



# Implementing Geological Disposal of Radioactive Waste Technology Platform

## Welcome to the Exchange Forum N°7



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SPRÁVA ÚLOŽIŠTĚ  
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ODPADŮ



# Practical information and program

- ▶ Emergency exits, lunches and breaks

## Program:

- ▶ 4 keynotes
  - Spanish policy
  - Situation in Ukrain
  - Update from EC
  - Less advanced programs
- ▶ Panel session on future RD&D
- ▶ Presentations of 3 projects (BELBaR, LUCOEX ,DOPAS)
- ▶ 4 working groups
  - Industrialization and optimization
  - Canister Design
  - High temperature clay interactions
  - Spent fuel characterization

# History

- ▶ The development of the IGD-TP started in 2008
  - The “CARD” project assessed the feasibility of a European Technology Platform (TP) that would provide a framework for networking and co-operation in the field of RD&D for geological disposal of radioactive waste in the EU.
  - A drafting team (SKB, Posiva, ANDRA, BMWi) was set up to prepare a Vision which was consulted among stakeholders in 2009
  - The executive group (EG) was set up with representation from 11 WMOs
  - A Strategic Research Agenda was published in 2011
  - A secretariat supporting the platform and the EG has been partly financed by EC until the end of 2015
  - Exchange fora have been organized every year since 2011
  - The number of “participants” is 133

## Ongoing EC funded projects

DOPAS	Full scale demonstration of Plugging and Sealing (finalized)
CAST	Waste forms and their behavior
CEBAMA	Materials interactions
MIND	Microbiology in nuclear waste disposal
MODERN 2020	Development and Demonstration of monitoring strategies and technologies for geological disposal
JOPRAD	Towards a Joint Programming on Radioactive Waste Disposal

## Status today

### Joint Activities

SPIRE	Spent fuel characterization program for the Implementation of (geological) repositories
	Handling of uncertainties
HotBent	Effects of high temperatures on clay buffer
	Sharing of knowledge on HLW/SF container materials

## Status today

### Project proposals (WP 2016-2017 call ) supported by the Executive Group

Project	
THERAMIN	Thermal treatment for radioactive waste minimization and hazard reduction
BEACON	Bentonite mechanical evolution
DISCO	Modern spent fuel dissolution and chemistry in container
CHANCE	Characterization of nuclear compounds for their safe (final) disposal in Europe
SAEXSFUEL	Safety of extended dry storage of nuclear spent fuel
TraCK	Transferring and consolidating the knowledge base

# Situation of Geological Disposal in Europe

## Czech Republic:

DGR site selection strategy is focused on selecting two candidate sites between 2020 - 2021 and a final site in 2025 for construction a site specific URL on the final site. Surface investigations will be finalized by reducing the number of the sites from current 7 to 4 in 2017/2018. Research activities supporting DGR development are ongoing at two underground facilities the Josef gallery and the URF Bukov.

## Germany:

Commission Storage of High-Level Radioactive Waste Material paved the way for the quest to find a suitable site for a final repository. The recommendations have been submitted to the Bundestag, the Bundesrat, and the German Government. The recommendations relate both to organizational and technical matters, as well as on public participation aspects.

All three types of host rock are given the same level of attention in the siting process.

Companies remain responsible for decommissioning and dismantling of NPP and for packaging . Government will be responsible for interim storage and final disposal. A regulatory authority, BfE, and a new implementer/operating company, BGE, owned by the Federation, are being established.

## Situation of Geological Disposal in Europe (2)

### Switzerland:

Stage 2 of the Sectoral Plan for the site selection: outcome of the review of the proposals (for L/ILW and HLW) for the final stage expected in March 2017.

### Hungary:

Geological characterization of the Boda Claystone Formation has been on-going for several years with the aim to find a suitable site for a future deep geological HLW repository. The investigation plan of the current phase was approved by the authority in 2013. The original aim was to narrow down the approximately 90 km<sup>2</sup> large investigations area to a significantly smaller one (some tens of km<sup>2</sup>) for more detailed investigations in the next phase.

### Sweden:

Statement by SSM in June 2016. SSM has assessed that SKB has the potential to comply with the nuclear safety and radiation protection requirements for the final disposal of spent nuclear fuel. The Environmental Court is preparing for main hearing during March-April 2017. The application for the extension of SFR has been reviewed. SKB is presently supplementing application. Court hearing in 2018?



## Belgium:

A policy decision (according to 2011/70) on the long-term management of HLW and SF is still pending

## The Netherlands:

Disposal in 2130. Siting is therefore excluded for the following decades. Third research program was commenced in 2011.

# Situation of Geological Disposal in Europe(1)

## France:

Submission of Safety Option Reports (operation and post-closure) was made by Andra to French Safety Authority in 2016. The report is under reviewing until mid 2017

The licensing authorization request is planned to be submitted in 2018.

## UK:

RWM has recently consulted on proposals for assembling, and presenting to the public, information on the geology of England, Wales and Northern Ireland. These proposals formed National Geological Screening (NGS) Guidance. The Guidance was published in April 2016. It sets out how RWM intends to bring together existing information on geology relevant to the long term safety of a GDF. RWM is preparing to launch a consent based GDF siting process in 2017.

**Finland:** The construction license for the encapsulation plant and the final disposal facility has been granted! The construction of the final disposal facility under the license is planned to start end of this year, 2016.

## Future

- ▶ Future joint research funded by the EC is still an “open question”
- ▶ The results from the JOPRAD project will be important
- ▶ The future of the IGD-TP and future of meetings like this exchange forum is being discussed in the Executive Group
- ▶ Future arrangements must not detract from the non-financial benefits to implementers of participating in the IGD-TP (e.g. development of consensus approaches, sharing of lessons learned, work-in-kind collaborations, validation through benchmarking, etc.)

I wish us all two fruitful days here in  
Cordoba!