



## Geological Disposal Facility web chat: Answers to outstanding questions

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Thanks to everyone who took part in the web chat on our geological disposal facility consultation on Monday 18 November.

We received 168 questions in total, coming under the following general themes:

- Geology/safety
- Cumbria
- Decision making
- Consultation and call for evidence
- Consultation events
- New build waste
- Disposal of waste internationally
- Community Benefits
- Scotland
- Engineering and cost

Responses included here address all questions relating to the consultation document and process which were not addressed during the web chat because of time constraints.

We have not provided responses on questions relating to any other topics submitted during the web chat, given that it was set up for a specific purpose.

### **Geology and safety**

- If we can throw billions of pounds on repeatedly looking at the same locations with little to no chance of success, and the process itself will cost billions more, why can we not spend a couple of million finding the safest geology nationally instead? Especially when 12 preferable sites have already been identified.
- Why are DECC not putting safety of geology as their highest priority?
- Why has DECC ignored the majority of responses (59%) to the Call for Evidence requesting geology now be investigated at national level?
- Is DECC aware of the work done in the 1980s identifying suitable UK geology by Chapman, McEwan and Beale?
- Is DECC aware that Nirex was of the view that 30% of the UK's geology was suitable?
- Are DECC prepared to accept less than good geology and rely on engineered solutions (notwithstanding no other civilised country is doing so namely all are relying on natural geological barriers)?



- Why are DECC claiming previous attempts at finding a location failed because of lack of engagement when every single one has failed because the geology in the region they were investigating was deemed unsuitable?
- How would long term (e.g 50 years +) safety be maintained?
- What type of geology is the safest to use for nuclear waste storage? And where can this be found in the UK?
- Clay is said to be the best underground rock substance for a nuke waste dump. Why isn't London clay or Cambridgeshire being investigated? People are very concerned that you going to try and build this dump in the Lakes come what may with no regard for future generations.

Issues around geological screening are discussed in the current consultation document, which sets out some proposals and the reasoning behind them. We welcome all views and evidence in response to these proposals.

On geology in particular, there is no single 'most suitable' type of geology in which to construct a GDF. For example, geological disposal facilities have already been designed in other countries to suit a number of geological settings and waste inventories, including bedded salt ("transuranic" wastes in the US), clay (reprocessed High Level Waste in France), and hard crystalline rocks (spent fuel in Sweden and Finland).

Every country that is considering geological disposal expects that safety will be secured through geology and engineered barriers working in combination, and has put considerable effort into container and facility design. No country anywhere is contemplating relying solely on geology to ensure safety, and DECC considers both are likely to be required here too.

On a similar basis, the NDA cannot construct a geological disposal facility (GDF) in any location which could not be demonstrated to be safe. The developer of a GDF will have to demonstrate to independent safety, security and environmental regulators that any proposed facility is safe. Safety is determined not just by the generic type of rock in which the facility is engineered, but by developing a detailed understanding of the local geological features, the hydrogeological systems (water flows) and how these combine with an engineering solution, including waste types, waste packaging and several layers of engineered barrier.

The Government does not currently have a location in mind to site a GDF. Various types of geology in the UK are potentially suitable, with differing engineering solutions tailored to the waste type and the specific geology of any given site.

If we proceed with a new siting process on the basis of the consultation proposals, a geological study will be undertaken much earlier than in the existing siting process. The aim will be to help interested communities understand what is already known about their regional geology and facilitate an informed discussion about geological prospects at the outset.



In tandem with the consultation launch, NDA have published a review of international GDF siting processes, which may also be of interest and is available at the following webpage:

<http://www.nda.gov.uk/documents/upload/Geological-Disposal-Overview-of-international-siting-processes-September-2013.pdf>

The background to the earlier Nirex work has also been in the public domain for some time and the 2005 Nirex summary of its old site selection process remains available online at: [http://www.nda.gov.uk/documents/old-sites/upload/site\\_selection.pdf](http://www.nda.gov.uk/documents/old-sites/upload/site_selection.pdf)

## Cumbria

- It was my understanding that the process of seeking a disposal site in Cumbria was over. Why are you revisiting this here again and does this mean that Allerdale and Copeland councils have yet again expressed an interest in sub-soil disposal in West Cumbria on my behalf without consultation?
- Considering the assurances given by DECC following the county's NO vote in January, is returning to Cumbria as a potential location for such a facility not in fact evidence of predetermination?
- Is DECC predetermined to site a GDF in Cumbria come what may?
- Why do the DECC keep coming back to Cumbria when they have been shown evidence time and time again that the county is geologically, hydrologically, and topographically unsuitable?

The former site selection process in Cumbria ended in January 2013, but the waste still exists and still has to be managed.

The current consultation is about finding a way forward nationally and developing a new site selection process which addresses many of the concerns raised with the former process, and has come about precisely because the previous process, in which Cumbria was taking part, has stopped.

The need for a national approach is also part of the reason why the consultation proposes that we should run a national awareness-raising campaign before seeking volunteers.

Regardless of the specific policy on site selection, any site ultimately selected through a revised voluntarist process will still have to pass the same environmental and safety regulation tests.

