use MCDA to assist in structured, evidence based decision making?

#### Summary statistics

- 27 respondents answered this question; 18 of those offered suggestions on the MCDA process;
- 18 respondents did not provide an answer to the question.

3.6. In answer to this question there were a range of comments on the use of MCDA in the decision making process. There was widespread agreement that MCDA should be an aid to decision making, but that it should not be used to determine the decision alone.

3.7. **Handling uncertainty in MCDA:** the issue of uncertainty was raised – both uncertainty around the information available on Potential Candidate Sites and over the accuracy of that information. There was also a concern expressed by one respondent that MCDA would not help with the assessment of uncertainties. A specific comment was made about the lack of reference to sensitivity testing against uncertainty in the data. A comment was also made about the subjective nature of some aspects of the MCDA process, noting the crucial role of expert judgement in using the MCDA tool.

3.8. **Weighting and scoring:** an issue on the weighting of criteria under the MCDA process was raised – namely that some stakeholders might be uncomfortable weighing safety against costs. It was therefore suggested that MCDA outputs could be considered both with and without costs included, as part of the sensitivity analysis. It was also noted that there should be a robust and transparent evidence base for the scoring of criteria and that stakeholders should be able to challenge, with evidence of their own, scores with which they disagreed. There was support for the recognition that local bodies have information that would aid the MCDA. One respondent commented that the workshops for developing scoring scales and weighting should be properly moderated and supported to ensure objectivity and to minimise any risk of strong personalities having a disproportionate influence. On criteria, some respondents wanted more detail on how criteria for site assessment would be weighted and assessed. Some made suggestions for the weighting of specific criteria, for example that National Parks should be given a greater weighting. One felt that priority weighting should be given to local criteria rather than national criteria and another was concerned that geological setting might not be given sufficient weighting.

3.9. **Use of experts:** two respondents raised concerns about how experts would be involved in the MCDA process. One suggested that the relevant stakeholders should agree a group of experts to avoid particular factions gaining undue influence.

## Government Response

### MCDA as an assessment tool (question 5)

- 3.10. The Government welcomes the support for the use of an approach based on MCDA to assess Potential Candidate Sites and support for the view that MCDA is useful as an aid to decision making but should not be used to determine the decision.
- 3.11. NDA is developing more detailed plans for implementing a MCDA process, in consultation with stakeholders. This will include consideration of how experts can be involved in the process and how the MCDA model should be structured.
- 3.12. The proposals for the implementation of the MCDA process will take into account lessons learned from implementing the site identification process. We will seek to ensure that volunteer communities are confident in the approach and in the experts that are involved in the assessment. A series of independently facilitated workshops would be conducted to undertake the MCDA process, including the development of scoring scales and subsequently - in discussion with local stakeholders - the weighting of the criteria.
- 3.13. Additional text has been added to the Framework to reflect these next steps in developing the MCDA process.

### Additional criteria to assess Potential Candidate Sites (question 6)

- 3.14. Government welcomes the suggestions made by respondents for additional criteria for site assessment and for amendments to proposed criteria and has made a number of amendments and clarifications to the Framework.
- **Geological setting:** this is of course a key criterion and is described as such in the accompanying Framework. Known mineral deposits will have already been ruled out of the site selection process due to the geological screening undertaken during MRWS Stage 2, but fault lines will be considered when looking at the size of the potentially suitable volume of host rock.
  - **Potential impact on people:** Government considers that the inclusion of food consumption alongside food production would be too detailed for this stage in the process; but it would be considered in the more detailed safety assessments in Stage 5 of the programme.
  - **Potential impact on the environment & landscape:** the sub-criterion “impacts on nationally important buildings or monuments” has been merged with “impact on local cultural heritage...and land use requirements” under the high-level criterion “potential impact on people” Clarification has been included in the Framework about what sorts of factors will be considered here.

- 3.15. The Government does not consider it appropriate to make political sensitivity a formal criterion for distinguishing between Potential Candidate Sites in the MCDA, as it would not help to distinguish between the geological and environmental suitability of sites and would be very difficult to evaluate. Local Decision Making Bodies and Government will be able to take any political sensitivities into account when they each make their decisions.
- 3.16. As described in the Framework, the NDA will be developing during 2012 more detailed proposals outlining what sub criteria will be covered under each one of the six national criteria.

