

# ERDO Association Annual Report 2024

## Contents

Acronyms.....	2
Introduction.....	3
Organization .....	3
Board and Secretariat.....	3
Members .....	3
Meetings.....	3
ERDO Projects.....	4
ERDO-USDOE SMR Study.....	4
ERDO-NEA MIRA Project .....	4
Collaboration .....	5
Tellus Holdings.....	5
DeepGeo .....	5
USDOE .....	5
European Partnership on Radioactive Waste Management 2 (EURAD-2) .....	5
Implementing Geological Disposal of radioactive waste Technology Platform (IGD-TP) .....	5
IAEA .....	5
Deep Borehole Disposal Center (DBDC) .....	5
European Commission Directorate General for Energy (DG-ENER).....	5
Euratom .....	6
Papers and Presentations.....	6
ERDO Policy-based Initiatives.....	6

## Acronyms

Acronym	Expansion
ERDO*	ERDO Association
ARAO*	Slovenian Agency for Radioactive Waste Management
COVRA*	Netherlands Central Organisation For Radioactive Waste
DEKOM*	Dansk Dekommissionering
ENEA*	Italian National Agency for New Technologies, Energy and Sustainable Economic Development
IFE*	Institute for Energy Technology
NND*	Norwegian Nuclear Decommissioning
ONDRAF/NIRAS*	Belgian National Agency for Radioactive Waste and enriched Fissile Material
TNO*	Netherlands Organisation for Applied Scientific Research
MCM*	MCM Environmental Services Ltd.
*ERDO member and secretariat support organisations	
ASTRA	Alternative RWM Strategies
CRP	Co-ordinated Research Project
DBDC	Deep Borehole Demonstration Centre
DG-ENER	European Commission Directorate General for Energy
EG	Executive Group
EURAD	European Partnership on Radioactive Waste Management
IAEA	International Atomic Energy Agency
ICGR	International Conference on Geological Repositories
IGD-TP	Implementing Geological Disposal of radioactive waste Technology Platform
MIRA	Multinational Infrastructure for Managing Radioactive Waste
MNR	Multi-national Deep Geological Repository
NEA	Nuclear Energy Agency
NEI	Nuclear Energy Institute
RWM	Radioactive Waste Management
SAPIERR	Strategic Action Plan for Implementation of European Regional Repositories
SFM24	Spent Fuel Management 2024
SIMS	Small Inventory Member States
SMR	Small Modular Reactor
USDOE	United States Department of Energy
WP	Work Package

## Introduction

The ERDO Association was established in Vlissingen, the Netherlands, by Dekom (Denmark), NND (Norway) and COVRA (Netherlands). The ERDO Association continues the activities run for over ten years by the broader the ad-hoc ERDO Working Group to promote multinational cooperation in radioactive waste management. The Working Group was established allowing the preparatory work based on the outcome of the Strategic Action Plan for Implementation of European Regional Repositories (SAPIERR) projects, organised by the Arius Association and funded by the European Commission.

The ERDO Association was established as a legal entity in order to allow organizations to work even more closely together on the common challenges in managing radioactive waste safely by sharing knowledge, implementing joint projects and promoting multinational waste management solutions internationally.

## Organization

### Board and Secretariat

In January 2024, the ERDO Board members were: Ewoud Verhoef (COVRA, President), Ole Kastbjerg Nielsen (Dekom, Vice President) and Nils Bøhmer (NND, Treasurer).

The Secretariat is located in the COVRA offices in Nieuwdorp and its work is performed principally by Marja Vuorio (COVRA), who is also responsible for maintaining the ERDO website ([www.ERDO.org](http://www.ERDO.org)). Independent consultants Charles McCombie and Neil Chapman act as advisors to ERDO, and Jake Kinghorn-Mills from MCM<sup>1</sup> assists the Secretariat.

### Members

The ERDO Association is currently made up of the following members: ARAO (Slovenia), COVRA (Netherlands), Dekom (Denmark), ENEA (Italy), Fund (Croatia), NND (Norway), ONDRAF/NIRAS (Belgium) and TNO (Netherlands) with IFE (Norway) as an associate member.

