

westcumbria:mrws

West Cumbria Managing Radioactive Waste Safely Partnership

Geological disposal of radioactive waste in West Cumbria?

The West Cumbria Managing Radioactive Waste Safely (MRWS) Partnership's initial opinions

Public consultation document

November 2011 to March 2012

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For information

1. About this consultation

Consultation documents

In addition to this full consultation document, we have produced an eight-page overview document. It can be found in the consultation pack along with a DVD introduction to the issues. The full consultation pack is available on request, and can also be downloaded from www.westcumbriamrws.org.uk.

This consultation

This consultation document has been written by the West Cumbria Managing Radioactive Waste Safely (MRWS) Partnership and concerns the work of the Partnership over the past two years.

The Partnership has been discussing the possibility of the development of a geological disposal facility (GDF) in West Cumbria. This would include surface facilities and an engineered, underground site that would be the final 'repository' for the UK's higher activity radioactive waste.

Allerdale Borough Council, Copeland Borough Council and Cumbria County Council will soon be making a decision about whether to take part in the search for a site for a repository in West Cumbria. We call this 'entering the siting process'. This would not commit West Cumbria to eventually having a repository, but would involve looking in more detail at whether there are any potential sites for a repository in the area.

Before the three Councils make their decision, we (the Partnership) will present them with the outcomes of our discussions. These will help them to make a decision about whether or not to enter the siting process.

What does this consultation cover?

This document asks for your views on the Partnership's initial opinions about the key issues relating to a potential repository for higher activity radioactive waste in West Cumbria. We will then use your responses to consider whether we should change these initial opinions and, if so, how. This will shape the advice we give to the three Councils in 2012, to help inform their decision about whether or not to enter the siting process.

Who is the Partnership?

The West Cumbria MRWS Partnership was set up to ensure a wide range of community interests are involved in the discussions. The Partnership is made up of individuals representing the following organisations:

Allerdale Borough Council
Barrow Borough Council
Carlisle City Council
Churches Together in Cumbria
Copeland Borough Council
Cumbria Association of Local Councils (CALC)
Cumbria Chamber of Commerce
Cumbria County Council
Cumbria Tourism
Eden District Council
GMB/Unite Unions
Lake District National Park Authority
National Farmers Union (NFU)
Nuclear Legacy Advisory Forum (NuLeAF)
Prospect Union
South Lakeland District Council

Each Partnership member provides views from their organisation's perspective, knowing its priorities and interests. This is not necessarily a formal or final view of the whole organisation.

Who is this consultation for?

This consultation concerns a future decision about West Cumbria. It is therefore mainly aimed at members of the public and stakeholder organisations in or around West Cumbria. However, we appreciate that it will be of interest to a wider range of people and we welcome responses from people living elsewhere in Cumbria and beyond, including visitors to the area and those with an interest in the Lake District National Park. All views received will be considered.

A large amount of information has been condensed into this consultation document. It is therefore primarily aimed at people keen to spend some time getting to grips with the issues involved. To make it easier to understand, we have produced an accompanying DVD, an eight-page overview (summarising some of the issues in this full consultation document), and specialist materials for schools and youth groups to use. You can also ask for the document in different formats including Braille, large type, audio transcription or a foreign language translation. For any of these additional materials please contact us by email (contact@westcumbriamrws.org.uk), or call our Freephone number (0800 048 8912).

Responding to this consultation document is the main way of inputting your views, but there are also several other activities going on during the consultation period where you can ask questions and find out more. To find out about these activities or to sign up for regular updates, you can visit our website (www.westcumbriamrws.org.uk) or call our Freephone number (0800 048 8912).

How long will the consultation period last?

This consultation closes on 23 March 2012.

Enquiries

If you have questions about the content or scope of the consultation, or if you would like to ask for more copies of this document, please contact us by email (contact@westcumbriamrws.org.uk), or call our Freephone number (0800 048 8912).

How to respond

We have provided a number of questions throughout this document which we would like feedback on. You can respond online to these questions by going to our website (www.westcumbriamrws.org.uk) and clicking on **Consultation**. There are then instructions for how to give us your responses. Alternatively you can post the response form back to us in the envelope provided – you do not need a stamp. We recommend responding online if possible. Please note we will not usually accept anonymous responses, firstly to avoid duplication of responses and also to ensure transparency, however we will not publish your personal details in connection with your submission. For responses made on behalf of an organisation, the organisation name may be displayed with the response, but the name of the individual who made the response will not. Please see page 7 for further information on how we will use any information you give us.

After the consultation

See Chapter 12 for a summary of what will happen after this consultation.

Confidentiality and data protection

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

We may publish people's responses to this consultation in full, removing any personal details first, unless respondents specifically ask us not to. If you want information that you provide to be treated as confidential, please be aware that, under the Freedom of Information Act, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this, if you want information that you provide to be treated as confidential it would be helpful if you could explain to us in your response to this consultation if and why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances.

Please see Appendix 4 for further detail.

Government Code of Practice on Consultation

We have used the Government's Code of Practice on Consultation to help us put together this document. See Appendix 7 for a summary of the Code of Practice. The Code requires us to say whether or not there has been an impact assessment carried out as part of this work. There is no specific impact assessment attached to this consultation because our initial opinions are based on a large amount of varied information, including technical reports, research, expert views, public and stakeholder views and Government information. References to these sources are provided throughout this document where relevant.

2. Using this consultation document

This document contains information to help you decide what you think about our initial opinions on a range of important topics and asks for feedback on each one.

We suggest that you might like to read this document over several sittings as there is a lot of information to digest. You could start by focusing on the topic that most interests you, and you do not have to respond to every question if you would rather focus on specific topics.

If you are using the online response form, you will be able to leave your answers and come back another time so you do not have to answer all of the questions in one go.

2.1 Chapters

FOR INFORMATION

Chapter 3 and the accompanying DVD explain the context of our work and the reason for this consultation.

Chapter 12 explains what will happen next, including how we will take views into account as a result of this consultation and a subsequent opinion survey.

FOR RESPONSE

Chapters 4 to 11 cover topics that we want your feedback on – these chapters outline the main issues that we have been considering, information we have gathered and any initial opinions we have formed about each issue.

2.2 Levels of detail

Our work has involved gathering evidence on a range of topics in order to develop our initial opinions. This has included looking at a large amount of detailed technical information. We know that it is difficult to make this information easy to understand whilst also giving enough technical detail for those who want it. We have therefore tried to write this document using various levels of detail as outlined below.

Level 1 – The basics:

Normal text written like this within the document provides a summary of the basic information. Sometimes the first time a word or phrase appears it will be highlighted **like this**, with an accompanying definition provided nearby.

Word or phrase:

i

Description here

Level 2 – Important information:

Throughout the document, important pieces of information referred to in the text are provided in more detail to help you see some of the information upon which we have based our initial opinions. This might include more text, flow diagrams or pictures.

Box/figure x

Information, picture or diagram

Level 3 – Supporting documents:

Additional, more detailed information is often available from our website if you want to analyse our work more closely. In such cases, the ‘Supporting documents’ boxes refer to relevant documents containing more detailed information on particular topics – each document has a reference number and a name. These are all available from our website www.westcumbriamrws.org.uk.

If you are using a web-based version of the consultation document, clicking on the links in these boxes will open up the relevant documents in a new window. If you have a paper version with no access to the Internet, you can call our Freephone number 0800 048 8912 and request any number of these documents to be posted to you.

Supporting documents

Document x: Title

All of the documents that we have published, including our meeting reports and additional information on many of the issues in this consultation document, are available on our website. Documents are listed by category, and can also be viewed in a full numerical list. You can request paper copies of any of the documents.

Please also see Appendix 6 for a list of useful websites.

3. Background information

3.1 The Government's MRWS process

Introduction to the Government's MRWS process

In 2008 the UK Government called for potential volunteers to host the final repository for the country's **higher activity radioactive waste**.

The Government is inviting communities across the country to talk to them about the possibility of having the repository in their area. The repository is known as a **geological disposal facility (GDF)** and would be one of the most significant engineering projects in the UK.

The Government gave more details in their White Paper: 'Managing Radioactive Waste Safely (MRWS): A Framework for Geological Disposal'. In this paper, the Government said that:

- It does not want to force the facility upon a community: it is looking for volunteers and wants to work in partnership. It calls this **voluntarism**.
- Just talking to the Government about having the repository does not commit anyone to it.
- It would be a long time until any construction starts, and during that time the **decision-making bodies** involved would have the **right of withdrawal** from the process.



Higher activity radioactive waste:



This is the most radioactive kind of waste. Some of it remains hazardous for many thousands of years. Put simply, it is a combination of nuclear materials and other materials, such as fuel packaging and equipment, that have been contaminated with, or contain, significant amounts of radioactivity.

Geological disposal facility (GDF):



An engineered, underground facility where the UK's higher activity radioactive waste will be permanently disposed of. Throughout this document we refer to a GDF as a **repository**.

Voluntarism:



An approach where a community expresses willingness to participate in the search for a site for a potential repository, and perhaps ultimately host a facility.

Supporting documents

Document e: MRWS White Paper, June 2008

What does the MRWS process involve?

Currently, higher activity radioactive waste is kept in stores at surface level at 36 sites across the UK. Because of the long timescales over which these materials can remain hazardous (in some cases for many thousands of years), the Government has decided a longer-term approach than surface storage is needed. In the White Paper (see page 10), the Government outlines its plans for implementing geological disposal as its preferred approach. They decided this after a detailed review by an independent committee – the **Committee on Radioactive Waste Management (CoRWM)**. That review found that, in the light of current knowledge, geological disposal is the best available long-term approach compared to other ways of managing higher activity radioactive waste.

The Government says that geological disposal involves placing the waste deep underground in a purpose built facility, called a GDF or a repository, leaving the waste there forever once the facility is closed. It is based on the idea that radiation can be contained for extremely long periods by a combination of engineered underground structures and the surrounding rocks. While the waste is in the facility, the level of radioactivity will reduce over time.

The Government also says that it is possible that more than one facility might be needed depending on the type and amount of waste disposed of, and the location or locations finally decided upon. However, a commitment from a community to have one repository does not automatically mean the same community would have a second one.

The MRWS process is an important part of the Government's overall energy policy, which also includes potentially building new nuclear power stations. The relationship between nuclear new build and the potential for a repository in West Cumbria is discussed further in Chapter 9 on Inventory. The Partnership is not looking at whether new power stations should be built or not.

Decision-making bodies (DMBs):



The local government decision-making authority/ies for any potential host community/ies. In this case Allerdale Borough Council, Copeland Borough Council and Cumbria County Council would be the formal decision-making bodies if West Cumbria enters the siting process.

Right of withdrawal:



This means that the decision-making bodies are able to pull out of the process at any time before construction is ready to start. This decision would be made on behalf of communities and in close collaboration with wider community representatives.

Committee on Radioactive Waste Management (CoRWM):



An independent committee originally set up by government to look at the options for managing the UK's higher activity radioactive waste. Now it scrutinizes the plans for implementing geological disposal.

Who is involved from the Government and how?

The **Department of Energy and Climate Change (DECC)** is leading the Government's MRWS programme.

The Government has set up a **Geological Disposal Implementation Board (GDIB)**, chaired by the Minister of Energy, to provide oversight of the MRWS programme. The Board's role is intended to bring challenge and hold DECC to account for delivery of the programme.

The Government has also published its first annual report to Parliament on the MRWS programme. The report includes progress on projects that contribute towards achieving the milestones in the timeline for repository development, and progress against major commitments given by the Government as a result of CoRWM's recommendations.

More information can be found at mrws.decc.gov.uk.

The **Nuclear Decommissioning Authority (NDA)** was set up with the responsibility of cleaning up the UK's civil nuclear facilities and implementing the Government's policy on the long-term management of radioactive waste. To take forward work on geological disposal, the NDA has set up the **Radioactive Waste Management Directorate (RWMD)**.

There are also various official regulators involved in the MRWS process. Regulators are bodies independent of the Government that make sure relevant laws, rules and regulations are followed, for example on health, safety, security and the environment. Regulators for the nuclear industry include the **Environment Agency (EA)** and the **Office for Nuclear Regulation (ONR)**.

Government and official bodies involved in the MRWS process

Body	Details i
Department of Energy and Climate Change (DECC)	The UK Government department responsible for national policy on radioactive waste.
Geological Disposal Implementation Board (GDIB)	A board chaired by the Minister of Energy, to provide oversight of the MRWS programme.
Nuclear Decommissioning Authority (NDA)	The UK Government body responsible for ensuring the clean-up of civil nuclear sites and for implementing the Government's policy on the long-term management of radioactive waste.
Radioactive Waste Management Directorate (RWMD)	The directorate of the NDA responsible for developing and implementing geological disposal.
Environment Agency (EA)	The regulator responsible for the enforcement of environmental protection legislation in England and Wales. Its activities include regulating disposal of radioactive wastes from licensed nuclear sites and other premises using radioactive substances by granting permits.
Office for Nuclear Regulation (ONR)	An agency of the Health and Safety Executive (the regulator responsible for protecting people against risks to health or safety arising out of work activities). Established on 1 April 2011, the ONR regulates nuclear safety and security, and regulates the safety of radioactive material transport by road, rail and sea.

What are the timescales for the Government's MRWS process?

The Government has laid out its overall timescales for the MRWS process across a number of stages that span several decades.

The Government's current expectation is that a repository would open to receive waste around 2040. However, the Minister has recently stated an aspiration for this date to be brought forward to 2029, and the NDA is assessing whether this might be possible. Should the Government expectation shift to 2029, we would want more detail from the Government and the NDA on how they see this new timeline working within a voluntary process.

Figure 1: Timeline showing the different stages in this process



Currently we are at Stage 3 (see Figure 1 above). Once we have given our advice to Allerdale Borough, Copeland Borough and Cumbria County Councils they will take a formal decision on whether to move to Stage 4 (the first stage of the search for a suitable location). This decision will take account of a number of factors, including whether there is credible support locally for the decision. Throughout this document we refer to this decision to move to Stage 4 as a decision to 'enter the siting process'.

3.2 A repository

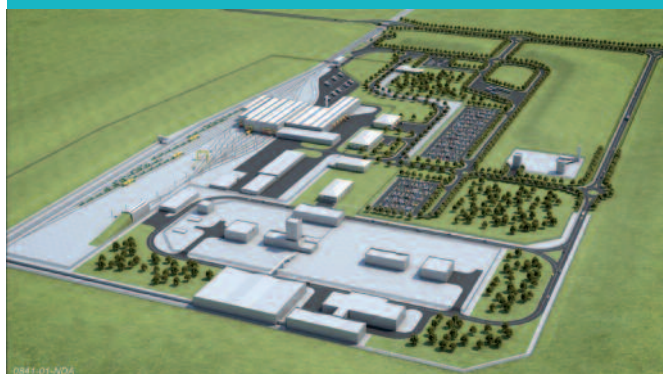
What might a repository look like?

A repository would be made up of surface and underground facilities. Surface facilities would include buildings such as construction support facilities, management and administration offices, workshops and possibly a **spent fuel encapsulation plant** and a visitor centre. There may also be railway sidings and roads or other transport infrastructure.

The waste would be placed in the underground facilities, accessed through one or more sloping tunnels from the surface facilities. Once filled with waste, which could take many decades, the Government says that the shafts and tunnels can be 'backfilled' and sealed. The surface facilities could then be dismantled or used for something else. Records of the location and general contents of the facility would be held permanently. There may also be the option for waste in a repository to be taken out of the facility after it has been placed inside – this is called **retrievability** and is discussed further in Chapter 8 on Design and Engineering.

The NDA says that the underground and surface facilities could be located above one another or, in some circumstances, they could be separated by a horizontal distance of up to 10km, possibly further. This means that the surface and underground parts of a repository could be in different locations.

Figure 2: Representation of an aerial view of repository surface facilities



Spent fuel encapsulation plant:

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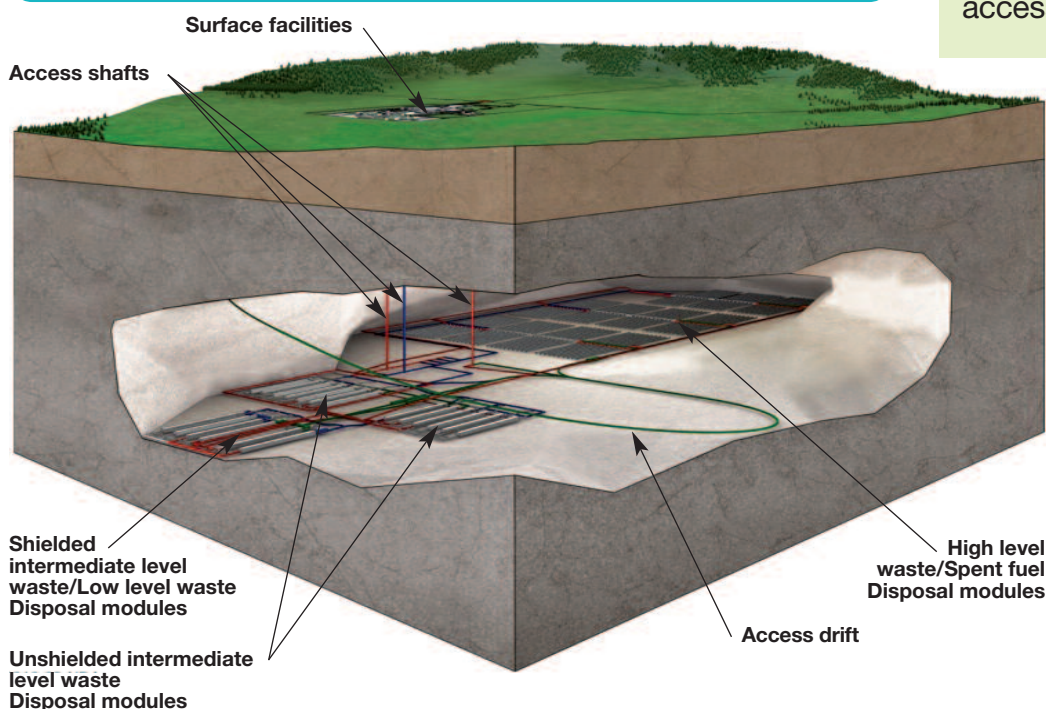
A facility to package used fuel from nuclear power stations in preparation for disposal.

Retrievability:

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The ability to take waste back out after it has been placed in a repository, rather than the waste being buried permanently without access to it in the future.

Figure 3: Possible design for a repository in higher strength rock



The depth of the underground facilities of a repository is likely to be between 200 and 1000 metres. The anticipated **'footprint'** of the underground facilities could range from 6km² to 25km² depending on the type of rock, and how much and what kind of waste would be placed into the facility. This would be between approximately one and four times the size of the Sellafield site.

The figures above are based on the waste being placed on one level underground, but it is also possible that the waste would be placed at different depths within the facility, which would mean a smaller overall footprint. In any case, this would be a huge engineering project for the UK, roughly similar in scale to the construction of the Channel Tunnel.

Footprint: i

The area covered by a specific building or development.

Figure 4: Representation of the minimum and maximum depth of the underground repository

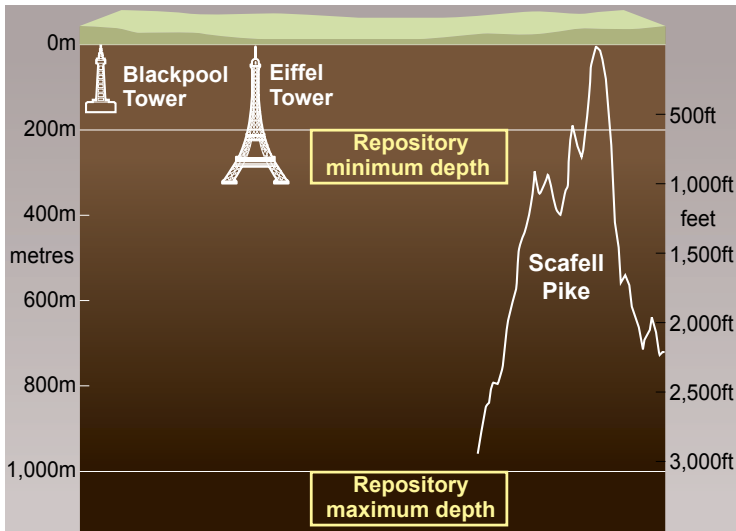
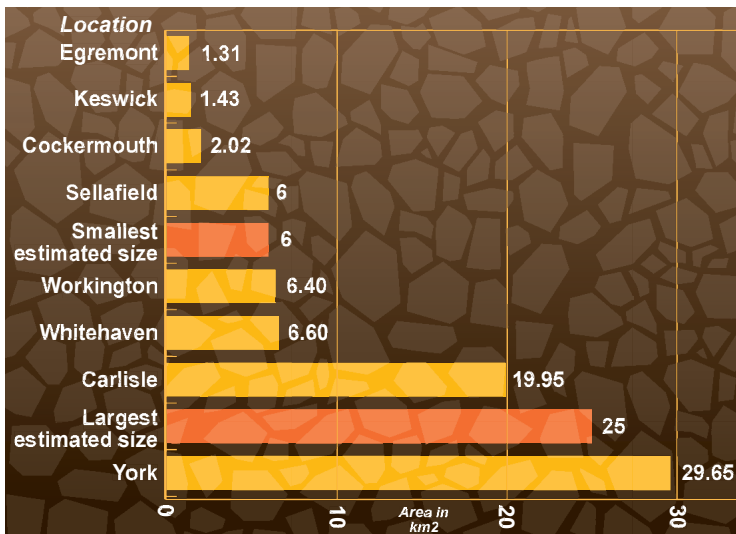


Figure 5: Representation of the potential 'footprint' of the underground repository



Please note that the above diagrams are for indicative purposes only. Figure 5 is based on information found on www.itraveluk.co.uk/maps.

What would go into a repository?

Most of the waste that would go into a facility would be higher activity radioactive waste (see definition on page 10). The amount of waste that would go into a repository depends on a lot of things, including whether a facility is only used for existing waste, or would also take waste from new nuclear power stations. Based on current estimates of the volume of waste that could go into a repository (including all packaging materials) we estimate that the underground facilities could be between 6 and 11 times the size of the Royal Albert Hall in terms of volume (m³) – see Chapter 9 on Inventory for more about the exact volumes that could go into a repository.

The Government says that, although it is technically possible and desirable from its point of view that a repository would take waste from new UK nuclear power stations, doing so has implications for design and operation and would have to be discussed with any community that has a repository. See Chapter 9 on Inventory for more on this.

What are other countries doing?

Geological disposal is the internationally preferred approach for dealing with higher activity radioactive waste. As of 2009/10, 24 countries have taken a policy decision in favour of deep geological disposal. These include Belgium, Canada, Finland, France, Germany and Sweden. The USA still favours deep geological disposal for some waste at its Waste Isolation Pilot Plant (WIPP), and in parallel is studying options for spent fuel management. The remaining 14 countries that have radioactive waste have taken no decision as yet, and five of these have a preference for geological disposal. Scottish Government policy for higher activity radioactive waste is that it should be held in near-surface facilities located close to the site where the waste is produced.

The Finnish programme is currently underway, with excavations at its Eurajoki site on target to have an operating repository available in 2020. The Swedish waste management organisation chose the site at Forsmark in 2009 to host the final repository for spent fuel, which should become operational in 2023. France is continuing to investigate its deep repository site at Bure.

However, geological disposal is still in relatively early stages of technical development and there are uncertainties involved (see section 3.4 on page 23).

