

The ENDURANCE EURATOM Project: Eu kNowleDge hUb foR enAbling molteN salt reaCtor safety development and dEployment



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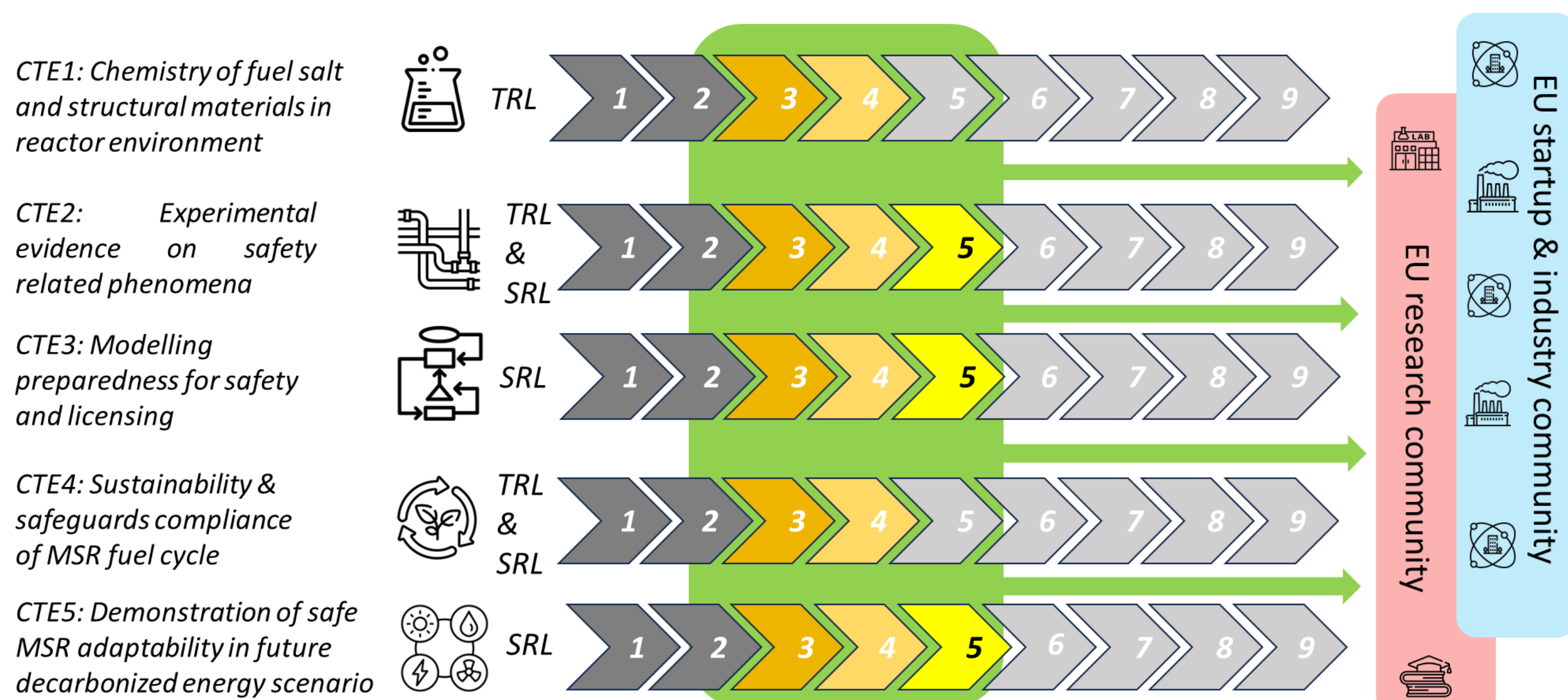
OBJECTIVES of the EU PROJECT

The ENDURANCE projects aims at supporting the safe operation and the technological development of Molten Salt Reactor (MSR) technology in Europe. The objectives of the project are:

- to create an environment for a **constructive alignment**, connecting the needs of reactor designers and industry with the university and research centre capabilities and the regulator requirements and to maintain the competence inside the Europe
- to enable the **MSR safe development and deployment** increasing the SRL and the TRL on key enabling phenomena, technologies and methodologies (Critical Technology Elements) and filling R&D gaps
- to **identify the future R&D needs** required to enable the safe development of MSR in Europe and define the technology roadmap development to preserve research and industry leadership in Europe on MSR technology