#### Use of MCDA in decision making (question 7)

- 3.17. The Government welcomes the comments received from respondents on the use of MCDA in decision making.
- 3.18. Handling uncertainty in the MCDA process: in any process there will be uncertainties and MCDA is no different. The availability and accuracy of information are variables that bring some element of uncertainty and that is why it is important that all such areas of uncertainty are investigated as part of the sensitivity studies associated with the MCDA. As described above, more details about how this can be achieved will be developed for discussion with stakeholders as part of the preparations in 2012 for future Potential Candidate Site assessment.
- 3.19. Weighting & scoring: the MCDA process will take into account the range of views about the weights that should be given to the different criteria. Therefore, it will show how the overall scores for the sites are affected by different weightings. The process will also be explicit about when expert judgements have been used. A range of sensitivity analyses will be conducted in consultation with stakeholders and will consider any differences in view about the scores.
- 3.20. Use of experts: the Government agrees with respondents that expert judgement is particularly important in this process. As outlined in the accompanying Framework, experts will need to be agreed with national and local stakeholders, so that an agreed group of experts on each criterion is involved in the process.
- 3.21. MCDA Workshops: the MCDA workshops will be independently facilitated to ensure that strong personalities do not dominate the discussions.

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## 4. Decision making

- 4.1. Although there were no specific questions about decision making, a number of respondents commented on this aspect of the process.
- 4.2. Several respondents asked for more detail on how the MCDA process would be applied. One, for example was concerned that too many factors will be considered under the geological setting criterion and that they will need to be appropriately grouped and weighted.
- 4.3. Further comments related to the need to clarify and define the roles, responsibilities and relationships of the participating bodies in Stage 4. The role of the NDA, the organisational structure and whether there would be funding for independent expertise to be made available to local communities were all queried.
- 4.4. There was a view that the decision makers are likely to want to consider a range of evidence in addition to the output from the MCDA before deciding on engagement in further stages of the MRWS process, and several respondents asked for more detail about how the decisions at the end of Stage 4 would be made.

### Government Response

- 4.5. Taking the decision to proceed to stage 5 of the MRWS process will be a key milestone and the Community Siting Partnership and the Decision Making Body/ies will want to consider a range of evidence, including that provided by the MCDA. It is therefore important that the MCDA and the decision-making process are clearly understood, and Government welcomes these requests for clarity.
- 4.6. The Government agrees that a range of evidence will need to be considered and assessed during the site assessment stage. The MCDA will be but one input into the decision-making process and will be considered alongside other evidence, including the results of any stakeholder engagement and the environmental and any other assessments. The organisation of local engagement will be led by the Community Siting Partnership and Decision Making Body/ies.
- 4.7. The roles and responsibilities of the various actors in the process, including the decision-making process, are contained in the White Paper and are reprised in the Framework that accompanies this consultation response. The Government will provide an engagement package to enable communities to undertake engagement and to obtain independent expertise.
- 4.8. The NDA has a key role in the MRWS process and subscribes to high level principles that will shape the NDA's relationship with the community, including a strong commitment to working in partnership. The exact way in which the NDA works with any communities that take a Decision to Participate will need to be discussed and agreed with those communities.

## 5. Other issues

5.1. There were a number of points raised by respondents that were outside of the scope of the consultation. The main points are listed below and the Government has, where possible, addressed them in this section of the document. Broadly, respondents' additional points fell into three categories: geological disposal; new nuclear power; and West Cumbria.

5.2. On geological disposal the main points and issues raised were:

- uncertainties associated with geological disposal, the research that needs to be undertaken to address them and how communities will be engaged in these discussions;
- concern that geological disposal is the only long-term waste management option being considered;
- how a disposal facility will be excavated and the increased risk of earth tremor;
- that the consultation was premature given known outstanding scientific and technical issues relating to the safety case for a geological disposal facility.