Figure 6: Underground facilities at the WIPP plant in New Mexico (source: WIPP)



Figure 7: Underground transport facilities in Sweden (source: SKB/Bengt O Nordin)



3.3 Who is involved locally and how?

Voluntarism

The Government says it is committed to an approach based on voluntarism. This means that communities would express willingness to search for a site for a potential repository, and perhaps ultimately host a facility, rather than having a facility forced upon them. Participation in the early stages of a search for a site is without any commitment to later stages of the process. Indeed, a right of withdrawal exists up until construction is due to start. This is different to a normal planning process for major infrastructure projects, where the approach is not based on voluntarism.

A key question here is how 'community' is defined. The Government's MRWS White Paper sets out three levels of community that must be involved in discussions and decisions. These definitions are outlined in **Box 1** below.

Box 1: Community definitions from the Government's White Paper

'Host Community: The community in which any facility will be built can be termed the 'Host Community'. The 'Host Community' 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.'

'Decision-Making Body: Local government will have decision-making authority for their host community. There are different local authority structures in different parts of the UK. For example, in England local authorities include district councils, county councils, metropolitan district councils and London Boroughs whereas in Wales, local authorities are unitary. Such a body will be termed 'Decision-Making Body'.'

'Wider Local Interests: Outside the Host Community, there are likely to be other communities that have an interest in the development of a facility in the Host Community, and there needs to be a mechanism that allows them to become involved in the process. Such a community might be the next village, a neighbouring district or a community on the local transport routes to the Host Community. Such communities will be termed 'Wider Local Interests'.'

The White Paper says that 'all three levels of community will need to liaise closely with one another as the process is taken forward' and that 'both Government and the Nuclear Decommissioning Authority (NDA) will need to engage with all three 'communities''.

The three local Councils have the responsibility of making the formal decision on whether to continue to the next stage or not, as set out in **Box 1** above. They have set up a partnership with a wide range of community interests to provide them with opinions before they take this decision. The role of this partnership is explained in more detail in the next section.

An introduction to the West Cumbria MRWS Partnership

A large amount of the country's higher activity radioactive waste is already at Sellafield in West Cumbria. Because of this, Allerdale Borough Council, Copeland Borough Council and Cumbria County Council have expressed an interest in talking to the Government about siting a repository in West Cumbria. No commitments have been made yet.

Having the waste at Sellafield has a range of social, environmental and economic impacts for West Cumbria. Because of this, the three Councils want to involve residents in the process to decide what happens to the waste in future.

To ensure a wide range of community interests are involved in the discussions, a partnership has been set up. This is called the 'West Cumbria MRWS Partnership' (the Partnership).

Currently we (the Partnership) are just talking to the Government. Soon the three Councils (Allerdale Borough, Copeland Borough and Cumbria County) will decide whether to take part in the siting process for a repository, without commitment to eventually having a facility. We are not taking any decisions. Our role is to advise the Councils, who are the decision-making bodies in the MRWS process (see definition on page 11). After the Councils have taken this decision, our role will end.

Government policy is for geological disposal. Therefore the Partnership is only discussing geological disposal and not other potential approaches to managing higher activity radioactive wastes in the long term.

Supporting documents

Document 2: The Partnership's Terms of Reference (working draft)

Our Work Programme

At the start of our work, we decided which issues we wanted to know more about before presenting our findings to Allerdale Borough, Copeland Borough and Cumbria County Councils, to help inform their decision about whether to enter the siting process. This led to the development of our Work Programme (see Appendix 5), which contains seven areas of work (we call these work streams):

- Geology (see Chapter 4)
- Safety, Security, Environment and Planning (see Chapter 5)
- Community Benefits and Impacts (see Chapters 6 and 7)
- Design, Engineering and Inventory (see Chapters 8 and 9)
- Siting Process (see Chapter 10)
- Other Activity (e.g. Evaluation and Ethics)
- How Public and Stakeholder Views Will Be Used (see Chapter 12)

Our meetings

We meet roughly every six weeks. The public can come to these meetings to watch discussions and ask questions. The meetings are managed and reported by independent professional facilitators, so that no one view dominates and the record of the meeting is fair. All of our work is independently evaluated by a third party.

Funding

Local council tax is not spent on this. We secure funding from the Government to cover the costs of the work we wish to do on behalf of local people, and we have full control over how this money is spent. We do not let the Government interfere with our choices over which experts to hear from, or who or how to consult.

For each area of work we developed at least one ‘**crit**erion’ – this is a statement about a specific thing that we would want to see in order to help us decide what advice to give to the three Councils. The work streams are all covered in the chapters below, laying out the criterion or criteria for each one, how we as the Partnership have developed our thinking and what our initial opinions are at this stage in the process.

In order to fulfil our Work Programme we have looked at reports and literature, heard from experts in the field, commissioned independent research and invited reviews by independent experts. We have also carried out a range of **public and stakeholder engagement (PSE)** activities to enable us to hear public concerns and get feedback on key issues.

Criterion/criteria:

A series of tests developed by the Partnership for each area of its Work Programme.

Public and stakeholder engagement

Public and stakeholder engagement (PSE) is central to the work of the Partnership. Three stages of engagement have been built in to our Work Programme in order to inform, seek input from and give feedback to the general public and stakeholder organisations in West Cumbria, the rest of Cumbria and beyond.

PSE1 and PSE2. The first two stages of engagement (PSE1 November 2009 to March 2010, and PSE2 November 2010 to February 2011) involved a variety of activities including: neighbourhood forums; residents’ panels; workshops with stakeholder organisations; a discussion pack (enabling discussion of key issues in small groups to provide feedback to the Partnership); community drop-in events; and a large amount of information giving through media channels, leaflets, email and the Partnership website.

The objectives of these stages were primarily to build an understanding of our work and of the overall process amongst the public and stakeholder organisations, and for us to understand what the key issues are for the public and stakeholders. PSE2 also sought specific input on: how public and stakeholder views will inform the work of the Partnership; impacts and community benefits; and community involvement in the siting process.

PSE3. Our third stage of public and stakeholder engagement (PSE3) is our formal consultation stage and is taking place until 23 March 2012. We want your views on our initial opinions across all the topics in our Work Programme. Responding to this consultation document provides a central way of inputting your views, but there are also several other activities going on during the consultation period where you can ask questions and find out more. To find out about these activities or to sign up for regular updates, you can visit our website (www.westcumbriamrws.org.uk) or call our Freephone number (0800 048 8912).

Public and stakeholder engagement (PSE):

The Partnership’s programme for discussing its work with the public, stakeholders and stakeholder organisations i.e. any individual or organisation who has an interest in the MRWS process.

Supporting documents

Document 61:
[PSE1 Report](#)
Document 157.1:
[PSE2 Report](#)

We have taken account of the outcomes of our previous rounds of engagement (PSE1 and PSE2) throughout the development of our thinking. We are asking different questions in this consultation (PSE3) which directly relate to the development of our initial opinions. Therefore, even if you have responded to PSE1 or PSE2, if you want your views to be taken into account in this consultation, you need to respond again.

Decision-making bodies and their decision making

The three decision-making bodies (DMBs) will take separate decisions on whether the areas of Allerdale and/or Copeland should enter the siting process, without commitment to host a repository. Each council will consider the report from the Partnership and other relevant matters, and take a decision in their Full Council (Copeland Borough Council), the Executive (Allerdale Borough Council), or Cabinet (Cumbria County Council). The Partnership understands that the three Councils have agreed a Memorandum of Understanding that shows how they will take and coordinate these decisions. For an area to formally enter the siting process, both the Borough Council and the County Council would need to be in agreement.

Supporting documents

Document 235: [Memorandum of Understanding between the three Councils, November 2011](#)

Document 240: [Letter from DECC regarding the Memorandum of Understanding, November 2011](#)

3.4 Other important issues

What we expect from other organisations

Other organisations have been involved in the process so far in three main ways:

- ◆ **As a funder.** We secure funding from the Government to support all our activities and we maintain full control over how the money is spent.
- ◆ **As an observer.** Individuals from organisations such as the NDA, DECC, CoRWM, the EA and the ONR are observing members of the Partnership – they attend meetings but do not take part in discussions except to clarify information (see bullet point below).
- ◆ **As a source of information and clarification.** Throughout the process so far we have had a dialogue with the Government to make sure we get the level of detail we need about key issues, and in order to be satisfied that, should West Cumbria enter the siting process, the Government will follow through on commitments.

If West Cumbria takes part in the siting process, without commitment to eventually having a repository, we would expect this level of engagement, dialogue and funding to continue. This is addressed at various points throughout the consultation document.

Ethics

We included **ethics** in our Work Programme. What to do with the UK's radioactive waste is an ethical issue in many ways. It involves making decisions now that will impact many generations to come, whether that decision is to leave the waste where it is, or to place it in a repository. It also involves making decisions about where to manage the waste.

To help us understand the ethics of radioactive waste management, we asked the professor who led CoRWM's work on ethics to summarise their investigations in the area. Professor Andy Blowers helped us understand that ethical considerations do not make decisions or answer questions for us. Each person brings their own sense of ethical values into discussions such as these. See the supporting document for more information.

If West Cumbria enters the siting process, ethics will remain an important and cross-cutting issue for consideration by any future partnership.

Ethics:

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Moral principles that govern a person's or group's behaviour.

Supporting documents

Document 139:
Partnership meeting report, 19 January 2011 (covering ethics)

Uncertainties

Throughout this document we have tried to explain the main issues, and how we have found out more about them and developed our initial opinions as a Partnership. Because we are not at the stage of identifying potential sites, there are a number of topics where we do not and cannot expect to have detailed answers, and so uncertainties remain. If West Cumbria decides to enter the siting process, these site-specific uncertainties, for example those involving the specific design and location of a repository, should start to be reduced.

However, there are also other general uncertainties, for example about geology and benefits, that we have highlighted at relevant places in this document. Some of these uncertainties are significant and would require a lot of work to be done in order to reduce them. This is understandable given the stage we are at in the process. Uncertainties would need to be kept under close scrutiny should West Cumbria decide to enter the siting process.

At this time, the key questions for us as the Partnership, and ultimately for the three Councils, are: ‘Do we know enough?’ and ‘Is what we know acceptable to us at this stage to justify entering the siting process?’

If West Cumbria enters the siting process, how could the process stop?

At the moment West Cumbria is just talking to the Government and the next stage will be for the decision-making bodies to decide whether to enter the siting process. This is where more detailed investigations and discussions would take place. This decision may lead to only part of West Cumbria deciding to enter the siting process (for example just Copeland or just Allerdale). The way the early part of the siting process would work is explained in Chapter 10. If all or part of West Cumbria does enter the siting process with the Government, this does not necessarily mean a repository will be built in West Cumbria. After entering the siting process there would be two main ways in which the search for a site in West Cumbria could stop:

- **The right of withdrawal is exercised.** There are various points in the siting process where the decision-making bodies would need to take a formal decision to either continue to participate in the siting process, or withdraw from it. In addition, the right of withdrawal can be exercised at any time until the point where construction would begin. This means that the decision-making bodies could decide not to take part in the process any more, for example, if it was felt that there was still too much uncertainty surrounding an issue such as safety, or unsatisfactory processes in place to deal with that uncertainty, or if there was not credible support within potential host communities.
- **The Government or the regulators stop the process. Geological suitability and safety** would be the overriding factors in any potential repository development. If at any point more detailed geological investigations were to show the whole of an area is definitely unsuitable, or the regulators determine that their regulatory requirements have not been met, the process would not go ahead in that area.

For response

4. Geology

4.1 Context

Why is geology important?

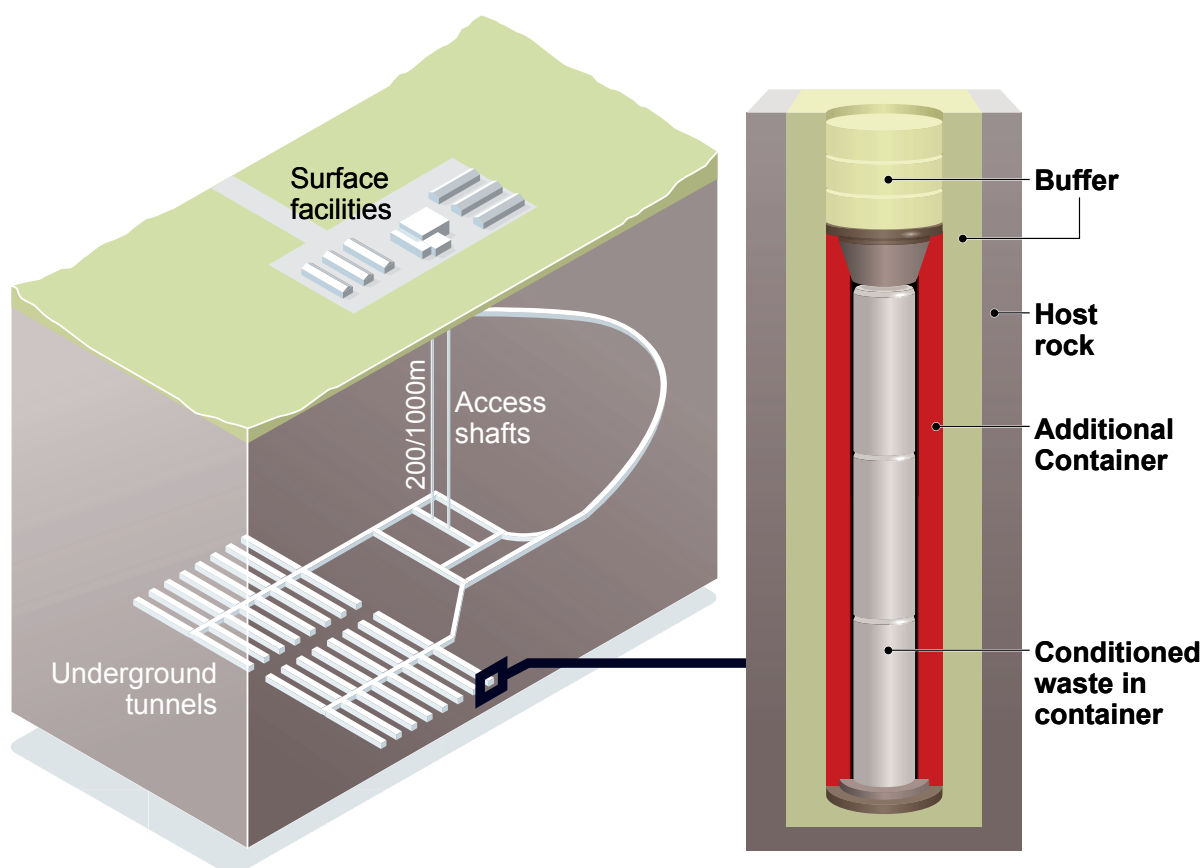
The purpose of this repository would be to isolate radioactive waste in a suitable rock formation deep underground so that no harmful quantities of radioactivity can reach the surface. Such a facility would be designed so that the geological and engineered barriers work together to minimise the escape of radiation over long periods of time. This is called a **multi-barrier approach**. Finding a suitable rock formation that can act as an effective barrier is therefore essential for the construction of a safe disposal facility.

Multi-barrier approach:

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A combination of engineered barriers (packaging, vaults and backfill/refilling of earth or other materials) and a natural barrier (the rock) working together to ensure the necessary levels of safety for a repository.

Figure 8: Multi-barrier illustration / cross section



An initial geological study

As a first step, the Government said that any area expressing an interest in hosting a repository should have a 'sub-surface unsuitability' test carried out by the **British Geological Survey (BGS)**.

The test involves a **desk-based study** that looks at a number of criteria set down in the Government's MRWS White Paper by two independent groups of scientists. The BGS study is designed to rule out certain areas as being clearly unsuitable and thereby enable a judgement about whether the remaining area is enough to continue investigations for a potential site. It avoids money being wasted if there is no prospect of suitable geology being found in an area.

This study has already been carried out in West Cumbria (see section 4.3 below) and is the only geological assessment required by the Government at this early stage in the process. If West Cumbria enters the siting process, more detailed geological assessments would be carried out in later stages of the process (see Figure 1 on page 14 of Chapter 3). If no suitable location is found the process would come to an end, or, if the decision-making bodies were not convinced by the evidence that there were suitable surface and underground sites, they would have the option to withdraw from the process.

British Geological Survey (BGS):

The UK geological experts.

Desk-based study:

A process of looking at available facts and figures without carrying out any new practical investigations.

4.2 What we are looking for

When setting our Work Programme we decided that we needed to consider two criteria about geology:

Criterion a) – Integrity of the BGS screening report

'Whether the Partnership is confident in the integrity of the BGS screening work/report.'

Criterion b) – Areas remaining in West Cumbria

'Whether there are sufficient areas remaining in West Cumbria after initial screening to make further progress worthwhile.'

4.3 What we have done in relation to the integrity of the BGS screening report

What the BGS screening report says

The geological screening report covers the known geology of Allerdale and Copeland and an adjoining area 5km offshore. The report applies a number of criteria to identify areas that have clearly unsuitable geology for a repository at a depth likely to be between 200 and 1000 metres underground. These criteria are laid out in the White Paper and include the presence of resources that people may want in the future e.g. minerals or drinking water. Note that areas not screened out by the report may not be suitable at all depths.

The BGS report does not show areas where a facility could be located. More rigorous geological assessments would be required if decisions are taken to proceed to future stages in the MRWS process.

In Figure 9 the **PINK** areas are those ruled out by the BGS report. N.B. some additional areas in Copeland are deemed unsuitable at specific depths because of the presence of aquifers (rock with water in it that may be used as a water source).

The **BROWN** area is the Lake District National Park.

The **BLUE** border shows the area surveyed (the dashed blue line is the Allerdale/Copeland border).

Figure 9: Results of the BGS screening



The map above shows the areas screened out by the BGS screening study (excluded areas) where one or more of the exclusion criteria apply to the whole rock volume between 200m and 1000m depth. The 'Excluded Area' is shown overlain on the 1:1m scale Ordnance Survey base map. All information other than the Excluded Area (shown in pink) and the boundaries of the screened area (shown in blue) is taken from the Ordnance Survey base map and is shown for context only. Dashed blue line indicates the Allerdale-Copeland boundary. Topographical base is OS topography.

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How we developed our initial opinions about the BGS screening report

Box 2: A selection of the information gathered in relation to potentially suitable areas remaining in West Cumbria

Information	Details	Supporting documents
BGS study	This study was carried out in 2010. It identified those areas of West Cumbria that are clearly unsuitable for a repository.	Document 116: BGS Report, October 2010
Expert review	The Partnership appointed two independent geological experts to undertake a review of the BGS study.	Document 111: Expert review of the BGS Report by Professor Gudmundsson Document 113: Expert review of the BGS Report by Dr Dearlove
Public and stakeholder input	Particularly at the Stakeholder Organisations Workshop during stage two of our public and stakeholder engagement (PSE2), participants were asked to comment on the reliability of the BGS study.	Document 157.1: PSE2 Report

Is the BGS screening report reliable? We hired two independent reviewers of the BGS study to check it was accurate. These were Dr Jeremy Dearlove (FWS Consultants Ltd) and Professor Agust Gudmundsson (Royal Holloway College, University of London), both geological experts. Following several rounds of comments and amendments by the BGS, both peer reviewers published a statement saying that the Partnership can rely on the study.

What did stakeholders say? The results of the study were widely publicised during the Partnership's second round of engagement, including on radio and TV. There was no significant criticism of the study's integrity from the public and stakeholders.

What the study did not do. We recognise the limited nature of the screening study – it did not consider certain criteria and interpreted others narrowly, which is appropriate to this stage in the process. Wider criteria would need to be subject to further rigorous assessment in later stages of the MRWS process if a decision to enter the siting process is taken.

Our initial opinions on ‘the integrity of the BGS screening report’

We wanted to be ‘confident in the integrity of the BGS screening work/report’.

Our initial opinions are:

- **BGS study.** We are confident in the integrity of the BGS screening report because it has been endorsed by two independent reviewers and there is no significant criticism of the study’s integrity from elsewhere.

4.4 What we have done in relation to areas remaining in West Cumbria

Areas remaining in West Cumbria

Deciding whether there is enough area of rock remaining in West Cumbria to make entering the siting process worthwhile involves making a judgement about both the amount of land and the geological suitability of that area. We gathered information on both of these issues.

How we developed our initial opinions on areas remaining in West Cumbria

Box 3: A selection of the information gathered in relation to potentially suitable areas remaining in West Cumbria

Information	Details	Supporting documents
BGS study	The BGS study showed how much of West Cumbria was not yet ruled out on basic geological criteria.	Document 116: BGS Report, October 2010
Geology seminars	We held two geology seminars, which included the results of the BGS study, detail on technical advances since the 1990s and (particularly in the second seminar) an opportunity to read and hear views from a number of experts about the suitability of West Cumbria’s geology for a repository.	Document 123: Report from first geology seminar, November 2010 Document 200: Report from second geology seminar, June 2011
Public and stakeholder input	The views of the public and stakeholders about the geological suitability of West Cumbria were heard during our second round of engagement, and again at the second geology seminar.	Document 157.1: PSE2 Report

Information	Details	Supporting documents
Hearing a range of views	We heard the views of a variety of professional geologists, and of CoRWM, on the geological suitability of West Cumbria.	See Box 4 below
NDA reports	We received two reports from the NDA outlining relevant geological developments since the 1990s and why it believes the prospects of finding a site for a repository in West Cumbria are sufficiently good to justify proceeding further.	Document 143: NDA briefing on geology, November 2010 Document 167: Further information on geology from the NDA, June 2011
Review by independent advisor	The second (more up to date) NDA report was reviewed by Dr Jeremy Dearlove, our independent advisor on geology.	Document 194: Review of the NDA's information on geology by Dr Dearlove, May 2011

Is there enough area of land not ruled out by the BGS study? Out of the 2,536km² studied by the BGS, about 646km² (25.5%) was excluded as clearly unsuitable. This leaves up to 1,890km² (74.5%) potentially available for further investigation.

The BGS report also indicated that an additional volume of rock would need to be excluded because of the presence of aquifers (rocks containing large volumes of water), as these could potentially be used as water sources in the future. The NDA has said that it is not possible to provide an estimate of this volume at this stage in the MRWS process.

The underground facilities of a repository could range from 6km² to 25km² depending on what goes into it and the type of rock it is placed in. This is a national estimate based on a range of different rock types, some of which are not present in West Cumbria.

Just in terms of square metres it is our opinion that there is a sufficient area remaining for investigation, should West Cumbria enter the siting process without commitment to having a repository.

We also note that the underground and surface facilities could be separated in some circumstances by a horizontal distance of up to 10km, possibly further. This could mean that much of the area excluded for the underground facilities by the BGS study could potentially still be suitable for the surface facilities – see Chapter 10 on the Siting Process for more on this topic.

Is the geology of that remaining area suitable for a repository? Whether West Cumbria is, or could be, geologically suitable for hosting a repository has been the subject of considerable public debate. We have tried to facilitate this debate by holding two seminars and publishing differing views in our newsletters. The issue has been well debated, with strong views involved. We have heard and considered a range of concerns, responses and evidence on this issue – see **Box 4** below.