### Meetings

Two ERDO Association meetings were organized during 2024. A face-to-face meeting was held in Rome, Italy from 4<sup>th</sup> to 5<sup>th</sup> April and a virtual meeting on 22<sup>nd</sup> November. The ERDO Board met virtually three additional times: 4<sup>th</sup> March and 28<sup>th</sup> October, to cover ERDO policy topics; and 17<sup>th</sup> December, with Tellus Holdings to discuss potential ERDO membership.

Minutes were sent to participants after the meetings, with summaries circulated to all ERDO members, and digital versions are saved in COVRA's documentation system.

---

<sup>1</sup> MCM Environmental Services Ltd. is a team of radioactive waste management experts, see <https://mcmenvironmental.co.uk/>.

## ERDO Projects

### ERDO-USDOE SMR Study

ERDO and the United States Department of Energy (USDOE) work together to promote cooperative activities in a number of areas related to multinational solutions for the management of spent nuclear fuel and radioactive wastes.

An ERDO-USDOE joint study on the potential impacts of Small Modular Reactors (SMRs) on multinational cooperation at the back end of the fuel cycle was completed in April 2024. The project research and analysis components were funded directly by the USDOE with support and in-kind contributions provided by ERDO members who provide information and review activities. MCM is the prime contractor carrying out this project. An updated final report, which addresses ERDO and USDOE review comments, was issued on 19<sup>th</sup> April.

The report considers the multinational aspects of the potential technical, strategic, political and commercial impacts of widespread deployment of SMRs on the back end of the nuclear fuel cycle, focusing on spent nuclear fuel. A paper summarizing the project, and its findings, was presented by Jake Kinghorn-Mills at the International Atomic Energy Agency (IAEA) Spent Fuel Management 2024 conference<sup>2</sup> (IAEA SFM24) in June.

Once fully approved by USDOE, the final report will be published on both the ERDO and USDOE websites and supported by ERDO-based outreach, e.g., a virtual webinar and submission of papers to relevant conferences / fora.

### ERDO-NEA MIRA Project

In prior years, ERDO initiated efforts to establish a project focusing on A Multinational Infrastructure for Managing Radioactive Waste (MIRA) through the Nuclear Energy Agency (NEA). An NEA-led meeting with interested parties took place on 10<sup>th</sup> January, but progress has slowed because it became apparent there is a potential for duplication of effort or partial overlap with other ongoing or planned projects in Europe. Engagement to support the formation of a value-adding MIRA project is planned for early 2025.

---

<sup>2</sup> The paper submitted to the IAEA SFM24 conference is available on the IAEA website here: [https://media.superevent.com/documents/20240611/acf0345a54251c74f7b1e88ef984f721/id95\\_kinghorn-mills.pdf](https://media.superevent.com/documents/20240611/acf0345a54251c74f7b1e88ef984f721/id95_kinghorn-mills.pdf).

## Collaboration

### Tellus Holdings

Following prior written engagement, a meeting between the ERDO Board, ERDO Secretariat and Tellus Holdings Ltd. took place on 17<sup>th</sup> December to discuss Tellus interest in joining the ERDO Association as a member. The most appropriate form for collaboration between ERDO and Tellus is expected to be discussed further during early 2025.

### DeepGeo

Deep Geo has been updating ERDO of its siting activities.

### USDOE

Follow-up engagement between ERDO Secretariat members and USDOE took place in July and December in the context of the Joint SMR Study. Additional opportunities for collaboration were identified but, due to organisational change at USDOE, and then the US presidential elections, no new projects were initiated in 2024.

### European Partnership on Radioactive Waste Management 2 (EURAD-2)

ERDO Members are involved in different Work Packages (WP) under the European Commission's EURAD-2 Program. The Alternative Radioactive Waste Management (RWM) Strategies WP (ASTRA) is one of the strategic studies WP where several ERDO members and other Small Inventory Member States (SIMS) collaborate in tasks about Long-Term Storage, Deep Borehole Disposal and alternative RWM options for SIMS (including shared solutions).

### Implementing Geological Disposal of radioactive waste Technology Platform (IGD-TP)

ERDO Members are involved in the IGD-TP, e.g., COVRA is a member of the Executive Group (EG).

### IAEA

IAEA Coordinated Research Project on Deep Borehole Disposal started 2023 and several ERDO members are participating, there are 15 countries and 18 organizations in this Co-ordinated Research Project (CRP).