5.3. On new nuclear power stations the main points and issues raised were:

- lack of clarity about whether geological disposal is for any waste created from new nuclear power stations as well as existing waste;
- the ability to safely manage waste from new nuclear power stations and existing waste together in a geological disposal facility;
- whether the new build programme should be delayed until further progress is made on implementing geological disposal.

5.4. On West Cumbria the main points and issues raised were:

- that West Cumbria is the only area in the UK that has made an expression of interest;
- that this means that comparisons with different regions or host rocks is unlikely;
- concern over the potential siting of a facility close to a National Park;
- the geology in West Cumbria, its suitability as a place for disposal and the findings from the work undertaken by Nirex in the 1990's;
- proposals by the Boundary Commission for England, which may result in boundary changes in West Cumbria;
- the membership and organisation of the current West Cumbria MRWS Partnership.

## Government response

### Geological Disposal

- 5.5. The Government's policy for managing higher activity radioactive waste is geological disposal. The independent Committee on Radioactive Waste Management (CoRWM) was set up to review the options for managing the UK's legacy higher activity radioactive waste. Government made clear that it wanted all the options that had been given serious consideration by the international scientific community to be reviewed. CoRWM combined consideration of the scientific evidence with a process of engaging stakeholders and members of the public and in 2006 recommended geological disposal as the best option for the long-term management of higher activity waste preceded by safe and secure interim storage until a geological disposal facility can receive waste. The Government has accepted this recommendation and is confident that a geological disposal facility could be built which would meet regulatory approval. Government also accepted that there is a requirement for ongoing research and development to ensure optimised delivery of the geological disposal programme, and the safe and secure storage of the radioactive waste in the interim.
- 5.6. Geological disposal is also internationally recognised as the preferred approach for the long-term management of higher activity radioactive waste. It is being adopted in many countries, including Canada, Finland, France and Sweden. The International Atomic Energy Agency has expressed confidence in geological disposal.
- 5.7. In the UK, geological disposal is supported by a number of UK learned societies including the Royal Society, the Royal Society of Chemistry, and the Geological Society.
- 5.8. There have been many decades of work in geological disposal around the world. The NDA has a programme of research that it is undertaking and an issues management process to capture, evaluate and address issues associated with geological disposal. There are some issues that cannot be addressed until site specific investigations are undertaken. Government expects the processes and research that the NDA has in place to be able to address outstanding issues in a timely manner. The NDA will work in partnership with any communities who participate in the site selection process and will work with them to address any issues and concerns they have. The communities will have access to an engagement package to enable them to hire independent experts to advise and support them.
- 5.9. In line with the commitments set out in the 2008 White Paper, the Government recognises the need to take account of developments in storage and disposal options, as well as possible new technologies and solutions. The NDA is keeping options such as deep borehole disposal of certain types of waste under review.
- 5.10. There are a range of excavation techniques that could be used in the construction of a GDF and the one that is most appropriate for the final geological setting will be selected. Unlike in mining, where the aim is often to cause the rock to collapse in order to extract the minerals, the aim of developing a geological disposal facility is to develop underground caverns that can be supported and maintained over long periods of time. Therefore, the risk of causing even minor, localised earth tremors is much smaller than in mining scenarios.

5.11. In relation to consultation timing, the Government wanted to ensure that communities currently considering whether to make a Decision to Participate have sufficient information to be able to understand what would be involved in Stage 4 of the MRWS process. Government also wanted to ensure that the plans for Stage 4 were developed in some detail in preparation for a possible Decision to Participate.

### New nuclear

5.12. The Government considers that it would be technically possible and desirable to dispose of both new and legacy waste in the same geological disposal facility and that this should be explored through the Managing Radioactive Waste Safely programme. This is Government policy and is set out in detail in Annex B of the National Policy Statement for Nuclear Power Generation<sup>13</sup>. The safety of any geological disposal facility design will have to be demonstrated to the independent regulators before it can be authorised for waste disposal to take place.