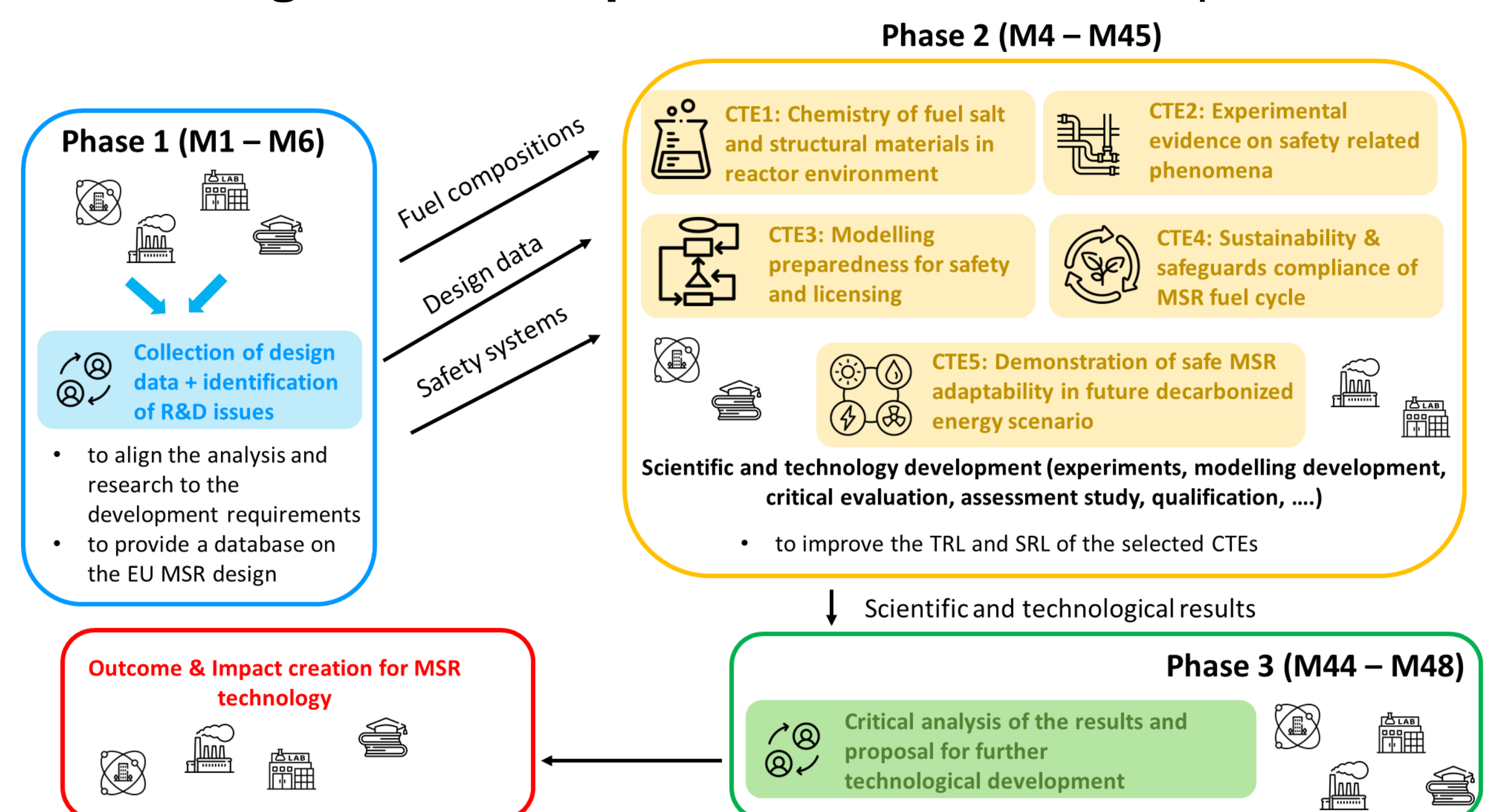
CRITICAL TECHNOLOGY ELEMENTS

The project has identified **five critical technology elements** as areas in which **the effort on R&D and safety assessment is more required to close the gap** for demonstrating that MSR technology could be deployed in compliance with the highest safety standards, excelling in waste management and proliferation resistance, thus providing a relevant contribution to the integrated European energy vision.



