

Long-term management of high-level waste : defining national strategies as a sound application of the precautionary principle

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and enriched fissile materials

Current situation

Low and intermediate short-lived waste: a well established industrial practice



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Current situation

High-level long-lived/spent fuel

- Interim storage mainly
- United States : TRU
- Germany : intermediate-level long-lived waste



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Need of a policy

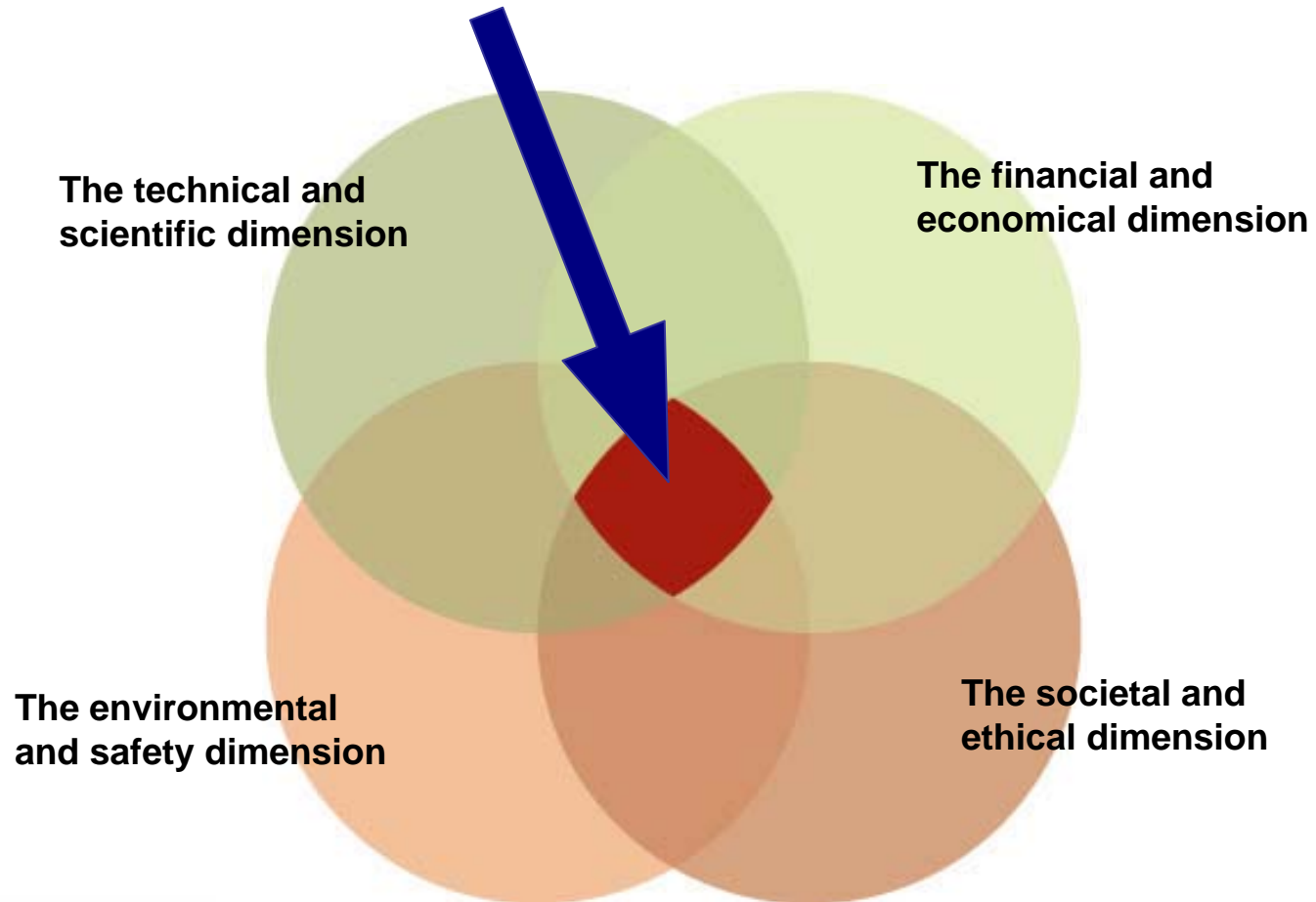
- **« Closing down » by choosing final destination**
 - Treatment and conditioning
 - RD&D
 - Provisioning

- **Strategic importance for countries who wish to carry on using nuclear energy**