5.13. It is not possible to provide at this time a definitive inventory of radioactive waste that would arise as a result of a new nuclear build programme, as the scale of any new programme is not yet known. Through agreed mechanisms for updating the Baseline Inventory, inclusion of new waste will be taken forward in discussion with host communities as the programme proceeds. Geological disposal facility design activities will consider the necessary features to safely accommodate particular waste types if that proves necessary. The NDA will need to demonstrate to the independent regulators that a site is able to provide suitable, safe containment for the radioactive wastes that it plans to emplace in it.

### West Cumbria

5.14. So far, West Cumbria is the only area that has expressed an interest in the process to consider hosting a geological disposal facility. Government would welcome more areas coming forward. We are committed to implementing geological disposal through a process based on voluntarism and partnership, working closely with interested communities in an open and transparent way. All interested communities are invited to talk to us – without obligation – to find out more about the potential benefits and impacts of hosting a geological disposal facility.

5.15. The Government understands concerns about the potential siting of a GDF close to a National Park. Potential environmental impacts will be rigorously evaluated as part of the environmental assessments the NDA conducts during Stage 4, to minimise any negative impacts and maximise positive ones. They will be considered in any decision about proceeding to Stage 5 of the process. The potential impacts will also be considered in the MCDA process.

5.16. The MCDA process will draw on all the geological information that is available about Potential Candidate Sites. This will include information from previous investigations undertaken in an area. Significant advances in the assessment of geological data allow

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<sup>13</sup> <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1943-nps-nuclear-power-annex-volll.pdf>

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more confidence in the interpretation of some geological information than was available in the 1990s.

- 5.17. The assessment process will only consider areas covered by a local authority Decision to Participate in the site selection process. In relation to West Cumbria in particular, it should be noted that the Planning Inquiry held in 1995-1996 rejected the particular planning application made by Nirex at the time on a range of planning-related issues. Although comments were made at the Inquiry about the suitability of the site for a geological disposal facility, the Inquiry was not an assessment of suitability. Furthermore, the site represented a small part of the geology of West Cumbria.
- 5.18. The Government would like to clarify that the boundary changes mentioned by one respondent will only affect Parliamentary boundaries and not local authority boundaries. Therefore this will not directly affect the boundaries of the councils who are currently participating in the site selection process. The local consultations to date in West Cumbria have involved communities across Cumbria and have taken their views into account.
- 5.19. The West Cumbria MRWS Partnership itself has conducted reviews of its work and these will be fed into any future partnerships that are established as part of the MRWS process. The White Paper outlines how a Community Siting Partnership should be established after a Decision to Participate, and its structure and role. The West Cumbria MRWS Partnership is not a Community Siting Partnership, as described in the White Paper (the local community have not yet taken a Decision to Participate) but the lessons learned from running it will be a useful input to formation of any Community Siting Partnership.

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# Annex A – List of organisations that responded to the consultation

34 organisations responded to the consultation and agreed to their responses being made public (see list below). One organisation requested that its response not be made public. The remaining ten responses were from individuals.

Allerdale Borough Council

Blackwater Against New Nuclear Group (BANNG)

British Geological Survey

Campaign for National Parks

Chapelcross Site Stakeholder Group

Copeland Borough Council

CORE (Cumbrians Opposed to a Radioactive Environment)

Cumbria Association of Local Councils

Cumbria County Council

Department of Environment, Food & Agriculture - Isle of Man Government

Don't Dump Cumbria

Dursley Town Council

EDF Energy

English Heritage

Gosforth Parish Council

Health Protection Agency

Lake District National Park Authority

Nuclear Free Local Authorities

Nuclear Industry Association

Nuclear Waste Management Organisation, Canada

NuGeneration Limited (NuGen)

Parents Concerned about Hinkley

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Peace News

Ponsonby Parish Council

Prospect Trade Union

Radiation Free Lakeland

SEPA (Scottish Environmental Protection Agency)

The Food Standards Agency

The Geological Society

The Nuclear Institute

Welsh Government

West Cumbria & North Lakes Friends of the Earth

West Cumbria Managing Radioactive Waste Safely Partnership

Wilkinson Environmental Limited

# Annex B - Glossary

## **Committee on Radioactive Waste Management (CoRWM)**

CoRWM was set up in 2003 to provide independent advice to Government on the long-term management of the UK's solid higher activity radioactive waste. In October 2007, CoRWM was reconstituted with revised Terms of Reference and new membership. The Committee will provide independent scrutiny and advice to UK Government and devolved administration Ministers on the long-term radioactive waste management programme, including storage and disposal. Further information available at <http://corwm.decc.gov.uk/>.