Box 4: A range of views on the geological suitability of West Cumbria for a repository

Source	Summary of views	Supporting documents
<p>Public and stakeholder concerns</p>	<p>Concerns which are specific to geological suitability:</p> <ul style="list-style-type: none"> ◆ Professor David Smythe has submitted a number of papers to the Partnership supporting his view that there is currently enough information available to rule out the whole of West Cumbria on geological grounds. ◆ Concerns that the outcome of the Nirex Planning Inquiry implies that some, perhaps all, of the geology of West Cumbria is unsuitable are reflected by some members of the public. There is also uncertainty over how this MRWS process is different from that followed by Nirex in the 1990s. ◆ There are concerns that we do not yet know enough to say definitively that the geology is suitable or unsuitable. 	<p>Document 61: PSE1 Report</p> <p>Document 157.1: PSE2 Report</p> <p>Document h: Analysis of the Nirex Inquiry by Professor Smythe, February 2011</p> <p>Document j: Response from Professor Smythe to CoRWM (Document 162), April 2011</p> <p>Document m: Response from Professor Smythe to Dr Dearlove (Document 194), September 2011</p> <p>Document n: Letter from Professor Smythe regarding unsuitability of Eskdale granite, October 2011</p>
<p>CoRWM</p>	<p>CoRWM state that in their view “there is presently no credible scientific case to support the contention that all of West Cumbria is geologically unsuitable”.</p>	<p>Document 162: CoRWM’s view on the geological suitability of West Cumbria, February 2011</p>

Source	Summary of views	Supporting documents
<p>Nirex Inquiry Inspector</p>	<p>CoRWM also say that the Nirex Inquiry Inspector did not draw conclusions about the suitability of West Cumbria as a whole. This view is confirmed in the note of the meeting between the NDA and the Nirex Inquiry Inspector dated 12 March 2011.</p>	<p>Document 193: File note from meeting between the NDA & the Planning Inspector for the Nirex Inquiry, 12 March 2011</p>
<p>Independent geologist advising the Partnership</p>	<p>Dr Jeremy Dearlove was asked by the Partnership to review the arguments. Dr Dearlove says: "I do not agree that there is enough geological information available to rule all of West Cumbria out at this stage of the process. I feel it is more Professor Smythe's personal opinion, and not the opinion of the wider geological community, that... the area should not be considered potentially suitable".</p>	<p>Document 175: Dr Dearlove's review of Professor Smythe's views on geology (Documents h and j), May 2011</p> <p>Document 194: Dr Dearlove's review of the NDA's information on geology (Document 167), May 2011</p> <p>Document 237: Dr Dearlove's review of Professor Smythe's further views on geology (Documents m & n), October 2011</p>
<p>The NDA</p>	<p>The NDA provided a more detailed briefing to clarify why it believes the prospects of finding a site for a repository in West Cumbria are good enough to justify proceeding further.</p>	<p>Document 167: Further information on geology from the NDA, June 2011</p>

Given the range of views and evidence that have been heard on this issue, it appears to us that the argument that all of West Cumbria should be excluded now on grounds of unsuitability is not generally accepted within the professional geological community.

To accept the argument that the whole of West Cumbria is definitely not suitable would require detailed geological evidence from all parts of the area to demonstrate that there is no prospect of finding a suitable area of host rock. This level of evidence is not available, although we recognise that some people believe it can be inferred from current information.

There is an absence of undisputed detailed geological evidence clearly ruling out all parts of West Cumbria. This has led us to the opinion that the land available for investigation after the BGS study should be viewed, at the present stage, as possibly suitable and therefore worthy of further investigation (acknowledging that a right of withdrawal exists).

Uncertainties and recommendations for future work

We have learnt from our discussions with a wide range of stakeholders that there is uncertainty about the potential suitability of West Cumbria's geology. Our work shows us that, even if West Cumbria enters the siting process, geological conditions may not provide a suitable site for a repository that meets regulatory requirements. We highlight this as an uncertainty at this early stage, although we also acknowledge there is a range of views about the likelihood of this happening. We emphasise that the process must stop if the geology is found to be unsuitable in the future.

Our initial opinions on 'areas remaining in West Cumbria'

We wanted to see whether there are 'sufficient areas remaining in West Cumbria after initial screening to make further progress worthwhile'.

Our initial opinions are:

- **Area of land.** We believe that the 1,890km² of land not ruled out as clearly unsuitable by the BGS provides a sufficient amount of land, in terms of area, available for investigation.
- **Suitability of geology.** We note that the suitability of that area for a repository has been challenged. However, the absence of clear, detailed evidence that demonstrates that all of West Cumbria should be ruled out has led us to the initial opinion that there is enough possibly suitable land to make further progress worthwhile. There are uncertainties about the suitability of West Cumbria's geology and the prospects of finding a site for a repository that meets regulatory requirements, that can only be resolved by further investigation.

4.5 Our initial opinions on geology

Criterion a) – Integrity of the BGS screening report

We wanted to be ‘confident in the integrity of the BGS screening work/report’.

Our initial opinions are:

- **BGS study.** We are confident in the integrity of the BGS screening report because it has been endorsed by two independent reviewers and there is no significant criticism of the study’s integrity from elsewhere.

Criterion b) – Areas remaining in West Cumbria

We wanted to see whether there are ‘sufficient areas remaining in West Cumbria after initial screening to make further progress worthwhile’.

Our initial opinions are:

- **Area of land.** We believe that the 1,890km² of land not ruled out as clearly unsuitable by the BGS provides a sufficient amount of land, in terms of area, available for investigation.
- **Suitability of geology.** We note that the suitability of that area for a repository has been challenged. However, the absence of clear, detailed evidence that demonstrates that all of West Cumbria should be ruled out has led us to the initial opinion that there is enough possibly suitable land to make further progress worthwhile. There are uncertainties about the suitability of West Cumbria’s geology and the prospects of finding a site for a repository that meets regulatory requirements that can only be resolved by further investigation.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 1.1 Do you agree with the Partnership’s initial opinions on **geology**?

Yes

No

Not Sure/Partly

Question 1.2 It would be helpful if you could set out your reasons. In particular:

- Please explain which parts you **agree** or **disagree** with and why.
- If you are not sure, what would help you make up your mind?

5. Safety, security, environment and planning

5.1 Context

Making sure that any repository would be safe, secure and environmentally sound is of the highest importance, and of particular concern to members of the public and stakeholders.

Safety can never be 100% guaranteed for any development in any industry, but mechanisms, checks and processes can be put in place to minimise the risk of anything going wrong. This is particularly important given the hazardous nature of the waste that would be contained within a repository.

Before the building of any repository, an assessment of the potential risks and impacts to the public, workforce and the environment would have to be undertaken. This would mainly be through the development of a '**safety case**', as well as through the statutory planning and permitting processes.

The regulators (see pages 12 & 13 in Chapter 3 for an outline of the different regulators involved) have an extremely important role in ensuring safety and security, and minimising environmental damage. In order to construct and operate any repository a developer (the people building the repository) would need to demonstrate that its safety cases meet regulatory requirements. The developer will also need to possess the necessary licences and permits which the regulators will issue if they accept the developer's safety cases. The regulators have the power to require improvements, deny permission to proceed, or to stop operations if they are not satisfied with respect to safety, security or environmental protection at any stage once permits have been granted.

Planning authorities (for example Cumbria County Council, the Lake District National Park Authority or the Borough Councils) are responsible for considering planning applications on a case-by-case basis, depending on the location and the nature of the planning application. See **Box 8** on page 40 for our understanding of how planning would work in a siting process, if it goes ahead.

Safety case:

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A structured argument or body of evidence that is intended to demonstrate that a system is safe. It also provides evidence to show **how** claims of safety are met.

5.2 What we are looking for

When setting our Work Programme we decided that we needed to consider two criteria about safety, security, environment and planning:

Criterion a) – Regulatory and planning processes

‘Satisfied that suitable regulatory and planning processes are in place or being developed to protect residents, workforce and the environment.’

Criterion b) – Safety

‘Satisfied that the NDA Radioactive Waste Management Directorate (RWMD) has suitable capability and processes in place to protect residents, workforce and the environment.’

5.3 What we have done in relation to regulatory and planning processes

What we wanted to see

We decided that in order to form an opinion on our regulatory and planning processes criterion we particularly wanted to see:

- ◆ **Regulatory bodies and processes.** Confidence that the necessary regulatory bodies and processes exist or are being developed.
- ◆ **Regulator communications.** Adequate communication links between regulators and the community are present and working.
- ◆ **Planning system.** In addition we wanted to understand the role of the planning system and clarify any particular issues, risks or uncertainties.

How we developed our initial opinions on regulatory bodies and processes

Box 5: A selection of the information gathered in relation to regulatory bodies and processes

Information	Details	Supporting documents
Impact assessments	To gain a broad understanding of the potential impacts of geological disposal we heard a presentation from the NDA which included information on the use of Strategic Environmental Assessments and Environmental Impact Assessments.	Document 27: Summary note from the NDA on the potential impacts of implementing geological disposal, October 2009
Regulator relationships	We heard from the regulators regarding their specific roles and responsibilities, how they co-ordinate their activities and how they interact with the NDA. We also learnt how the regulators would plan for extra capacity within the workforce and the need for new skills and capabilities in the future. (See Box 6 below for more on this.)	Document 47: Partnership meeting report, 13 January 2010 Document 36.1: Regulators' roles and processes in the implementation of MRWS, October 2009 & updated March 2011
Public and stakeholder input	One of the issues highlighted in our first round of public and stakeholder engagement (PSE1) was security. In response to this we asked for an update from the regulators on security processes that would apply to a repository.	Document 61: PSE1 Report Document 36.1: (see above)
Reorganised regulation	We received a Government announcement that the Office for Nuclear Regulation (ONR) had been created as a new independent statutory body to regulate nuclear safety and security, including for any potential repository.	www.hse.gov.uk/nuclear

Box 6: A summary of the information received on regulator relationships

The regulators gave us details on:

- How they would consider an application for a repository, bringing together consideration of land-use planning matters, nuclear site licensing and staged environmental regulation.
- How members of the wider community and local stakeholders can influence the regulatory process.
- Reassurance about the independence of the regulators.
- Arrangements for the regulation of the transport of radioactive materials.
- The regulators' ongoing role of scrutiny of the NDA.
- The regulators' work with the NDA's RWMD to support the RWMD in its task to become an 'implementing organisation' for geological disposal.

Regulator relationships. We have received several reports and presentations on the work of the regulatory bodies. Our current view is that there is an acceptable level of understanding of the roles and responsibilities of the various bodies and their joint working arrangements. A number of the main processes are, not surprisingly, 'work in progress' but they are being developed. There is evidence that positive changes are being made to the range, scope and structure of the bodies which are responsible for these issues, for example the development of the ONR.

We welcome the fact that the regulators are working together and engaging with the NDA on the implementation of geological disposal. The regulators are already providing the NDA with advice and scrutiny on matters of regulatory interest about a potential repository, and have developed a process to manage issues of regulatory concern arising from their scrutiny work. We believe there is clarity of roles and responsibilities across the regulators and they are functioning in a joined-up and coordinated fashion.

Regulating security. In response to public concerns we asked for an update from the regulators on security processes that would apply to a repository. If a facility is built, the regulators would need to be assured that security is dealt with via a 'Site Security Plan'. However, this would be many years away and could only be done if and when a site is identified.

How we developed our initial opinions on regulator communications

Box 7: The information gathered in relation to regulator communications

Information	Details	Supporting documents
<p>Regulator input</p>	<p>We heard from the Environment Agency about how they currently engage with communities, how they might engage in the future and how local residents and stakeholders can influence the regulatory process.</p>	<p>Document 130: Regulatory interfaces with the community, January 2011</p> <p>Document 36.1: Regulators' roles and processes in the implementation of MRWS, March 2011</p>

The presentation given to us by the Environment Agency (EA) highlighted to us the importance of engagement and consultation with the public on any permitting decisions. We understand that the EA can tailor its approach to consultation in response to local circumstances and link its activities with those of the other regulators. We also note a general willingness to engage and communicate if the process continues.

We have welcomed the fact that the regulators have been present at our meetings as observing members since May 2009, and have provided information and support when we have asked.

How we developed our initial opinions on the planning system

Box 8: A summary of the information gathered on the planning system

- ◆ If the process proceeds, an application for a repository is not likely to be made for around 15 years.
- ◆ We acknowledge that the law places responsibility on planning authorities to follow certain procedural rules when determining a planning application. We note that even though the local planning authorities would be working together with host communities and wider local interests as part of a future partnership, this does not diminish their responsibilities or restrict their discretion to determine planning applications according to these rules.
- ◆ The first time a planning application would occur is likely to be in around 5 to 6 years time for site investigation work such as boreholes. Such applications are most likely to be considered by Cumbria County Council, the Borough Councils or the Lake District National Park Authority as appropriate under current planning legislation (depending on the location). It is also possible that applications for some ancillary developments would also be considered by the Borough Councils or the Lake District National Park Authority.
- ◆ DECC says it is likely that in due course the development of a repository would be included in the scope of the **Infrastructure Planning Commission (IPC)**'s work (or its successor, the **Major Infrastructure Planning Unit (MIPU)**). This would mean that a planning application for a repository would be considered by the IPC or MIPU rather than the local planning authority. In this case, the local planning authority would submit its comments and views on the proposals as part of the development consent process, for consideration by the IPC or MIPU, who would then make a recommendation to the Secretary of State. However, if the scope of the IPC's work does not change to cover a repository, an application for a repository would be decided by Cumbria County Council or the Lake District National Park Authority, depending on the location.

Figure 10: Borehole drilling in Sweden (source: SKB/Alf Sevastik Kustbild)



Infrastructure Planning Commission (IPC):

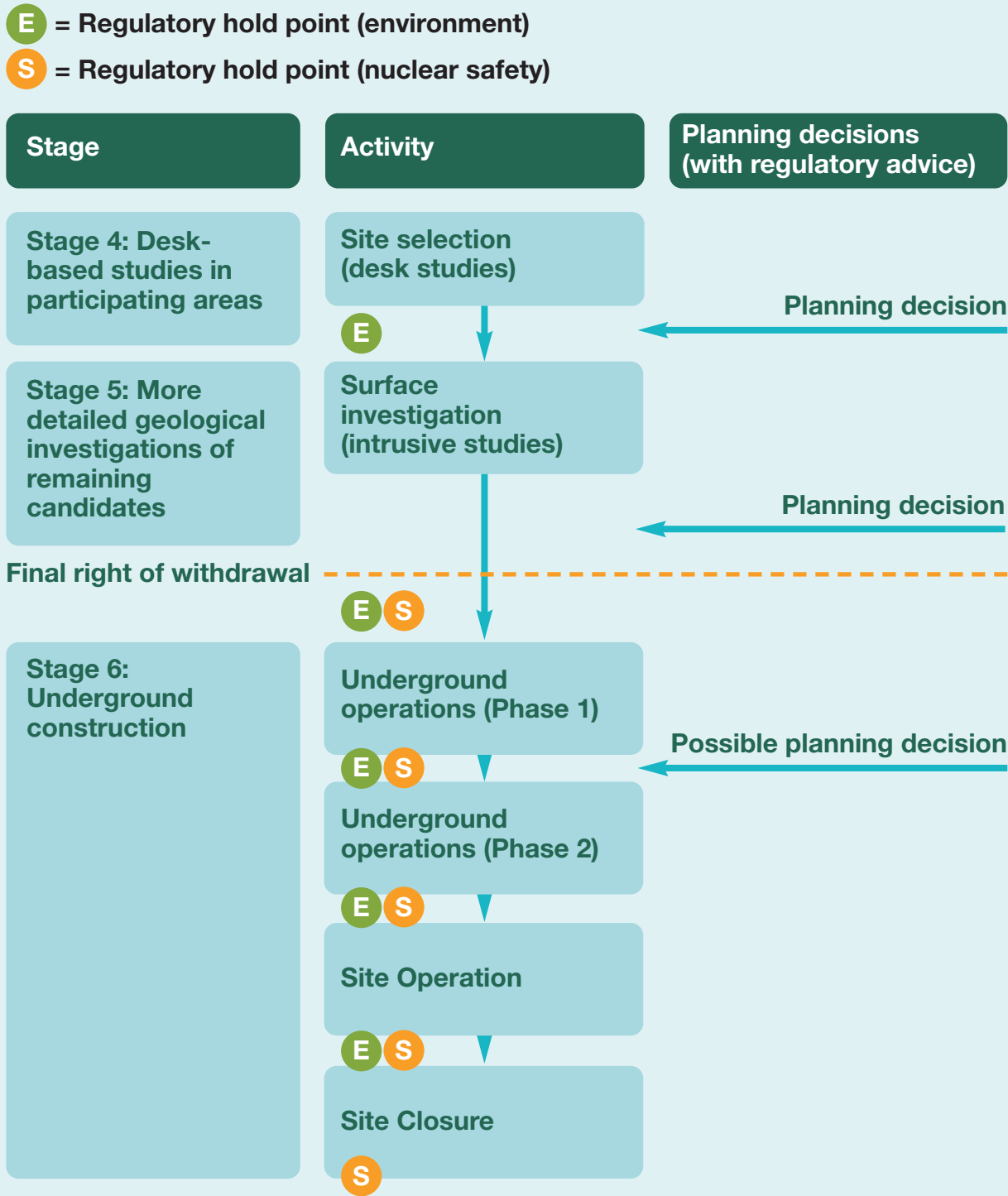
The independent body that examines applications for nationally significant infrastructure projects.

Major Infrastructure Planning Unit (MIPU):

The proposed new name for the body which will operate the development consent process for nationally significant infrastructure projects such as offshore wind farms and nuclear power stations. This replaces the IPC.

Based on what we have heard, we understand that the planning system would have a role to play during a number of important steps within the siting process (see Figure 11 on page 41).

Figure 11: The Partnership’s view on planning interfaces with repository stages, roles etc.



Under current planning arrangements we are clear as to how Cumbria County Council or the Lake District National Park Authority would consider an application for a repository depending on whether it was made inside or outside the National Park boundary.

We understand how a planning application for a repository would be handled as far as is possible at this stage, and that planning permission to build a repository would not happen if the decision-making bodies exercised their final right to withdraw from the process after surface-based investigations.

Uncertainties and recommendations for future work

Timescales and regulatory planning. Based on the current timeline the EA could start statutory regulation around 2017, whereas for the ONR this may not be until around 2025. The voluntarism and partnership aspects of the siting process make it challenging for the regulators to plan for. However, the long timescales and the regulators' early engagement with the NDA assists them in their planning. The regulators are also aware that they may need some additional skills or resources to support the regulation of a repository.

Planning application. We know that if the siting process were to proceed, the planning application for the actual construction of a repository would probably still be about 15 years away. There is therefore uncertainty around what planning process might be in place at that time and therefore what opportunities for community engagement there might be. However, legislation would be required in order to change the planning process. Partners and local stakeholders would be able to comment on new planning proposals as they are developed, and the right to withdraw from the process would also still exist.

National Park. We recognise that planning policies, relevant strategies and legislative frameworks relating to land use will need to be considered as an early step if the process moves forward. This may rule out certain scenarios, for example siting surface facilities within the National Park.

Our initial opinions on 'regulatory and planning processes'

We wanted to be 'satisfied that suitable regulatory and planning processes are in place or being developed to protect residents, workforce and the environment'.

Our initial opinions are:

- ◆ **Regulatory bodies and processes.** We are as confident as is possible at this stage that the necessary regulatory bodies exist and have, or are developing/modifying, processes by which they will consider proposals for a repository.
- ◆ **Regulator communications.** We are confident that the Environment Agency has adequately described its intentions regarding its approaches to community engagement both now and going forward to a potential siting partnership.
- ◆ **Planning system.** We understand how a planning application for a repository would be handled as far as is possible at this stage, and recognise that further scrutiny of the planning process would be required if the process proceeds, as much could change in the 15 years before an application could occur.

5.4 What we have done in relation to safety

What we wanted to see

We decided that in order to form an opinion on our safety criterion we particularly wanted to see:

- ◆ **Developing a safety case.** Acceptability of the NDA's process for making a safety case.
- ◆ **Research and development programme.** Acceptability of the NDA's research and development (R&D) programme.

How we developed our initial opinions on developing a safety case

Box 9: A selection of the information gathered in relation to the development of a safety case

Information	Details	Supporting documents
Review of safety case	<p>We received the NDA's introduction to its generic Disposal System Safety Case (DSSC) and an independent 'Peer Review Panel' report on the safety case.</p> <p>We received an update from the regulators on their interim review comments on the generic DSSC.</p>	<p>Document 160: Introduction to the NDA's generic DSSC, December 2010</p> <p>Document 161: Summary report on the peer review of the NDA's generic DSSC, January 2011</p> <p>Document 215: Partnership meeting report, 29 July 2011 (Appendix 5)</p>
Challenging the NDA	<p>We invited presentations on the Nuclear Waste Advisory Associates (NWAA) Issues Register and Greenpeace's 'Rock Solid?' report (see Box 10). We considered these alongside the regulators' joint regulatory issues resolution process, and the NDA's issues resolution process.</p>	<p>Document 165.1: Partnership meeting report, 14 April 2011</p>

Box 10: A summary of some of the information we have considered in relation to the safety case

Information	What is it?	What does it say?	References/ supporting documents
<p>Nuclear Waste Advisory Associates (NWAA) Issues register</p>	<p>A report on outstanding scientific and technical issues relating to the production of a robust safety case for the deep geological disposal of radioactive waste.</p>	<p>The Issues Register lists the issues which the NWAA considers need resolving if a robust safety case for deep geological disposal is to be developed. The issues are categorised under a number of headings, e.g. inventory, gases, site considerations, construction issues, the waste package and repository components, and several more.</p>	<p>Document f: Issues Register published by the NWAA, March 2010</p> <p>www.nuclearwasteadvisory.co.uk</p>
<p>'Rock Solid?' report</p>	<p>A scientific review of geological disposal of high-level radioactive waste commissioned by Greenpeace.</p>	<p>The report is based on a review of papers published in peer-reviewed scientific journals. It identifies a number of scenarios in which 'a significant release of radioactivity could occur, with serious implications for the health and safety of future generations'.</p> <p>The scenarios include consideration of things like the effects of intense heat generated by radioactive decay, build-up of gas pressure in the repository, and poorly understood chemical effects.</p>	<p>Document g: 'Rock Solid?', a report by Dr Helen Wallace for Greenpeace International, September 2010</p>

Information	What is it?	What does it say?	References/ supporting documents
Regulator comments	A note from the regulators commenting on the NWAA Issues Register and 'Rock Solid?', as well as outlining the 'joint regulatory issues resolution process'.	The document responds to some specific process concerns from the NWAA Issues Register. It outlines the production of an EA (soon to be joint regulators') report each year summarising the scrutiny of the NDA's work on geological disposal. It also summarises some of the steps in the joint regulatory issues resolution process, including: documenting and communicating issues, defining regulator expectations of the NDA in resolving issues, monitoring progress, and providing an audit trail towards the resolution of issues.	Document 154: The regulators' comments on the NWAA Issues Register and 'Rock Solid?', April 2011
NDA issues resolution process briefing note	A briefing note requested by the Partnership in particular with respect to how the NDA is responding to the NWAA Issues Register.	The note describes at a high level the process that the NDA plans to operate for managing issues from a range of sources internal and external to the NDA, including those raised by the NWAA. It provides an overview of the NDA's process for managing potential issues, including the identification, assessment, screening, evaluation and management of these issues. It also outlines regulatory and stakeholder interactions in relation to issues resolution.	Document 159: Briefing note on the NDA's issues process, April 2011

Peer review of safety case. Whilst the peer review panel commented that the generic Disposal System Safety Case (DSSC) itself was largely satisfactory, they criticised the peer review process and highlighted lessons for the NDA for the future. The NDA has agreed to take these lessons on board.

Regulators' review. The regulators have reviewed the generic DSSC. Their interim views are outlined in **Box 11** below.

Box 11: The regulators' interim views on the generic DSSC

The regulators have reviewed the generic DSSC under voluntary arrangements agreed for regulatory scrutiny of RWMD; it does not form the basis of any regulatory decision. Their interim views were that the generic DSSC:

- ◆ Shows that it is feasible that a safety case could be generated that would meet regulatory requirements, should a suitable site be identified.
- ◆ Has a broad structure which is satisfactory but needs more effective editorial control in future to improve clarity.
- ◆ Should in future describe how new information will be considered and combined with existing safety case knowledge.
- ◆ Is less successful in signposting its use in any future stages of MRWS.

