

# STRATEGIC KNOWLEDGE MANAGEMENT FOR RADIOACTIVE WASTE DISPOSAL: A REVIEW OF EURAD AND PREDIS

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## Abstract

The EURAD (European Joint Programme on Radioactive Waste Management, 2019-2024) and PREDIS (Pre-Disposal Management of Radioactive Waste, 2020-2024) programmes, co-funded by the European Commission, have significantly advanced research, strategic studies, and knowledge management (KM) in the field of radioactive waste management (RWM). Both programmes align with the EU's Council Directive 2011/70/Euratom, supporting Member States in implementing safe radioactive waste disposal. This paper reviews the key achievements, strategies and lessons learned in the KM activities of these programmes.

Central to these efforts is the EURAD Roadmap (Beattie et al. 2022), a structured framework that captures the accumulated knowledge of over 50 years of RWM and deep geological repository (DGR) development. The roadmap organises the necessary steps and knowledge through five phases of implementation (Initiation, Site Selection, Site Characterisation, Construction, as well as Operations and Closure) and seven thematic areas (National Programme Management, Pre-disposal, Engineered Barrier Systems, Geoscience, Disposal Facility Design and Optimisation, Siting and Licensing, and Safety Case). This roadmap serves as a tool for guiding national RWM programmes.

KM activities in EURAD and PREDIS are based on four fundamental elements: the capture of the state-of-knowledge by the development of knowledge documents (Knuuti et al., 2022), the creation of comprehensive guidance materials (Ormai et al., 2022), targeted training and mobility activities (Belmans et al., 2022), and overarching KM dissemination strategies. The KM efforts have resulted in the organisation of over 50 webinars and "Lunch & Learn" sessions, the production of over 40 knowledge documents (such as Domain Insights and State-of-Knowledge), and facilitating over 150 mobility actions. These initiatives engaged nearly 1200 experts and 150 students, fostering collaboration with major international organisations such as IAEA and OECD/NEA to ensure a broad dissemination of expertise and to avoid the duplication of efforts.

Key lessons learned include the importance of a bottom-up approach to training, the creation of a School of RWM, the success of mobility programmes in enhancing the skills of the next generation of professionals and the strategic mapping of knowledge to capture the state-of-knowledge. In both programmes, the integration of KM activities with R&D work and strategic studies contributed to a successful knowledge transfer between RWM programmes and generations. Additionally, continuous feedback mechanisms, obtained from KM webinars, expert evaluations and KM sessions, have played an important role in refining these initiatives.

The EURAD and PREDIS KM strategies have not only strengthened the EU's RWM community but also laid a foundation (through the Strategic Research and Knowledge Management Agenda) for future programmes, such as EURAD-2. This review underscores the long-term values of strategic KM in advancing safe and responsible RWM in Europe.

Beattie et al. 2022. Overview of knowledge management in EURAD.

<https://doi.org/10.1051/epjn/2022023>

Belmans N. et al. 2022l. Training and mobility in EU projects EURAD and PREDIS

<https://doi.org/10.1051/epjn/2022028>

Knuuti et al. 2022. Capturing the state-of-knowledge in EURAD knowledge management.

<https://doi.org/10.1051/epjn/2022030>

Ormai et al. 2022. Development of guidance documents in the EURAD and PREDIS projects.

<https://doi.org/10.1051/epjn/2022035>

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