

Introduction to Geological Disposal

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Radioactive Waste
Management

Working together to protect the future

Introduction to Geological Disposal

Our vision and mission

Radioactive Waste Management (RWM) was established in 2014 as a wholly-owned subsidiary of the Nuclear Decommissioning Authority (NDA)

Our vision

is to create a safer future by managing radioactive waste effectively, to protect people and the environment.

Our mission

is to deliver a Geological Disposal Facility and provide radioactive waste management solutions.

What is Geological Disposal?

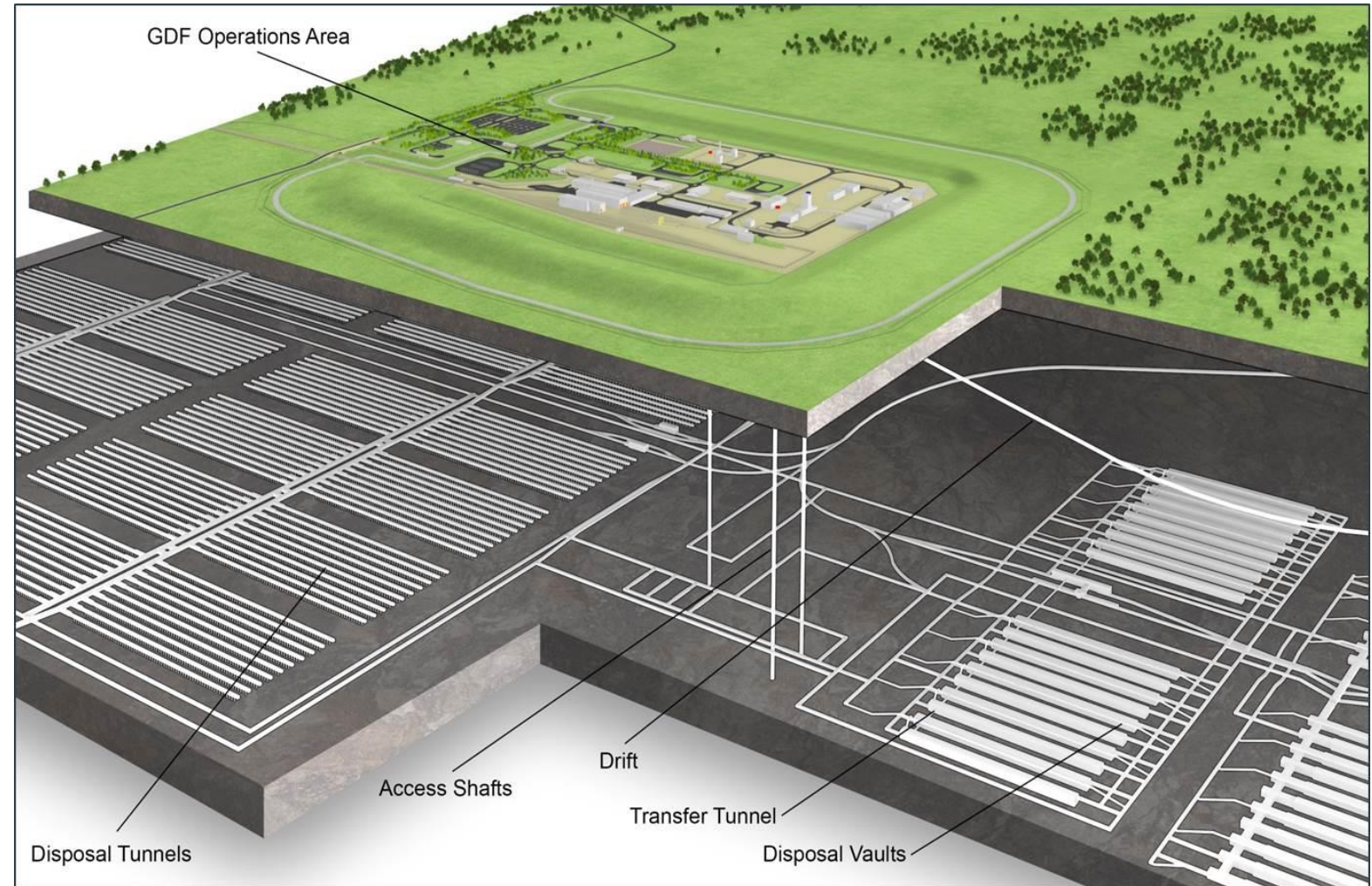
Key principles:

ISOLATE radioactivity from the surface

CONTAIN until most of the hazard has decayed

PASSIVE safety, not requiring human action

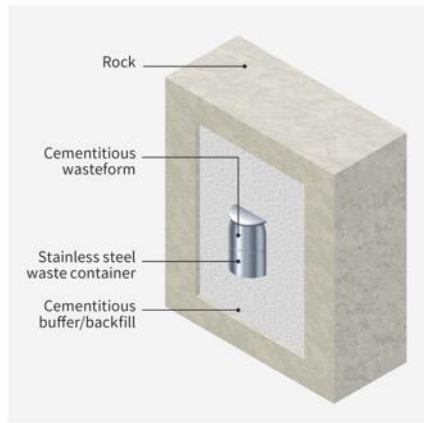
Internationally accepted as best solution for long-term management of these wastes



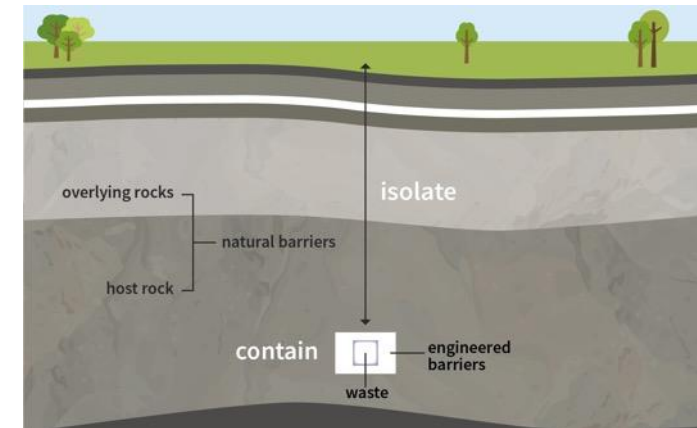
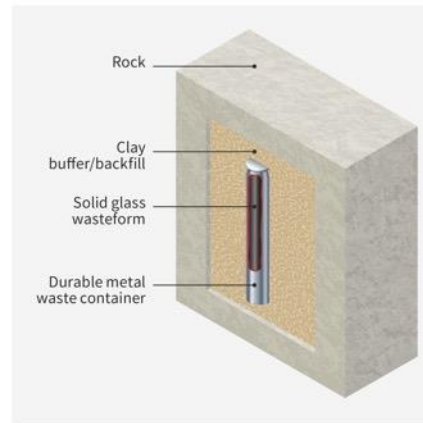
How does geological disposal work?

Engineered and natural barriers **isolate** and **contain** radioactive waste.

