

FOUNDATION STUDY

The Deep Isolation Foundation Study is a comprehensive feasibility assessment that applies industry best practices to deliver a technical and economic overview of our nuclear waste management solution within your specific national context.

Understanding if borehole storage or disposal is a viable option is a complex, multi-disciplinary process. The first step is an evidence-based, strategic appraisal. Our Foundation Study incorporates an integrative, data-driven approach that evaluates local, regional, and national criteria through research, interviews, and partner collaboration to assess the most suitable borehole repository options in planning for the storage and/or disposal of spent fuel and high level waste.

DELIVERABLES

Our assessment deliverables present the findings as a structured economic and strategic business case based on a technical suitability review and lays the foundation for a solution delivery roadmap.

1. BUSINESS CASE

- Strategic assessment of the extent to which Deep Isolation's solution meets regulatory, policy and financial objectives for geologic disposal
- High-level costs for implementation of Deep Isolation's solution across the target inventory
- Scenarios showing how these costs might vary across potential candidate geologies
- Qualitative assessment of non-financial benefits of Deep Isolation's solution
- A quantitative and qualitative comparison of costs and benefits with other options (including geologic disposal in a mined repository and long-term storage)

2. REFERENCE ARCHITECTURE

A high-level generic design for a Deep Isolation repository tailored to the geologic and regulatory

requirements— including repository configuration and conceptual design for canisters and borehole casing.

3. TAILORED ROADMAP

A plan for the further work needed to demonstrate and implement Deep Isolation's solution. This draws on Deep Isolation's generic roadmap process (see overleaf) to develop a multi-year high-level plan, tailored to meet the needs of your national context, as well as a more detailed 1-year delivery plan for the first phase of work.

BUSINESS CASE STRUCTURE

Our study systematically addresses six business case dimensions. This six case structure represents global best practices for the design of feasibility studies and business cases, drawn from best practices published by the G20 nations, UK Government's Green Book, World Bank, European Commission as well as guidance on Feasibility Studies for new nuclear power projects from the International Atomic Energy Agency (IAEA).



STRATEGY

The strategic rationals for a Deep Isolation solution



ECONOMICS

A comparison of risks, costs, and benefits across options



SAFETY

A safety case of regulatory and technical requirements



COMMERCIAL

Risk management, supplier integration, and compliance



FINANCIAL

Budget impact, cost distribution, and affordability



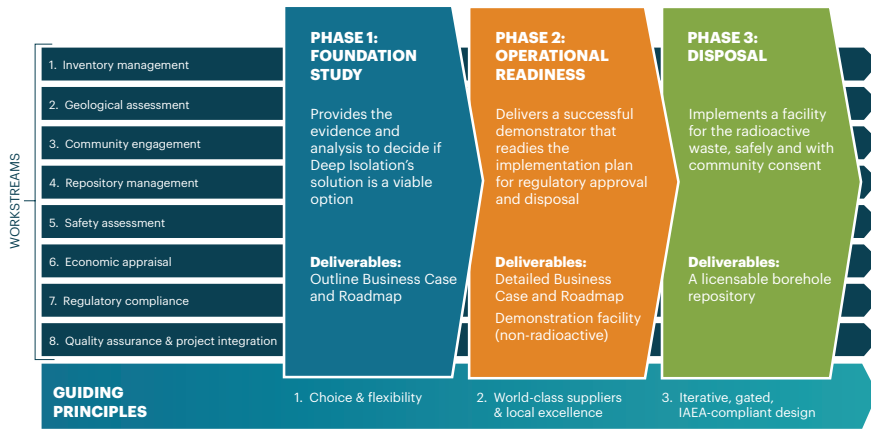
MANAGEMENT

The management case from implementation to operations and monitoring

DEEP ISOLATION ROADMAP

The Deep Isolation Roadmap provides a practical and evidence-based framework for evaluating and deploying Deep Isolation's unique technology and business solution for deep borehole disposal of radioactive waste. It uses a phased and gated process, aligned with IAEA-recommended best practices, to ensure safe, timely and quality-assured implementation.

DEEP ISOLATION ROADMAP



WORKSTREAMS

Deep Isolation's Foundation Study is structured to follow eight interconnected workstreams for an iterative, data-driven approach that will function throughout all three phases of our solution delivery roadmap:

- 1. Inventory management:** Examines the waste inventory being considered for borehole storage/disposal, and how it would be prepared, packaged and transported to the repository.
- 2. Geological assessment:** Provides a detailed understanding of the geologic environment for hosting the repository; both in terms of the drilling and construction as well as the long-term safety performance of the repository within the geologic environment(s) of specific candidate sites.
- 3. Community engagement:** Ensures plans are informed at all stages by community engagement and consultation with intentions to gain support and buy-in from key stakeholders, as well as relationship building for future support of potential long-term disposal.
- 4. Repository design:** Outlines a strategy and plan for a repository design that meets relevant regulatory and policy requirements, both for a demonstration facility and for the longer-term disposal solution.
- 5. Safety assessment:** Ensures the safety case is clearly understood, evidenced and documented.
- 6. Economic appraisal:** Develops the cost benefit analysis for nuclear waste disposal in the repository, including the potential social and economic benefits for the local and national economy, and to develop recommendations on how the commercial and procurement model for the repository can help optimize those benefits.
- 7. Regulatory compliance:** Planning and delivery of a Deep Isolation repository is carried out in compliance with relevant national and international policy and regulatory requirements.
- 8. Quality Assurance and project integration:** Manages the project as an integrated whole and delivers Quality Assurance across all aspects ensuring relevant regulatory and policy requirements are met.

GUIDING PRINCIPLES

To plan and deliver a Deep Isolation Solution Roadmap, we seek to follow three principles to inform and guide our work:

PRINCIPLE 1: Provide our clients with choice and flexibility

We work with you to deliver results that are aligned to your needs whether that be as a sole-provider or in partnership with other contractors or institutions within your budget and timeframes.

PRINCIPLE 2: Combine world-class suppliers and local excellence

Deep Isolation brings together local and international experts combining the skills recommended by the IAEA. We also draw on our global supply chain partners, including Bechtel, NAC and our technology advisor, Schlumberger.

PRINCIPLE 3: Follow a gated process of iterative engineering design, embracing IAEA practices

Our repository development roadmap aligns to the stages of the IAEA's generic repository design process. Our workstreams and systems engineering processes follow a requirements-driven, gated process from initial concept to final design.