METHODOLOGY

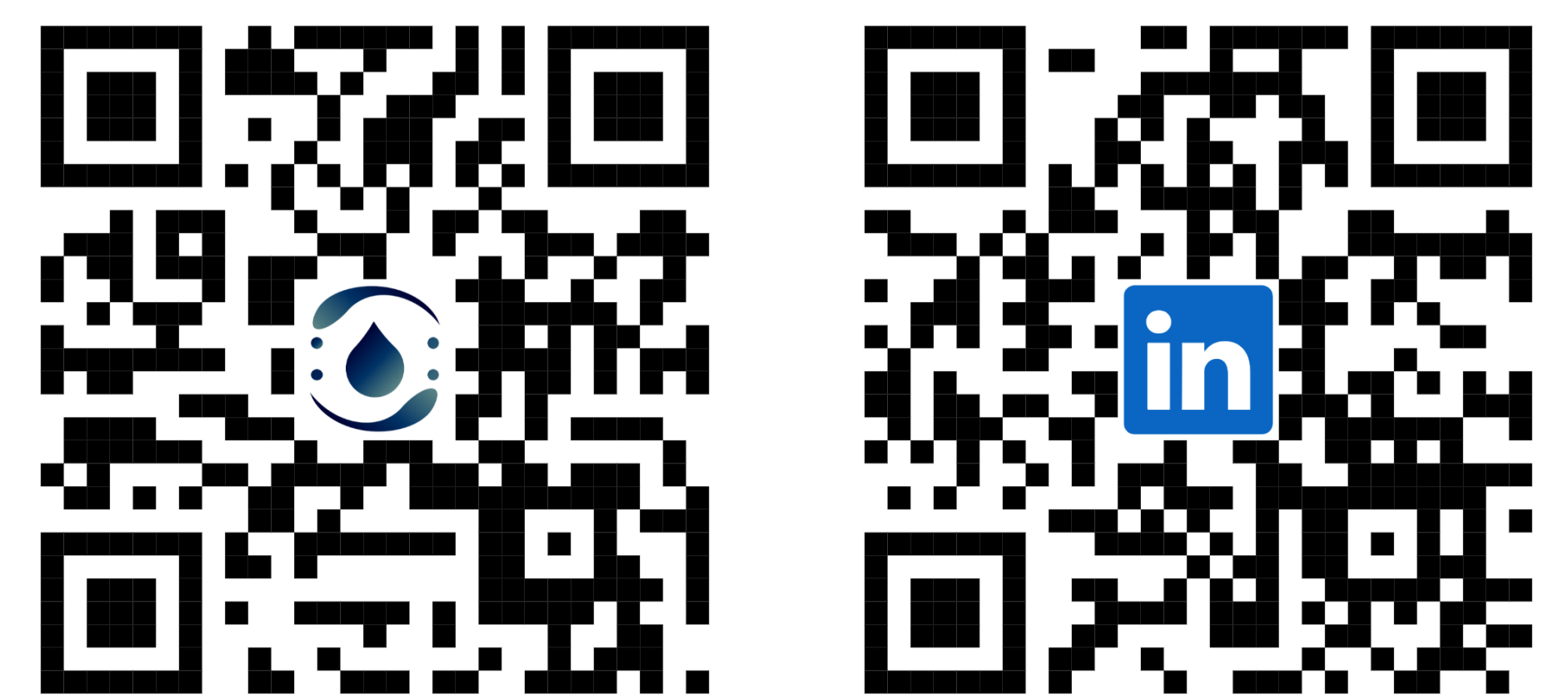
After a first phase characterized by a review and collection of **European MSR design data and common R&D needs identification**, the project will mainly focus on the **scientific and technological advancements** in the five CTEs. At the end of the project, the evaluation of the results and **development of a scientific and technological roadmap** for MSR will be developed.



ACTIVITIES on MSR systems

- Thermo-physical properties measurements**, front-end modelling and simulation, PIE in reactor environment
- Experimental analysis** of the transport and deposition of solid fission products, neutronics parameter and natural circulation
- PIRT, TAR and computational methods **for supporting safety analysis and licensing** including numerical and experimental benchmark
- Assessment of MSR **fuel cycle sustainability**, reprocessing schemes, off-gas systems and process **safeguardability**
- Evaluation of **operational flexibility of MSR** in poly-generation and relative safety aspects

STAY CONNECTED



<https://www.endurance-msr-project.eu/>
<https://www.linkedin.com/company/endurance-msr-project/>

PARTNERS & FUNDING

4 years (Oct 24 – Sep 28), Budget 5.1 mln € (EU contribution 4 mln €), Consortium: 8 universities, 7 research centers, 1 industry, 4 startups, 1 TSO