Intermediate Level Waste



High Level Waste

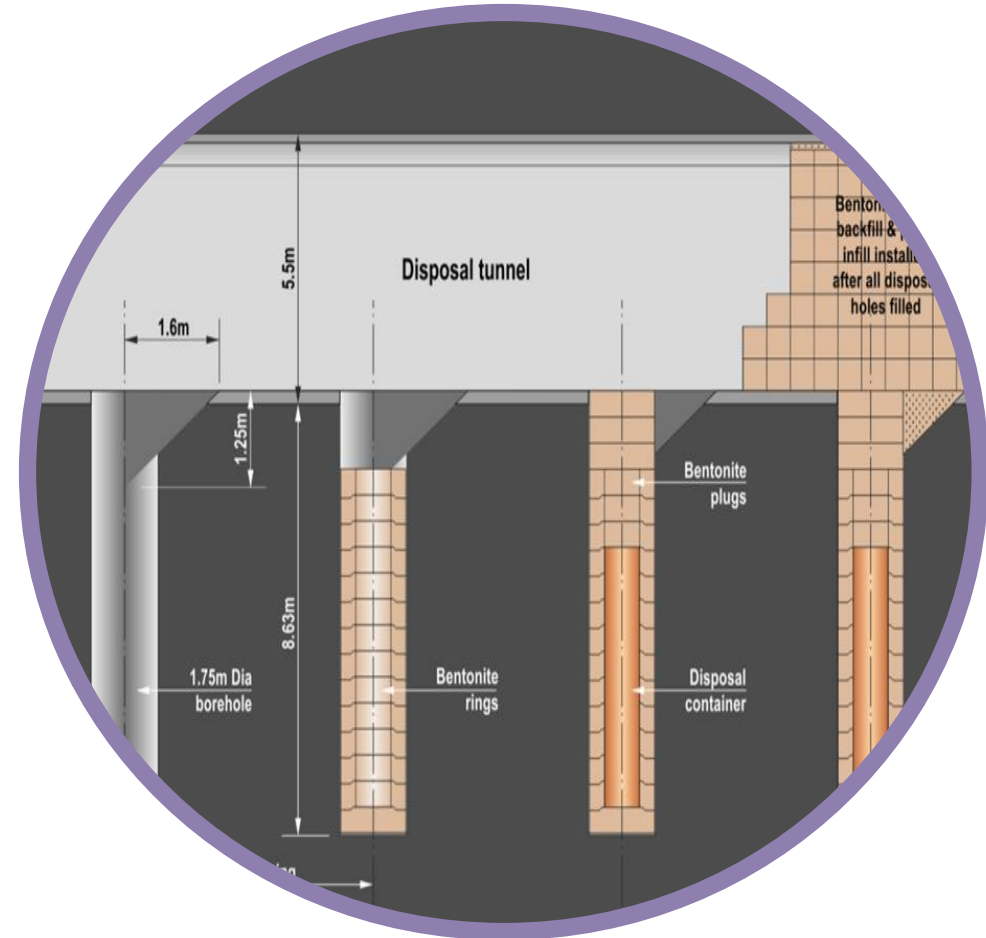


- Geological disposal provides safety through a combination of man-made (engineered) and natural barriers that work together to provide isolation and containment of radioactive waste. This is called the **multi-barrier approach**
- Solid radioactive waste is packaged in secure engineered containers, typically made of metal or concrete, and then placed in a stable rock formation hundreds of metres below the surface, with the containers surrounded by clay or cement

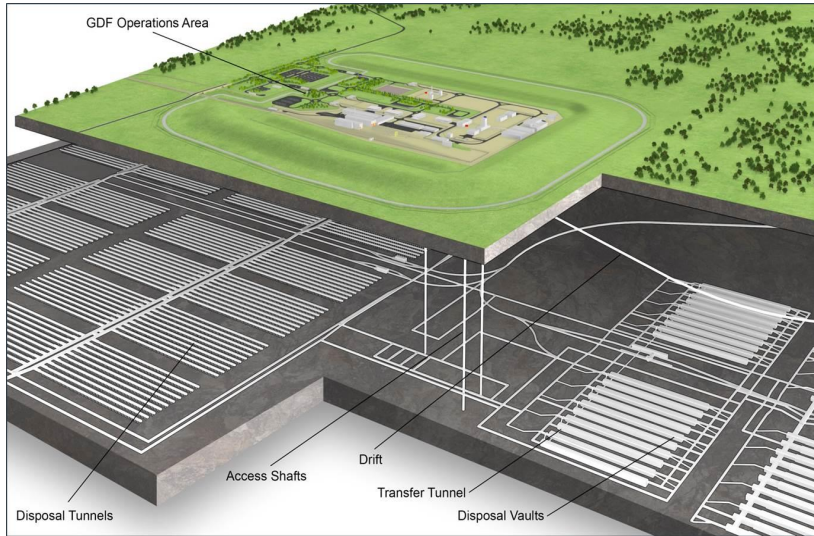
ILW disposal in vaults



HLW Disposal in Deposition Tunnels



What could a GDF look like?