The regulators' final views will be published in December 2011. The regulators have not changed their interim views in any substantial way.

External challenge. We invited presentations on the Nuclear Waste Advisory Associates (NWAA) Issues Register and Greenpeace's 'Rock Solid?' report, which we considered alongside the regulators' joint regulatory issues resolution process, and the NDA's issues resolution process.

Handling technical uncertainty. The NDA responded to the NWAA Issues Register, and this was also the subject of a meeting between the NDA, DECC, stakeholders and representatives of the Partnership. The NDA outlined plans to create an overarching issues register which is publicly available on the internet and lists all issues that have been raised by stakeholders or outlined in reports. It identifies key issues that would need to be resolved before a repository could be licensed to operate. This may require more research to be carried out, so we recognise the link between the issues register and the NDA's research & development (R&D) programme. The register also considers issues highlighted in the 'Rock Solid?' report published by Greenpeace. The NDA's initial issues register has been published and can be found in the appendices of the report at <http://www.nda.gov.uk/documents/upload/Geological-Disposal-RWMD-approach-to-issues-management-August-2011.pdf>.

Ongoing review and scrutiny. We note that the NDA's process for developing its generic DSSC is subject to a range of review and scrutiny processes. It has already undergone external peer review and will continue to be reviewed internally and by the regulators.

We support the development of a publicly accessible issues register. The NDA has also already started to establish an issues management process. It highlights how

Supporting documents

Documents 159:
Briefing note on the NDA's issues process, April 2011

potential issues will be identified, assessed and evaluated, as well as potential links or impacts on the R&D programme.

How we developed our initial opinions on the NDA's research and development (R&D) programme.

Box 12: A selection of the information gathered in relation to the NDA's R&D programme

Information	Details	Supporting documents
NDA R&D programme	In February 2011 the NDA published its R&D programme – it is available at: http://www.nda.gov.uk/documents/upload/Geological-Disposal-Research-and-Development-Programme-Overview-February-2011.pdf	See link on the left
Critical review of R&D programme	The Partnership requested and funded a critique by Professor Stuart Haszeldine (Edinburgh University). The NDA has subsequently responded to Professor Haszeldine's comments and has clarified issues relating to its R&D programme (see also Box 13 below).	<p>Document 146: Review of the NDA's R&D programme by Professor Haszeldine, March 2011</p> <p>Document 184: The NDA's response to Professor Haszeldine's review of its R&D programme, March 2011</p> <p>Document 185: Professor Haszeldine's response to the NDA, May 2011</p> <p>Document 217: Further information on R&D from the NDA, July 2011</p>
CoRWM and regulator review	CoRWM and the regulators also commented on the R&D programme.	Document 147: The regulators' view of the NDA's R&D programme, March 2011

Update from CoRWM. CoRWM acknowledged that a lot has happened since they issued their 2009 report and that the Government has responded to their recommendations and is acting on most of them. They have noted that the R&D agenda is given a lot of emphasis in current work and the topic is discussed in DECC's annual report. CoRWM is continuing to scrutinise the NDA's R&D programme, and, whilst it is recognised that many issues cannot be resolved at the moment, it is their impression that there has been considerable progress, and a realisation by all parties of the significance of R&D. The general feeling is, therefore, that R&D is being given far more strategic significance than when the issue of R&D was raised by CoRWM in 2009.

Update from the regulators. The regulators say that they will expect the NDA to use sound science and good engineering practice in developing any future safety case for geological disposal. The NDA will need to decide what R&D is required to support the safety case at any particular stage in developing a repository. The regulators will review the evolving R&D programme as part of their ongoing scrutiny of the NDA. The regulators are encouraging the NDA to publish as many aspects of its R&D as possible without compromising commercial and security requirements.

It is not the role of the regulators to undertake R&D to support safety case development. Regulators commission R&D to increase understanding of technical issues relevant to their roles, and use the output from R&D to inform their views and advice, and to aid decision making.

Responding to a critical review. The Partnership asked Professor Haszeldine to review the NDA's R&D programme. Whilst not a full list of the points he raised, some of his views included:

- The programme of R&D is comprehensive but complex with 203 research areas.
- More prioritisation between research areas would be helpful.
- Duration and cost information is not included.
- He observed that different people prioritise the research areas differently.
- Independent critique of future research is required, including funding of regulators and communities so that research is both scientific and balanced.

The NDA has responded to Professor Haszeldine's issues and has provided a number of related future actions with timescales for completion (see **Box 13** below).

Box 13: The NDA's actions in response to issues raised by Professor Haszeldine

'The actions that we propose, set out below, recognise the need for continued interaction with stakeholders within a framework of review and scrutiny of our programme by the regulators and Government.

1. We invite feedback from stakeholders on all our publications and we would welcome comments on our R&D programme document. (Ongoing action.)
2. If, through feedback, we find that there are areas where there is significant disagreement about the R&D needs or our assessment of the priority, we will discuss these with stakeholders through workshops or other mechanisms and explore the range of views and the reasons for them. (Ongoing action.)
3. We hold periodic meetings where we seek stakeholder input on our programme. One such is the workshop on the Current Status of Science and Technology Underpinning Geological Disposal of Higher Activity Wastes to be held at Loughborough University in October of this year. (Held during October 2011.)
4. We will record any changes to the scope or content of our R&D programme document through a series of addenda to the document. (First set will be added by March 2012.)
5. We have improved the way in which we procure our work from suppliers in order to give the technical specialists a greater involvement in shaping our forward programme. We call this 'solution-based' contracting. (Implemented from April 2011.)
6. In response to a number of comments received, we will improve access to our technical information by making more of our reports directly downloadable from the Bibliography. (This action will be progressed over the next year, but may take longer to complete in full.)
7. We are starting the process of development of the R&D programme for MRWS Stage 5. We will consider ways in which we can engage stakeholders on the overall approach to identifying and prioritising R&D needs. This could take the form of a series of technical workshops. We envisage that we would involve the Learned Societies in this process, acting as an independent voice to ensure that our approach is based on sound scientific processes for document development and peer review. (Outline plans for producing an R&D programme for MRWS Stage 5 for discussion will be produced by December 2011.)
8. From this year, we will publish the values of the R&D contracts we award. (A list will be produced during October 2011 and updated regularly. Information will also be available via the Government 'contracts finder'.)

9. We recognise the specific technical issues raised by Professor Haszeldine as what we call 'potential issues', which we will address using our issues management process. (Issues have already been added and will be considered by March 2012.)
10. As part of our issues management process, any potential issues will be evaluated to see whether there is an R&D need and then these will be prioritised and added to the R&D programme document as an addendum. (Issues have already been added and will be considered by March 2012.)
11. During MRWS Stage 5, we will develop plans for the underground research that will be required during Stage 6. These plans will include consideration of whether or not a stand-alone rock laboratory is required. (Action will be progressed during MRWS Stage 5.)

Our current view is that the NDA response provides sufficient clarity to the points raised, in particular around prioritisation, and how they will be tackled in the programme going forward, if it does go ahead.

Ongoing scrutiny. We recognise that the NDA's R&D programme would have to be subject to significant independent ongoing scrutiny by any future partnership, by the regulators and by CoRWM, including the use of expert review and independent specialists.

Uncertainties and recommendations for future work

Site-specific safety case. Detailed independent reviews of any site-specific safety case would be undertaken by the regulators, and we recommend that they should also be undertaken by a future partnership, if the process proceeds.

Scope and coverage of the NDA's R&D programme. We recognise that through the further development of the R&D programme, through stakeholder engagement and via input from the issues register, the scope and coverage of the programme will inevitably change.

Ongoing scrutiny. Further independent scrutiny would be required should the process move forward, and it would be necessary, for example, to see a clearer indication of which uncertainties might potentially represent 'show-stoppers' for the MRWS programme at some point in the future, as well as the size of each research task to enable a greater degree of transparency for community representatives.

We are aware that there is much more work to do in the area of R&D if the process moves forward, but our current view is that, given where we are in the MRWS process, this is hardly surprising. The NDA should consider the comments made by Professor Haszeldine when it next reviews its R&D programme.

Our initial opinions on 'safety'

We wanted to be 'satisfied that the NDA RWMD has suitable capability and processes in place to protect residents, workforce and the environment'.

Our initial opinions are:

- **Safety case.** Given all of the evidence we have heard on the processes and the various levels of scrutiny in place, and the NDA's development of an issues register, we believe that the NDA will have suitable capability and an acceptable process in place to develop site-specific safety cases. Of course, any site-specific safety cases would need further monitoring and independent reviews before they are deemed adequate by the regulators and other stakeholders.
- **R&D programme.** Based on the responses from the peer reviewers and the scrutiny process undertaken, we believe that the NDA's R&D programme contains the necessary areas of research in terms of content, and that there is further scope for the programme to change in response to stakeholder engagement and via input from the issues register. Given the NDA's response to the issues raised, we are confident – to the degree required at this stage – that the R&D programme is acceptable.

5.5 Our initial opinions on safety, security, environment and planning

Criterion a) – Regulatory and planning processes

We wanted to be ‘satisfied that suitable regulatory and planning processes are in place or being developed to protect residents, workforce and the environment’.

Our initial opinions are:

- ◆ **Regulatory bodies and processes.** We are as confident as is possible at this stage that the necessary regulatory bodies exist and have, or are developing/modifying, processes by which they will consider proposals for a repository.
- ◆ **Regulator communications.** We are confident that the Environment Agency has adequately described its intentions regarding its approaches to community engagement both now and going forward to a potential siting partnership.
- ◆ **Planning system.** We understand how a planning application for a repository would be handled as far as is possible at this stage, and recognise that further scrutiny of the planning process would be required if the process proceeds, as much could change in the 15 years before an application could occur.

Criterion b) – Safety

We wanted to be ‘satisfied that the NDA RWMD has suitable capability and processes in place to protect residents, workforce and the environment’.

Our initial opinions are:

- ◆ **Safety case.** Given all of the evidence we have heard on the processes and the various levels of scrutiny in place, and the NDA’s development of an issues register, we believe that the NDA will have suitable capability and an acceptable process in place to develop site-specific safety cases. Of course, any site-specific safety cases would need further monitoring and independent reviews before they are deemed adequate by the regulators and other stakeholders.
- ◆ **R&D programme.** Based on the responses from the peer reviewers and the scrutiny process undertaken, we believe that the NDA’s R&D programme contains the necessary areas of research in terms of content, and that there is further scope for the programme to change in response to stakeholder engagement and via input from the issues register. Given the NDA’s response to the issues raised, we are confident – to the degree required at this stage – that the R&D programme is acceptable.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 2.1 Do you agree with the Partnership's initial opinions on **safety, security, environment and planning**?

Yes

No

Not Sure/Partly

Question 2.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

6. Impacts of a repository in West Cumbria

6.1 Context

If a repository were to be sited in West Cumbria it could lead to a number of different negative and positive impacts for the community, the economy and the environment. These might include the effects of construction such as noise and dust; whether there would be any impact on health; changes in investment in the area, employment and population; traffic impacts; and possible effects on the visual or physical environment and on tourism. These impacts, both positive and negative, would need weighing up against the impacts of the waste remaining in its current form and above-ground storage arrangements at Sellafield and elsewhere in the country.

6.2 What we are looking for

When setting our Work Programme we decided that we needed to consider three criteria about impacts of a repository in West Cumbria:

Criterion a) – Direct impacts

‘Whether the Partnership is confident that appropriate possibilities exist to assess and manage environmental, social and economic impacts appropriately if they occur.’

Criterion b) – Long-term direction

‘Whether the Partnership is confident that the possibility of a repository fits appropriately with the overall direction of the relevant community/ies.’

Criterion c) – Economic sustainability

‘Whether the Partnership is confident that accepting a repository at some point in the future, and committing the host area to a nuclear future for many generations to come, is economically advantageous and will contribute to economic sustainability.’

6.3 What we have done in relation to direct impacts

What we wanted to see

We decided that in order to form an opinion on our direct impacts criterion we particularly wanted to see:

- ◆ An acceptable process in place to assess any negative impacts and mitigate them.

How we developed our initial opinions on direct impacts

Box 14: A selection of the information gathered in relation to direct impacts

Information	Details	Supporting documents
NDA presentation on generic impacts	A paper and presentation from the NDA covering potential generic impacts of a repository.	Document 27: NDA paper on the generic impacts of a GDF, October 2009
NDA paper on assessment of impacts in Stage 4	A briefing note from the NDA on how impacts would be assessed in Stage 4 of the MRWS process.	Document 219: Briefing note on environmental assessments in Stage 4 of the MRWS Process, August 2011
NDA briefing on transport impacts	A review of transport infrastructure requirements in response to concerns from our first round of public and stakeholder engagement (PSE1).	Document 178: Letter from the NDA re transport movements, May 2011
Public and stakeholder input	Input from public and stakeholders on impacts of concern.	Document 61: PSE1 Report Document 157.1: PSE2 Report
Perceptions research	This was qualitative research that we commissioned to help us understand the potential impacts on perceptions of West Cumbria and other parts of the county, should a repository be sited in West Cumbria. The research looked at the perceptions held by current and prospective residents, visitors, businesses and potential investors.	Document 165.1: Partnership meeting report, 14 April 2011 Document 163: Partnership report on the impacts of a GDF, July 2011 Document 168: Report from research into community, visitor and business perceptions of the impacts of a GDF, April 2011

Public and stakeholder concerns. The response to PSE2 showed that by far the biggest concerns for those who oppose or support a potential repository are safety, health and security, both in relation to a potential facility and the surrounding communities. The issues of safety and security are addressed in Chapter 5. Other concerns include the impact on tourism, the environment and stresses on infrastructure. There was uncertainty over what kind of economic impact a repository would bring, including hopes of a positive impact due to job creation and fears of a negative impact due to damage to the tourist industry.

Perceptions research. The perceptions research that we commissioned identified visitor concerns about environmental and health impacts. Within the West Cumbrian urban community and business community on the whole, the perception appears positive, but less so in the rural community where there were concerns about landscape impacts as well as land and property prices. The research showed that a repository would be expected (by those asked in the research) to bring investment to road infrastructure and have a positive impact on employment, which could help retain young people in West Cumbria and reduce the numbers moving out of the area.

Schedule of Impacts. Following the paper and presentation from the NDA at the October 2009 Partnership meeting, and taking account of public and stakeholder concerns, we developed a **Schedule of Impacts**, which is a list of the key impacts we felt needed to be addressed in more detail.

Many of these impacts are considered in the NDA's early generic impacts assessment. The NDA says that if the process continues, all of the issues would be addressed initially by a **Strategic Environmental Assessment (SEA)** and later **Environmental Impact Assessments (EIAs)**. At each stage the assessment work would become more detailed and there would be less uncertainty associated with its findings.

Schedule of Impacts:



A table drawn up by the Partnership that identifies specific impacts of a potential repository and when the developer (the NDA) will assess them. The purpose of the table is to satisfy the Partnership that the NDA a) recognises all the important impacts and b) has plans in place to fully assess them before development.

Supporting documents

Document 163 - Appendix A: [Schedule of Impacts to be assessed](#)

Strategic Environmental Assessment (SEA):



A system of incorporating environmental considerations into policies, plans, and programmes, by assessing their potential social, economic and environmental impacts.

Environmental Impact Assessment (EIA):



An assessment of the possible positive or negative impacts that a proposed project may have on the environment, together consisting of the natural, social and economic aspects.

Our Schedule of Impacts lists a number of direct impacts that we think need to be addressed, including impacts on the environment, health and communities.

Box 15: The impacts listed in the Partnership’s Schedule of Impacts (see Box 16 for an example of how each of these impacts is looked at in more detail)

- ◆ Air quality
- ◆ Biodiversity and ecosystem services
- ◆ Climate change (greenhouse gas emissions)
- ◆ Communities: population, employment and viability
- ◆ Communities: supporting infrastructure
- ◆ Human health and well-being
- ◆ Cultural heritage
- ◆ Landscape
- ◆ Soils, geology and land use
- ◆ Water: hydrology (water sources) and geomorphology (underground structures)
- ◆ Water: water quality (including surface, coastal and marine)
- ◆ Water: supply and demand
- ◆ Water: groundwater quality and flow
- ◆ Flood risk

For each impact a number of questions are answered along with any additional comments – this all contributes to the level of confidence the Partnership has in whether or not key impacts will be assessed by the NDA in a timely and effective manner. An example of this is shown in **Box 16**.

Box 16: Example section from the Partnership's Schedule of Impacts (N.B. the box below mentions Decision to Participate or DtP – this is another way of saying 'decision to enter the siting process')

Impact	Assessable prior to Decision to Participate (DtP)?	Confident can be answered later?	Covered satisfactorily in NDA Generic Assessments, or commitment to address in SEA and EIA?	Further assessment likely to be necessary or desirable prior to DtP?	Assessment available from other source?	Comments
<p>Human health and well-being:</p> <ul style="list-style-type: none"> To avoid adverse impacts on physical and mental health. To avoid the loss of access and recreational opportunities. 	Yes – at a generic level	Yes	Yes	No	N/A	<p>Will be assessed as part of the SEA during MRWS Stage 4 and as part of the EIAs for surface-based investigation and underground operations during MRWS Stages 5 and 6.</p> <p>NDA RWMD's SEA and EIA work will include an integrated Health Impact Assessment (HIA).</p> <p>Identified effects will be assessed by regulators at the planning and authorisation stages.</p>
<p>Guide Questions:</p> <ul style="list-style-type: none"> Will it adversely affect the health of local communities through accidental radioactive discharges or exposure to radiation? Will the storage or disposal of radioactive waste result in adverse physical and mental health effects for local communities? 	Yes – at a generic level	Yes	Yes	No	N/A	<p>See comment on guide questions under Air Quality.</p> <p>Health clearly addressed as part of SEA process; also note HIA will be prepared and integrated.</p>
	In relation to physical effects yes – at a generic level	Yes	Yes	No	N/A	

Uncertainties and recommendations for future work

Property value protection. We commissioned a briefing on how property values can be affected by large infrastructure projects and how they can be protected via schemes called '**property value protection' (PVP) plans**. These are schemes underwritten by the Government whereby homeowners are recompensed if there is a demonstrable drop in the value of their property when they sell it. International experience suggests that these schemes can provide reassurance and confidence to a community. Such PVP schemes are usually only developed when a specific site is found, so that geographic boundaries can be drawn, and clear rules for applying for compensation can be agreed. We are, of course, not at this stage yet. However, any future partnership should consider if, when and how to develop a PVP plan with the Government.

Brand protection. We have recently commissioned a new piece of work to develop a potential marketing strategy to offset any negative reputational impacts that the siting process may have across Cumbria. Such impacts could include: reduced visitor numbers, impacts on food-based industries including farming, and impacts on any business that relies on association with the Lake District or the Cumbrian brand. This work will allow us to properly understand what the reputational impacts might be of site investigations and how much offsetting these impacts might cost. We will also be seeking confirmation from the Government that they would discuss how these could be offset including any financial aid needed. The outcomes will be published before we conclude our work and report to the Councils.

Jobs and skills. The NDA has stated that, legally, jobs cannot be set aside just for local people. As a result, it recognises that there will be a requirement for pre-development investment in local skills training if the siting process starts. This will be essential if the West Cumbria workforce is to be well equipped to compete for jobs arising from any future repository construction and operation.

Spoil. Considerable amounts of spoil would be generated by a repository, roughly equivalent to that excavated for the Channel Tunnel. Illustrative designs published by the NDA assume that much or all of this spoil would be kept on site by building embankments 12m high. Where possible, this spoil would be used as backfill in the repository or removed from site for resale as aggregate. Further information on this is available in the NDA's Generic Environmental and Sustainability Report which can be found at <http://www.nda.gov.uk/documents/loader.cfm?url=/commonsport/security/getfile.cfm&pageid=46357>.

Supporting documents

Document 231: Information on property value protection plans from Galson Sciences, October 2011

Property value protection plans (PVPs).

Schemes underwritten by the Government whereby homeowners are recompensed if there is a demonstrable drop in the value of their property when they sell it.

Supporting documents

Document o: Input from Professor David Smythe on spoil, October 2011

Document 234: Response from the NDA regarding spoil, October 2011

However, we are aware that the specific site location has a significant influence on how much spoil there is, whether it can be used as backfill, and whether it can be sold as aggregate or not. This is therefore a key area of exploration and understanding for any future partnership, if and when specific sites are identified.

Our initial opinions on 'direct impacts'

We wanted to be 'confident that appropriate possibilities exist to assess and manage environmental, social and economic impacts appropriately if they occur'.

Our initial opinions are:

- ◆ We have received a good deal of information on the generic impacts, both positive and negative, of developing a repository, from the NDA, through public and stakeholder engagement, and from the commissioned perceptions research. For most of the impacts identified, our initial opinion at this stage is that an acceptable process can be put in place during the next stage of the MRWS process to assess and mitigate any negative impacts. However, the research and strategy to protect the brand and reputation of the area is not yet complete and will be considered before forming our final opinions and reporting to the Councils.

6.4 What we have done in relation to long-term direction and economic sustainability

(We have combined these criteria in this section due to their strong relation to each other and the similarity of information gathered in relation to each one.)

What we wanted to see

We decided that in order to form an opinion on our long-term direction and economic sustainability criteria we particularly wanted to see:

- ◆ **Long-term direction.** Support for the possibility of a repository in relation to other documented long-term priorities.
- ◆ **Economic sustainability.** Sufficient prospect of the development of other job-creating investments complementary to a repository that will provide sustainable employment in the long term.

How we developed our initial opinions on long-term direction and economic sustainability

Box 17: A summary of the information gathered in relation to long-term direction and economic sustainability

Information	Details	Supporting documents
Vision for West Cumbria	A presentation about the current economic vision for West Cumbria (see also Box 18 below).	Document 150.2: Partnership meeting report, 3 March 2011
NDA presentation on employment and skills	A presentation and paper from the NDA on employment and skills required for the development of a repository.	Document 179: A report by the NDA on manpower and skills requirements for a GDF, May 2011 Document 176: Partnership meeting report, 24 May 2011
Public and stakeholder input	Input from the public and stakeholders on issues of concern.	Document 61: PSE1 Report Document 157.1: PSE2 Report
Perceptions research	(See Box 14 above on page 55)	Document 168: Report from research into perceptions of the impacts of a GDF, April 2011

Box 18: A summary of the presentation on the economic vision for West Cumbria

At the March 2011 Partnership meeting, a Partnership member speaking on behalf of the principal authorities (Allerdale Borough, Copeland Borough, and Cumbria County Councils) and Britain's Energy Coast, gave a presentation to the Partnership on 'The Vision for West Cumbria'. Some of the key points from the presentation included:

- ◆ West Cumbria has had nuclear operations for over 50 years and can now be said to have a 'nuclear dependence' – for example 40% of local suppliers depend on Sellafield for 50% of their business.
- ◆ The West Cumbria Strategic Masterplan was produced in 2006/7, followed by the Britain's Energy Coast brand and programme. This was against a backdrop of predicted job losses from 2011/12 onwards due to an increased focus on decommissioning nuclear facilities.
- ◆ The Energy Coast Masterplan includes the following aspiration:
By 2027 West Cumbria will be a confident place that prides itself on its strong economy providing opportunities for all and offering a lifestyle of choice.
It will:
 - Be globally recognised as a leading nuclear, environment and related technology business cluster.
 - Have a strong diversified economy.
 - Project a positive image to the world.
 - Provide opportunities to the communities.
- ◆ West Cumbria has a range of current and future economic initiatives with a vision focused on working towards a diverse and sustainable economic future.