## Decision making and roles of local authorities in new proposals

- How can you justify removal of the county council from the decision making? You said there needed to be 3 green lights- yet when these were



not forthcoming you have removed the red lights (county and parish) from future decision making processes. Surely this is just an attempt to get your own way regardless of local democratic process.

- Why has DECC proposed vesting decision making in District Councils when only 3% of respondents to Call for Evidence advocated this?
- Why has democracy been undermined - ie: the overturning of the county council vote- the blatant dismissal of the will of the people?
- Why has the role of the county council been reduced to consultee? Is it that they (Cumbria County Council) previously voted no? The role of the parishes is also reduced. Is that they were the voice of caution throughout mrws1 and in the final analysis rejected the move to stage 4?

There was consistent feedback from the call for evidence that decision-making roles needed to be clarified. The process set out in the 2008 MRWS White Paper did not specify whether Districts or Counties should be the decision making body but it did state that Parish Councils would not be. The current consultation does not propose any change to the role of Parish councils. It is also worth stating that the role of Cumbria County Council in the decisions that took place in west Cumbria under the old process was agreed separately from the 2008 White Paper process, through correspondence between the three councils and Government.

We are not proposing to exclude county councils from the siting process - we intend and wish to work with all levels of local government throughout the site selection process, including county councils, neighbouring districts, and parish councils (where they exist).

The reasons for proposing that district councils should be the 'representative authority' (in a two-tier area in England) in a revised siting process are explained in the consultation document. It is proposed that the final say on whether a community wants to host a GDF resides with none of these local authority bodies but directly with the community, through a demonstration of public support, rather than with the district council, or any other body.

The proposals seek to give people in a potential host community a direct say in what happens – or doesn't happen. Furthermore, it is important to remember that this local, 'voluntarist' process is not a replacement for the normal planning and regulatory processes so it does not remove existing powers. Rather, it is an additional step allowing a potential host community to give its views on whether or not it is willing to take part in the GDF programme.

The current consultation document sets out proposals on how decision making roles could be clarified in a future GDF site selection process. Views are welcome on these proposals alongside the other issues contained in the consultation.



## Consultation and call for evidence

- Why has DECC proposed vesting decision making in District Councils (albeit only in England!) when only 3% of respondents to Call for Evidence advocated this?
- 59% of the 187 respondents to the 'Call for Evidence' strongly recommended a NATIONAL geological survey before calling for voluntary communities. You appear to have rejected this proposal. However, only 3% of the respondents called for county councils to be relegated to a consultative role and yet you have adopted his proposal. Does this not suggest you are attempting to engineer the outcomes to suit your predetermined intent?

Proposals in the consultation have been based on experience and consideration of the evidence available, including responses to the call for evidence, which formed only one part of our external engagements during development of the consultation proposals.

The consultation document sets out proposals across a range of issues relevant to GDF site selection, and sets out the reasoning behind them. We welcome all views and evidence in response to these proposals.

## Consultation events

- Given that the search for a site for a GDF is meant to be a national one why is the DECC only holding meetings about the review of the site selection process in Cumbria, especially as Cumbria is the only county in the UK which has given a resounding NO to the project? - Does this mean that DECC have a predetermined preference for siting the nuclear dump in Cumbria regardless of volunteerism and suitable geology and despite the fact that the majority of the people of Cumbria have already said NO as clearly as they possibly can?
- On Thursday 14 November there was a "workshop" in London specifically for Local Authorities. Can you please inform us how many Local Authorities had representatives at this event?
- Why have the DECC had special meetings with Allerdale council this week, and offered the same to Copeland- have they held similar meetings with other councils around the country?
- Why have the DECC held this week's events in Allerdale, Penrith(Cumbria) and Warrington (Sellafield HQ) and thought they could get away with calling it a national tour?
- If you want to hear views from all over the country why hasn't this webchat been advertised all over the country?

DECC is not only holding meetings in Cumbria.



We have held targeted public and stakeholder events across England and Wales: in Bridgwater, Exeter, Llandudno, London, Nottingham, Oxford, Penrith and Warrington. These events are designed to gather views on the consultation proposals, but do not replace a formal response and we encourage views on all proposals.

This included specific events for local government, nuclear industry stakeholders and for NGOs. All councils nationally have been invited to stakeholder events in their region and to the dedicated event for local authorities, held in London on 14 November. Representatives from 16 councils and local authority organisations across the country attended the London event. Others have attended the events outside London.

Allerdale District Council approached Government directly to ask for a meeting to explain the consultation proposals. We would expect to give equal weight to any similar requests from other local authorities.

The web chat on the GDF siting consultation was advertised widely via Twitter, on the DECC website and to subscribers to various national mailing lists.

## **New build waste**

- Ed Davey stated in the House of Commons on 21 October that he was "satisfied that arrangements were in place to deal with nuclear waste (from the two new proposed plants at Hinkley) both in the interim and in the long term". Without a site for a GDF being identified and agreed, how can he be justified in saying this?
- When the idea of a GDF was first raised it was to hold legacy waste. Apparently it is now intended to hold waste from nuclear new build. Is this the case?
- How are your plans developing for informing the public about the quantity and quality of the new build waste their area would also be accepting?

