



The collection, digitisation, interpretation and publication of geological data in the German site selection procedure – status and challenges

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Abstract. The German site selection procedure for a repository site for high-level nuclear waste is subdivided into three major phases. During the first phase, the subsurface of Germany is evaluated based on existing data, with the aim of defining siting regions for surface-based underground exploration. Although Germany is covered by large amounts of geoscientific data – including ca. 50 000 boreholes deeper than 300 m and more than 340 000 km of reflection seismic lines – the legal obligation to make these data publicly available on a national scale is fairly new and dates back to the Geological Data Act of 2020 (GeoIDG: Geologiedatengesetz vom 19. Juni 2020; BGBl. I S. 1387). However, significant amounts of data are available in analogue form only, posing a significant challenge to the timeline of the site selection procedure. As the German nuclear waste management organisation, the Federal Company for Radioactive Waste Disposal (BGE) is in charge of collecting, interpreting and publishing geoscientific data that are relevant to the decisions made within the site selection procedure.

In this contribution, we outline the path of data within the first phase of the site selection procedure. We start with an overview of the BGE's current and past activities related to data collection and digitisation, focussing on a major campaign through which more than 16 000 drilling reports are being digitised in cooperation with the State Office for Mining, Energy and Geology in Lower Saxony (LBEG). We then report on the different approaches of data quality control, processing and supply, highlighting challenges related to the federal organisation of geodata storage in Germany. We present selected examples of how data are used for evaluating the subsurface in terms of suitability as a potential repository site. Finally, we give an outlook of how data could be integrated into a web application that is currently being developed as an interactive tool for the public presentation of results and underlying decisions.