## **Community Siting Partnership (or Partnership)**

A partnership of local community interests that will work with the NDA's delivery organisation and with other relevant interested parties to ensure questions and concerns of potential Host Communities and its Wider Local Interests are addressed and resolved as far as reasonably practicable and to advise Decision Making Bodies at each stage of the process. The NDA's delivery organisation would be a member but would not be directly involved in decisions on community related issues. Whilst not a member of a Partnership, Government could participate in the work of the Community Siting Partnership as and when required.

## **Decision Making Body/ies**

The Local Government decision-making authority/ies for the host community.

## **Decision to Participate**

The decision point at which a Decision Making Body/ies makes a formal commitment to participate in the geological disposal facility siting process, but without commitment to host the facility.

## **Environment Agency**

The environmental regulator for England and Wales. The Agency's role is the enforcement of specified laws and regulations aimed at protecting the environment, in the context of sustainable development, predominantly by authorising and controlling radioactive discharges and waste disposal to air, water (surface water, groundwater) and land. The Environment Agency also regulates nuclear sites under the Environmental Permitting Regulations and issues consents for non-radioactive discharges.

## **Environmental Impact Assessment (EIA)**

A legal requirement under EU Directive 85/337/EEC (as amended) for certain types of project, including various categories of radioactive waste management project. It requires information on the environmental impacts of a project proposal to be submitted by the developer and evaluated by the relevant competent authority (the planning authority, HSE or other regulators concerned).

## **Equality Impact Assessment (EqIA)**

An Equality Impact Assessment considers the likely effects of a policy, plan or project on a variety of social groups, mainly focussing on the protected characteristics established under the Equality Act 2010: age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation. It helps to ensure that proposals will not result in discrimination against any individual or community and where possible will promote equality.

### **Expression of Interest (Eoi)**

The decision point at which local communities register their 'without commitment' interest in discussions with Government about potential involvement in the geological disposal facility siting process.

### **Geological disposal**

A long term management option involving the emplacement of radioactive waste in an engineered underground geological disposal facility or repository, where the geology provides a barrier against the escape of radioactivity and there is no intention to retrieve the waste once the facility is closed.

### **Habitats Regulations Assessment**

In this document, Habitats Regulations Assessment refers to the type of assessment legally required by EC Directive 92/43/EEC in the preparation of certain plans and projects. The relevant "competent authority" must assess and report on the predicted effects of the plan or project on "European sites" and associated "European protected species".

### **Health and Safety Executive (HSE)**

A statutory body whose role is the enforcement of work-related health and safety law. HSE is the licensing authority for nuclear installations. The HSE exercises this delegated authority through the Office of Nuclear Regulation, who are responsible for regulating the nuclear, radiological and industrial safety of UK nuclear installations under the Nuclear Installations Act 1965.

### **Health Impact Assessment (HIA)**

A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.

### **High Level Waste (HLW)**

Radioactive wastes in which the temperature may rise significantly as a result of their radioactivity, so this factor has to be taken into account in the design of storage or disposal facilities.

### **Higher activity radioactive waste**

It includes the following categories of radioactive waste: high level waste, intermediate level waste and a small fraction of low level waste containing specific radionuclides.

### **Host Community**

The community in which any facility will be built. This will be a small geographically defined area and include the population of that area and the owners of the land. For example, it could be a town or village.

### **Intermediate level waste (ILW)**

Radioactive wastes exceeding the upper activity boundaries for low level radioactive waste but which do not need heat to be taken into account in the design of storage or disposal facilities.

### **International Atomic Energy Agency (IAEA)**

The IAEA is the world centre of cooperation in the nuclear field. It was set up in 1957 as the world's "Atoms for Peace" organisation within the United Nations family. The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies.

### **Low Level Waste (LLW)**

LLW is defined as radioactive waste having a radioactive content not exceeding 4 gigabecquerels per tonne (GBq/t) of alpha or 12 GBq/t of beta/gamma activity.

