

Acceleration potential of a Swiss-inspired approach to the site selection procedure

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Abstract. The Federal Company for Radioactive Waste Disposal (BGE), the implementer of Germany's site selection procedure to identify a site suitable to safely dispose of its high-level nuclear waste, recently proposed a timeline suggesting the period between 2046 and 2068 as potential time slot for the final site decision (BGE, 2022). Thus, the decision is expected to be made substantially later than envisaged by the Site Selection Act, which states that one should aim for 2031 (StandAG, 2017).

The BGE document not only details the timeline resulting in a site decision by mid-century but also outlines an alternative exploration approach inspired by the Swiss site selection procedure, which – if pursued – would enable substantial time gains. The core of this approach is a paradigm shift from exploration programs designed to acquire all data legally required for the safety analyses to data acquisition explicitly aiming at a site comparison during the respective exploration phase. Consequently, full-scale exploration would only be performed for those siting regions having passed the comparison.

This contribution aims to detail and discuss this approach more thoroughly, based on the BGR's experience regarding the exploration of the subsurface. It focuses on the geoscientific aspects of this approach, while neglecting others such as the legal and administrative challenges. Owing to the basic idea of this alternative exploration approach, first a set of parameters suitable to differentiate potentially "better-suited" siting regions from "worse-suited" ones has to be identified. There are two main requirements for this set of parameters, namely the (i) general acceptance by the scientific community and (ii) capability to account for the specific characteristics of the individual host rock types while (still) ensuring the comparability of different rock types.

References

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