



Meeting note

File reference	N/A
Status	Draft
Author	Kay Sully
Date	8 August 2017
Meeting with	Radioactive Waste Management
Venue	Harwell Office, Oxfordshire
Attendees	The Planning Inspectorate Richard Hunt (Senior EIA and Land Rights Advisor) Kay Sully (Case Manager) Radioactive Waste Management (am session) Peter Lock Matthew White Andrew Craze Radioactive Waste Management (additional attendees for pm session) Andy Parkes Stuart McLaren Stephen Brown Matthew Meldrum Glenda Crockett Mark Gough
Meeting objectives	To discuss the Planning Act 2008 process for Nationally Significant Infrastructure Projects (NSIPs)
Circulation	All attendees

Summary of key points discussed and advice given

Introduction

Radioactive Waste Management (RWM) and the Planning Inspectorate (the Inspectorate) introduced themselves and their respective roles. The Inspectorate outlined its openness policy and ensured those present understood that any issues discussed and advice given would be recorded and placed on the Inspectorate's website under s51 of the Planning Act 2008 (PA2008). Further to this, it was made clear that any advice given did not constitute legal advice upon which RWM (or others) can rely.

Presentation by RWM

RWM presented an overview of the proposed Geological Disposal System, setting the context for disposal of higher activity radioactive waste in England or Wales.

It was explained that geological disposal is internationally recognised as the safest and most secure means of permanently managing higher-activity waste, with countries including Finland, Sweden, Canada and the USA pursuing or operating

similar facilities. RWM set out that its key principle is to isolate and contain radioactive material from the surface by using multiple barriers as part of a highly engineered facility around 200 - 1000 metres below ground, together with the natural geological barrier. RWM noted that identifying a willing community will be integral to the successful implementation of geological disposal as shown by UK and international experience and reflected in Government Policy..

After a policy of geological disposal was set out in 2008, a new framework for implementing geological disposal was set out by the UK Government in 2014; RWM then began an initial phase of national geological screening as part of a suite of initial actions set out in the 2014 framework. Once this and the parallel work led by Government to guide the approach to working with communities are complete, the processes to identify potential sites for a GDF will commence. As part of a third initial action to clarify the approach to development consent of geological disposal infrastructure in England, UK Government is developing a National Policy Statement and accompanying Appraisal of Sustainability and Habitats Regulations Assessment.

Once sites have been identified, they will be evaluated to identify those sites proposed to be characterised through an extensive programme of geological investigations using a range of techniques - including the use of deep boreholes - to determine the suitability of those sites. RWM has identified that the investigatory phase of deep boreholes required to characterise a prospective host site may take between 5-15 years to complete. RWM identified that as many as 20-30 large boreholes may be required and is considering the degree of flexibility that might be required for an application for development consent under the PA2008. The Rochdale Envelope principle was discussed and RWM were advised to consider the Inspectorate's Advice Note 9 – Using the 'Rochdale Envelope'.

Further details can be found in [RWM's presentation](#).

Presentation by the Inspectorate

The Inspectorate explained that the PA2008 process is front-loaded and that the pre-application stage is important for carrying out consultation and any necessary environmental assessment prior to making an application. It is important that Applicants (and others) can access helpful and timely advice about what they are required to do and when. The Inspectorate will assist with this by providing s51 advice, carrying out any outreach meetings where necessary and reviewing Applicant's draft documents. It was emphasised that better pre application engagement would lead to a smoother examination.

The Inspectorate emphasised the importance of meaningful engagement with communities and other stakeholders. Statutory consultees would also play a vital role in providing advice to Applicants within their statutory remit; helping to shape the application as well as being a consultee at scoping stage. Local authorities would also be integral to the process and would produce Local Impact Reports and subject to a consent, would discharge and enforce requirements. It is also important that Applicants ensure landowners are engaged as they too will help shape application.

The Inspectorate explained the benefit to the developer of requesting a Scoping Opinion for a Proposed Development, as this an opportunity for the Inspectorate (on behalf of the Secretary of State) to provide comments on the scope of the EIA assessments including the topics to be considered, the description of the baseline

environment, the applicant's proposed survey and assessment methodology, such as study areas and potential receptors, proposed mitigation and signpost to NPS (where relevant). Essentially, this would be what information on the proposed development is necessary for an effective EIA and so we would strongly encourage engagement at this stage.

The Inspectorate advised RWM that any Associated Development (AD) should be proportionate to the nature and scale of the principal development and should not be an aim in itself but should be subordinate to the principal development. It requires a direct relationship between associated development and the principal development and that it is for the Secretary of State to decide on a case by case basis whether or not development should be treated as AD. It was noted that the Secretary of State can only consider AD in conjunction with the principal development and has no power to consider a separate application unless the development requires development consent under the Planning Act in its own right

The Inspectorate advised that Applicants seeking authorisation for the compulsory acquisition of land should make appropriate provision for this in their draft Development Consent Order. The Applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored. The Statement of Reasons should seek to justify the compulsory acquisition sought, and explain in particular why in the applicant's opinion there is a compelling case in the public interest for it. This includes reasons for the creation of new rights.

Further details can be found in the [Inspectorate's presentation](#).

Date of next meeting

It was agreed that RWM would maintain contact with the Inspectorate regarding the development of any Proposed Development.

Radioactive Waste Management Presentation



Radioactive Waste Management

History of Higher Activity Waste Management

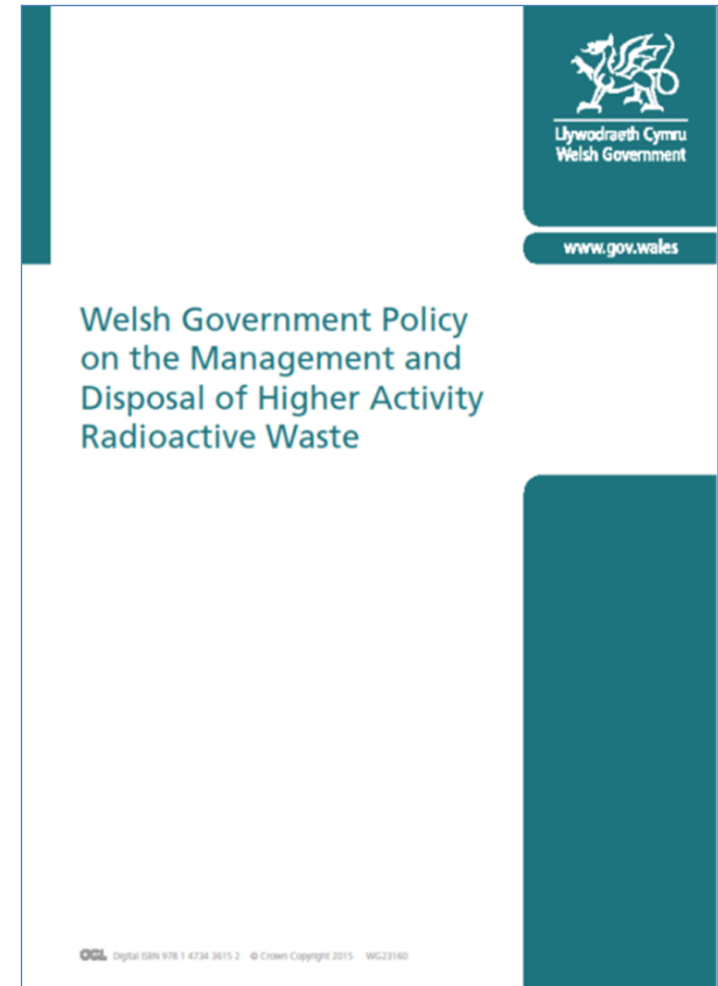
- 1976 Flowers report
- 1978 UKAEA high level waste studies – first planning applications submitted
- 1983 Moratorium on sea dumping
- 1983 Nirex established
 - Considered disused mine ICI Billingham 1983
 - Four shallow sites considered in 1986
- 1997 Sellafield Rock Characterisation Facility decision
- 2001 Managing Radioactive Waste Safely process (MRWS) started
- 2003/07 Committee on Radioactive Waste Management (CoRWM)
 - recommendations 2006
 - reconstituted 2007
- 2008 MRWS White Paper – Implementing Geological Disposal
- 2008/09 Expressions of interest received
- 2013 Cumbria County Council decision
- 2013 DECC consults on revised siting process
- 2014 White Paper – Implementing Geological Disposal
- 2015 Welsh Government Policy on Disposal of Higher Activity Waste

Higher Activity Waste Policy – England and Northern Ireland

- Policy of geological disposal set out in 2008
- New framework set out in 2014
- Initial actions
 - a national geological screening exercise
 - amendments to national land-use planning
 - clarity on how RWM/BEIS will work with communities
- Recognises importance of providing upfront information on issues such as geology, socio-economic impacts and community investment
- Remains based on communities willingness to participate

Higher Activity Waste Policy - Wales

- The Welsh Government has adopted a policy for the geological disposal of higher activity radioactive waste similar to that adopted in England



Higher Activity Waste Policy - Scotland

- Policy – management of waste near site
- Strategy in support of the policy position on the long-term management of higher activity waste in near-surface facilities



**Implementation strategy
for Scotland's policy
on higher activity
radioactive waste**

December 2016

 Scottish Government
Riaghaltas na h-Alba
gov.scot

RWM Corporate Strategy

- Sets out vision, mission and values
- Identifies key strategic drivers
- Describes RWM's strategy and governance arrangements to achieve the vision and mission
- **Our mission** - deliver a geological disposal facility and provide radioactive waste management solutions



