



## **Nuclear Decommissioning Authority Stakeholder Interests**

The Nuclear Decommissioning Authority (NDA) is a non-departmental public body created through the Energy Act 2004. It is a strategic authority that owns 19 sites and the associated civil nuclear liabilities and assets of the public sector, previously under the control of UKAEA and BNFL.

It is responsible for:

- decommissioning and cleaning up these civil nuclear facilities
- ensuring that all the waste products, both radioactive and non-radioactive, are safely managed
- implementing Government policy on the long-term management of nuclear waste
- developing UK-wide nuclear Low Level Waste (LLW) strategy and plans
- scrutinising decommissioning plans of British Energy

NDA's purpose is to deliver the decommissioning and clean-up of the UK's civil nuclear legacy in a safe and cost-effective manner, and where possible to accelerate programmes of work that reduce hazard. It aims to do this by introducing innovation and contractor expertise through a series of competitions.

NDA reports to the Department of Energy and Climate Change (DECC); for some aspects of our functions in Scotland it is responsible to Scottish Ministers.

In 2008, UK Government published following consultation its Managing Radioactive Waste Safely White Paper. The White Paper sets out how Government would lead on the site selection process for a geological disposal facility, based on voluntarism and partnership with potential host communities. The NDA was tasked with implementing geological disposal and in turn set up its Radioactive Waste Management Directorate (RWMD) responsible for the programme that will deliver a geological disposal facility. In due course its ownership may be opened up to competition in line with other NDA sites. Further dialogue with Government, the regulators and the supply chain will be required before the step is taken to determine whether this is the appropriate implementation approach.

### **NDA RWMD mission and objectives**

RWMD's programme mission is:

*"To deliver geological disposal and provide radioactive waste management solutions."*

In order to deliver this mission RWMD's programme has seven objectives, one of which is to:

*"Deliver a focused R&D programme to support geological disposal and optimised packaging solutions."*

### **NDA RWMD's Research & Development Programme and Prioritisation**



The main drivers for the R&D programme under this objective are as follows:

- The **Disposal System Specification and its supporting justification** – some R&D needs are identified through the development of the Disposal System Specification. Such activities support the clear identification and justification of the requirements set out in the specification and development of technical solutions to achieve these requirements.
- Support the **assessment of packaging solutions** – R&D necessary to evaluate the disposability of specific waste streams and packaging solutions, and to support the development of optimum waste packaging solutions, are identified through Disposability Assessments and through optioneering studies. Depending on the nature of the activities required, R&D may be carried out by waste producers or by NDA (including RWMD).
- Support the **identification and development of GDF concepts** – at this stage of our programme, specific disposal concepts for different types of wastes have not yet been decided and we are carrying out optioneering studies to evaluate the suitability and merits of different concepts. We are also examining different GDF design solutions. Such information will be used during MRWS Stage 5 to support the selection of preferred concepts. This will include work in preparation for a future site characterisation programme.
- The **Disposal System Safety Case (DSSC)** – demonstration of the safety of a GDF is a key driver for the R&D programme. The DSSC and its supporting Status reports describe the current state of the knowledge and identify important knowledge gaps which the research programme needs to address. This may include aspects relevant to a future site characterisation programme.
- **Assessment of environmental impact and sustainability** – the development of the Strategic Environmental Assessment and subsequent Environmental Impact Assessments will place requirements for R&D that are different to those from the DSSC.
- **Support strategic decisions** – R&D needs are identified to support Government policy on long-term waste management strategies. For example, this includes the long-term approach to the management of plutonium and uranium.
- The site selection process based on **volunteerism and partnership** – R&D to meet good practice in working with a community stakeholder partnership.

To this end we manage a highly focussed ‘needs-driven’ R&D programme, complemented by support in the improvement of scientific understanding via our funding of Research Councils UK and a number of international collaborations. Under this approach we seek to influence the development of these programmes in order to obtain the greatest value possible for the UK tax-payer while promoting somewhat more fundamental research. These drivers ensure that the safety strategy for the



geological disposal facility are underpinned by appropriate R&D, and that the R&D feeds into the programme for the implementation of a geological disposal facility in a timely manner

The R&D programme is sub-divided into a work breakdown structure comprising the following nine topics, each broken down into a number of sub-topics detailed in the R&D Programme Overview document (NDA Report NDA/RWMD/073, available on the NDA RWMD on-line bibliography):

- Wasteform evolution;
- Container evolution;
- Near-field evolution;
- Geosphere;
- Biosphere;
- Radionuclide behaviour in the groundwater pathway;
- Release by the gas pathway;
- Waste package accident performance; and
- Criticality safety.

Under RWMD's structured approach to prioritisation identified in our R&D Programme Overview Document we have attributed a rating of high / medium or low to the scale of the knowledge gap and the urgency. These research needs have been taken into consideration by NERC's expert group in developing the scope of the RATE call.

### **The NDA's stakeholder contribution to the RATE programme**

We are augmenting NERC's and EA's funding by £2M over the funding period. NDA will contribute to the programme through the following ways:

- NDA RWMD employs a highly skilled and experienced team of scientists in support of the GDF programme. Successful applicants will be supported by this team, as required, in order to ensure the optimum relevance of research activities undertaken by the consortia;
- NDA RWMD will facilitate access to international geological disposal underground research facilities based at Aspo in Sweden and Grimsel in Switzerland, as appropriate. Specific opportunities will require agreement between NDA and the respective facility owner based on feasibility and relevance.
- NDA RWMD will provide engagement with a broader range of industrial organisations, harnessing industrial expertise in support of specific opportunities (to be agreed under the programme).