Public and stakeholder concerns. Responses to our first two rounds of public and stakeholder engagement have shown that some people are concerned about an increased reliance on the nuclear industry and a weakened tourism industry, should a repository ultimately be built in West Cumbria.

Perceptions research. The perceptions research identified a concern about the impacts on Cumbria's visitor economy. It also reflected a concern that a prosperous 'nuclear driven' economy could hamper future development of tourism across Cumbria and a concern that any investment would be 'channelled away' from local people who might not benefit from the building of a repository. Concerns such as these are being explored further by the work on brand protection (see above).

Compatibility with existing policies and plans. Existing policies and development plans suggest that the presence of a repository is broadly compatible with the economic aspirations of West Cumbria as presented to the Partnership. However, there is some concern within the Partnership that, although current policies support the nuclear industry, they also support the diversification away from nuclear in the longer term. We also recognise that current planning policies would rule out certain scenarios such as surface facilities within the National Park boundary. The impact on rural and urban areas will be different, and policies for the affected areas will need to be kept under review.

Employment. According to the NDA, a facility would create direct employment of an average of 550 jobs over 140 years, with up to 1000 people being employed during construction and early facility operation. Indirect employment would also be created. Government figures suggest that between 1 and 1.5 extra jobs would be created for each repository job, though figures from the United States suggest more than this.

Link to Community Benefits Principles. Our Community Benefits Principles (see Chapter 7) include the need for long-term support that makes a difference and which has the potential to transform the economic and social well-being of West Cumbria.

Uncertainties and recommendations for future work

Future economic development. Concerns remain within the Partnership over job creation and diversification of the local economy away from the nuclear industry in the future. We would suggest that, if decisions are taken to enter the siting process, then a future partnership should consider undertaking a longer-term visioning exercise over at least a 20-50 year horizon to understand the economic implications more clearly. Such a visioning exercise should cover both the urban and rural economy, as far as these can ever be separated and clearly defined.

Our initial opinions on ‘long-term direction’

We wanted to be ‘confident that the possibility of a repository fits appropriately with the overall direction of the relevant community/ies’.

Our initial opinions are:

- The development of a repository appears broadly compatible with the economic aspirations of West Cumbria, although it is recognised within the Partnership that the long-term implications for the urban and rural economy will need to be better understood and properly considered if West Cumbria enters the siting process. We note, however, that we have yet to consider the results of our brand protection work.

Our initial opinions on ‘economic sustainability’

We wanted to be ‘confident that accepting a repository at some point in the future, and committing the host area to a nuclear future for many generations to come, is economically advantageous and will contribute to economic sustainability’.

Our initial opinions are:

- At this time there appears to be enough of a prospect of new job-creating opportunities in West Cumbria to move into the next stage of the MRWS process, but more substantial evidence would be needed to move beyond it. The Community Benefits Principles (see Chapter 7) provide the basis for future discussions between community representatives and the Government about how long-term sustainable employment and appropriate diversification could be achieved.

6.5 Our initial opinions on the impacts of a repository in West Cumbria

Criterion a) – Direct impacts

We wanted to be ‘confident that appropriate possibilities exist to assess and manage environmental, social and economic impacts appropriately if they occur’.

Our initial opinions are:

- We have received a good deal of information on the generic impacts, both positive and negative, of developing a repository from the NDA, through public and stakeholder engagement, and commissioned perceptions research. For most of the impacts identified, our initial opinion at this stage is that an acceptable process can be put in place during the next stage of the MRWS process to assess and mitigate any negative impacts. However, the research and strategy to protect the brand and reputation of the area is not yet complete and will be considered before forming our final opinions and reporting to the Councils.

Criterion b) – Long-term direction

We wanted to be ‘confident that the possibility of a repository fits appropriately with the overall direction of the relevant community/ies’.

Our initial opinions are:

- The development of a repository appears broadly compatible with the economic aspirations of West Cumbria, although it is recognised within the Partnership that the long-term implications for the urban and rural economy will need to be better understood and properly considered if West Cumbria enters the siting process. We note, however, that we have yet to consider the results of our brand protection work.

Criterion c) – Economic sustainability

We wanted to be ‘confident that accepting a repository at some point in the future, and committing the host area to a nuclear future for many generations to come, is economically advantageous and will contribute to economic sustainability’.

Our initial opinions are:

- At this time there appears to be enough of a prospect of new job-creating opportunities in West Cumbria to move into the next stage of the MRWS process, but more substantial evidence would be needed to move beyond it. The Community Benefits Principles (see Chapter 7) provide the basis for future discussions between community representatives and the Government about how long-term sustainable employment and appropriate diversification could be achieved.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 3.1 Do you agree with the Partnership's initial opinions on the **impacts, both positive and negative, of a repository in West Cumbria?**

Yes

No

Not Sure/Partly

Question 3.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

7. A community benefits package

7.1 Context

The Government has said that any area in which a geological disposal facility is sited would expect some kind of **community benefits package**. Exactly what this package might be and when it might happen cannot be decided yet. However, we would expect it to be a substantial long-term investment in infrastructure, services or skills provided by the Government that benefits the whole community.

Community benefits package:

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A set of benefits provided by the Government to an area in which a repository is sited, including those over and above any direct benefits to the area from the construction and operation of a repository.

7.2 What we are looking for

When setting our Work Programme we decided that we needed to consider one criterion about a community benefits package:

Criterion – A community benefits package

‘Whether the Partnership is confident that an appropriate community benefits package can be developed.’

7.3 What we have done in relation to a community benefits package

What we wanted to see

We decided that in order to form an opinion on our community benefits criterion we particularly wanted to see an acceptable process in place to secure **additional** benefits:

- ◆ Beyond those which derive directly from the construction and operation of the facility such as the jobs at the facility, or roads constructed to service the facility directly.
- ◆ In addition to those which the community would normally expect so that other funding is not displaced.

How we developed our initial opinions on a community benefits package

Box 19: A selection of the information gathered in relation to a community benefits package

Information	Details	Supporting documents
DECC and NDA presentations	Presentations from DECC to outline the Government's view on community benefits, and from the NDA to outline what has happened elsewhere in the world.	Document 20: Partnership meeting report, 4 September 2009
Public and stakeholder input	Feedback from the public and stakeholders on the issue of community benefits.	Document 61: PSE1 Report Document 157.1: PSE2 Report
International experience	Gathering of independent information on UK and international experience of community benefits.	Document 31: Briefing note from the NDA on international benefits packages, October 2009 Document 140: Review of international experience of benefits packages by Galson Sciences, October 2010 Document 156: Report from a 'virtual' visit to the Waste Isolation Pilot Plant in the USA, March 2011

Box 20: Examples of community benefits in other countries

These have included things like cash payments to the area, lower taxes and extra facilities. For example:

- In Sweden £130 million is being invested into regional projects in the communities that volunteered to have the repository, in various ways and only when milestones are met.
- In South Korea a community was given funds and a new science park when they agreed to have a low level waste repository.
- In Spain and Italy, the benefits are linked to the amount of waste that goes into the facility.

Responding to public and stakeholder concerns. Feedback from our previous public and stakeholder engagement showed that many people feel community benefits are expected or necessary, some feel they are a bribe and a few feel they would not be enough to outweigh the negative impacts of a repository. Many people consider health and safety to be more important than community benefits.

It seems that people generally want community benefits to be agreed in advance and at least in part received before construction starts (although there were concerns that this should not be too early as this could make the construction a 'done deal'). There was the suggestion that benefits should be allocated according to how close people were to the repository, how much they needed the benefits, and encouraging sustainability of benefits. Members of the public made various suggestions for specific benefits including physical infrastructure, jobs, skills development and training.

We have noted concerns about the ethics of community benefits (bribe or rightful reward?). However we take the view as a Partnership that community benefits defined in this context are a reasonable opportunity, as long as clear and appropriate principles are established to guide negotiations and the distribution of benefits.

Developing our Community Benefits Principles. We have taken on board concerns from the public, including a perceived lack of trust in central Government, in developing our **Community Benefits Principles**. These are wide in scope and ambition for Cumbria as a whole, and West Cumbria in particular. The principles stress the expectation of additional benefits in recognition of the national service that a repository would provide to the whole country. The Government has agreed these principles as a basis for negotiation in the next stage of the process.

We also recognise that the term ‘community’ has to be considered in its broadest sense when considering community benefits, including potentially more than one geographical community, communities of interest such as National Park users, and communities over time (future generations).

Community Benefits Principles:



A set of principles developed by the Partnership by which community benefits would be discussed, agreed and potentially administered, if the siting process begins.

Supporting documents

Document 227: DECC’s response to the Partnership’s Community Benefits Principles, September 2011

Box 21: The Partnership’s Community Benefits Principles

Principle 1 – Overall: International best practice shows that community benefits are commonly used to ensure a positive contribution to the well-being of host and other affected communities, and are therefore worthy of consideration.

Principle 2 – Timescale: Any benefits must deliver both short and long-term community well-being.

Principle 3 – Making a Difference: Benefits must put the area in a better position, both economically and socially, than if no repository were to be developed.

Principle 4 – Additionality: Benefits must be additional to existing and planned investments, rather than replacing them. Other government funds or opportunities must not be displaced, and the approach must be at no cost to the community. Benefits must also be in addition to the investment that will be necessary to create a repository and its associated facilities.

Principle 5 – Impact Mitigation: Preference should be given to mitigating rather than compensating for impacts, recognising the long timescales over which impacts could potentially occur. Reasonable steps should be taken to mitigate and/or compensate for any impacts arising from the siting process itself, as well as from hosting a potential facility.

Principle 6 – Scale: The scale of any benefits must have the potential to transform the economic and social well-being of West Cumbria (taking into account best practice from other countries).

Principle 7 – Defining Scale: The magnitude of benefits must bear a clear relationship to the overall scale, nature and national significance of the development.

Principle 8 – Flexibility: There must be flexibility over how community benefits are distributed over time and between different communities.

Principle 9 – Distribution: Benefit distribution must be equitable, in terms of the scale of the impact on different stakeholders.

Principle 10 – Delivery: Effective mechanisms must be agreed between national and local government for the provision of benefits. These mechanisms must ensure value for money and incorporate the principles of fairness, equity and flexibility in relation to communities and local businesses.

Principle 11 – Longevity: Agreements on community benefits will need to endure over a substantial period of time because of the multi-generational nature of the proposed development. These agreements could take a range of forms including legislation.

Principle 12 – Community Confidence: In order to establish and maintain community confidence, any agreement on a community benefits package must provide a high level of reassurance that any agreed benefits will be delivered if a site is selected.

In a letter from DECC to the Partnership responding to these principles (see supporting document 227, Appendix 1) the following was stated: "I agree that all the 12 principles you have outlined form a basis for negotiations in a potential Stage 4 and this is consistent with the Managing Radioactive Waste Safely (MRWS) White Paper, which has cross departmental support. Obviously the detail underlying these high level principles will need to be explored in the next stages of engagement, though it's clear we will need to reach an agreement which is mutually satisfactory."

The Partnership acknowledges that the key questions on community benefits, such as ‘when exactly will they be decided?’, ‘who would influence them?’ and ‘what exactly are the benefits?’ can only be answered in detail if the next stage of investigations occur and discussions continue.

7.4 Our initial opinions on a community benefits package

Criterion – A community benefits package

We wanted to be ‘confident that an appropriate community benefits package can be developed’.

Our initial opinions are:

- ◆ We have agreed a set of principles with the Government as the basis for any future negotiations. However, we cannot be certain what specific package the Government might agree to this far in advance and, therefore, whether the amount and type of these benefits would match the expectations of local people. Any negotiations would therefore need to be carefully managed, and the agreements openly scrutinised, should West Cumbria enter the process without commitment.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 4.1 Do you agree with the Partnership’s initial opinions on **a community benefits package**?

Yes

No

Not Sure/Partly

Question 4.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

8. Design and engineering

8.1 Context

Knowing how a repository might be designed and engineered is important because:

- ◆ It helps people to visualise what a repository might look like and appreciate the scale of the project.
- ◆ It can affect, or be affected by, what goes into it (the inventory) and where it is located.
- ◆ The design affects the safety of the facility, especially given the long timescales of any repository development.

The Government has said that any repository would use a multi-barrier approach (see Chapter 4). This means the waste would have several layers of protection around it, with the ultimate barrier being the rock surrounding the facility.

A particular issue of concern to us at this early stage of the process is making sure that any designs being developed do not rule out the option to retrieve waste from the facility at a later date. This issue of whether retrievability should actually be a design requirement is one that would be dealt with much later in the process, taking account of the views of local communities.

8.2 What the Partnership is looking for

When setting our Work Programme we decided that we needed to consider one criterion about design and engineering:

Criterion – Design concepts

‘Whether the Partnership is satisfied that the design concepts being developed are appropriate at this stage.’

8.3 What we have done in relation to design and engineering

What we wanted to know

We decided that in order to form an opinion on our design and engineering criterion we needed to see:

- ◆ **Design concepts.** An acceptable design concept and flexibility thereof.
- ◆ **Retrievability.** Sufficient reassurance that retrievability is an option, and flexibility to confirm this later.

How we developed our initial opinions on design concepts

Box 22: A selection of the information gathered in relation to design concepts

Information	Details	Supporting documents
Generic design concept	In order to examine the generic design concept and how this would translate into a specific design depending on any location ultimately chosen and on the inventory, we received a presentation and papers from the NDA.	<p>Document 29: Briefing note from the NDA on how generic design concepts will evolve, October 2009</p> <p>Document 30: Clarifications from the NDA on generic design concepts, October 2009</p> <p>Document 20: Partnership meeting report, 4 September 2009</p>
MoDeRn project	We have been kept up to date by the NDA on progress of the European MoDeRn (Monitoring Developments for Safe Repository Operation and Staged Closure) project. This provides a reference framework for the development and possible implementation of monitoring activities during relevant phases of the radioactive waste disposal process.	<p>Document 203: Briefing note from the NDA on the MoDeRn Project, June 2011</p>

Presentations about the generic design concept showed us that design and engineering choices are site specific as they depend on the eventual location of a repository. Actual design must be tailored to the geography and specific geological structure at the site in question.

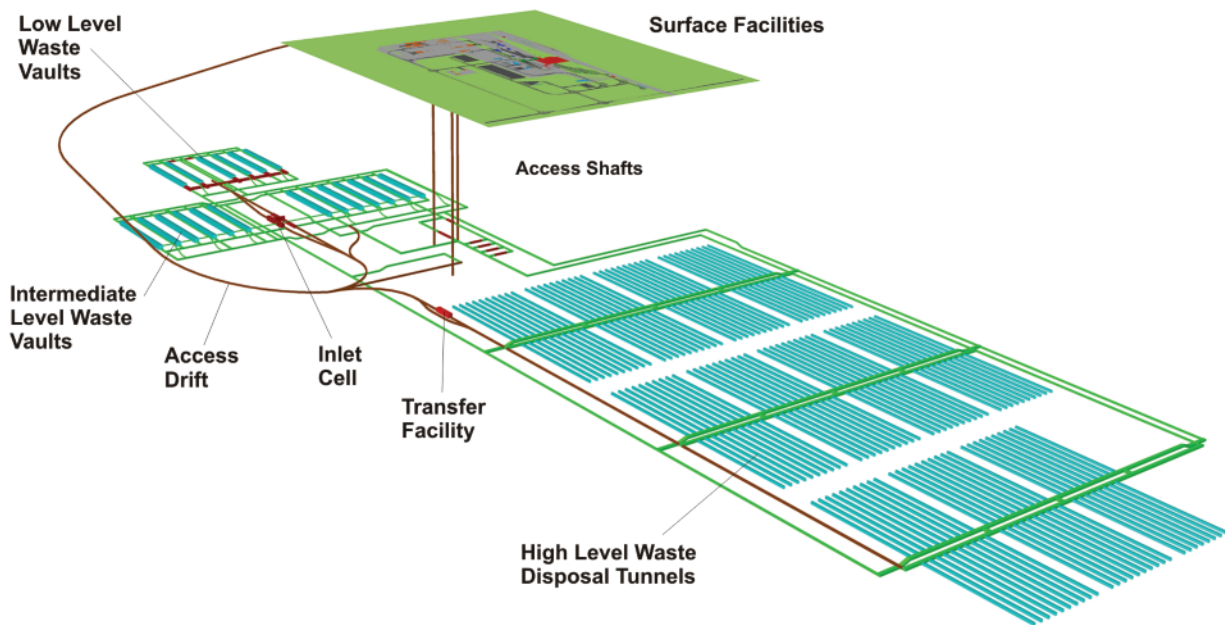
Generic designs indicate that the area covered by the surface facilities would be around 1km². The underground facilities would be situated between 200 and 1000 metres below ground, and national estimates predict that the footprint could range from 6km² to 25km² depending on the inventory and the type of rock.

Generic design concept

An illustrative design for geological disposal for a specific geology.

Our work on design and engineering has mainly been to collect information on overall generic designs and the process that the NDA would follow to design and engineer the facility if a site (or sites) are ever identified. The NDA/DECC position is still that the details of design and engineering are a site-specific issue and this is reflected in the responses they have given to any points that have been raised. We have accepted and agreed with this position as a reasonable reflection of where we currently are in the MRWS process.

Figure 12: Generic design for a GDF (image provided by the NDA)



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How we developed our initial opinions on retrievability

Box 23: A selection of the information gathered in relation to retrievability

Information	Details	Supporting documents
NDA presentation	A presentation from the NDA on retrievability.	Document 47: Partnership meeting report, 13 January 2010
NEA leaflet	Circulation of copies of the Nuclear Energy Agency's (NEA) leaflet on the Retrievability Scale .	Document 45: NEA Retrievability Scale leaflet (draft), December 2009

We wanted to develop a shared understanding of the meaning of retrievability and other terms, as well as how flexible the generic design concept is in relation to this point.

We agreed on a common definition of retrievability (the NEA definition, see also the definition on page 15 in Chapter 3). We agreed that retrievability should be explicitly included within generic designs. We also note that any final decisions on retrievability will be made many years away, through agreement between decision-making bodies, local communities, the Government and the independent regulators.

At this point in the process, all parties (DECC, the NDA and the regulators) are content that the option should be kept open. Indeed, Government policy requires that the design concept should not exclude the possibility of retrievability at this stage.

Retrievability Scale:



A scale developed to illustrate the degree and type of effort that is needed to retrieve waste before and after it is placed in a repository.

Supporting documents

Document 90:
Partnership briefing note on retrievability

Uncertainties and recommendations for future work

Detailed design. The main point to note is that, at this early stage in the process, it is not possible to say exactly what a repository would look like. The detailed layout and design of the facilities, both above and below ground, would depend on the location and would be tailored to the geography and specific geological structure at the site in question.

Distance between surface and underground facilities. Another uncertainty is the horizontal distance between the surface and underground facilities. This could be up to 10km, or more in some circumstances, and so clearly affects the overall footprint of the repository.

How many repositories. We are aware that the Government has said that more than one repository is possible, but also that this would depend on the inventory and the eventual location or locations under discussion. Because of this, we have had no detailed discussions on this issue. We note that committing to one repository does not automatically commit an area to having a second one.

Timescale of retrievability. Although everyone involved is content to keep the option of retrievability open for the time being, it is not clear exactly how long it will be before a final decision is needed. Whilst the option of retrievability needs to be designed into a repository (possibly in the next several years), any decision to backfill vaults and tunnels can be taken by future generations under the circumstances posed at the time (many years away).

Monitoring. We are aware that the waste must be monitored while it is in the facility. Research is being carried out to assess the best ways of doing this. However, the research is still in its early stages, so we note that more work would need to be done if the process goes ahead. Local communities would understandably want to know exactly how monitoring will happen if a facility is ever built.

8.4 Our initial opinions on design and engineering

Criterion – Design concepts

We wanted to be ‘satisfied that the design concepts being developed are appropriate at this stage’.

Our initial opinions are:

- ◆ **Design concepts.** We understand the generic designs being worked on, and they fit with our expectations. We know that detailed design can only be done if and when a site or sites are identified.
- ◆ **Retrievability.** We have confirmed that retrievability is an option, to be decided on in the future.
- ◆ **Overall.** We are content that detailed design issues are largely site specific and, as such, cannot and should not be resolved at this time. We are therefore satisfied that the design concepts being developed are appropriate and flexible enough at this stage.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 5.1 Do you agree with the Partnership's initial opinions on **design and engineering**?

Yes

No

Not Sure/Partly

Question 5.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

9. Inventory: What might be sent for geological disposal?

Inventory:



The type and amount of radioactive waste that would be placed and managed in a repository.

Spent fuel:



Nuclear fuel that has been removed from a reactor.

9.1 Context

We have looked in some detail at the **inventory** of radioactive wastes which would be disposed of in a repository. This is because the types and amounts of radioactive wastes could affect a repository in a number of ways, including its design, size and how long it operates for.

Some Partnership members are also concerned about whether some radioactive materials, particularly **spent fuel** and plutonium, should be disposed of as wastes, when they could in principle be used for further reprocessing and fuel manufacture at Sellafield.

9.2 What we are looking for

When setting our Work Programme we decided that we needed to consider one criterion about inventory:

Criterion – Inventory

‘Whether the Partnership is satisfied with the proposed inventory to be managed in a facility.’

9.3 What we have done in relation to inventory

What we wanted to know

To be able to form an opinion on inventory, we decided that we needed to understand what might go into a facility, and to develop principles for how the inventory might be changed (changes might mean an increase or decrease in the overall amount of waste, or of particular kinds of waste, being placed in a repository). We wanted to know what level of influence the community could have over any changes. Following public input, we also wanted to understand the implications of new nuclear build for the inventory and associated requirements for a repository (including facility size, footprint, design and length of time it would need to be open).

How we developed our initial opinions on inventory

Box 24: A selection of the information gathered in relation to inventory

Information	Details	Supporting documents
Public and stakeholder input	During our first round of engagement (PSE1), some stakeholders said that we should make sure we understood the implications of the proposed programme of new nuclear power stations. In response, we added this as a task to our Work Programme. People also wanted clarification about whether overseas wastes might be disposed of in a repository.	Document 61: PSE1 Report
Hearing from the NDA	The NDA gave us an introduction to the inventory.	Document 93: Partnership meeting report, 5 August 2010
Inviting a ‘critical challenge’	The Partnership invited Pete Roche from the Nuclear Waste Advisory Associates to provide a ‘critical challenge’ of the inventory.	Document 94: Inventory critique by Pete Roche, August 2010
Response from the Government to the Partnership’s Inventory Principles	Once we had developed a set of Inventory Principles we asked for feedback on these from the Government. The Minister of Energy provided a formal response to the Partnership’s Inventory Principles.	Document 189: Response from DECC to the Inventory Principles, June 2011
Inventory statement from the Government	We asked the Government to provide an up-to-date inventory statement so that we could develop our understanding of what the inventory could be.	Document 241: 2010 UK Radioactive Waste Inventory, March 2011

Overseas waste. We asked the Government to respond to public concerns on overseas waste. Government policy says that there is a presumption that only UK radioactive waste should be disposed of in this country.

Responding to public and stakeholder input. Feedback from stakeholders and inviting critical challenge, helped us to understand the uncertainties in the inventory and how it depends on a whole range of expectations. For example, this includes nuclear power station lifetimes, how quickly nuclear plant is decommissioned, and the size of any new nuclear build programme. It led to the agreement that a set of **Inventory Principles** should be developed and was important in helping us to identify what we wanted to know from the Government in its inventory statement.