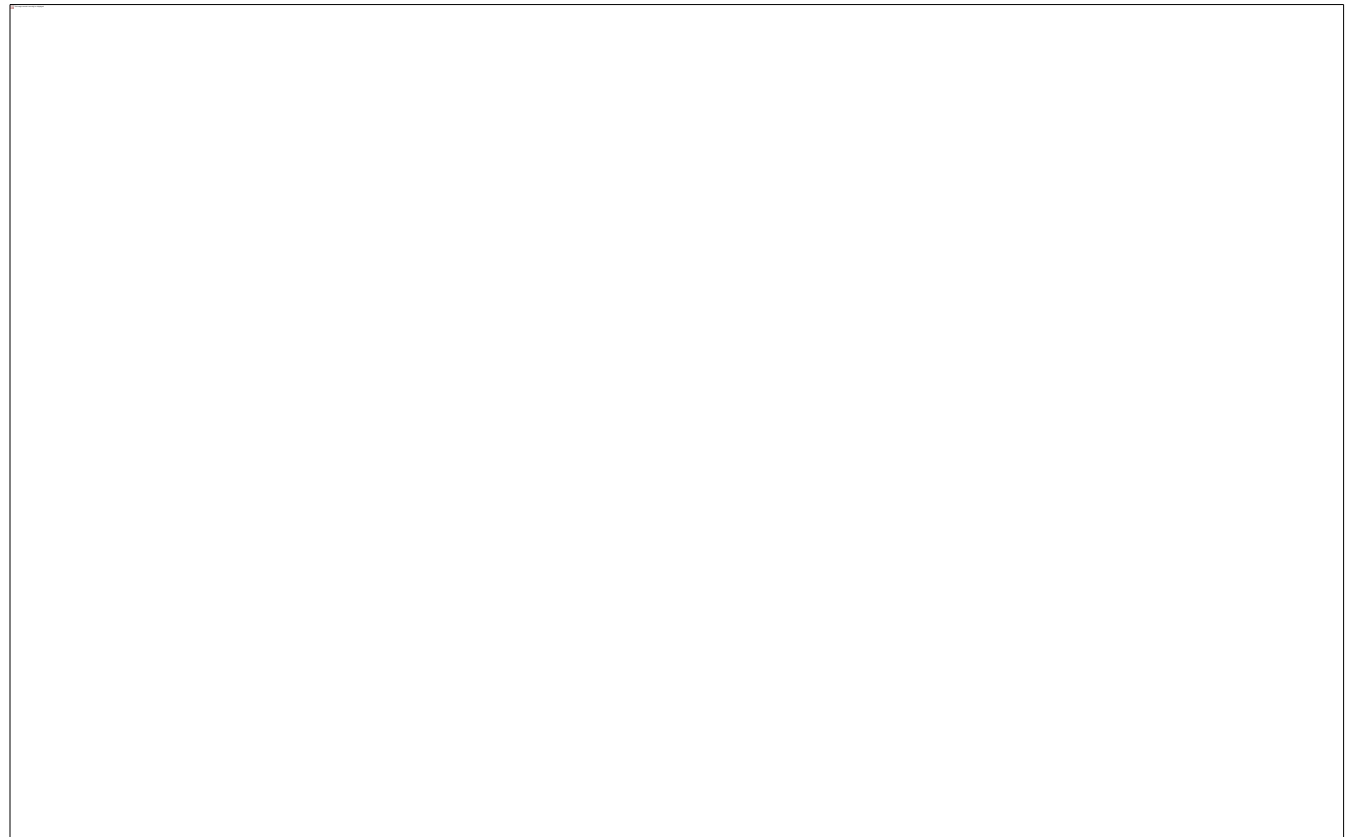
What is geological disposal?

Key principles:

ISOLATE radioactivity
from the surface

CONTAIN until most of
the hazard has
decayed

PASSIVE safety, not
requiring human action



Needs **suitable site**, a **willing community** and
wastes packaged in suitable form

Higher Activity Waste

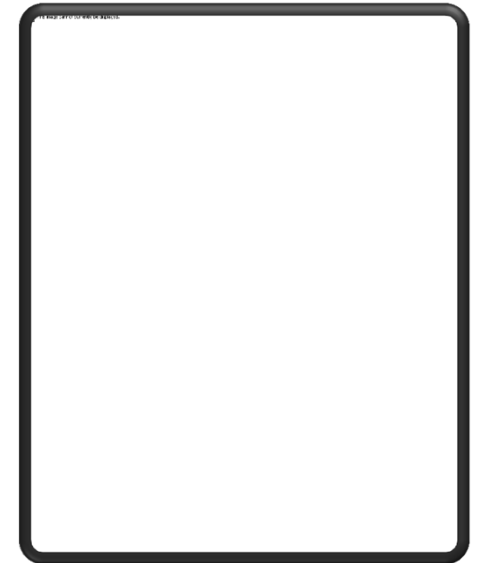
Dealing with the legacy

Supporting new build

- High Level Waste
- Intermediate Level Waste
- small amounts of Low Level Waste
- Spent Nuclear Fuel
- Plutonium
- Uranium



Dealing with the Legacy



Supporting New Nuclear Build – 16GW Planned Capacity



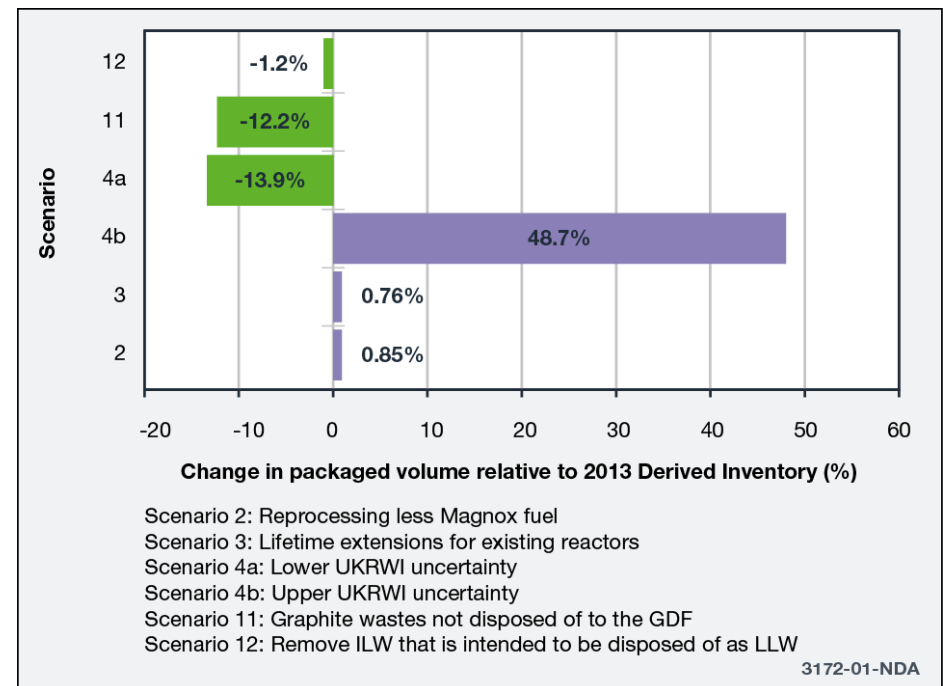
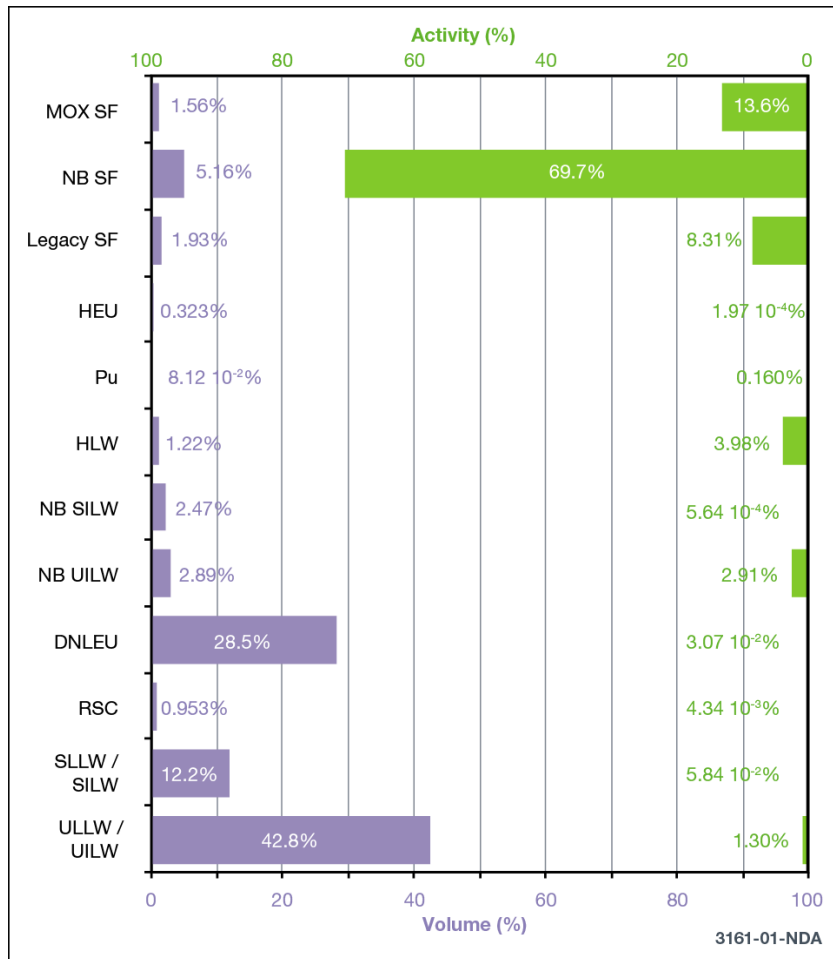
Wylfa