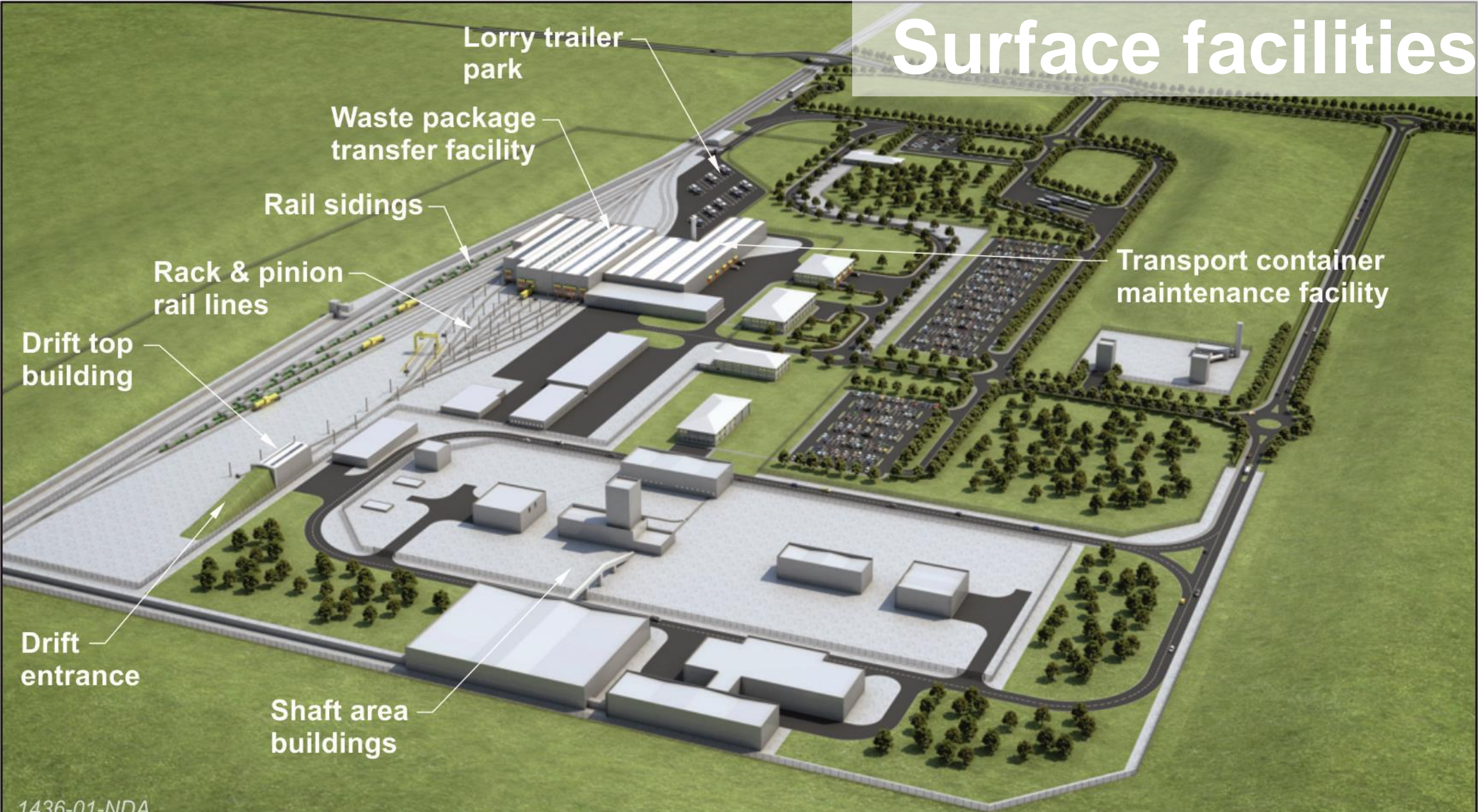


- Surface facility c1km² but could be as small as 0.6km²
- Underground vaults between 200m and 1,000m deep
- Surface connected to underground by shafts or inclined tunnels called “drifts”
- Underground can be directly below surface facility or can be latterly displaced by 10-15km



- Surface facilities built onshore
- Underground vaults can be positioned under the land surface or under the sea in the inshore zone which extends up to 22km from the shoreline
- Coastal locations open up the possibility to establish sea transport for construction and other materials
- Spoil from construction can be used to screen the facility or other beneficial uses