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Sustainable solution



ONDRAF/NIRAS

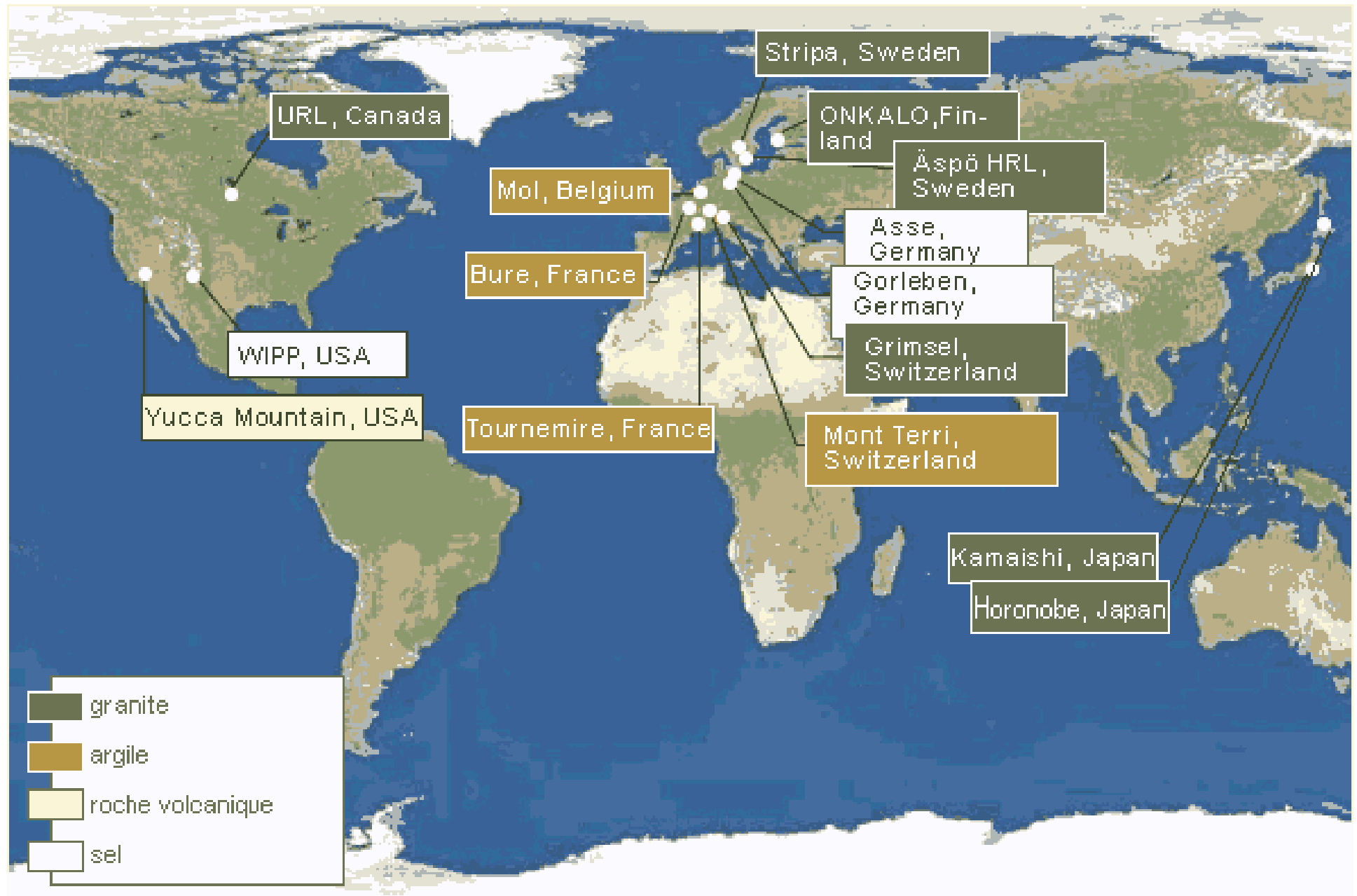
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Geological disposal

- **Wide international consensus within the scientific community**
- **Long-term safety as a result of appropriate matching between geological settings and facility design**
- **A priori definitive**
- **Massive amount of knowledge available worldwide**



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Other solutions

Either do not meet international legal provisions

Or unsafe

Or unaffordable

Or shift heavy burdens and responsibilities on to future generations



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Advanced fuel cycle

There will always be some existing and future high-level/long-lived waste to be safely managed in the long term

Not available for decades

Decades of operation needed to get significant reduction of radiotoxicity



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Remaining uncertainties are no reason for not choosing a management solution

Precautionary principles

- To establish a policy as soon as possible
- To establish adequate funding
- Flexible decision-making process

Waste plans
Strategic decision
“Decision-in-principle”