The Partnership's Inventory Principles. The Inventory Principles we have written (see **Box 25**) ask for commitments from the Government about how inventory issues will be handled if a decision to enter the siting process is taken. They cover:

- ◆ When agreement should be reached about what the inventory for disposal will be.
- ◆ Commitment to negotiate a process that would be used to change the inventory.
- ◆ Commitments to provide information about the inventory.
- ◆ Acknowledgement that negotiations about community benefits should take into account significant changes to the inventory, for example in terms of volume and radioactivity.

In his letter to us about the Inventory Principles, the Minister of Energy “warmly welcomes the broad approach” taken and states that “there is much common ground between us”. The Minister welcomed our approach to managing inventory uncertainties and possible changes in future years “through aiming to set principles at this early stage which then govern how the issues are to be tackled as we go forward”.

DECC’s more detailed response to each principle shows where there is straightforward agreement, and where there is a more qualified response (see **Box 25** below for a summary of DECC’s responses to our principles).

Inventory Principles:

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These principles set out the commitments needed from the Government about how inventory issues will be handled if a decision to enter the siting process is taken. In particular, they address how the inventory would be agreed and potentially changed during the process of siting and constructing a repository.

Supporting documents

Document 189:
[Response from DECC to the Inventory Principles, June 2011](#)

Box 25: The Partnership's Inventory Principles and our understanding of DECC's response to them (see Document 189 for DECC's full response)

Partnership Principle	Our understanding of DECC's response
<p>Principle 1. The Government should make clear its commitment to agreeing with a community siting partnership (CSP) what the inventory for disposal in a GDF [repository] will be. This agreement will be reached by the end of Stage 5 (surface-based investigations). Subsequent significant changes to the inventory would be subject to an agreed inventory change process.</p>	<p>DECC does not provide this specific commitment, but explains that it will provide up-to-date information on the inventory at the end of Stage 5, “so that any CSP can provide informed advice to local decision-making bodies (DMB) on whether to move forward or to exercise their right of withdrawal at the end of surface investigation”. It adds that, even at that point, there will be some uncertainty about the waste that will require geological disposal.</p>
<p>Principle 2. Following any decision to enter the siting process, the Government will enter into negotiation with a CSP to develop a mutually acceptable process for how the inventory for disposal in a GDF would be changed and for how host communities and the decision-making bodies (DMBs) can influence this. That process should be defined and agreed as a working draft by the end of Stage 4 (desk-based studies). The negotiation about a mutually acceptable process will agree the circumstances under which local DMBs should have a veto on changes to the inventory.</p>	<p>DECC states that “the Government would expect to develop a process for dealing with such changes” and that “this process might reach decisions based on pre-agreed principles”. DECC states that “these principles might include, for example, the circumstances under which DMBs may feel the impacts of any change to the inventory to be unacceptable...”</p>
<p>Principle 3. During Stages 4 and 5 (desk-based studies and surface-based investigations – see Figure 1 on page 14 of Chapter 3), the Government will inform a CSP at the earliest opportunity when significant changes occur to (a) the baseline inventory and (b) the ‘upper’ inventory, and will clarify the implications for (i) the design of a GDF and surface facilities, (ii) the size of the underground footprint, (iii) the period of operation of the GDF, (iv) the developing GDF safety case, (v) the number of required GDFs and (vi) the use of alternative disposal methods.</p>	<p>DECC has expressed agreement with this principle.</p>

Partnership Principle	The Partnership's understanding of DECC's response
<p>Principle 4. The Government will provide an 'inventory statement' prior to local decision-making at the end of stages 3, 4 and 5 of the GDF siting process in order to inform a partnership's recommendations at that time. The statement will describe the baseline and upper inventories and a high-level summary of the implications for aspects (i) to (vi) as stated in Principle 3.</p>	<p>DECC has provided a draft inventory statement for Stage 3 and states that it will "also produce inventory statements for any CSP during stages 4 and 5, unless an alternative approach is agreed". However, DECC points out that with regard to the provision of a summary of implications, it has concerns about the extent to which a single inventory statement will provide the most appropriate means to provide timely and potentially detailed information. It adds that "flexibility should be retained ...to ensure participating communities receive appropriate and clear information".</p>
<p>Principle 5. Each 'inventory statement' should include a high-level overview of the main areas of research still to be undertaken to enable development of the GDF safety cases that would be associated with (a) baseline and (b) upper bound inventories.</p>	<p>See response to Principle 4.</p>
<p>Principle 6. The Government acknowledges that negotiations about community benefits will take account of any significant changes to the inventory.</p>	<p>DECC has expressed agreement with this principle.</p>

We agree that there is much common ground between our Inventory Principles and the Government's response, and we consider the Government's qualifications relating to Principles 1, 2, 4 and 5 to be understandable at this stage of the process.

The Government's inventory statement. The Government's inventory statement answers key questions:

Key question: What might go into a repository? The Government statement explains which categories of wastes and materials could be sent for geological disposal (see **Box 26** below).

Box 26: The Partnership's summary of DECC's response on what might go into a repository

DECC says that the following types of waste **could** go into a repository:

- **Higher activity waste.** This includes both **high level waste (HLW)** and **intermediate level waste (ILW)**. HLW is the most radioactive type of waste and is a by-product from the reprocessing of spent nuclear fuel. It occurs mostly in liquid form but would be solidified in glass before being placed in a repository. ILW is less radioactive than HLW and occurs mostly from the reprocessing of spent fuel, and from operations and decommissioning at civil and military nuclear sites. It can include metal items such as fuel cladding and reactor components, and sludges from the treatment of radioactive liquid effluents.
- A small amount of **low level waste (LLW)** not suitable for other disposal facilities because of the specific type of radioactive material it contains.
- Other materials currently not classified as waste could go into a repository if, at some point in the future, it is decided they are of no further use and they are classified as waste. These materials include **spent fuel** from nuclear reactors, and **plutonium** and **uranium** produced as a result of reprocessing spent fuel.
- Higher activity waste and spent fuel from **new nuclear power stations** would also need to be disposed of, but DECC has confirmed that this would be discussed with host communities if the process proceeds.

Key question: How much could go into a repository? The Government statement explains how amounts of waste can change over time and describes the most recent (2010) ‘baseline’ and ‘upper’ inventories. The ‘baseline inventory’ is the ‘working assumption’ about the volume of wastes and materials that will be sent for geological disposal. The ‘upper inventory’ provides a possible higher-volume inventory, including radioactive wastes and spent fuel from a new nuclear build programme in the UK (see **Box 27** below).

Box 27: The Partnership’s summary of DECC’s response on how much could go into a repository

The amount of waste of different types will change over time depending on nuclear site operations (e.g. keeping a reactor open for longer), developing waste management technology and practices (e.g. changes to the way in which waste is packaged), changes to the definition of waste, and the development of new nuclear power stations.

DECC says that the inventory will continue to change as the MRWS process continues and that “any final agreement with a community on a preferred site for a geological disposal facility would need to address possible changes to the inventory in future years”.

The Government keeps track of the UK’s ‘**baseline inventory**’, which is the amount of different materials (including high level waste, intermediate level waste, low level waste, spent fuel, plutonium and uranium) currently estimated for geological disposal. It is not possible to estimate a maximum inventory that could be disposed of in a repository due to uncertainties in the amount and type of waste that will be present in the future. However, the Government has produced what it calls an ‘**upper inventory**’. This gives a realistic estimation of a potential inventory should certain scenarios (e.g. new nuclear power stations) lead to higher volumes of waste in the future.

Taking into account the volumes of the various packaging materials required, the 2010 baseline inventory compared to the upper inventory estimated in 2010 is as follows:

Waste / material	2010 baseline inventory	Upper inventory as estimated in 2010
Low level waste (m ³)	13,800	150,000
Intermediate level waste (m ³)	490,000	786,000
High level waste (m ³)	6,910	12,000
Spent fuel (m ³)	6,440	22,200
Plutonium (m ³)	7,820	10,400
Uranium (m ³)	106,000	183,000
TOTAL (m³)	631,000	1,160,000

Key question: How does a change in inventory affect a repository? The Government statement summarises what it is possible to say at this stage about the implications of the baseline and upper inventories for repository design, size, period of operation, the safety case, research and development needs and number of facilities. This summary helps clarify the implications of a new nuclear build programme for a repository, or of removing certain materials from the inventory (see **Box 28** below).

Box 28: The Partnership's summary of DECC's response on how a change in inventory would affect a repository

A repository would consist of two major parts: the surface facilities and the underground facilities. No matter how much and what type of waste goes into a repository, the surface facilities are expected to cover an area of around 1km².

The size of the underground facilities would be affected more significantly by higher volumes of waste, depending on the type of rock involved. DECC has provided an illustrative example based on the 2010 baseline inventory and estimated upper inventory.

Illustrative example of the footprint of the underground facilities of a repository:

Type of rock	2010 baseline inventory	Upper inventory as estimated in 2010
Higher strength rock	6 km ²	9 km ²
Lower strength sedimentary rock	9 km ²	20 km ²
Evaporite rock	9 km ²	18 km ²

A 10GW(e) new nuclear build programme was assumed in the upper inventory. However currently developers are planning for a 16GW(e) programme, which could mean that the footprint could be as much as 25km².

A change in the inventory is not expected to present any new technical challenges for the design and construction of a facility, but there would be a proportionate increase or decrease in the construction and backfill materials required and the spoil generated, as well as changes to the amount of infrastructure required underground.

Based on the 2010 baseline inventory, it is assumed a repository would be in operation for around 100 years prior to closure. The upper inventory estimated in 2010 would probably increase this to around 130 years.

The information above is based on figures provided by the NDA in their presentation to the Partnership on 5 August 2010 (see supporting document 93 and the NDA report that supported this presentation which can be found at: <http://www.nda.gov.uk/documents/loader.cfm?csModule=security/getfile&PageID=48680>).

Waste from new nuclear power stations. The issue of whether waste from new nuclear power stations would go into a repository is of concern to some people. We agree this is an important issue. However, because it is not yet clear if or when this additional waste would arise, or how much of it there would be, we believe that this is a decision for the future when the implications of this additional waste would be better known. We note that the right of withdrawal would exist whilst these decisions would be taken.

Uncertainties and recommendations for future work

Although we have a good understanding of what **could** go into a repository, currently we do not have a definite picture of what actually **would** go into a repository, and cannot for many years. This is because of outstanding uncertainties around issues such as nuclear site operations (for example, keeping a reactor open for longer), developing waste management technology and practices (for example, changes to the way in which waste is packaged), changes to the definition of waste and the development of new nuclear power stations.

9.4 Our initial opinions on inventory

Criterion – Inventory

We wanted to be ‘satisfied with the proposed inventory to be managed in a facility’.

Our initial opinions are:

- ◆ We have received an inventory statement from the Government that explains the difference between baseline and upper inventories. This gives us a good understanding of what could go into a repository, although more certainty would have to be gained before any final commitments are made.
- ◆ Satisfactory progress has been made towards agreeing the principles that define an acceptable process for how the inventory could be changed, including how the community can influence this.
- ◆ **Overall**, our initial opinion is that we have received what we are looking for on the inventory at this stage in the process.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 6.1 Do you agree with the Partnership’s initial opinions on the **inventory**?

Yes No Not Sure/Partly

Question 6.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

10. The process for siting a repository

10.1 Context

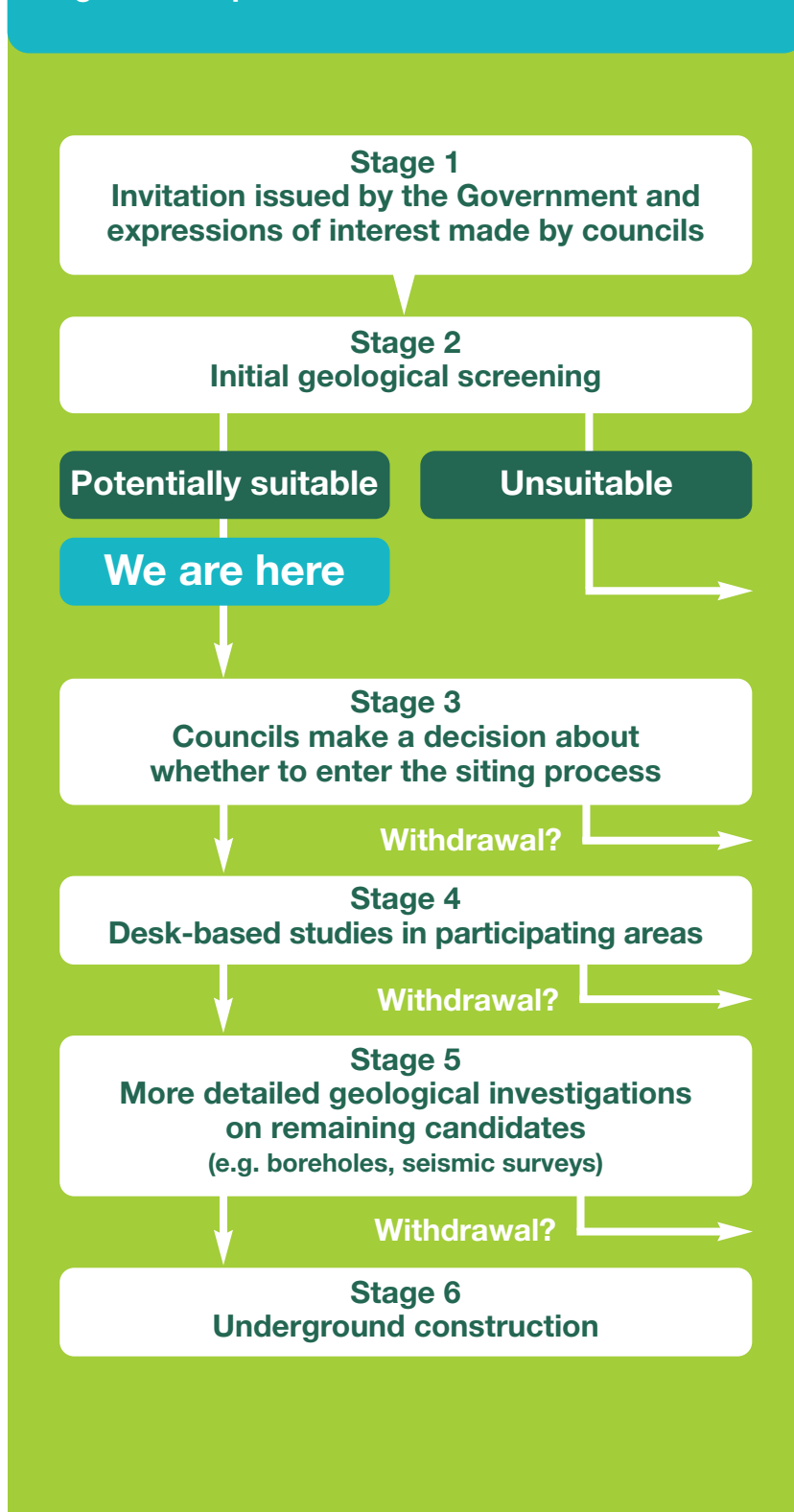
The Government has laid out the overall process for finding a site or sites for a repository in several stages – this is shown in Figure 13.

West Cumbria is currently approaching the end of Stage 3 of the Government's process, at which point Allerdale Borough Council, Copeland Borough Council and Cumbria County Council will make decisions about whether to move to Stage 4 of the process.

We have spent time considering how a site for a repository/ies would be found if a decision to enter the siting process were taken. This is because we want to be confident that a good process can be put in place before, and if, the next steps are taken.

The right process must be fair and meet the needs of potential host communities, decision-making bodies (DMBs) and wider local interests (see definitions in Chapter 3 on page 11 and in **Box 1** on page 18). It also needs to inform the DMBs in a clear and thorough way, ensuring that local issues and technical challenges are properly addressed. It must also meet the requirements of the Government, the NDA, the regulators and the planning system.

Figure 13: Timeline showing the different stages in this process



10.2 What we are looking for

When setting our Work Programme we decided that we needed to consider one criterion about the process for siting a repository.

Criterion – Siting process

‘Whether the Partnership is confident that the siting process is sufficiently robust and flexible to meet its needs.’

We identified a number of more detailed points that we would want to see in order to be satisfied on the issue of the siting process:

- ◆ **Narrowing down.** An acceptable process of moving from ‘possibly suitable areas’ to specific potential host sites.
- ◆ **Future partnership process.** An acceptable future partnership process can be defined.
- ◆ **Pause points, right of withdrawal and Government commitment.** Provision for ‘pause points’ to allow more work to be undertaken. Acceptable nature of (and limitations to) the right of withdrawal (see definition on page 11 in Chapter 3). Acceptable degree of Government commitment to sustain the process.

10.3 The Government’s proposals for the siting process

As explained in Chapter 4 on Geology, if decisions to enter the siting process are taken, then substantial areas of West Cumbria remain available for assessment and investigations for both surface and underground facilities. The question then arises of how to identify potential sites, while working within the Government’s framework of voluntarism and partnership.

We have considered the Government’s proposals for the siting process. This included submitting some comments to the Government’s consultation on Stage 4 of the MRWS siting process. A brief summary of the Government’s proposals is shown in **Box 29** below.

Supporting documents

Document 228:
[DECC’s consultation document and the Partnership’s response, September 2011](#)

Potential site area (PSA):

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A combination of a possible surface site area and a large volume of host rock for the underground facilities of a repository.

Box 29: Summary of the Government's proposals for Stage 4

The Government calls its proposals 'Desk-based identification and assessment of potential candidate sites for geological disposal'. The proposals set out a framework for addressing the two main tasks in Stage 4: a) identifying potential site areas, and b) assessing the potential site areas.

Stage 4a – Identifying potential site areas

- The first part of Stage 4 would identify **potential site areas (PSAs)** where desk-based assessments would be carried out. A PSA is a combination of a possible surface site area and a large volume of host rock for the underground facilities.
- Surface facilities could be sited in areas screened out by the high-level geological screening study undertaken by the British Geological Survey (see Chapter 4).
- The surface and underground facilities could be separated by a considerable distance – up to 10km and possibly further. This means that PSAs are likely to be large at this relatively early stage of the narrowing down process, probably encompassing many potential host community areas, towns or villages.
- The Government proposes that to provide local flexibility, future partnerships would be able to adapt or develop the process to identify PSAs, by using local criteria and incorporating local issues, as well as using the criteria published in the MRWS White Paper.

Stage 4b – Desk-based assessments

- The assessments would be consistently applied across any PSA against the following criteria:
 - Geological setting.
 - Potential impact on people.
 - Potential impact on the natural environment and landscape.
 - Effect on local socio-economic conditions.
 - Transport and infrastructure provision.
 - Cost, timing and ease of implementation.
 - Local criteria determined by the local communities.
- As part of the assessment process, the NDA would work with a future partnership to gather information relevant to each criterion.
- An expert 'scoring' process would be combined with a 'weighting' process using local stakeholder views on the relative importance of different criteria.
- The results of this work would be used by a future partnership and DMBs to help make a decision about whether or not to proceed to the next stage.
- The Government considers that voluntarism is based on community support and, as such, it would apply to all communities and sites.
- The rock volumes and land areas in a participating area could be considerably larger than would be required for an underground repository. This is because

the existing information available to desk-based assessments may only allow a relatively high-level geological assessment, and the whole rock volume in which the host rock is thought to be present may be identified as a PSA.

- ◆ We understand that all of Stage 4 would take about 4 to 5 years.

Stage 5 – Geological investigations

- ◆ In Stage 5 (surface-based investigations) there would still be fairly large areas under which a repository could be built that would be considered.
- ◆ Although potential host communities would become clearer by the start of Stage 5, there would still be a group or groups of potential host communities rather than one specific host community.
- ◆ We understand that Stage 5 would take about 10 years.

10.4 How we developed our initial opinions on the siting process

We decided that we needed to develop our own views on the way in which voluntarism should work during a siting process. This has three elements:

- 1) Principles for Community Involvement.
- 2) How voluntarism should work during the different stages of the siting process.
- 3) Organisational arrangements for a future partnership.

1) Principles for Community Involvement

We have agreed a set of **Principles for Community Involvement** (see **Box 30** below). These were consulted on during PSE2 and amended to take the findings of this consultation into account. In our view, it is essential that these principles are followed to ensure there is a voluntary approach during the siting process.

Box 30: The Partnership's Principles for Community Involvement

Principle 1: Ensure that the siting process is developed in a way that inspires confidence and engenders a sense of ownership of the process on the part of potential host communities and wider local interests.

Principle 2: Ensure that there is sufficient time, resources and an effective process for identifying, involving and empowering potential host communities and wider local interests.

Supporting documents

Document 186: Preliminary assessment report for the siting process (Criterion 5), June 2011

Principles for Community Involvement:

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A set of principles developed by the Partnership that recommend how the different levels of community should be engaged in decision making if West Cumbria enters the siting process for a repository.

Supporting documents

Document 157.1: PSE2 Report

Principle 3: Ensure that organisational arrangements after any decision to enter the siting process are sufficiently flexible to effectively involve representatives of potential host communities and wider local interests as they are identified.

Principle 4: Strive for a constructive, deliberative and consensual process, with an emphasis on effective communication, engagement, joint working, respect for divergent views and reasoned weighing of evidence and arguments.

Principle 5: Draw on appropriate specialist knowledge, including local knowledge and expertise in timely and effective ways.

Principle 6: Secure the most equitable collective outcome for potential host communities, decision-making bodies and wider local interests, including the distribution of benefits.

Principle 7: Only move to site-specific investigations if there is 'credible local support'.

2) How voluntarism should work during the siting process

In **Box 31** below we set out a series of suggested steps for the decision-making bodies (DMBs) and any future partnerships that may exist during the siting process. These suggested steps would need to be applied flexibly, based on the circumstances at the time, and bearing in mind the Principles for Community Involvement above.

We have considered how the process might work through Stage 4 and to some extent Stage 5, so that we and the public can have a sense of how voluntarism might work up to the point when a final decision would be made (ahead of Stage 6). There are clearly limitations in looking this far ahead. We accept that we cannot tie the hands of future partnerships but we do have a responsibility to give our opinion on how the process can be fair and workable.

We believe the emphasis on a strong commitment to voluntarism and community 'willingness to participate' is one that parties should keep at the forefront of their minds if this process continues. At each stage, any future partnership should seek to maximise consensus amongst the decision-making bodies, local authorities, potential host communities and wider local interests.

Box 31: Summary of the Partnership's suggested steps for the siting process

Decision to enter the siting process taken by DMBs

Step 1: Set-up period

Step 2: New partnership

Step 3: Initial identification of potential site areas (PSAs)

Step 4: Desk-based assessments of PSAs

Step 5: Surface-based investigations (Stage 5)

Step 1: Set-up period

- a) The DMBs should widely communicate the decision to enter the siting process and the next steps, across Cumbria and beyond.
- b) Working closely with representatives of potential host communities, wider local interests and others, the DMBs should map out options for a new partnership in the light of guidelines for organisational arrangements (see **Box 32** below).
- c) Potential host communities would decide a representative mechanism, and other organisations invited to join the new partnership would decide how they want to be represented.

Step 2: New partnership

Once it has been established a new partnership should:

- a) Review the Principles for Community Involvement (see **Box 30** above).
- b) Review the Government's framework for Stage 4.
- c) Agree local criteria for identification of potential site areas (PSAs).
- d) Agree future steps, including how and when credible local support would be gauged.
- e) Agree roles and responsibilities of the new partnership, the NDA and DECC during Stage 4.
- f) Agree operation, programme and tasks of the new partnership.
- g) Agree organisational arrangements, in light of the current Partnership's suggested steps and the White Paper.