Surface facilities



Geological Disposal around the world



POSIVA,
Finland

SKB,
Sweden



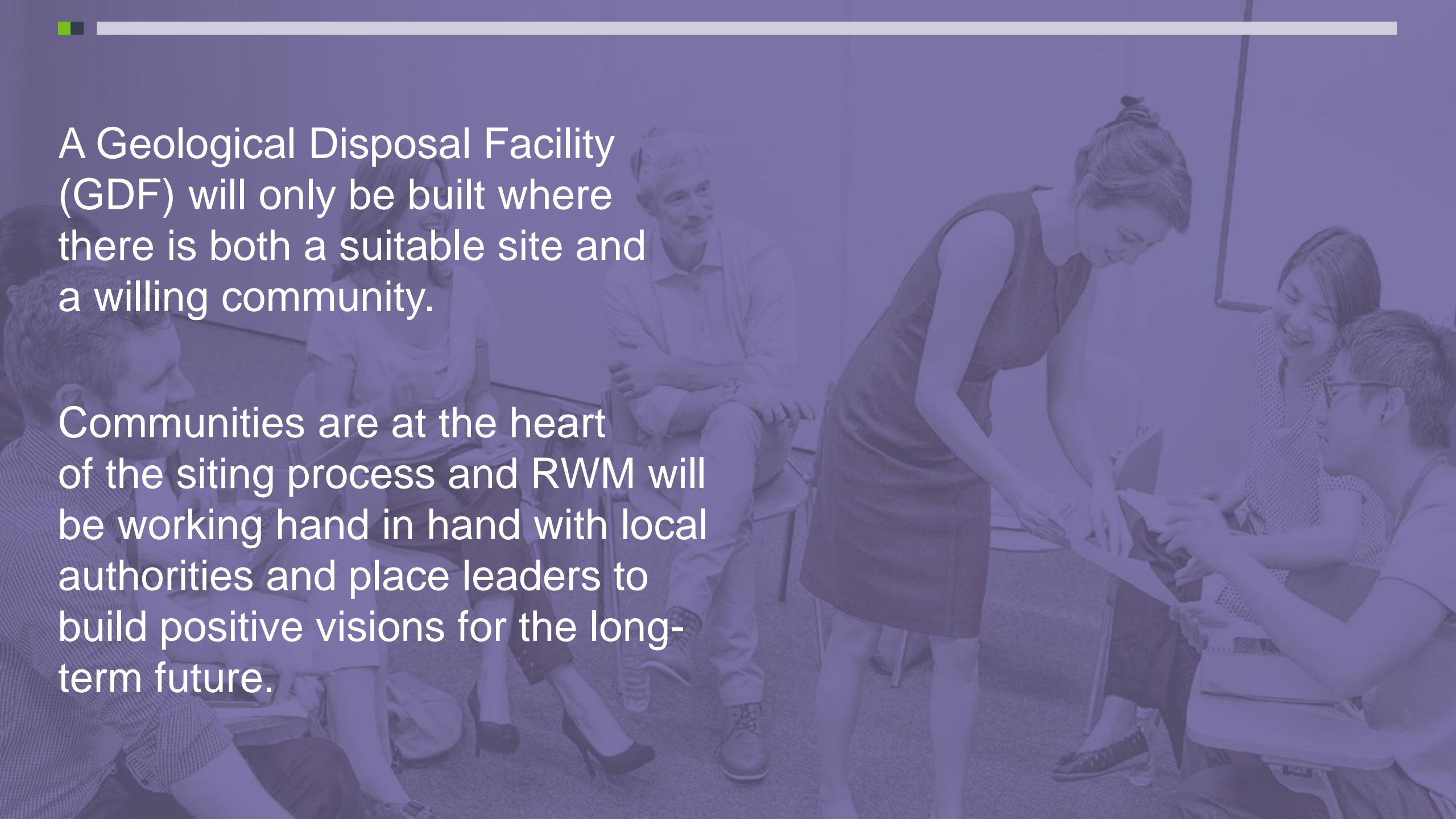
NAGRA,
Switzerland



WIPP,
USA



ANDRA,
France

A group of people are gathered in a meeting. A woman in a dark dress is standing and pointing at a document on a table. Several other people are seated around the table, looking at the document. The background is a plain wall with a whiteboard.

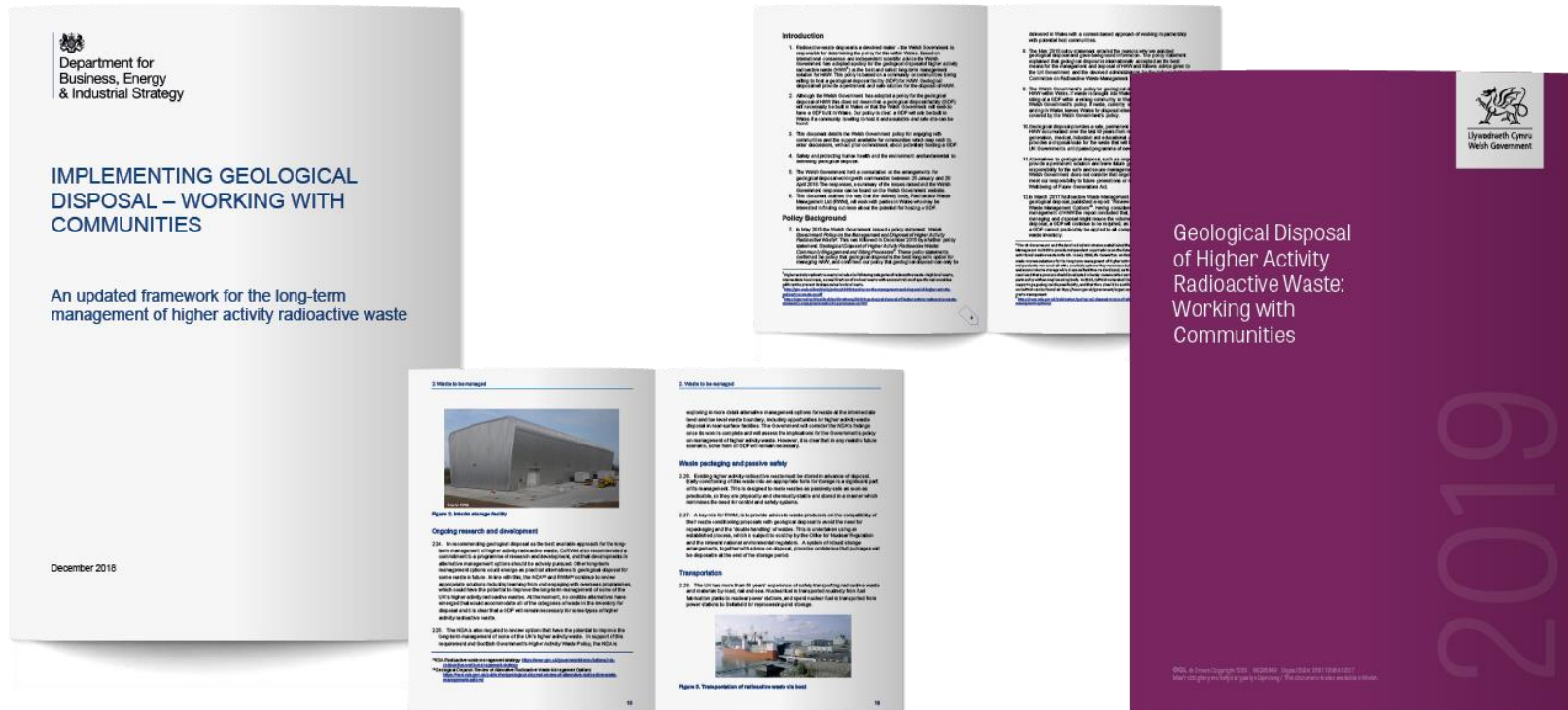
A Geological Disposal Facility (GDF) will only be built where there is both a suitable site and a willing community.