Hinkley Point



Disposal System Specification (DSS) - Inventory



Geological disposal: making it happen



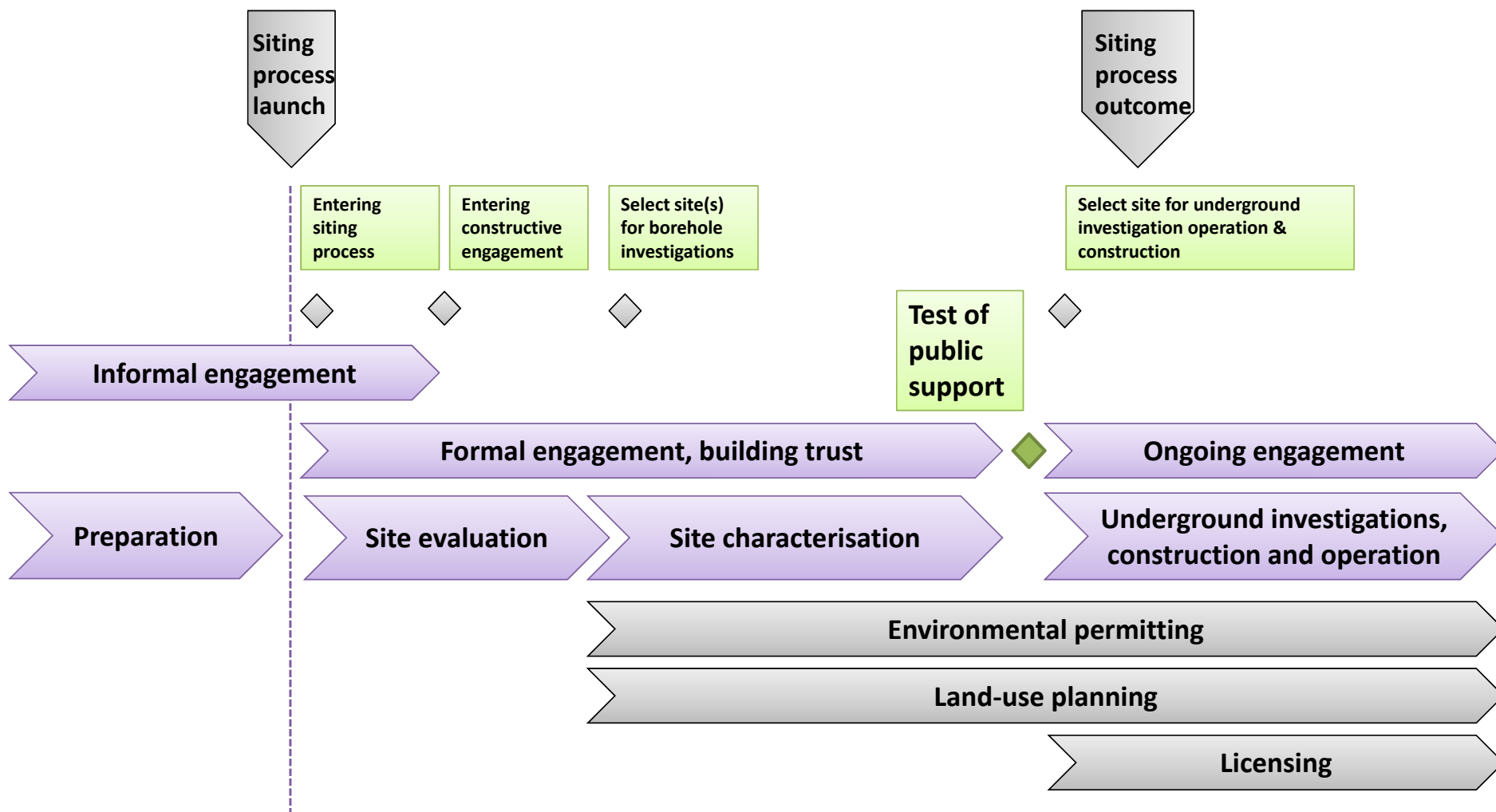
Making it safe: Office for Nuclear Regulation and environment agencies - independent bodies that will only authorise construction and operation of any facility if the developer can demonstrate that it will be safe, secure and the environment will be protected.



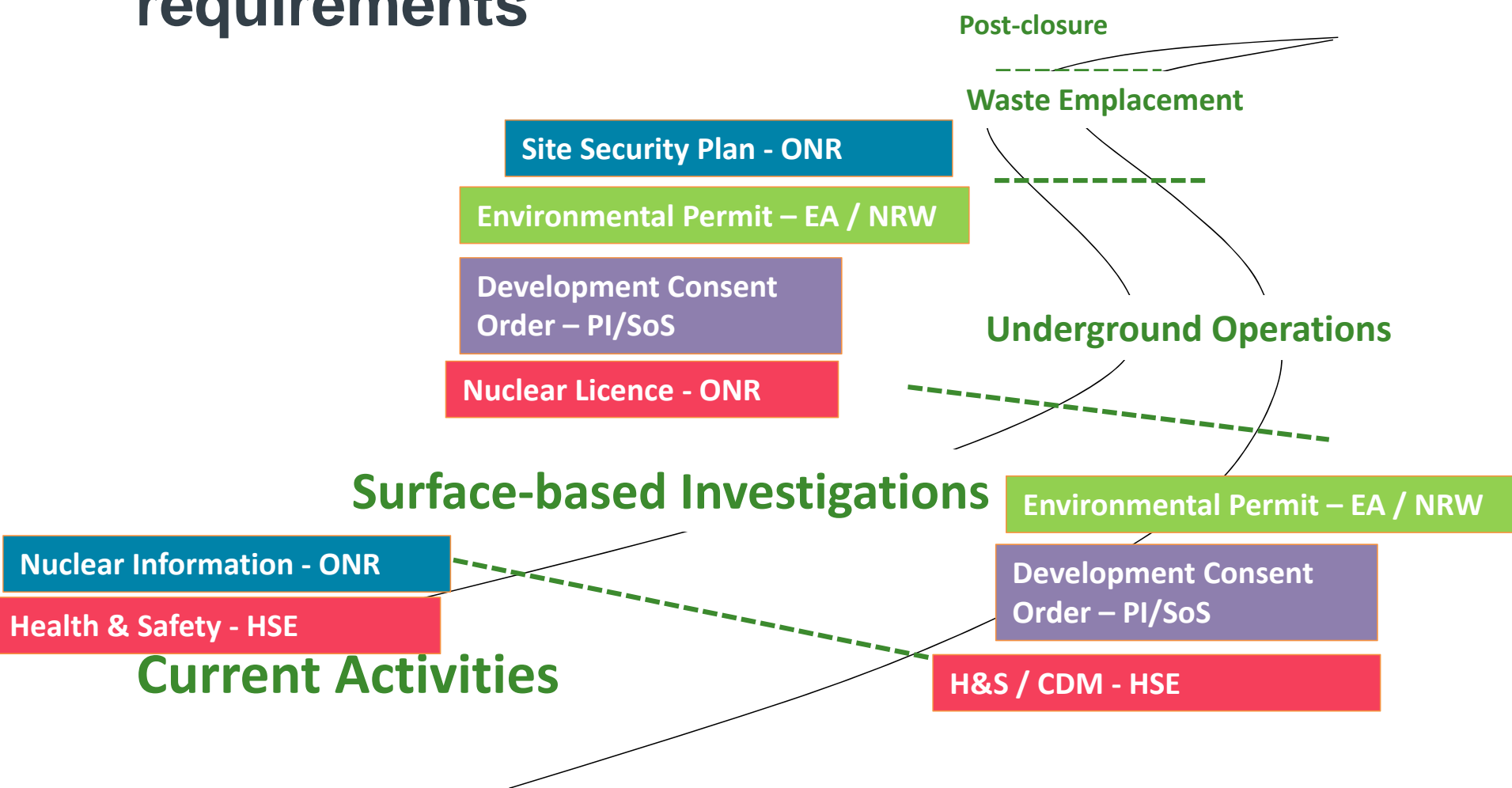
Engagement: Communities can talk to Government and the developer at any time, although formal discussions will only begin in 2016. There will be open dialogue throughout the entire process and a test of public support will be carried out before construction of a geological disposal facility can begin.

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Overview of the GDF siting process



Regulatory Road Map – understand risks and requirements



Disposal System Design and Safety Case

- **Generic designs**
 - higher strength rocks
 - lower strength sedimentary rocks
 - evaporites
- **Examples exist in all rock types**
- **Disposal System Safety Case**
 - addresses transport, construction and operation and long-term environmental safety
 - subject to independent regulatory scrutiny

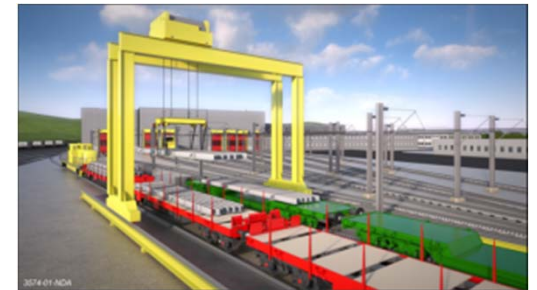
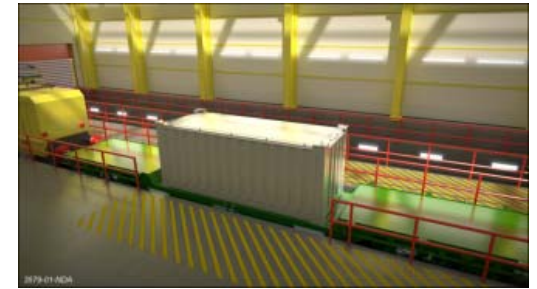
Transport System Concept Design

Transport System Design:

- New transport containers and transport overpacks
- Increased focus on the transport of people and materials



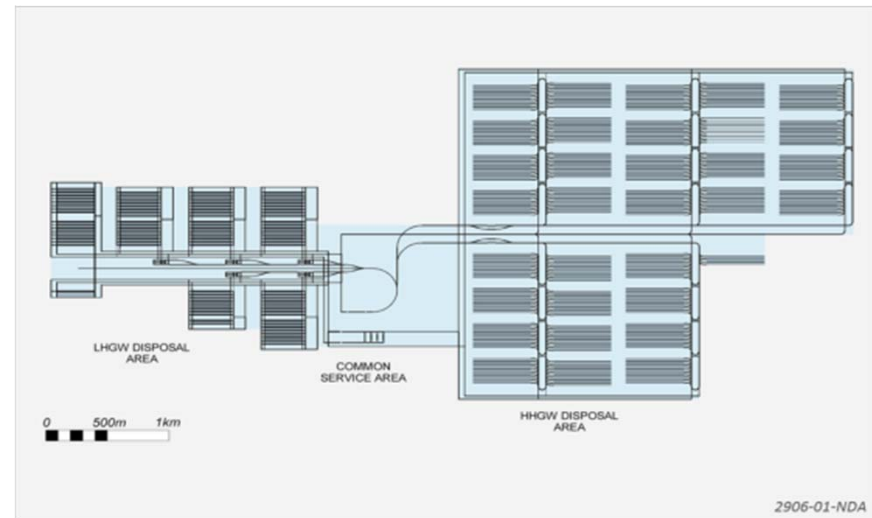
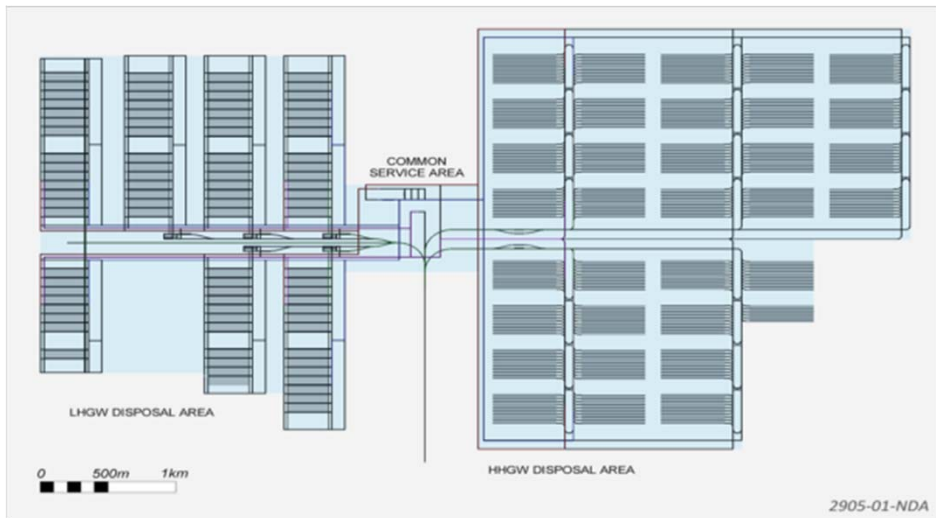
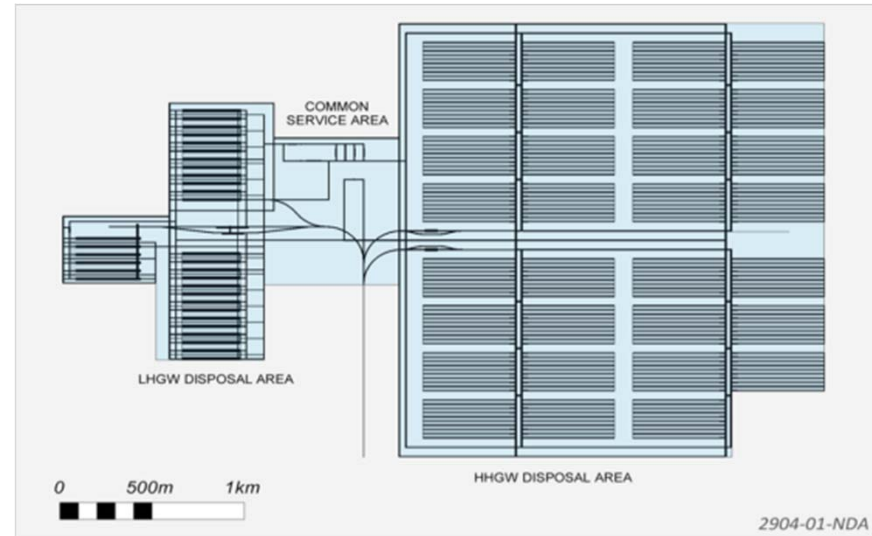
- Reduced environmental impacts of transport of waste, materials and people
- New transport vehicles