Step 3: Initial identification of potential site areas (PSAs)

The role of the new partnership

- a) The new partnership would oversee and be involved in the identification of PSAs. The NDA would lead on technical aspects, with officers from local authorities. The partnership would lead on engagement with potential host communities and others.
- b) The new partnership should engage closely with potential host communities, keeping them up to date with the technical work being carried out and seeking their contributions and views. It should also oversee the publication of the initial findings.
- c) We would suggest there would need to be a high level of communications and engagement across Cumbria and beyond. In particular, securing the active involvement of people in the PSAs may require providing resources for parish councils and other community groups to help the partnership engage people in their areas.

Gauging credible local support

- d) The key points to assess credible support are at the end of Stages 4 and 5. However, there are circumstances where it may be appropriate for the new partnership to consider using a method such as a representative opinion poll to gauge whether there is support for moving to desk-based assessments from within the suggested PSAs and the wider area. The decision about whether to do this would probably depend on how much smaller the PSAs are than the areas covered by Allerdale and Copeland Borough Councils, and the feedback the new partnership has had from potential host communities.
- e) The new partnership's objective should be to achieve consensus across all the potential host communities in a PSA. An opinion poll may show support for moving forward across the potential host communities as a whole, but one or more potential host communities may decide they do not want to take part in the desk-based assessments. If this was based on reasoned justification and on demonstrable community support, and the partnership decided it would be possible to move into the desk-based assessments without these potential host communities, the presumption should be that they would be left out of the process.

In the event of the partnership concluding that the omission of a potential host community from the PSA would create insurmountable problems for the siting process, then it could recommend the inclusion of the community concerned if this was supported by a full justification and explanation.

- f) The new partnership would then give its recommendations to the DMBs on which potential site areas should proceed to desk-based assessments.
- g) The DMBs would consider the recommendations of the partnership and the views of potential host communities and other stakeholders, and take a formal decision on which PSAs, if any, they would wish to see proceed to desk-based assessments.
- h) DECC would then need to reach a judgement about whether it was appropriate to move forward with the PSAs put forward by the DMBs.

Step 4: Desk-based assessments of PSAs

The role of the new partnership

- a) There should be a review of representation of potential host communities in the light of areas chosen for assessment. Representation would be on a 'without commitment' basis.
- b) The new partnership should review and amend its organisational arrangements to accommodate an increase in numbers and a potential change of focus. We would suggest this includes potential sub-groups in each PSA to meet roughly every quarter to provide updates, answer questions from local people and report back to the full partnership.
- c) The new partnership should agree the desk-based assessment process with the NDA.
- d) The NDA would lead on the technical work, with partnership oversight.
- e) The new partnership would start negotiations with the Government on a community benefits package.
- f) There should be ongoing engagement across all PSAs to ensure that people at the potential host community level understand the work that is taking place. The partnership should aim to get the active involvement of people in the PSAs and this will also mean providing resources for parish councils and other community groups to help the partnership engage people in their areas.
- g) The partnership should oversee the publication of the desk-based assessments, and give its opinion on the implications of these assessments.

Gauging credible local support

- h) We would suggest that the consultation carried out by the new partnership at the end of Stage 4 would involve a further step change in the level of communications and engagement across Cumbria and beyond, with a particular focus on the potential host communities. We also anticipate that it would be useful to consider a method such as a representative opinion poll to gauge whether there is support for moving into Stage 5 from within the suggested PSAs.
- i) The new partnership's objective should be to achieve consensus across all the potential host communities within an area considered for surface-based investigations. An opinion poll may show support for moving forward across the potential host communities as a whole but one or more potential host communities may decide they did not want to go to the next stage. If this was based on reasoned justification and on demonstrable community support and the partnership decided it would be possible to move to the next stage without these potential host communities, the presumption should be that they would be left out of the process.

In the event of the partnership concluding that the omission of a potential host community would create insurmountable problems for the siting process then it could recommend the inclusion of the community concerned if this was supported by a full justification and explanation.

- j) The partnership would then give its recommendations to the DMBs on which areas should proceed to the surface-based investigations.

- k) The DMBs would consider the recommendations of the partnership and the views of potential host communities and other stakeholders, and take a formal decision on which areas, if any, should proceed to the next stage, where surface-based investigations such as boreholes would be done.
- l) DECC would then need to reach a judgement about whether it was appropriate to move forward to the next stage with the areas put forward by the DMBs.

Step 5: Surface-based investigations (Stage 5)

- a) Given that Stage 5 would not start for a number of years we have considered this in less detail. The membership and role of the new partnership would need to be reviewed again as the focus would be on a smaller number of potential host communities, which, in turn, may wish to be more closely involved in the discussions. Prior to the start of borehole investigations the new partnership would also need to agree with DECC the criteria for exercising a right of withdrawal beyond this point.
- b) The technical investigations would be significant at this stage, taking many years and costing hundreds of millions of pounds. It would be important to ensure that the new partnership had appropriate independent technical support to assess the results of this work. The partnership would also complete detailed negotiations with the Government on a community benefits package.
- c) There would need to be a further step change in the level and type of communications and engagement activity by the new partnership, with a particular focus on working very closely with a smaller number of potential host communities and among wider local interests. Before the final right of withdrawal comes to an end, we think it will be particularly important to use various methods, including something like a representative opinion poll or a referendum, to gauge whether there is support for a repository being located at the site, from within the potential host communities and among wider local interests.

3) Organisational arrangements for a future partnership

We would expect the nature of a new partnership's work in Stage 4 and Stage 5 to be different to Stage 3 and, therefore, the existing Partnership arrangements are unlikely to be appropriate. We have taken the view that drawing up the details of organisational arrangements should be left until it is known whether a decision to enter the siting process has been taken, and for what areas. However, we have drawn up some suggested steps to pass to the DMBs and these are outlined in **Box 32** below.

Box 32: The Partnership's suggested steps for organisational arrangements

- ◆ In the initial set-up period after a decision to enter the siting process has been taken (see flowchart in **Box 31** above) there should be an opportunity to consider lessons learnt from the experience of the current Partnership, its functions and activities, to ensure these are applied to any new arrangements to follow.
- ◆ The arrangements should facilitate the achievement of all of the Principles for Community Involvement (see **Box 30**).
- ◆ They should seek to use the best available methods of community engagement, appropriate for a process based on partnership and voluntarism.
- ◆ They would need to fulfil a number of key functions, including: a) political accountability and strategic decision-making; b) co-ordination and integration of technical work and community engagement (including operational decisions); and c) engagement of potential host communities and wider local interests.
- ◆ Operational decisions and recommendations to the DMBs should be based on consensus.
- ◆ Representatives of potential host communities and wider local interests should be members of the new partnership from the outset, and should be involved in all aspects of Stage 4 work, including discussions on community benefits.
- ◆ The new partnership's work should be, and be seen to be, designed and managed to meet Community Involvement Principle 1 – inspiring confidence and ownership of the process. Therefore, careful consideration should be given to how this can be best achieved, for example through the main elements of process management (chairing, facilitation, programme management, evaluation etc.) being independently provided.
- ◆ We would suggest that all future partnership members should be invited to take part in a group to manage the partnership's work programme. The aim should be to ensure that there are at least two people on this group representing wider local interests, in addition to the representatives from the DMBs and potential host communities.
- ◆ Members of a new partnership must not underestimate the time and effort required to work closely with small communities within any PSAs identified. Judging by our work over the past two years, this implies dedicated staff within the more active partnership member organisations, and almost certainly a dedicated team working on behalf of the whole partnership to manage the workload involved, in particular the community engagement programme.
- ◆ The DMBs should put in place arrangements to coordinate their decisions, and should involve the parish tier of local government in those arrangements.
- ◆ All participants should be properly resourced to play a full and active role.

4) Other issues

We considered whether formal pause points are needed but decided these were not necessary because the siting process is based on voluntarism, and because of the DMBs' right of withdrawal, which can be exercised up to the end of Stage 5. We also note our direct experience of pressing an informal 'pause button' in the current process when needed.

We note the commitments to a right of withdrawal in Government policy, an excerpt of which is in **Box 33** below.

Box 33: Right of withdrawal

The 2008 MRWS White Paper (para 6.38) describes the right of withdrawal as follows:

'The Right of Withdrawal (RoW) 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. As with other key local decisions in the siting process, the Decision-Making Body will be responsible for exercising the RoW, based on advice and recommendations from the local Community Siting Partnership.'

Although we recognise that some people are sceptical that the Government will honour commitments to a right of withdrawal, we believe that the assurances in the White Paper and additional clarifications are adequate for this stage of the process. In particular, DECC confirms that the right of withdrawal would be available to participating local authorities up to the end of Stage 5 (surface-based investigations). Given that this is in the White Paper and therefore Government policy, there would have to be a Government decision to change it.

We have noted that, despite the severity of public spending cuts, Government funding for the MRWS programme and the work of the Partnership has been preserved.

We also note:

- ◆ That the process has cross-party support in parliament.
- ◆ The continued commitment to the principle of voluntarism and the right of withdrawal as set out in the White Paper.

In the light of the reassurances in the White Paper and clarifications from DECC with respect to voluntarism and the right of withdrawal we take the view that there are no additional reassurances we can realistically expect from DECC at this stage in the process.

Supporting documents

Document 82:
Partnership meeting report, 25 June 2010 (para 2.14)

Document 139:
Partnership meeting report, 19 January 2011 (Appendix 3)

10.5 Our initial opinions on the process for siting a repository

Criterion – Siting process

We wanted to be ‘confident that the siting process is sufficiently robust and flexible to meet our needs’.

Our initial opinions are that the elements above provide sufficient confidence that the siting process can be sufficiently robust and flexible, at least during Stage 4. In the light of written assurances from the Government regarding voluntarism and the right of withdrawal, we believe that there are no additional reassurances that we can realistically expect from DECC at this stage in the process. There is a commitment from those who have been involved in this process to consensus and fairness, however, despite this, the practical challenges of working together and making voluntarism work are not underestimated.

Your comments (Please use the response form to submit your responses)

We are keen to understand the reasons why people hold particular views on our initial opinions so that we can take them into account before advising the three Councils.

Question 7.1 Do you agree with the Partnership’s initial opinions on **the process for siting a repository**?

Yes No Not Sure/Partly

Question 7.2 It would be helpful if you could set out your reasons. In particular:

- Please explain which parts you **agree** or **disagree** with and why.
- If you are **not sure**, what would help you make up your mind?

11. Overall views

In this consultation we are not putting forward an overall opinion on whether the Councils should enter the siting process or not. Question 8 asks for your views on this, and Question 9 gives you the opportunity to make additional comments on any other issues.

Your comments (Please use the response form to submit your responses)

Question 8. What are your views on whether the areas covered by Allerdale and/or Copeland Borough Councils should take part in the search for somewhere to put a repository, without any commitment to have it?

Question 9. Please use this section to make any additional comments.

For information

12. Next steps

12.1 What happens to the consultation responses?

This consultation will close on 23 March 2012. Our independent programme managers, 3KQ, will then undertake a detailed process of analysis, looking at all input to this consultation. They will report back to us and we will then consider how we might change our initial opinions, which are set out in this document. This will shape the advice we provide to the three Councils (see 12.3 below).

We will publish a summary report from this consultation on our website as soon as possible following the consultation. We then hope to produce our final report to the three Councils soon afterwards. See Appendix 4 for more detail on how we will analyse and respond to consultation inputs.

12.2 Assessing public and stakeholder views

We will take account of public and stakeholder views by using three ‘indicators’ that we received feedback on during our second round of engagement (PSE2). These are: taking into account the range of views received as part of this consultation from across West Cumbria and beyond; ensuring we have understood and responded to concerns from the public and stakeholder organisations; and a statistically representative opinion survey that will take place towards the end of the consultation period. The survey will look at how many of the people surveyed in Copeland and/or Allerdale are in favour of entering the siting process compared to how many are against. For more information see Appendix 3.

12.3 What happens to the overall process?

Once the three Councils have received our final report, they will take it into consideration in making a decision about whether to enter the siting process. They may make a joint decision, or decide to proceed separately – for example one area (Copeland or Allerdale) could decide with Cumbria County Council to go ahead whilst the other may withdraw, or the areas could both proceed with the siting process, or both withdraw.

For an area to formally enter the siting process, both the Borough Council and the County Council would need to be in agreement.

We thank you for your time and effort in reading and responding to this consultation.

Appendix 1: Summary of consultation questions

This is a summary of all of the consultation questions. Please use the response form to submit your responses.

Question 1.1 Do you agree with the Partnership's initial opinions on **geology**?

Yes **No** **Not Sure/Partly**

Question 1.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 2.1 Do you agree with the Partnership's initial opinions on **safety, security, environment and planning**?

Yes **No** **Not Sure/Partly**

Question 2.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 3.1 Do you agree with the Partnership's initial opinions on the **impacts, both positive and negative, of a repository in West Cumbria**?

Yes **No** **Not Sure/Partly**

Question 3.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 4.1 Do you agree with the Partnership's initial opinions on a **community benefits package**?

Yes **No** **Not Sure/Partly**

Question 4.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 5.1 Do you agree with the Partnership’s initial opinions on **design and engineering**?

Yes No Not Sure/Partly

Question 5.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 6.1 Do you agree with the Partnership’s initial opinions on the **inventory**?

Yes No Not Sure/Partly

Question 6.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 7.1 Do you agree with the Partnership’s initial opinions on **the process for siting a repository**?

Yes No Not Sure/Partly

Question 7.2 It would be helpful if you could set out your reasons. In particular:

- ◆ Please explain which parts you **agree** or **disagree** with and why.
- ◆ If you are not sure, what would help you make up your mind?

Question 8. What are your views on whether the areas covered by Allerdale and/or Copeland Borough Councils should take part in the search for somewhere to put a repository, without any commitment to have it?

Question 9. Please use this section to make any additional comments.

Appendix 2: Explanation of technical words and phrases

Aquifer: A layer of water-bearing rock from which groundwater can be usefully extracted.

British Geological Survey (BGS): The UK geological experts.

Committee on Radioactive Waste Management (CoRWM): An independent committee originally set up by government to look at the options for managing the UK's higher activity radioactive waste. Now it scrutinizes the plans for implementing geological disposal.

Community benefits package: A set of benefits provided by the Government to an area in which a repository is sited, including those over and above any direct benefits to the area from the construction and operation of a repository.

Community Benefits Principles: A set of principles developed by the Partnership by which community benefits would be discussed, agreed and potentially administered, if the siting process begins. The Government has agreed the Partnership's principles as a basis for negotiation in the next stage of the process.

Criterion / Criteria: A series of tests developed by the Partnership for each area of its Work Programme.

Decision-making bodies (DMBs): The local government decision-making authority/ies for any potential host community/ies. In this case Allerdale Borough Council, Copeland Borough Council and Cumbria County Council would be the formal decision-making bodies if West Cumbria enters the siting process.

Department of Energy and Climate Change (DECC): The UK Government department responsible for national policy on radioactive waste.

Desk-based study: A process of looking at available facts and figures without carrying out any new practical investigations.

Environment Agency (EA): The regulator responsible for the enforcement of environmental protection legislation in England and Wales. Its activities include regulating disposal of radioactive wastes from licensed nuclear sites and other premises using radioactive substances by granting permits.

Environmental Impact Assessment (EIA): An assessment of the possible positive or negative impacts that a proposed project may have on the environment, together consisting of the natural, social and economic aspects.

Ethics: Moral principles that govern a person's or group's behaviour.

Footprint: The area covered by a specific building or development.

Generic design concept: An illustrative design for geological disposal for a specific geology.

Geological disposal facility (GDF): An engineered, underground facility where the UK's higher activity radioactive waste will be permanently disposed of. Throughout this document we refer to a GDF as a **repository**.

Geological Disposal Implementation Board (GDIB): A board chaired by the Minister of Energy, to provide oversight of the MRWS programme.

Higher activity radioactive waste: This is the most radioactive kind of waste. Some of it remains hazardous for many thousands of years. Put simply, it is a combination of nuclear materials and other materials, such as fuel packaging and equipment, that have

been contaminated with, or contain, significant amounts of radioactivity.

Host community: The Government defines host community as the community in which any facility will be built. The host community would be a small geographically defined area, for example a town or village, and would include the population of that area and the owner of the land.

Indicators of Credibility: These are criteria about public and stakeholder views that the Partnership has decided should be met to be satisfied that there is public support for continuing with the process.

Infrastructure Planning Commission (IPC): The independent body that examines applications for nationally significant infrastructure projects.

Inventory: The type and amount of radioactive waste that would be placed and managed in a repository.

Inventory Principles: A set of principles developed by the Partnership that set out the commitments needed from the Government about how inventory issues will be handled if a decision to enter the siting process is taken. In particular, they address how the inventory would be agreed and potentially changed during the process of siting and constructing a repository.

Major Infrastructure Planning Unit (MIPU): The proposed new name for the body which will operate the development consent process for nationally significant infrastructure projects such as offshore wind farms and nuclear power stations. This replaces the IPC.

Managing Radioactive Waste Safely (MRWS): The name of the Government process to find a permanent site for the geological disposal of the country's higher activity radioactive waste.

Multi-barrier approach: A combination of engineered barriers (packaging, vaults and backfill/refilling of earth or other materials)

and a natural barrier (the rock) working together to ensure the necessary levels of safety for a repository.

Nirex: The former Nuclear Industry Radioactive Waste Executive which was previously responsible for managing the country's radioactive waste. It was formed by the nuclear industry, then owned by the Government and merged with the NDA RWMD.

Nuclear Decommissioning Authority (NDA): The UK Government body responsible for ensuring the clean-up of civil nuclear sites and for implementing the Government's policy on the long-term management of radioactive waste.

Office for Nuclear Regulation (ONR): An agency of the Health and Safety Executive (the regulator responsible for protecting people against risks to health or safety arising out of work activities). Established on 1 April 2011, the ONR regulates nuclear safety and security, and regulates the safety of radioactive material transport by road, rail and sea.

Opinion survey: A poll of public opinion from a sample or sub-set of a particular group or population. Opinion surveys are used to gauge public opinion without having to survey every member of a group or population (in this case everyone in West Cumbria).

Potential host community: An area in which a facility could be built (see also **host community**).

Potential site area (PSA): A combination of a possible surface site area and a large volume of host rock for the underground facilities of a repository.

Principles for Community Involvement: A set of principles developed by the Partnership that recommend how the different levels of community should be engaged in decision making if West Cumbria enters the siting process for a repository.

Property value protection plans (PVPs):

These are schemes underwritten by the Government whereby homeowners are recompensed if there is a demonstrable drop in the value of their property when they sell it.

Public and stakeholder engagement

(PSE): The Partnership's programme for discussing its work with the public, stakeholders and stakeholder organisations i.e. any individual or organisation who has an interest in the MRWS process.

Radioactive Waste Management

Directorate (RWMD): The directorate of the NDA responsible for developing and implementing geological disposal.

Referendum: Putting a question directly to the vote of the whole electorate.

Repository: See **geological disposal facility (GDF)** above.

Retrievability: The ability to take waste back out after it has been placed in a repository, rather than the waste being buried permanently without access to it in the future.

Retrievability Scale: A scale developed to illustrate the degree and type of effort that is needed to retrieve waste before and after it is placed in a repository.

Right of withdrawal: This means that the decision-making bodies are able to pull out of the process at any time before construction is ready to start. This decision would be made on behalf of communities and in close collaboration with wider community representatives.

Safety case: A structured argument or body of evidence that is intended to demonstrate that a system is safe. It also provides evidence to show **how** claims of safety are met.

Schedule of Impacts: A table drawn up by the Partnership that identifies specific impacts of a potential repository and when

the developer (the NDA) will assess them. The purpose of the table is to satisfy the Partnership that the NDA a) recognises all the important impacts and b) has plans in place to fully assess them before development.

Spent fuel: Nuclear fuel that has been removed from a reactor.

Spent fuel encapsulation plant: A facility to package used fuel from nuclear power stations in preparation for disposal.

Stakeholder organisations: Organisations that represent people with a clear or specific interest in the MRWS process.

Strategic Environmental Assessment

(SEA): A system of incorporating environmental considerations into policies, plans, and programmes, by assessing their potential social, economic and environmental impacts.

Voluntarism: An approach where a community expresses willingness to participate in the search for a site for a potential repository, and perhaps ultimately host a facility.

West Cumbria MRWS Partnership (the

Partnership): An advisory body set up to make recommendations to Allerdale Borough, Copeland Borough and Cumbria County Councils on whether they should participate in the Government's process for siting a GDF, without commitment to eventually having a facility in West Cumbria.

Wider local interests: Communities outside the host community that have an interest in the development of a facility in the host community e.g. the next village, a neighbouring district or a community on the local transport routes to the host community.

Appendix 3: How the Partnership will assess public and stakeholder views

We have thought carefully about the best way to take account of the views of the public and stakeholders that are expressed during this consultation.

This will be based on the use of what we call ‘**Indicators of Credibility**’. These indicators were discussed in our second round of engagement (PSE2) and, taking into account what we heard, we adopted them at our meeting in May 2011.

Assessing public and stakeholder views

The indicators have been developed so that, after this consultation, we can judge whether our initial opinions are credible given public and stakeholder views. Our final report to the three Councils will explain how the indicators have been used to reach this view. There are three indicators: broad support; understanding and addressing concerns; and net support.

Indicators of Credibility:

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These are criteria about public and stakeholder views that the Partnership has decided should be met to be satisfied that there is public support for continuing with the process.

Box 34: The Partnership’s Indicators of Credibility

Indicator (what the Partnership is looking for)	What does this mean?	How the indicator will be used
<p>1 – Broad support for the Partnership’s initial opinions. Broad support for the Partnership’s initial opinions on the criteria for participation from its current member organisations and those engaged through its programme of public and stakeholder engagement.</p>	<p>This is not about the numbers of people or organisations expressing a particular view. It is about asking a range of organisations and people interested or involved in the Partnership’s work what they think about the quality of evidence and argument set out in this document.</p>	<p>After this consultation, the Partnership will examine views about its initial opinions, and decide whether they should be changed or not.</p>
<p>2 – Understanding and addressing concerns. Evidence that a) concerns raised have been, or will be, addressed where appropriate, including explanations as to why not where relevant, and b) reasons for opposition have been identified, understood and taken into account in reaching opinions on the criteria for participation.</p>	<p>This is about the Partnership understanding and addressing concerns and reasons for opposition, and explaining how they have been taken into account.</p>	<p>The Partnership will use this consultation to gather evidence about concerns and reasons for opposition. These will then be reviewed and taken into account in reaching final opinions.</p>

3 – Net support for continuing with the process. The percentage of the surveyed public in Copeland and/or Allerdale that support without commitment participation in the process for identifying a potential candidate site should be greater than the percentage that oppose it (i.e. there should be net support).

In order for the Partnership to take the view that West Cumbria should enter the siting process, there would have to be more people* in favour of moving forward than against. This is called 'net support'.

*(in this case, people surveyed in West Cumbria)

The Partnership will conduct a statistically representative opinion survey to see whether net support exists. The indicator will just apply to West Cumbria, as it is only within this area that participation may result in the actual siting of a repository. The views of people living in the rest of Cumbria will be taken into account in reaching opinions on the first two indicators.

All three indicators would have to be met for a recommendation to enter the siting process to be made. In other words the following would all have to be true:

Broad support: A range of organisations and people interested or involved in the Partnership's work consider the initial opinions in this document to be reasonable in the light of the available evidence.

Understanding and addressing concerns: The Partnership can demonstrate that it has understood and taken into account concerns and reasons for opposition, and does not consider any arguments or evidence put forward in PSE3 to be 'show-stoppers'.

Net support: Of the people surveyed in Copeland and/or Allerdale, more are in favour of entering the siting process than are against.

There is no indicator more important than the others, and they will not be weighted against each other; they are all equally important.