Communities are at the heart of the siting process and RWM will be working hand in hand with local authorities and place leaders to build positive visions for the long-term future.

Current UK policies

Local community consent is at the heart of this process and is written into Government policy:

- ✓ UK Government policy published 19 December 2018
- ✓ Welsh Government policy published 16 January 2019



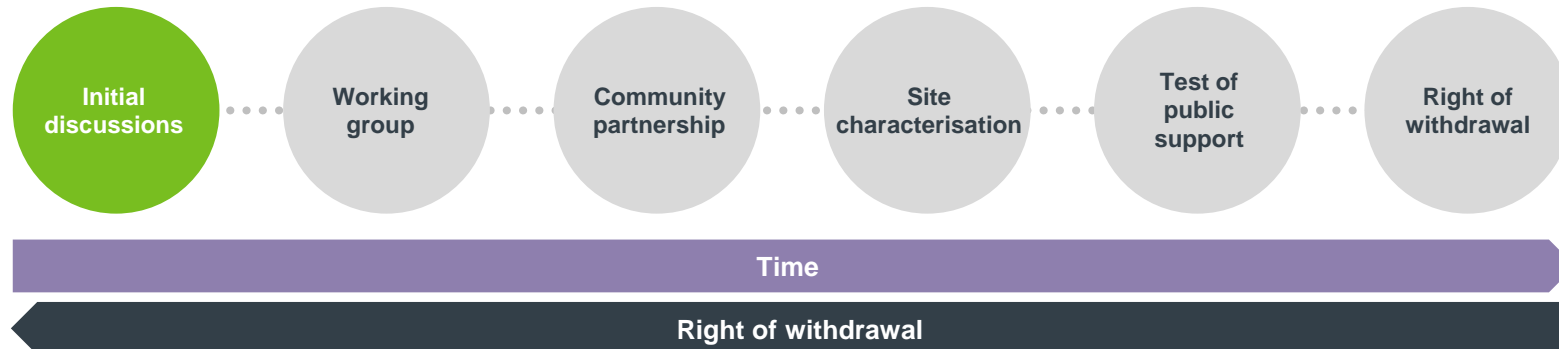
Siting process



Initial discussions

Any person or group of people who wish to propose an area for consideration can approach RWM for initial discussions and to find out more about geological disposal.

After agreement that the proposal merits further consideration, discussions are opened up more widely in the community.



Working Group – scoping the question

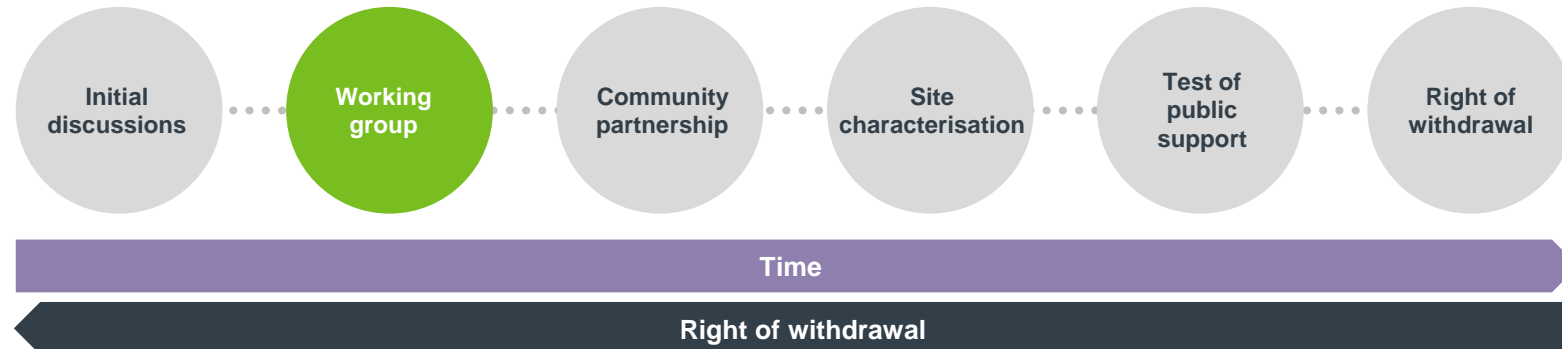
The Working Group will consist of at least the Interested Party, RWM, an independent chair and facilitator.

Local authorities can be members but don't need to be.

Starts to engage the public locally.

Proposes a “Search Area”.