Sea Transport



Illustrative GDF Designs



Under the Sea



Surface Receipt and Transfer Facilities



receipt of transport packages, and transfer to drift wagon

drift wagon transfer underground



Emplacement in Vaults

design tools used include:

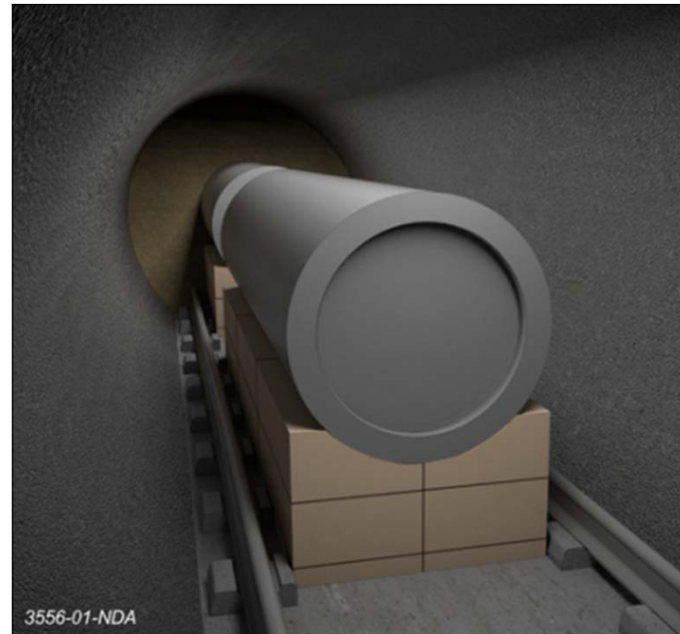
- 3D models within a Building Information Modelling environment
- vault calculator

Emplacement in disposal tunnels - HHGW



Disposal of 200 units a year.
Containers range from 4.5m up
to 5.2m long

Different concepts for different geological environments either emplaced in vertical deposition holes based on that developed by SKB/Posiva or placed horizontally within a disposal tunnel



Environmental Safety Case (ESC) [Post Closure Safety Case]

Demonstration of long term safety; our capability to predict how the GDF evolves over time (the radionuclide population moves over time)?

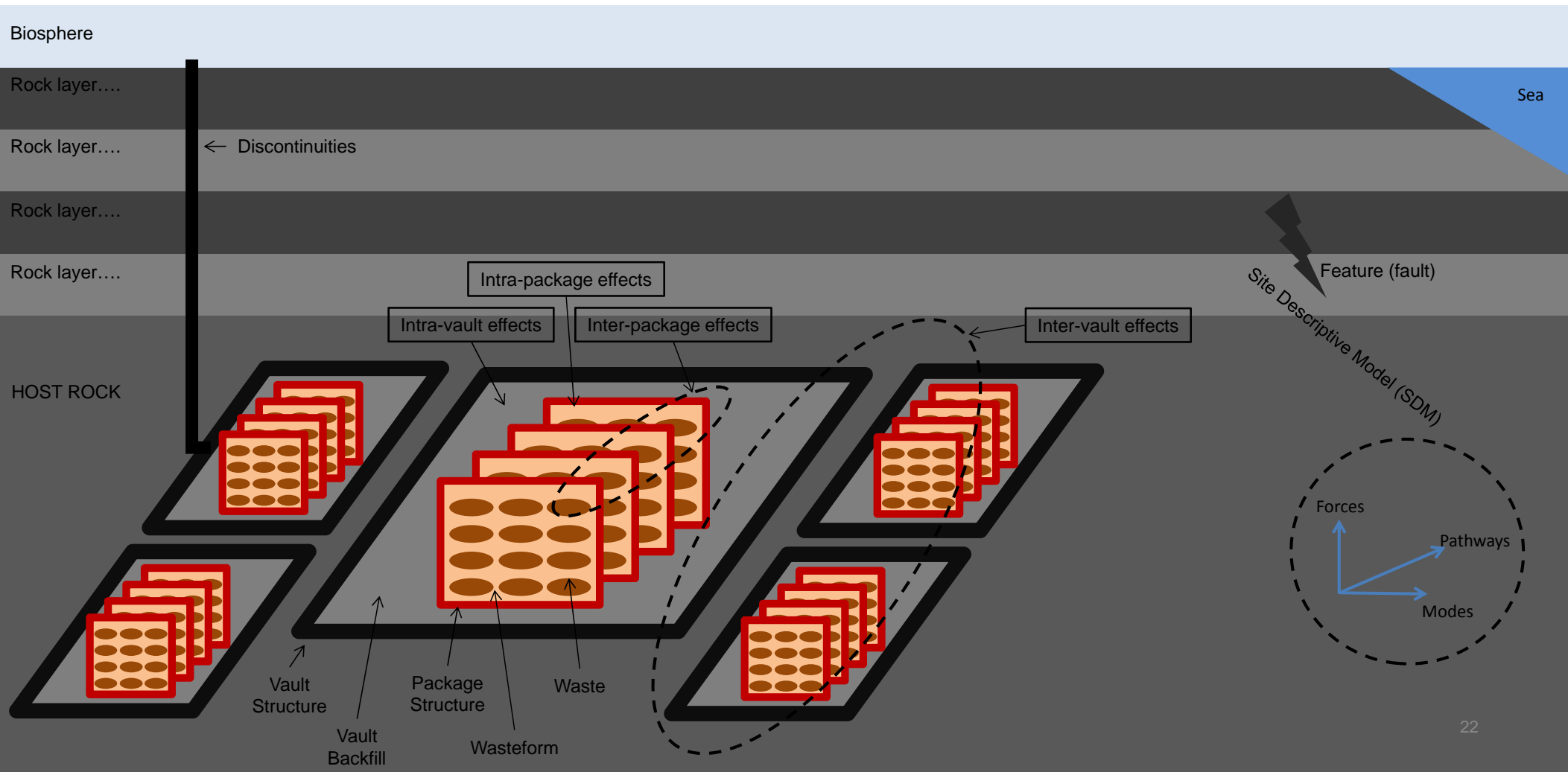
Some relevant "tensors":

- Forces (acting on GDF)
- Hydrogeology
- Geochemistry
- Geophysical (properties)
- Thermal
- Criticality / reactivity
- Radioactivity
- Macro earth (glaciation)
- Macro earth (sea level)
- Macro earth (temperature)

Site Descriptive Model (SDM)

Variables, all integrated over TIME

Closure to 500,000 years?



Packaging Waste for Disposal

- Happening now
- Well established process
 - packaging specifications based on safety case
 - engagement with waste producers, agile and responsive
 - disposability assessment, issue of 'Letter of Compliance' (LoC)
- Incorporated in regulatory framework and subject to regulatory scrutiny



Waste Packaging

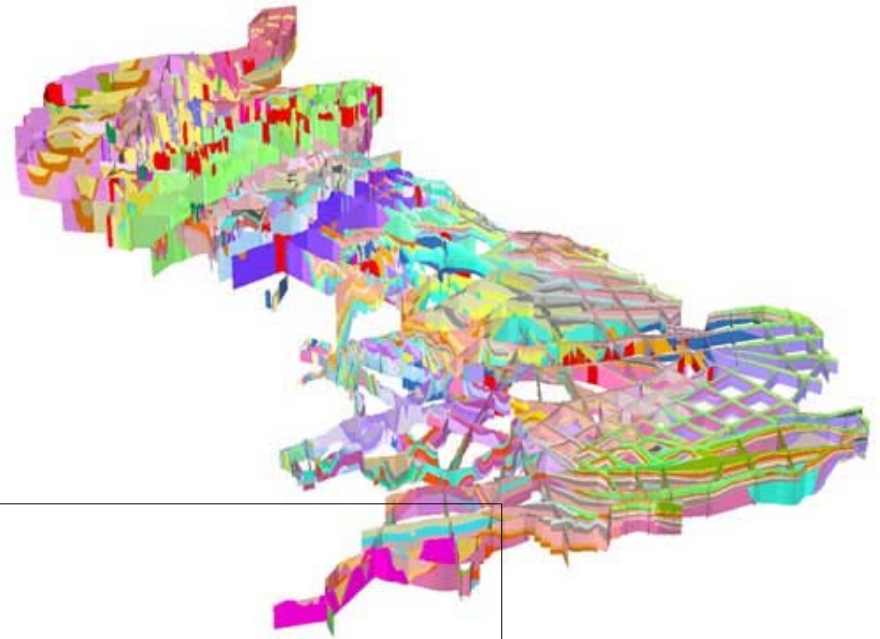


Initial actions and preparation for siting

- National Geological Screening
 - Independent Review Panel endorsed technically robust process
 - Web portal and communication materials in development
- BEIS Consultations
 - Working with Communities policy and National Policy Statement on Geological Disposal Infrastructure assumed to start in October 2017
- Implementation of working with communities policy
 - Community investment, Right of withdrawal, Test of public support
- Stakeholder and community engagement preparations
- Siting evaluation preparations
- Launch of siting process assumed to be June 2018