It has been stated Government policy since the two 2008 White Papers on new nuclear power and on geological disposal that waste and spent fuel from new nuclear power stations will be disposed of in a GDF. Spent fuel will be stored safely and securely on site until a GDF is ready to dispose of the waste.

The Government is satisfied that geological disposal of higher activity radioactive waste from new nuclear power stations is technically achievable, that a suitable site can be identified and that secure interim storage arrangements will be available until a GDF is ready.

There is a proposal in the current consultation for a GDF to take spent fuel and intermediate level waste from a new build programme of a specified maximum size, such as the 16GW(e) for which nuclear operators have developed proposals.. This would set a clear limit on the amount of new build waste that would be within scope



of the GDF, and thus would be an important consideration in the GDF siting process. This is however, a proposal at this stage, and views are welcome on this, alongside the other issues contained within the consultation.

## Disposal of waste internationally

- Is DECC aware of international guidelines on locating a GDF namely simple geology and low relief?
- Why do DECC keep citing false comparators in their discussions on a UK GDF? There may be many storage facilities around the world but none take the mix of materials expected to be stored here in the UK. Blithely reeling off names of international storage facilities without also pointing out that they are in fact low-level waste stores, intermediate level waste stores or are built in climates and geology deemed suitable for the purpose according to IAEA guidelines (clay or desert) is irresponsible and duplicitous.

DECC and NDA are aware of international guidelines and the experiences gained in other countries on the practical challenges of siting geological disposal facilities for a range of waste inventories in a range of geological settings.

Each country seeking to manage higher activity waste for the long term is at a different stage of development and NDA has published a review of international GDF siting processes, which is available at the following webpage:

<http://www.nda.gov.uk/documents/upload/Geological-Disposal-Overview-of-international-siting-processes-September-2013.pdf>

There is no single 'most suitable' type of geology in which to construct a GDF. For example, geological disposal facilities have already been designed in other countries to suit a number of geological settings and waste inventories, including bedded salt ("transuranic" wastes in the US), clay (reprocessed High Level Waste in France), and hard crystalline rocks (spent fuel in Sweden and Finland). Various types of geology in the UK are potentially suitable, with differing engineering solutions tailored to the waste type and the specific geology of any given site to be considered.

Every country that is considering geological disposal expects that safety will be secured through geology and engineered barriers working in combination and has put considerable effort into container and facility design. No country anywhere is contemplating relying solely on geology to ensure safety.

Government policy is that waste types could be co-located in one facility if a suitable site can be identified but that does not preclude us from having more than one facility in different locations if it proves necessary.



## Community benefits

- Is it ethical to offer 'benefits' to poverty stricken cash strapped councils who will effectively be held to ransom since if they withdraw the 'benefit' will have to be paid back?

When the independent Committee on Radioactive Waste Management (CoRWM) originally recommended geological disposal in their 2006 report to Government they also recommended that “community packages” should be provided both to facilitate participation in the short term and to ensure that a development is acceptable to the host community in the long term. CoRWM stated that participation in a siting process should be based on the expectation that the well-being of the community will be enhanced.

The development of a GDF is a multi-billion pound project. This represents a huge investment for any area that hosts the facility. Job-creation will be on a large scale: an average of 550 jobs over the 100-year lifetime of the facility, with about 1000 jobs during peaks in construction. There will also be increased employment in local service industries that support the GDF and its workforce.

The current consultation document sets out proposals on how the provision of community benefits could be given greater clarity in a future GDF site selection process. Views are welcome on these proposals alongside the other issues contained in the consultation.

## Scotland

- What happens to Scotland's waste if they go Independent? Do we dig it up and send it back?

Scottish Government policy is that higher activity radioactive waste arising on sites in Scotland will be managed in the long term in near-surface facilities located as near to the sites where the waste is produced as possible. Whilst the Scottish Government does not support deep geological disposal at this time it continues, along with the UK Government and other devolved administrations, to support a robust programme of interim storage and an ongoing programme of research and development.

## Engineering and cost

- How could we finance any engineered solution given the size of a repository?
- How can any engineered solution last 100,000 years?





The costs of constructing and operating a GDF will be spread across the estimated 100 years of operation and are factored into the nuclear provision, which is the NDA's total liability estimate for cleaning up the UK's civil, public sector nuclear facilities. The cost of disposal of any waste from new nuclear power stations will be borne by new build operators as part of their waste and decommissioning funding arrangements.

Geological disposal is accepted internationally as the best available means of long-term management of higher activity radioactive wastes. Storage at the surface can be safe and secure for as long as it is maintained by society against external threats such as weather, climate change and human conflict. Removing waste permanently from the surface environment can achieve very long-term safety through the combination of multiple engineered barriers, designed to work alongside the natural geological environment, deep underneath several hundred metres of rock while the natural process of radioactive decay runs its course.

Safety is paramount and the UK Government is committed to strong and independent regulation of geological disposal throughout every step of the process.