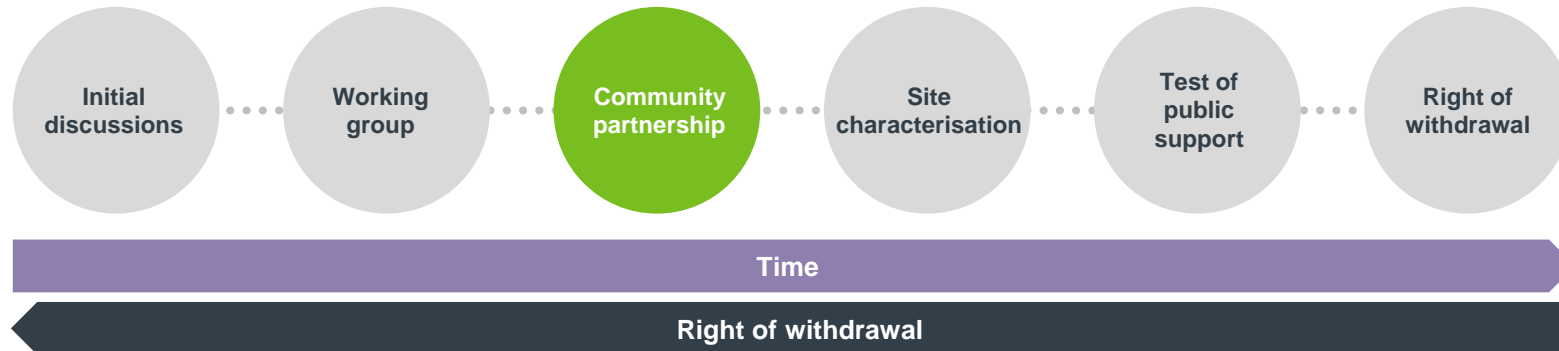
Identifies initial membership for “Community Partnership”.



Community Partnership

After the initial “task and finish” of the Working Group, a Community Partnership is a more enduring body, formed of community members and organisations, RWM and at least one relevant principal local authority.

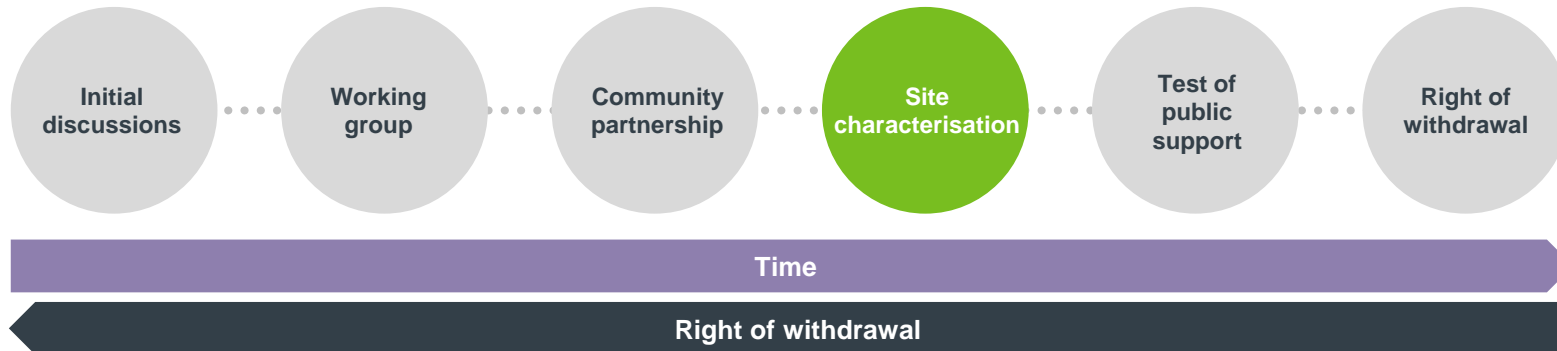
An important job for a Community Partnership is to share information with the community and find answers to any questions that they may have as well as developing the community vision for the future.



Site characterisation

Extensive site characterisation work will be required to demonstrate whether or not a specific site is suitable for a GDF, including geological investigations to develop greater understanding of the deep geological environment.