National Geological Screening

- Purpose
 - provide authoritative information that can be used in discussions with communities and help RWM focus its engagement activities
- Outputs
 - brief narratives by geological region illustrated with maps where appropriate



Guidance

About National Geological Screening

From: [National Geological Screening](#)
Part of: [Mockup](#)
First published: 1 January 2017
Last updated: 10 April 2017, [see all updates](#)

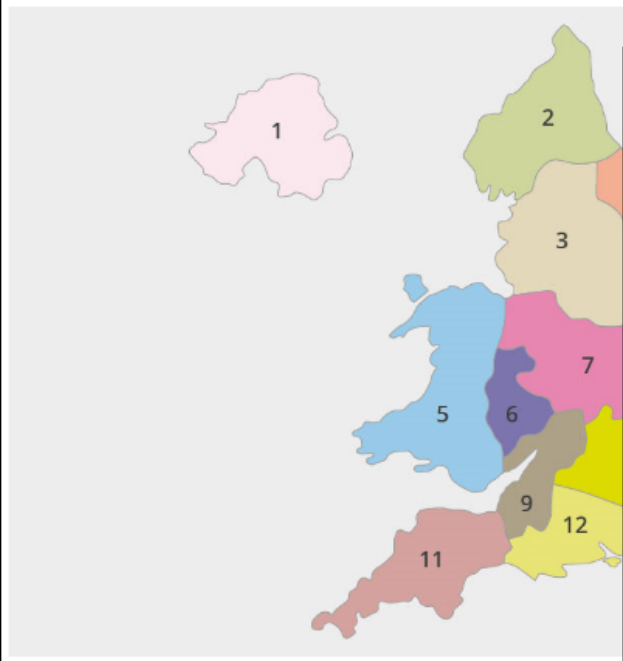
National Geological Screening.

- Contents
- [The 13 Regions](#)
 - [FAQs](#)
 - [Contact](#)

Radioactive
Screening (disposal of
England, W
NGS report
Geological
be needed t
of the regio

If you have a
[gdfenquirie](#)

The 13 Regions



Click on the links below to read the regional report of interest to you:

1. [Northern Ireland](#)
2. [Northern England](#)
3. [Pennines and adjacent areas](#)
4. [Eastern England](#)
5. [Wales](#)
6. [Welsh Borderland](#)
7. [Central England](#)
8. [East Anglia](#)
9. [Bristol and Gloucester](#)
10. [London and the Thames Valley](#)
11. [South West England](#)
12. [Hampshire Basin](#)
13. [Wealden District](#)

FAQs

Read the most frequently asked questions and answers [here](#).

Contact

If you have any further questions please go to our [FAQ section](#) or email gdfenquiries@nda.gov.uk.

2014 - 2018

2018 - 2022

2022 – 20XX

20XX – 2XXX

Initial actions

Community Engagement & Site Evaluations

Site Characterisation

Construction, Operation and Closure

Community Engagement & Site Evaluations

Preparation for Surface-based investigations

Surface-based investigations

5 years

1-2 years

4-6 years

4-6 years

circa 2 years

Preliminary investigations & regional geophysics

Borehole phases 1 – 2
2D Seismic reflection survey

Borehole phases 2 – 4
3D Seismic reflection survey

Post-completion testing & assessment of candidate sites

Decision on site

Outcome:

Make decision on the final site, to begin underground investigations and construction

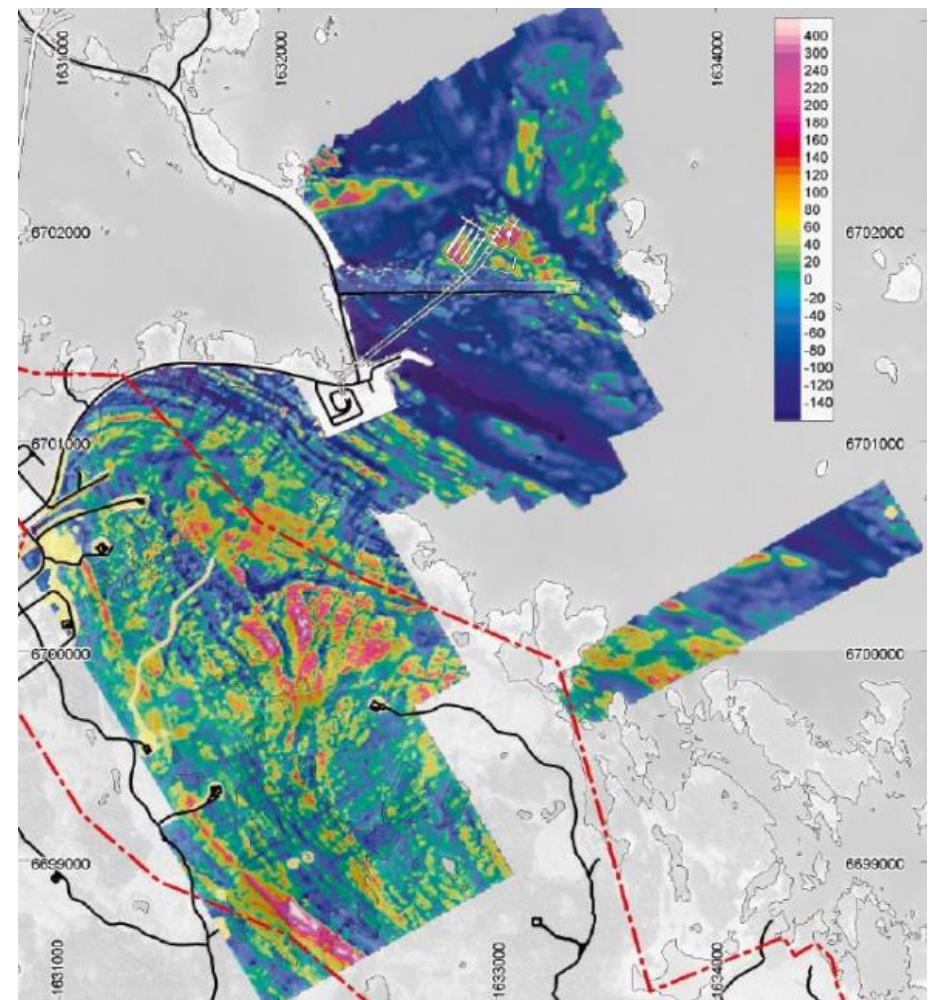
Construction, Operation and Closure

The Site Characterisation Programme

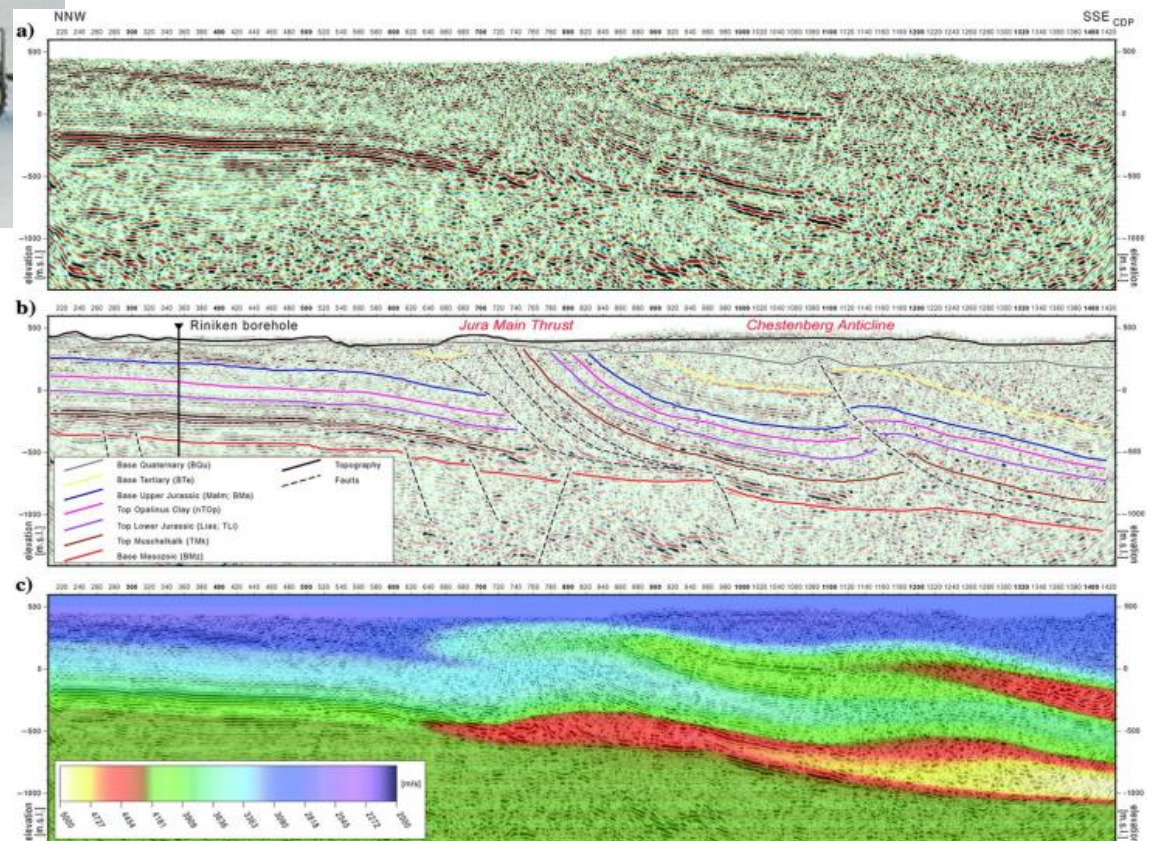
A number of assumptions underpin the illustrative programmes for the different host rocks. Some of the key assumptions are:

- Airborne geophysics will occur at the very early stages of site characterisation (or even during the Site Evaluation stage)
- 2D Seismic geophysics will occur at the beginning of the process, a higher resolution 2D seismic campaign and 3D seismic campaign will occur later during Site Characterisation
- two separate DCO applications will be made for boreholes at each site
- the first DCO application for boreholes will be prepared and submitted during the 2D Seismic campaign
- up to 12 boreholes will be required in a LSSR or Evaporite scenario, up to 20 boreholes will be required in an HSR scenario
- interpretation and modelling of site characterisation results will occur during a number of 'data acquisition cycles'
- the test of public support will likely occur at the end of the site characterisation programme

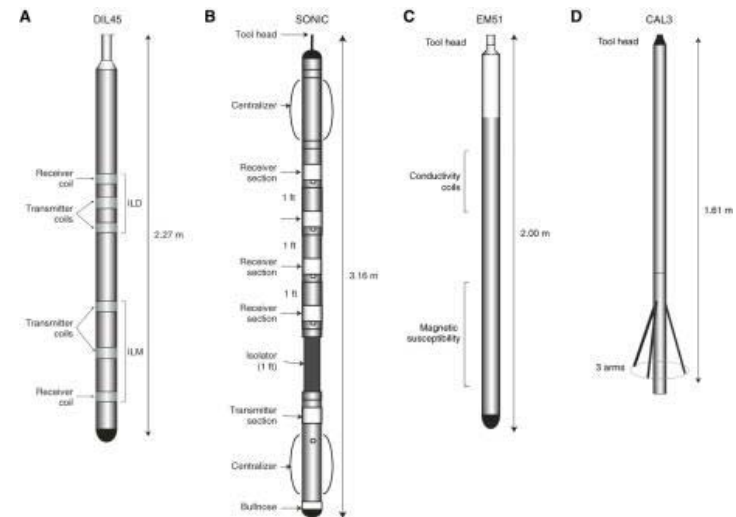
Data acquisition techniques



Data acquisition techniques



Data acquisition techniques



GDF Construction and Ongoing Characterisation



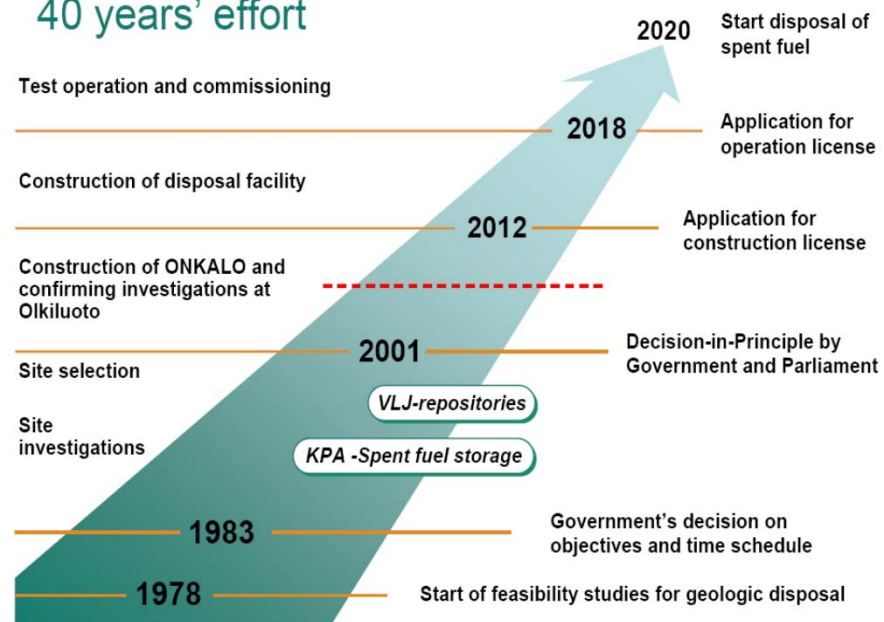
International

Finland

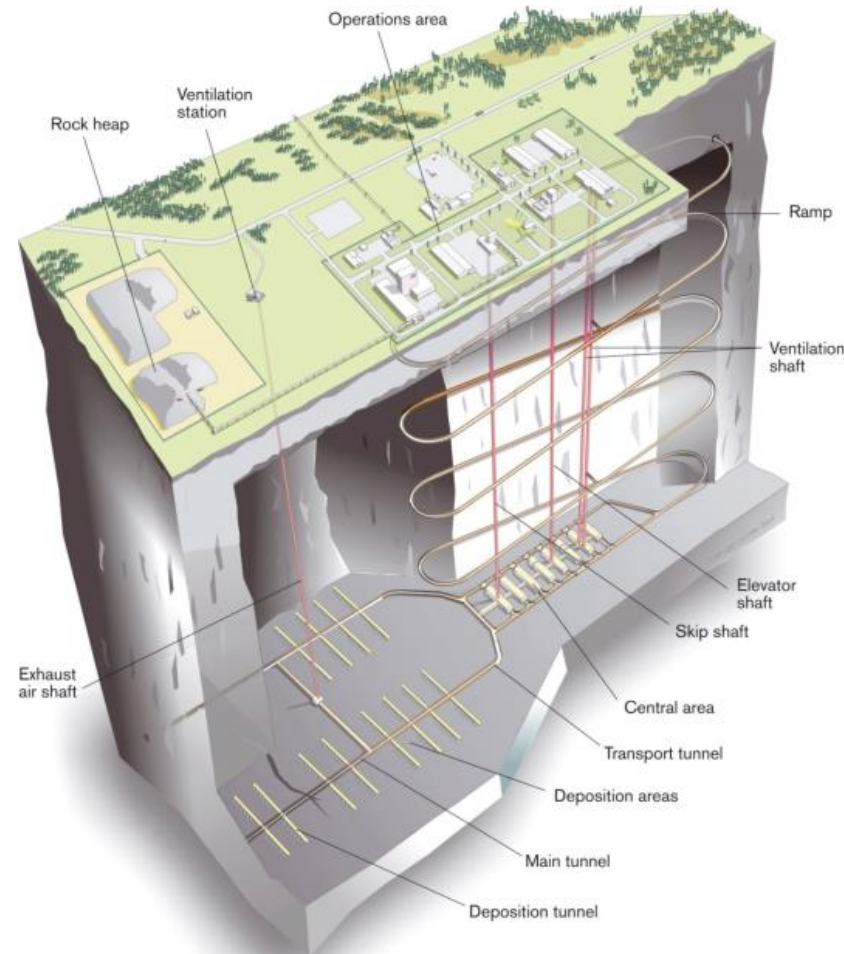


- Finnish Government has issued Posiva a construction licence
- Construction started - December 2016

40 years' effort



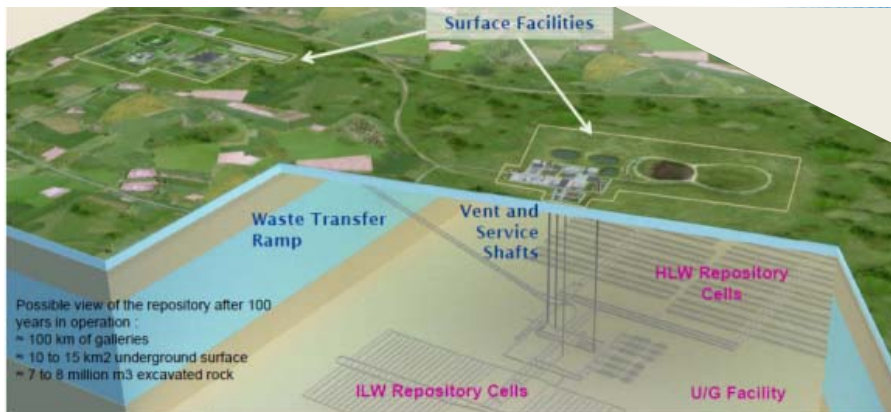
Sweden



- Green light from regulators
Awaiting decision from Environmental Court
Community referendum planned prior to construction
- Added value” agreement (2010-2025): Kr2x10⁹ ~ £200M
- 75% to Oskarshamn, unsuccessful community
- 25% Forsmark, the selected site

France

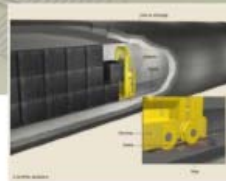
- Site selected near Bure in north east France
- Underground research ongoing
- Operation planned for 2025



Waste Transfer



ILW Emplacement

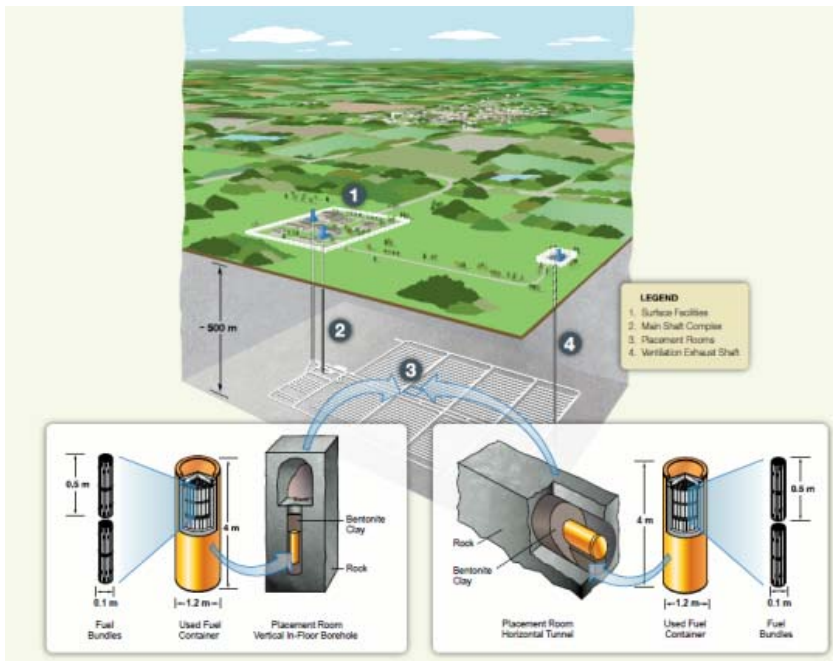


HLW Emplacement

AGENCE NATIONALE POUR LA GESTION DES DÉCHETS RADIOACTIFS
 Club of America June 17th 19th 2017 Brian Saitstead

Canada

“Community led” programme – 7 sites still under consideration



Communities Engaged in Learning More



USA – Waste Isolation Pilot Plant (WIPP)