### Deep Borehole Disposal Center (DBDC)

DBDC an independent, nonprofit organization that aims to advance the maturity of the safety case for deep borehole disposal and the technical readiness levels of the disposal concept was launched 2023.<sup>3</sup> COVRA, DEKOM and NND decided to participate DBDC work and share the costs of the membership fee.

### European Commission Directorate General for Energy (DG-ENER)

In 2023, at the request of the European Parliament, DG ENER initiated a strategic project "Proposal for a Joint European Approach towards Radioactive Waste". This is intended to examine options or opportunities for pooling European resources and facilities and whether changes to legislation would be necessary to achieve this. ERDO's view was referenced in specification documents prior to a closed set of organizations being invited to tender in January 2024.

Throughout 2024, ERDO has continued to be involved and engaged as part of the project. We have agreed to participate in the project Stakeholder Group and the Steering Committee of the project and have provided support with the definition of project Work Streams and/or define objectives that could be taken up as project goals.

---

<sup>3</sup> A press release for this launch can be found on the Deep Isolation website here:

<https://www.deepisolation.com/press/the-deep-borehole-demonstration-center-launches-today-at-waste-management-symposia-in-phoenix-arizona/>.

## Euratom

ERDO participated dedicated SIMS event in Brussels on 22<sup>nd</sup> October<sup>4</sup>. All the presentations from the event are available on public domain.

## Papers and Presentations

To publicize the ERDO-USDOE Joint SMR Project and, also therefore, ERDO more generally, a paper was submitted to the IAEA SFM24 conference:

- Jake Kinghorn-Mills, Neil Chapman, Leon Kegel, Charles McCombie, *Potential Impacts of SMR Deployment on Multinational Cooperation at the Back End of the Fuel Cycle*, IAEA SFM24 Conference: Meeting the Moment, Austria, 2024, available online: [here](#).

Jake Kinghorn-Mills and Leon Kegel attended the conference in Vienna, Austria in June 2024, with the former presenting on the paper topic and the latter chairing the session on disposal.

ERDO was represented by members of the ERDO Board at the Seventh International Conference on Geological Repositories (ICGR-7) from 27<sup>th</sup> – 31<sup>st</sup> May in Busan, Korea, including the presentation of a poster.

- Marja Vuorio, Ewoud Verhoef, Jake Kinghorn-Mills, Charles McCombie, Neil Chapman, *ERDO: strategic and technical pathways to shared disposal*, ICGR-7: Empowering Progress in Developing Deep Geological Repositories, Busan, Korea, 2024.

Charles McCombie and Neil Chapman drafted a paper for publication as an article in Nuclear Engineering International (NEI) under the ERDO Association name, covering the importance of multinational solutions and ongoing initiatives, projects and activities associated with their development, illustrating that ERDO is central in this space and aware of, or actively involved in, them:

- Charles McCombie and Neil Chapman, *Sharing geological repositories*, Nuclear Engineering International, December 2024.

### Presentations

- 14<sup>th</sup> March Essen, Germany: 11th Expert Talk on Final Repositories, M. Vuorio, Multinational Radioactive Waste Solutions
- 20<sup>th</sup> May Helsinki, Finland: Case For Waste report publication, M. Vuorio, ERDO Association
- 14<sup>th</sup> November DigiDECOM 24 Halden, Norway, M. Vuorio, (online presentation), ERDO: working towards RWM solutions for small inventory member states

## ERDO Policy-based Initiatives

The current emphasis in ERDO is on the need to ensure support for Multi-national Deep Geological Repository (MNR) concepts by governments at the strategic and political level. Policy-based initiatives are considered very important on the road towards one or more MNR, and other joint RWM initiatives. In this context, ERDO has proposed a Joint Declaration on a Multinational Approach to Radioactive Waste Disposal in Europe.

For the past year, discussions between government representatives of ERDO Member countries have been ongoing, with the objective of organising a ministerial-level meeting between European countries that support a dual-track disposal policy that keeps open both national and multinational disposal

---

<sup>4</sup> Presentations made at the meeting can be found on the EURAD website here: <https://www.ejp-eurad.eu/events/safe-management-spent-fuel-and-radioactive-waste-small-inventory-member-states>.



options. In this framework, dedicated contacts have been taken with the Netherlands and Belgium representatives. Engagement between these contacts is currently being pursued at a bilateral level.