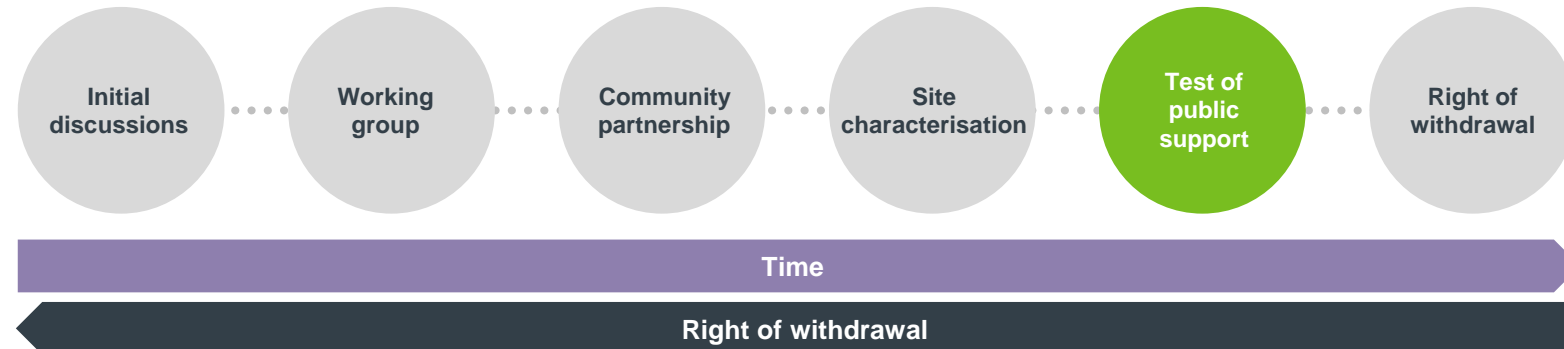
The “Suitable Site” part of the equation.



Test of public support

Before a final site is selected for a GDF, the potential host community, defined using existing district or unitary electoral ward boundaries around a site, must demonstrate it is willing to host a GDF through a Test of Public Support.

The “Willing Community” part of the equation.

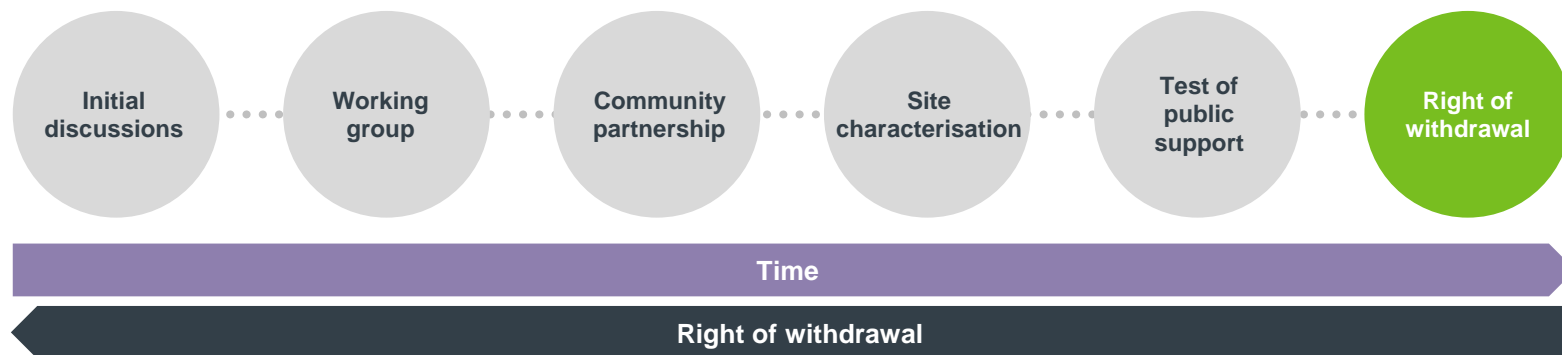


Right of withdrawal

At any point, up to a Test of Public Support, a community may withdraw from the siting process.

The decision to withdraw a community would be taken by the relevant principal local authorities on the Community Partnership but, in areas with two tiers of local authority involved, both would have to agree for the community to be withdrawn.

RWM also has the ability to withdraw.



Summary

1

A multi £billion major infrastructure project that will live within a community for over 100 years – huge opportunity to think long-term.

2

RWM is committed to working closely with local communities, local authorities and place leaders on this project.

3

Community involvement and support in this consent-based process is essential – must have both a suitable site and a willing community.

4

Community visions, developed locally, will shape the project and significant additional investments. Chance to maximise positive impacts in green regeneration and sustainable growth.

Get in touch

To learn more about the UK's mission to deal with radioactive waste

Email: **gdfenquiries@nda.gov.uk**

Telephone: **03000 660 100**

Follow us on Twitter

@rwm_gdf_uk

@rwm_community

Visit our communities website at **www.workinginpartnership.org.uk**

Sign up for RWM's e-bulletin **[here](#)**



**Radioactive Waste
Management**

Working together to protect the future

Copeland Working Group

- Working Group onshore area of consideration covers Copeland Borough excluding the National Park.
- Recognition of the 2019 proposed extension area, which would also be excluded from consideration if adopted.
- Deep geology beneath the 'inshore' area can be accessed up to 22.2 km from coast.
- Working Group seeking to begin local engagement, identify 'Search Area(s)' for a Community Partnership to consider and initial membership for that partnership.
- Not making commitments or judging suitability of individual sites.