### **Managing Radioactive Waste Safely (MRWS)**

Government's programme of work for the long term management of the UK's higher activity radioactive waste. It covers the whole process of public consultation, work by CoRWM, and subsequent actions by Government to identify and now implement geological disposal, coupled with safe and secure interim storage and ongoing research and development.

### **Nuclear Decommissioning Authority (NDA)**

The NDA is the implementing organisation responsible for planning and delivering geological disposal. The NDA was set up on 1 April 2005, under the Energy Act 2004. It is a non-departmental public body with designated responsibility for managing the liabilities at specific sites. These sites are operated under contract by site licensee companies. The NDA has a statutory requirement under the Energy Act 2004 to publish and consult on its Strategy and Annual Plans, which have to be agreed by the Secretary of State (currently the Secretary of State for Energy and Climate Change) and Scottish Ministers.

### **Office for Nuclear Regulation (ONR)**

The ONR maintains and improves safety standards for work with ionising radiation at licensed nuclear installations. It sets national regulatory standards and helps develop international nuclear safety standards. Through its licensing powers it assesses safety cases and inspects sites for licence compliance. The ONR sets out, in conditions attached to a nuclear site licence, the general safety requirements to deal with the risks on a nuclear site.

### **Potential Candidate Site**

A Potential Candidate Site is a combination of a surface site for the surface facility and a volume of rock for the underground facility. The land areas and/or rock volumes identified during the process described in this document could be considerably larger than would be required for a geological disposal facility. Any Candidate Site taken through to Stage 5 for further, more detailed investigation could still extend over a relatively large area.

### **Radioactive waste**

Any material contaminated by or incorporating radioactivity above certain thresholds and for which no further use is envisaged, is known as radioactive waste.

### **Right of Withdrawal (RoW)**

This is an important part of the voluntarism approach intended to contribute to the development and maintenance of community confidence. Up until a late stage, when underground operations and construction are due to begin, if a community wished to withdraw then its involvement in the process would stop.

### **Spent fuel (spent nuclear fuel)**

Used fuel assemblies removed from a nuclear power plant reactor after several years use and treated either as radioactive waste or via reprocessing as a source of further fuel.

### **Stakeholders**

In the context of this document, people or organisations having a particular knowledge of, interest in or affected by radioactive waste, examples being the waste producers and owners, waste regulators, non-Governmental organisations and local communities and authorities.

### **Strategic Environmental Assessment (SEA)**

In this document, SEA refers to the type of environmental assessment legally required by EC Directive 2001/42/EC in the preparation of certain plans and programmes. The authority responsible for the plan or programme must prepare an environmental report on its likely significant effects, consult the public on the report and the plan or programme proposals, take the findings into account, and provide information on the plan or programme as finally adopted. [www.legislation.gov.uk/ukxi/2004/1633/contents/made](http://www.legislation.gov.uk/ukxi/2004/1633/contents/made)

### **Strategic Transport Assessment (STA)**

In this document, Strategic Transport Assessment refers to an assessment of the potential transport effects of a proposed plan or programme. An Strategic Transport Assessment also identifies what measures may be required to deal with adverse transport effects and to improve accessibility and safety, especially for pedestrians, cyclists and public transport users.

### **Sustainability Appraisal (SA)**

A form of assessment used in England, particularly in regional and local planning, covering the social, environmental and economic effects of proposed plans and appraising them in relation to the aims of sustainable development. SAs fully incorporating the requirements of the SEA Directive (2001/42/EC) are mandatory for a range of regional and local planning documents under the Planning and Compulsory Purchase Act 2004.

### **Voluntarism**

An approach in which communities “express an interest” in participating in the process that would ultimately provide the site for a geological disposal facility. Initially a community would be expressing an interest in finding out more about what hosting such a facility would involve. In the latter stages there would be more detailed discussion of plans and potential impacts.

### **Wider Local Interests**

Communities outside the Host Community that have an interest in the development of a disposal facility in the Host Community. Such a community might be the next village, a neighbouring district or a community on the local transport routes to the Host Community.

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