- Transuranic materials from military programme
- Over 10 years operating experience of a geological disposal facility
- Facility closed from February 2014 to early 2017 following a fire and a fault with a waste package

Planning Inspectorates Presentation



The Planning
Inspectorate

Participating in the Planning Act 2008 process

Kay Sully, Case Manager

Richard Hunt, Senior EIA and Land Rights Advisor



Principles

- 
- Single consents regime
 - Statutory timescales
 - National policy statements
 - Frontloaded
 - Written process
 - Inquisitorial



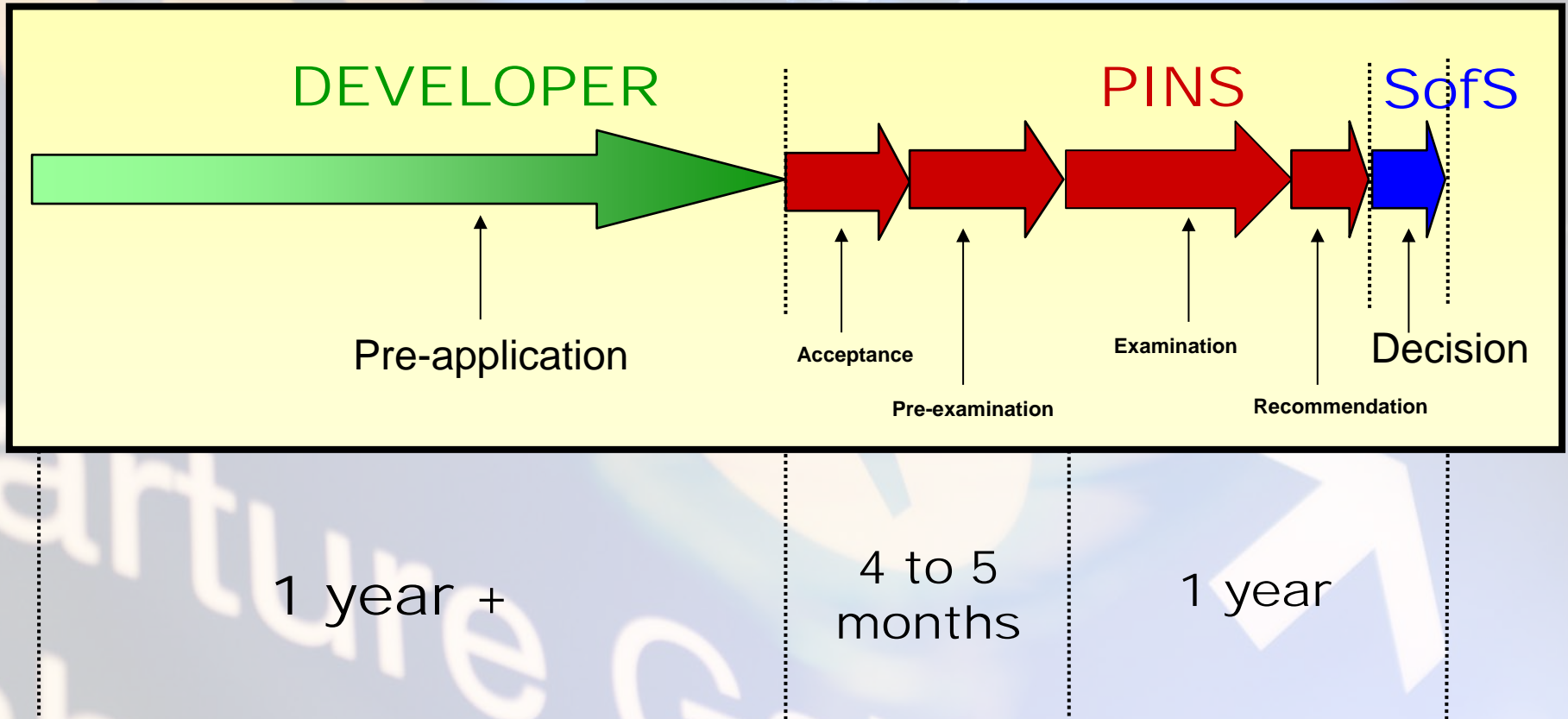
High-profile projects

- Open, transparent, impartial
- National/ international interest
- Government interest
- Education – outreach
- Social media
- Risk management
- Resource management
- Legal challenge





The PA2008 process





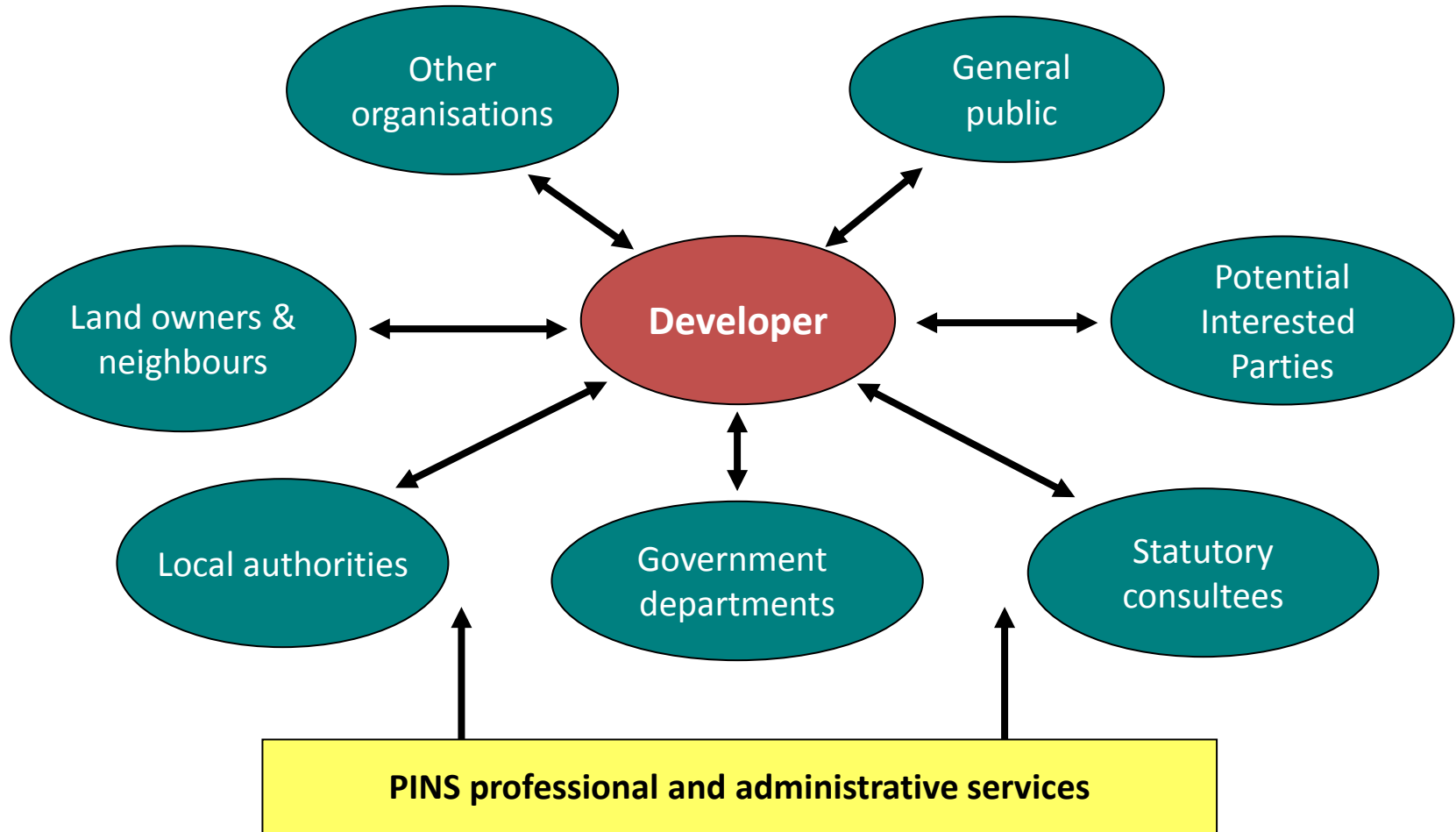
Developer role in the PA2008 process

- Total application: No shocks, no surprises!
- Limited scope for amending applications post-submission
- Environmental screening and scoping
- Consultation with prescribed bodies and landowners
- Consultation with the community (SoCC)





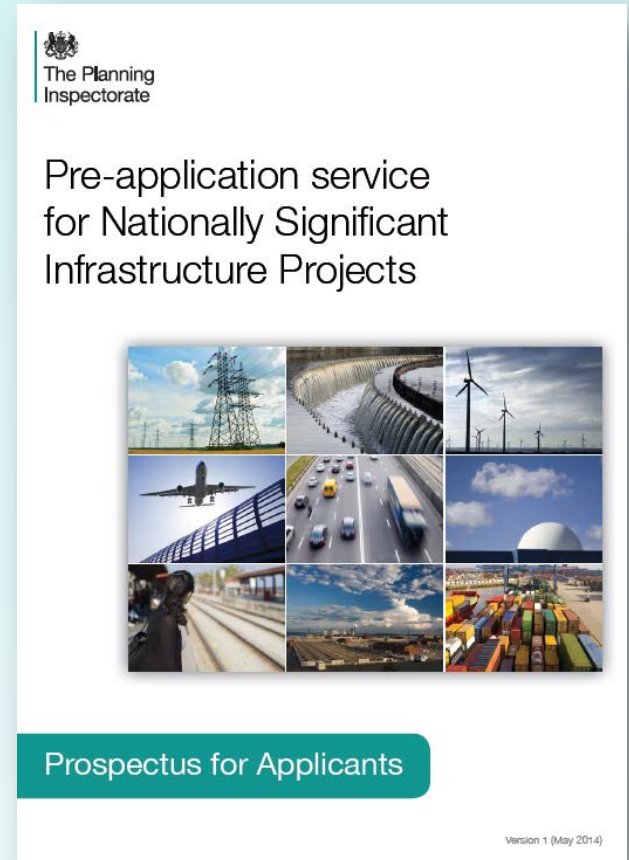
Pre-application engagement model





Utilising the Pre-application service

- Pre-application Prospectus
- s51 advice
- Outreach
- Draft documents review
- Better Pre-application engagement = smoother examination





Pre-application for statutory consultees

- EIA consultation bodies (Scoping)
- Statutory Government advisors
- Statutory undertakers
- Protective provisions
- Early and ongoing dialogue!
- Other consents/ licences
- Statements of Common Ground





