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Investigations on the significance of a storage facility for high-level radioactive waste for the siting region

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1 Background information

Spent fuel assemblies are stored in facilities at the respective nuclear power plant (NPP) site and in central storage facilities. While the NPPs are currently being decommissioned, the storage facilities will remain at the sites for much longer. Currently, storage periods of up to 120 years are being discussed. The project "Storage and Region" (short title) investigated the question of the current and future economic and social significance of the storage facility for the respective siting region (Neles et al., 2023).

In March 2023, the project was completed. It was funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (grant no. 4720E03366).

2 Project realization

Two storage sites were selected based on the two main implemented construction concepts: the Brokdorf site in the north and the Gundremmingen site in the south. Here data were collected via guided interviews. In addition, data were collected by means of desk research and participant observation of various events on storage. In addition, the economic, social, and environmental studies carried out in Switzerland as part of the sectoral plan procedure for deep geological repositories were examined for the methods used and transferable results.

3 Results

One result was that the economic situation in the example regions was classified as stable in the short and medium terms, even after shutdown of the NPPs. The storage facility itself was not considered to contribute to economic development. However, it was also not seen as an obstacle to future development, which is seen more in the commercial–industrial sector. Monitoring in Switzerland also showed that the siting regions had not experienced any negative development in terms of population growth, employment, or real estate prices.

The storage facility was perceived as safe by interviewees at the two sites. However, questions remained, e.g., why different construction concepts were chosen or how the ageing of casks and inventories should be addressed in the future. These are questions that are also repeatedly asked at events. Relocation of the waste to another, e.g., central storage facility was not the focus. However, most of the data collection took place before the Bundesgesellschaft für Endlagerung mbH (BGE; Federal Company for Radioactive Waste Disposal) schedules were announced at the end of 2022.

For the procedural design of future licensing processes, the interviewees in the sample regions expect comprehensive public participation. Difficulties, e.g., in access to information, as happened in past approval processes, should not be repeated. However, the interest in the region in the topic of storage being rather low was also discussed. An information gap was identified between the siting community and the surrounding area, but also between non-governmental organizations and the public.

Based on these results, a first evaluation approach was developed to investigate the significance of the storage facility for spent fuel elements for the respective region. For this purpose, characteristics for description were assigned to the three dimensions identified: economy and society, perception of safety, and procedural design. These were underpinned by indicators and concrete questions for operationalization.

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