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EDRAM views

- **Because of their responsibility to future generations, and whatever the future of nuclear energy, countries need to choose a long-term management solution for their radioactive waste. This also allows more accurate estimates to be made of the provisions necessary for implementing the chosen solution.**
- **Whatever the future developments of advanced fuel cycles and of partitioning and transmutation, there will always be some radioactive waste, in particular already existing waste, to be managed in the long term. The characteristics of those wastes are such that surface disposal for an indefinite period of time cannot be considered a sustainable solution.**
- **Waste plans or similar documents, based on a sound comparison of alternative solutions, are an adequate basis to support a strategic decision on the final destination of ultimate radioactive waste.**



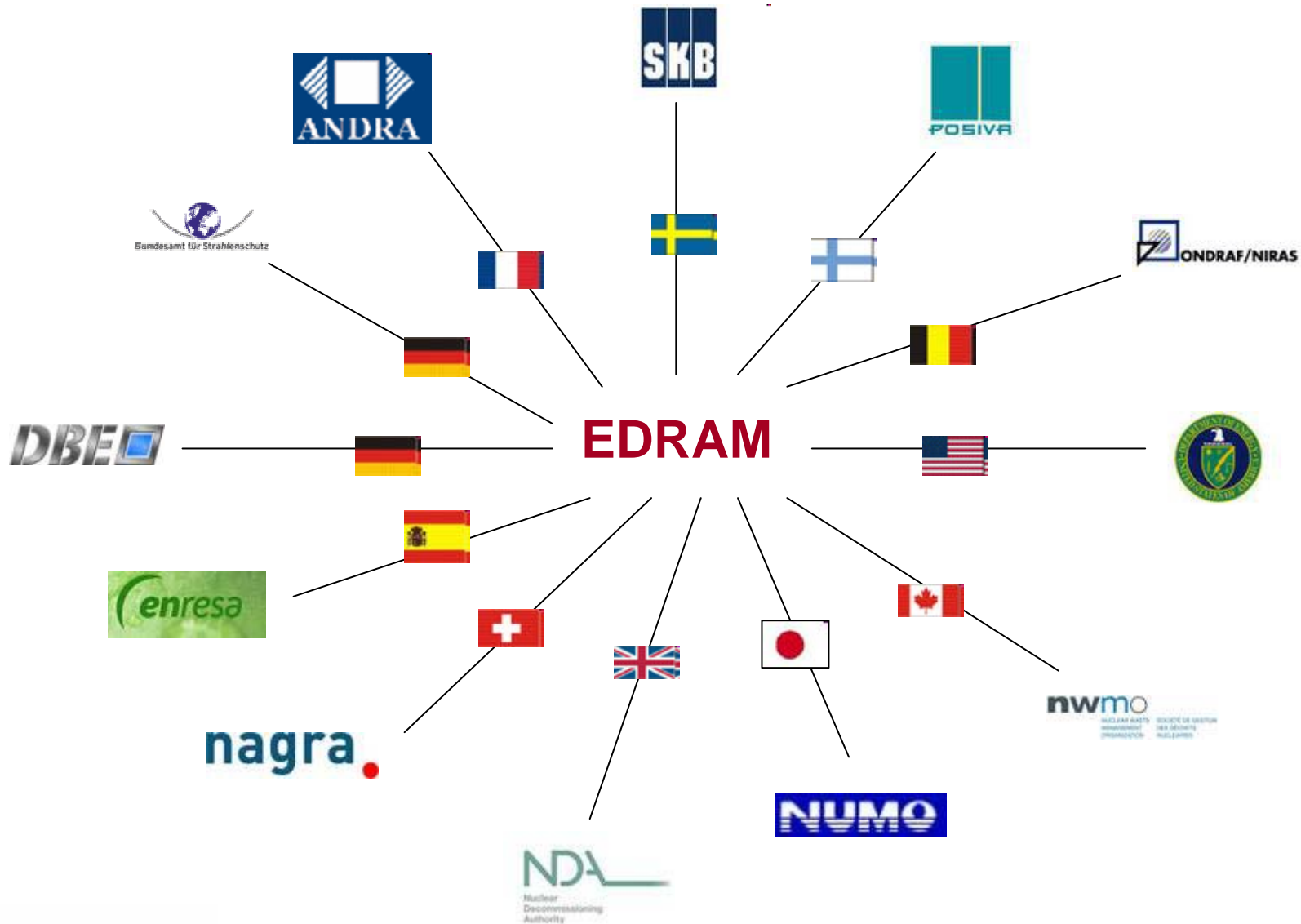
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EDRAM challenges

- **To ensure the continuity of human knowledge and expertise and of resources throughout the process;**
- **To move from research and development on to full-scale, industrial implementation;**
- **To maintain adequate societal support throughout the process;**
- **To adapt to successive evolutions in the applicable legal and regulatory framework, which reflect, at least in part, important evolutions in society.**



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