Environmental considerations during Pre-application

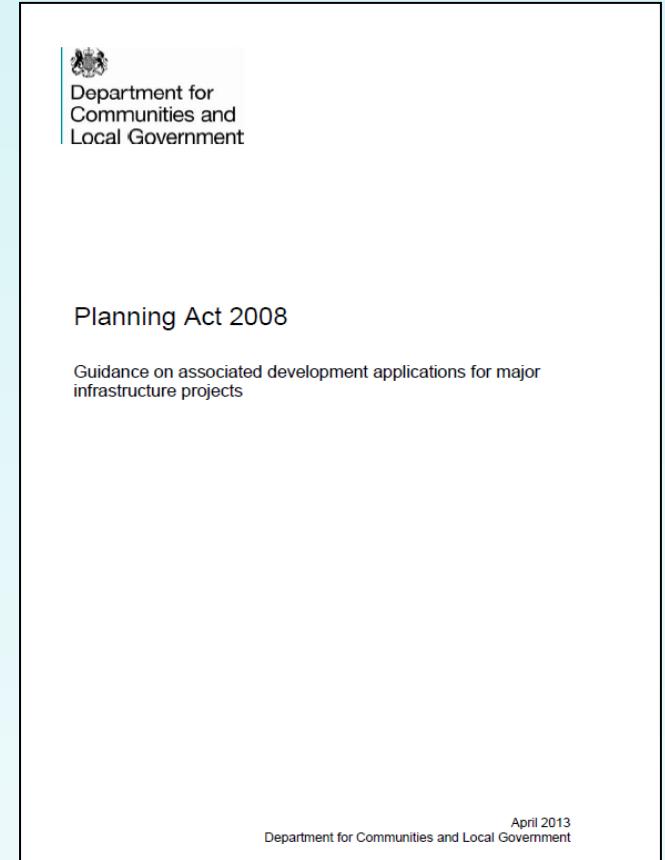
- **NPS Assessment Principles**
- **Environmental Impact Assessment**
 - Secretary of State EIA Scoping Opinion
- **Preliminary Environmental Information (PEIR)**
- **Habitats Regulations Assessment**
 - Evidence Plans
- **Interest/ Access to Land (s52 & s53)**
- **Licences and permits**
- **Advice Notes**





Associated Development

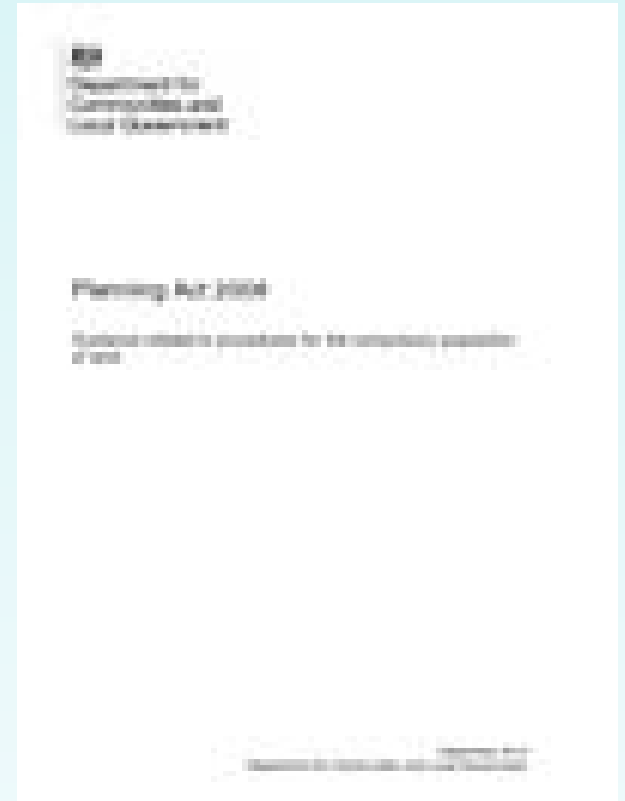
- Proportionate
- Subordinate
- Direct relationship
- Secretary of State will decide if development should be treated as associated
- Any associated development should be included in the application





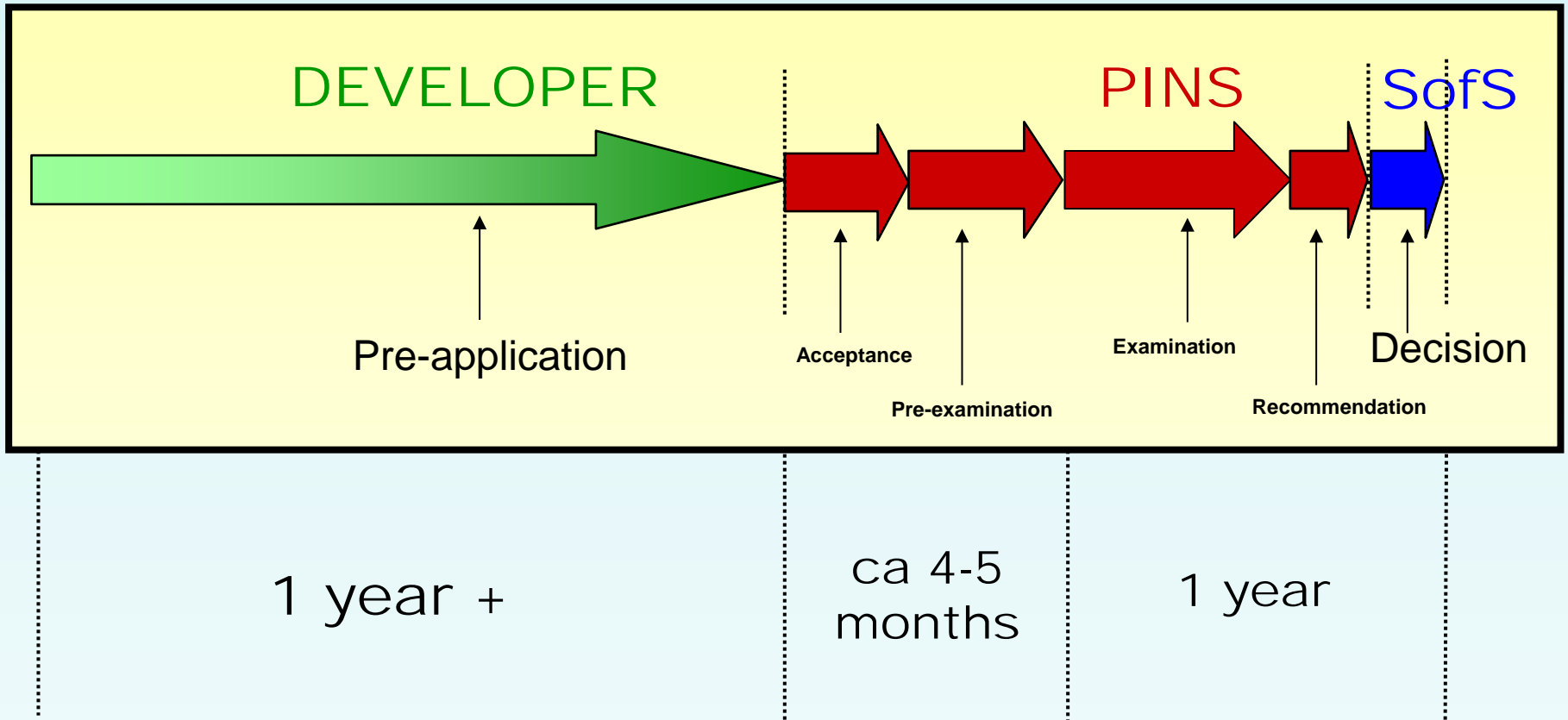
Compulsory Acquisition

- Acquire land by negotiation wherever practicable
- Need to justify proposals for the compulsory acquisition of any land to the satisfaction of the Secretary of State
- appropriate provision for this will need to be in a draft development consent order





The PA2008 process (again!)





Acceptance stage

- APFP Regulations
- 28 days to decide
- Full application
- Principal tests:
 - NSIP
 - Consultation Report
 - **Adequacy of Consultation**
 - Full suite of documents
 - Ensure all plans are correct
 - Satisfactory standard
- The Examining Authority





Pre-examination

- Application accepted
- Examining Authority appointed
- **Relevant Representations**
- Initial Assessment of Principal Issues
- Preliminary Meeting
- Local authorities
 - Local Impact Report
 - SoCG





Environmental matters



- Environmental Statement and HRA Report
- Flexibility
- Securing mitigation
- Management/monitoring plans
- Licences and permits
- Transboundary



Examination stage

- Six months
- Certainty
- Inquisitorial
- Relevant and important
- NPS(s)
- Local policy context



Recommendation stage

- ExA has three months
- Recommendation report taking account of:
 - National Policy Statement(s)
 - Local Impact Reports
 - Important and relevant matters
 - International obligations
- Recommended DCO included



Decision stage

- Relevant SoS has three months
- Decision taking account of:
 - National Policy Statement(s)
 - Local Impact Reports
 - Important and relevant matters
 - International obligations
- Judicial review





Legislation, guidance and advice

National Infrastructure Planning

[Cymraeg](#) [FAQs](#) [Contact](#) [Sitemap](#)

Enquiries: 0303 444 5000

The screenshot shows the website's navigation structure. At the top, there are links for 'Cymraeg', 'FAQs', 'Contact', and 'Sitemap'. Below this is a search bar with the text 'Enquiries: 0303 444 5000'. The main navigation menu includes 'Home', 'Projects', 'Application process', 'Legislation and advice', and 'Help'. The 'Legislation and advice' menu is expanded, showing sub-links for 'Legislation', 'Guidance', 'Advice notes', 'National Policy Statements', 'Consents Service Unit', and 'Register of advice'. The 'Help' menu is also expanded, showing a search bar and a 'Search' button. The main content area features a banner image of wind turbines and a 'Welcome to National Infrastructure Planning' section. Below the banner, there is a search bar for project names and a 'Go' button.

Welcome to National Infrastructure Planning

Here you can find out about proposed major infrastructure projects within England and Wales.

This site is managed by the Planning Inspectorate, the agency responsible for examining planning applications for nationally significant infrastructure projects.

Projects
This section lists all national infrastructure planning applications that have been submitted; or are under examination; or have been withdrawn or decided.

Search project name

- Planning Act 2008 and Regs/ Rules
- DCLG Guidance (statutory)
- PINS Advice notes (non-statutory)

<https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/>



The Planning
Inspectorate

Questions?