How the indicators were developed

Box 35: The key steps taken in developing and agreeing the indicators

Stage	Details	Supporting documents
Wider discussion in PSE2	The indicators were a major topic for discussion in PSE2. The findings are set out in the Partnership's PSE2 report and are discussed below.	Document 157.1: PSE2 Report
Partnership assessment	After considering the comments made during PSE2, the Partnership agreed to formally adopt the indicators, and to explain how they will be used as part of this consultation.	Document 171: Preliminary assessment report on public and stakeholder views and the indicators of credibility, May 2011

Using net support as an appropriate indicator

Net support basically means the 'yeses' are more than the 'nos' – those who remain neutral or say 'I don't know' are not counted.

We chose net support because we think this is an appropriate indicator to use at this stage in the process. The decision at this stage is about entering the siting process, without commitment to eventually hosting a repository. It is not about saying a final 'yes' or 'no' to having a repository in West Cumbria, and there are still a number of details that would be site-specific and as yet uncertain.

Feedback from PSE2 showed that some people were concerned that if a large number of people say 'I don't know' net support would not be a valid indicator. We have commissioned three opinion surveys so far at various points in the process, and each time between 2% and 5% of people have said they don't know, with on average 22-23% remaining neutral. Based on these figures, we are confident that net support will be a fair indicator to use, as the number of 'don't knows' has been consistently low up to now.

We think that having net support would be enough at this stage. If West Cumbria enters the siting process and when more detail is known about particular sites, further thought would have to be given to what level of support would be needed from particular areas and communities to enter into the later stages of the process.

Opinion survey or referendum

Feedback from PSE2 also showed that some people were concerned about the method used to gauge net support. There was a mix of views expressed, particularly about the relative pros and cons of using **opinion surveys** and **referendums**.

We have discussed this issue at length and we have concluded that, at this stage in the process, an opinion survey rather than a referendum should be used to gauge whether or not net support for a decision to enter the siting process exists. This is because:

- It avoids the claimed negative features of referendums such as low or unrepresentative turnout, manipulation of views by organised interests, over-simplification of the issues, and the risk of other issues influencing people's responses.
- PSE2 found that there is a mix of opinion on using referendums. Although some participants asked that referendums be used as a method of gauging support, on considering the practical implications they concluded that referendums would have to be carried out at the right point in the process, when more detail is available, for example, on impacts, benefits and siting.
- In the limited number of countries where referendums have been used in a volunteer process (Hungary and South Korea), this has only been done at the stage when potential sites and well defined potential host communities have been identified, which is later in the process than we currently are at.

The potential use of referendums and other methods to inform decision making in later stages of the siting process can be kept open for review if a decision to enter the siting process is taken.

We want to make sure that the opinion survey we undertake is independent and statistically representative, and that a legitimate approach is taken. We will therefore be using a reputable polling company and have also hired two expert reviewers to check the methodology and survey, as well as the polling company's work. The reviewers are Doctor Sandy Ochojna (independent consultant) and Professor Patrick Sturgis (University of Southampton).

Opinion survey:

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A poll of public opinion from a sample or sub-set of a particular group or population. Opinion surveys are used to gauge public opinion without having to survey every member of a group or population (in this case everyone in West Cumbria).

Referendum:

i

Putting a question directly to the vote of the whole electorate.

Summary of our approach

In summary:

- ◆ After PSE2, we concluded that no convincing reasons had been put forward to prevent the Partnership formally adopting the Indicators of Credibility.
- ◆ We will only recommend moving forward if our evidence suggests that more people are for than against (net support).
- ◆ We will organise an independent and statistically representative survey to gauge support at this stage, independently reviewed by experts to ensure a fair and accurate approach.
- ◆ We believe a referendum can only be done with all the facts to hand e.g. on siting, impacts and community benefits. The option for a referendum later on remains open, should the process continue.

We will use the indicators after this consultation to help us reach a view about whether our opinions are credible given public and stakeholder views and, if so, whether we wish to make any specific recommendations to the three Councils about entering into the next stage of the MRWS process.

Our final report to the three Councils will explain how the indicators have been used in forming our opinions.

Appendix 4: How the Partnership will analyse and respond to consultation inputs

How can I submit my views?

We would be pleased to receive your views online via our website (go to www.westcumbriamrws.org.uk and click on **Consultation**), or in writing via the response form available in the consultation pack. Alternatively, you can submit short comments via the comments slip available in the consultation overview document. We must receive your views by 23 March 2012 for them to be included. We will not usually accept anonymous responses for reasons outlined in Chapter 1 of this consultation document. See also page 113 for further information on data protection and confidentiality.

What will you do with them?

All submissions to the consultation will be analysed by our independent programme managers. They will be grouped according to question or issue, and a summary report will be written covering each aspect of the consultation, including 'any other comments' that may fall outside the remit of this Partnership.

When and how will I hear how my views have been dealt with?

Alongside the summary report (above) we will write and publish our response to the issues raised. We anticipate that this response will cover issues that we agree with, those we don't, and those that we cannot address for some reason. We will be clear in each case. The summary report and parallel response to the issues raised will be published as soon as possible after the end of the consultation period, and we will notify everybody via our e-bulletin. The report will be published on our website and a paper copy can be requested for free.

Can I submit views on both the comments slip and the response form?

You can, although we will treat this as one consultation submission.

Do I have to use a comments slip/response form? Can't I write a letter?

We encourage everyone to use the detailed response form to submit comments, because we have structured this around the key questions we most want feedback on. However, you can submit views via the comments slip, or simply write to us at the Freepost address (see front cover) stating that you would like us to consider your letter as a formal submission to the consultation. Please provide your name, that of any organisation you represent, and your postcode as a minimum as part of your submission. We will not add you to our mailing list unless you make a request for us to do so.

How does the opinion survey fit into the consultation?

The opinion survey will be conducted at the end of the consultation period to test public opinion in a statistically representative way. The results will be considered

alongside the results of this consultation. See Appendix 3 for more information on how this will be done.

What other events are you organising for this consultation?

We are holding a series of Community Events across Cumbria to help people learn more about the MRWS discussions and have their questions answered. A full list of dates and venues can be found at www.westcumbriamrws.org.uk.

The Partnership encourages you to request a presentation: we will make every effort to respond positively around diary commitments.

Data Protection and Freedom of Information Acts

Use of information provided for reporting purposes. Information provided in response to this consultation may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

As outlined above, a summary report of this consultation will be made available. Responses to this consultation may be displayed on a public website and may be included in published reports. A list of organisations who have registered and a list of organisations who have responded to the consultation may be displayed on a public website and may be included in published reports. Individuals' names or contact details are protected by the Data Protection Act and will not be made public.

Attribution of consultation responses in published documents. For responses made by individuals the response will be displayed but the respondent's name will not. For responses made on behalf of an organisation, the organisation name may be displayed together with the response, but not the name of the individual who made the response.

Requests for confidential treatment of responses. If you request confidential treatment of your response, we will not include it in the display of responses on the website and in the published consultation reports. However, your response may still be subject to publication or disclosure in accordance with relevant legislation such as the Freedom of Information Act. In view of this it would be helpful if you could explain to us in your response to this consultation if and why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but as public authorities are bound by the statutory disclosure requirements in the freedom of information and other legislation, we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Partnership.

Inclusion of personal information in the body of consultation responses. If a consultation response contains a reference to the participant's details, or details of other individuals or organisations, we will assume that the participant is happy for the response to be published, including any such details and that they take full responsibility for such disclosure.

Appendix 5: Summary of the Partnership's Work Programme

This appendix provides an overview of the Partnership's full Work Programme (Document 13.1)

	Workstream	What we are looking for	Tasks
1	Safety, Security, Environment and Planning		
1a	Criterion: 'Satisfied that suitable regulatory and planning processes are in place or being developed to protect residents, workforce and the environment.'	<p>Confidence that necessary regulatory bodies and processes exist or are being developed.</p> <p>Adequate communication links between regulators and the community are present and working.</p> <p>Acceptability of the planning aspects in the early stages of the siting process.</p>	<p>Task 1a(i) – Understand what regulatory bodies are involved, what their roles are and what regulatory processes they have in place or are developing.</p> <p>Task 1a(ii) – Assess the recent and current arrangements for regulatory interfaces with the community.</p> <p>Task 1a(iii) – Understand the context and role of the planning system in the process and any uncertainties associated.</p> <p>Task 1a(iv) – Seek written reassurance from the regulators on the nature of their engagement with a potential Community Siting Partnership (CSP).</p> <p>Task 1a(v) – Ask the NDA and the regulators for commentary on the NWAA submission to the Energy and Climate Change Committee, Issues Register, and 'Rock Solid?' report.</p>
1b	Criterion: 'Satisfied that the NDA RWMD has suitable capability and processes in place to protect residents, workforce and the environment.'	<p>Acceptability of the NDA's process for making a safety case.</p> <p>Acceptability of the NDA's research & development (R&D) programme.</p>	<p>Task 1b(i) – Review the NDA's generic Disposal System Safety Case once it has been peer reviewed.</p> <p>Task 1b(ii) – Review and comment on the NDA's R&D plans.</p>

	Workstream	What we are looking for	Tasks
2	Geology		
2a	Criterion: 'Whether the Partnership is confident in the integrity of the BGS screening work/report.'	Acceptable peer review process. Broad stakeholder confidence in the BGS study.	Task 2a(i) – Understand the peer review process and work with the Government to alter the process if required. Task 2a(ii) – Ask DECC to instruct the start of the BGS work. Task 2a(iii) – Commission independent expert review of the BGS study via consultants on advice from the Geological Society. Task 2a(iv) – Implement the output of the peer review process, as required.
2b	Criterion: 'Sufficient areas remaining in West Cumbria after initial screening to make further progress worthwhile.'	Subjective judgement that the results of the screening leave enough 'possibly suitable' land to make further progress worthwhile.	Task 2b – Assess the BGS report when published.

	Workstream	What we are looking for	Tasks
3	Community Benefits and Impacts		
3a	Criterion: 'Whether the Partnership is confident that an appropriate community benefits package can be developed.'	Acceptable process in place to secure additional benefits – beyond those which derive directly from the construction and operation of the facility.	<p>Task 3a(i) – Understand the Government's perspective on community benefits and what is stated in the White Paper, as well as international experience of other nuclear communities.</p> <p>Task 3a(ii) – Develop with the Government a formal set of cross-party principles by which community benefits would be discussed, agreed and potentially administered, including how benefits might be allocated to different communities.</p> <p>Task 3a(iii) – Understand UK and international experience of community benefits and learning that the Partnership could apply.</p>
3b	Criterion: 'Whether the Partnership is confident that appropriate possibilities exist to assess and manage environmental, social and economic impacts appropriately if they occur.'	Acceptable process is in place to assess any negative impacts and mitigate them.	<p>Task 3b(i) – Understand the likely broad impacts (both positive and negative) of hosting a repository, and how they might be mitigated.</p> <p>Task 3b(ii) – Define a specification for research to assess the likely extent of impacts.</p> <p>Task 3b(iii) – Conduct and monitor research to assess impacts.</p> <p>Task 3b(iv) – Consider results of impacts research, and take a view on their acceptability at this stage.</p>

	Workstream	What we are looking for	Tasks
3	Community Benefits and Impacts (continued)		
3c	Criterion: 'Whether the Partnership is confident that the possibility of a repository fits appropriately with the overall direction of the relevant community/ies.'	Support for the possibility of a repository in relation to other documented long-term priorities.	Task 3c – Understand the vision for the future of West Cumbria and to what extent a repository may or may not fit into it.
3d	Criterion: 'Whether the Partnership is confident that accepting a GDF at some point in the future, and committing the host area to a nuclear future for many generations to come, is economically advantageous and will contribute to economic sustainability.'	Satisfied that there is sufficient prospect of the development of other job-creating investments complementary to a repository that will provide sustainable employment in the long term.	Task 3d – Assessment of commitment to other new nuclear missions that will support employment, and a clear prospect of major sustainable investments from other sectors that will provide sustainable employment.

	Workstream	What we are looking for	Tasks
4	Design, Engineering and Inventory		
4a	Criterion: 'Satisfied that the design concepts being developed are appropriate at this stage.'	Acceptable design concept and flexibility thereof. Reassurance that retrievability is an option, and flexibility to confirm this later.	Task 4a(i) – Examine the generic design concept, and how this translates into a specific design depending on any location ultimately chosen. Task 4a(ii) – Develop a common understanding of the meanings of reversibility/retrievability/recoverability and the implications associated with them and associated monitorability, as well as how flexible the generic design concept is. Task 4a(iii) – Continue to receive updates from the NDA in order to understand the developing generic design concept, and how this translates into a specific design depending on any location ultimately chosen.
4b	Criterion: 'Satisfied with the proposed inventory to be managed in a facility.'	Knowledge of what the inventory could be, and principles that define an acceptable process for how the inventory would be changed, including how the community can influence this.	Task 4b(i) – Develop understanding of the likely inventory range, the process for altering the inventory and how the community might influence it. Task 4b(ii) – Understand the implications of new nuclear build for the inventory and associated requirements for a GDF. To include facility size, footprint, design and length of time it would need to be open.

	Workstream	What we are looking for	Tasks
5	Siting Process		
5a	Criterion: 'Whether the Partnership is confident that the siting process is sufficiently robust and flexible to meet its needs.'	<p>Acceptable process of moving from 'possibly suitable areas' to specific potential host sites.</p> <p>Acceptable CSP process can be defined.</p> <p>Provision for 'pause points' to allow more work to be undertaken at a potential CSP's request (if a decision to enter the siting process is taken).</p> <p>Acceptable nature of (and limitations to) the right of withdrawal.</p> <p>Acceptable degree of Government commitment to sustain the process.</p>	<p>Task 5a(i) – Understand the site selection process, including how the community can influence it.</p> <p>Task 5a(ii) – Understand, and seek reassurance on, how 'pause points' might be introduced and managed.</p> <p>Task 5a(iii) – Understand what a decision to enter the siting process implies and how the right of withdrawal works, what would need to underpin it, and when it ceases to exist.</p> <p>Task 5a(iv) – Seek reassurance and evidence from the Government on their commitment to the process.</p>

	Workstream	What we are looking for	Tasks
6	Public and stakeholder views		
6a	<p>Criterion: 'Whether the Partnership's recommendations are credible given public and stakeholder views' (Note: the word 'credibility' here is used to reference the criterion in the MRWS White Paper, para. 6.22.)</p>	<p>Any recommendation to enter into the siting process would require all of the following to indicate credibility:</p> <ul style="list-style-type: none"> ◆ 'Net support' for entering into the siting process for Allerdale and/or Copeland. ◆ 'Broad support' from the stakeholder organisations in the area, including those that are likely to form a continuing community partnership if a decision to enter the siting process was taken. ◆ Evidence that concerns raised have been, or will be, addressed where appropriate, including explanations as to why not where relevant. 	<p>Task 6a(i) – Design and adopt a PSE Plan.</p> <p>Task 6a(ii) – Initiate, monitor and guide PSE1, including consulting on the PSE Plan.</p> <p>Task 6a(iii) – Reflect on output of PSE1, incorporate output and provide feedback to participants.</p> <p>Task 6a(iv) – Design and adopt PSE2.</p> <p>Task 6a(v) – Reflect on output of PSE2, incorporate output and provide feedback to participants.</p> <p>Task 6a(vi) – Design and adopt PSE3.</p> <p>Task 6a(vii) – Monitor and guide PSE3 as required.</p> <p>Task 6a(viii) – Reflect on output of PSE3, incorporate output in final report and provide feedback to participants.</p> <p>Task 6a(ix) – Consider the pros and cons of using different engagement methods to inform a decision about entering the siting process, as well as any ultimate decision to proceed (to include referendums).</p>

	Workstream	What we are looking for	Tasks
7	Other		
	Supporting Activity		<p>Task 7a – Build the capacity of decision-making bodies and other Partnership members.</p> <p>Task 7b – Manage risks in the process.</p>
	Ethics	Broad understanding of what the ethical issues are, and reassurance that they can be addressed in the future (as appropriate).	Task 7c – Summarise and briefly review the ethics work completed by CoRWM and identify implications for the MRWS process in West Cumbria.

Appendix 6: Useful websites

If you want to find out more about some of the issues covered in this document, here is a selection of useful websites. This is not a complete list, but does provide a range of resources from differing perspectives.

Our website: www.westcumbriamrws.org.uk

Members of the West Cumbria MRWS Partnership

Allerdale Borough Council: www.allerdale.gov.uk

Barrow Borough Council: www.barrowbc.gov.uk

Churches Together in Cumbria: www.churchestogethercumbria.co.uk

Copeland Borough Council: www.copeland.gov.uk

Cumbria Association of Local Councils (representing town and parish councils):
www.calc.org.uk

Cumbria Chamber of Commerce : www.cumbriachamber.co.uk

Cumbria County Council: www.cumbria.gov.uk

Cumbria Tourism: www.cumbriatourism.org

Eden District Council: www.eden.gov.uk

GMB Union/Unite: www.gmbnorthern.org.uk
www.unitetheunion.org/regions/north_west.aspx

Lake District National Park Authority: www.lakedistrict.gov.uk

National Farmers Union: www.nfuonline.com

Nuclear Legacy Advisory Forum: www.nuleaf.org.uk

Prospect Union: www.prospect.org.uk

South Lakeland District Council: www.southlakeland.gov.uk

Other useful websites

Committee on Radioactive Waste Management: www.corwm.org.uk

Department of Energy and Climate Change: www.decc.gov.uk

Joint regulator's website (Environment Agency, Health and Safety Executive and Department for Transport): www.environment-agency.gov.uk/geological-disposal

Friends of the Earth: www.foe.co.uk

Greenpeace: www.greenpeace.org.uk

Nuclear Decommissioning Authority: www.nda.gov.uk

Nuclear Free Local Authorities: www.nuclearpolicy.info

Nuclear Waste Advisory Associates: www.nuclearwasteadvisory.co.uk

Appendix 7: The Government Code of Practice on Consultation

Criterion 1 – When to consult: Formal consultation should take place at a stage when there is scope to influence the policy outcome.

Criterion 2 – Duration of consultation exercises: Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible.

Criterion 3 – Clarity of scope and impact: Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals.

Criterion 4 – Accessibility of consultation exercises: Consultation exercises should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach.

Criterion 5 – The burden of consultation: Keeping the burden of consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained.

Criterion 6 – Responsiveness of consultation exercises: Consultation responses should be analysed carefully and clear feedback should be provided to participants following the consultation.

Criterion 7 – Capacity to consult: Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.

Appendix 8: Partnership members and contacts

The current key representatives of Partnership member organisations are listed below. Where councillors/elected members only are listed, support was usually also provided by officers.

Organisation	Current key representatives and preferred contact details
Allerdale Borough Council	Cllr Alan Smith Email: alan.smith@alderdale.gov.uk Telephone: 01900 827061
	Cllr Tim Heslop Email: tim.heslop@alderdale.gov.uk Telephone: 01900 823276
	Cllr Carni McCarron-Holmes Email: carni.mccarron-holmes@alderdale.gov.uk Telephone: 01900 812834
	Cllr Michael Heaslip Email: michael.heaslip@alderdale.gov.uk Telephone: 08454 185489 Mobile: 07786 625859
Barrow Borough Council	Cllr Ken Williams Email: kenwilliams@barrowbc.gov.uk Telephone: 01229 835290
Carlisle City Council	Jason Gooding Email: jasong@carlisle.gov.uk Telephone: 01228 817001 Mobile: 07515 569031
Churches Together in Cumbria	Revd Dr Lindsay Gray Email: lgray782@btinternet.com Telephone: 01946 822051 Mobile: 07545 188947
Copeland Borough Council	Cllr Elaine Woodburn Email: elaine.woodburn@copeland.gov.uk Telephone: 01946 598530 Mobile: 07748 332838

continued...

Organisation	Current key representatives and preferred contact details
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Cllr Allan Holliday

Email: allan.holliday@copeland.gov.uk

Telephone: 01946 695086

Cllr John Kane

Email: john.kane@copeland.gov.uk

Mobile: 07813 704599 / 07867 983989

Cllr Yvonne Clarkson

Email: yvonne.clarkson@copeland.gov.uk

Telephone: 01946 841126

Cumbria Association of Local Councils (CALC)**Allerdale District Association****Cllr Geoff Smith**

Email: geoffandhelen@btconnect.com

Telephone: 01900 812210

Mobile: 07979 206797

Copeland District Association**Cllr Keith Hitchen**

Email: keith.hitchen@btinternet.com

Mobile: 07843 370085

Cumbria Chamber of Commerce**Robert Johnston**

Email: rob@cumbriachamber.co.uk

Telephone: 0845 2260040

Cumbria County Council**Cllr Tim Knowles**

Email: timothy.knowles@cumbria.gov.uk

Telephone: 01946 811687

Mobile: 07776 238892

Cllr Tony Markley

Email: anthony.markley@cumbria.gov.uk

Mobile: 078248 38287

Cllr David Southward MBE

Email: david.southward@cumbria.gov.uk

Telephone: 01946 841476

Mobile: 07817 394270

Cllr Gerald Humes

Email: gerald.humes@cumbria.gov.uk

Telephone: 01900 63976

Mobile: 07821 678335

Organisation	Current key representatives and preferred contact details
Cumbria Tourism	Richard Greenwood Email: rgreenwood@cumbriatourism.org Telephone: 01539 825024
Eden District Council	Cllr Mike Tonkin Email: mike.tonkin@eden.gov.uk Telephone: 01931 714094
GMB/Unite Unions	Peter Kane Email: peter.kane@sellafieldsites.com Telephone: 01946 773652 Mobile: 07740 096702
Lake District National Park Authority	Robert Allison Email: robert.allison@lakedistrict.gov.uk Telephone: 01539 792672 Judith Cooke (Member) Email: judith.cooke@lakedistrict.gov.uk Telephone: 01768 482829 Stephen Ratcliffe Email: stephen.ratcliffe@lakedistrict.gov.uk Telephone: 01539 792631
National Farmers Union (NFU)	Robert Morris-Eyton Email: rmorriseyt@aol.com Telephone: 01229 772298 Mobile: 07740 081642
Nuclear Legacy Advisory Forum (NuLeAF)	Fred Barker Email: fred.barker@nuleaf.org.uk Mobile: 07803 905430
Prospect Union	Marcus Swift Email: mjs17@sellafieldsites.com Telephone: 01946 775185 Mobile: 07977 999857

Organisation**Current key representatives and preferred contact details****South Lakeland District Council****Cllr Clare Feeney-Johnson**

Email: c.feeney-johnson@southlakeland.gov.uk

Telephone: 0845 050 4434

Cllr Ian Mcpherson

Email: i.mcpherson@southlakeland.gov.uk

Telephone: 015396 20648

Observing members**Committee on Radioactive Waste Management (CoRWM)****Brian Clark**

Email: briandclark@btinternet.com

Telephone: 07712 579528

Mark Dutton

Email: lizmark@lizmark1.co.uk

Telephone: 01625 428 498

Mobile: 07715 498958

Department of Energy and Climate Change (DECC)

Email: radioactivewaste@decc.gsi.gov.uk

Telephone: 0300 068 6218

Environment Agency**Gavin Thomson**

Email: gavin.thomson@environment-agency.gov.uk

Mobile: 07880 570266

Nuclear Decommissioning Authority**Dr Elizabeth Atherton**

Email: elizabeth.atherton@nda.gov.uk

Telephone: 01925 802826

Alun Ellis

Email: alun.ellis@nda.gov.uk

Telephone: 01925 802234

Office for Nuclear Regulation**Mick Bacon**

Email: mick.bacon@hse.gsi.gov.uk

Telephone: 0151 951 4099

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West Cumbria Managing Radioactive Waste Safely Partnership

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0800 048 8912 numaralı telefonu arayınız

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