



# Performing science, performative science: a science and technology studies (STS) reflection on the pioneering pathways of the HADES underground research laboratory (URL)

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**Abstract.** Developing and implementing a project for managing high-level radioactive waste over extensive periods of time is a multifaceted challenge. Among others, it entails demonstrating the feasibility, safety and overall performance of the proposed waste management strategy. However, how to tackle such a demonstration when the periods over which the waste needs to be isolated and contained extend over thousands of years? In the development of geological disposal facilities, a key role in this matter is played by underground research laboratories (URLs), which aim to provide a setting to study how different techniques and materials perform in a realistic environment. Insights gained into URLs are expected to be translatable to the performance and timescales of an actual repository, hence offering a tool to make a seemingly distant future comprehensible today. In this contribution, we use the HADES (High-Activity Disposal Experimental Site) URL in Mol, Belgium, as an example to illustrate how URLs are producing knowledge and insights, and how in this way they are also actively performing the possible future(s) of radioactive waste management. Building on insights gained in the field of science and technology studies (STS), this paper emphasizes how knowledge production is a complex process characterized by the interplay of heterogeneous – and sometimes rather trivial – elements and actors interlinked through a range of explicit and implicit decisions. We argue that tracing these elements and decisions, making them explicit and reflecting upon them are of key importance, as knowledge production not only describes a possible future but also actively contributes to “making the future” by emphasizing what is considered possible and imaginable – and what is not. This paper will therefore also focus on what the implications of making the future could entail from an ethical perspective, with a particular focus on deliberation and intergenerational justice.