

JRC PORTFOLIO 04

SAFETY OF NUCLEAR TECHNOLOGY IN SUPPORT OF THE TRANSITION TOWARDS CLIMATE NEUTRALITY

The European Union (EU) aims to be climate-neutral by 2050, becoming an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement. Through the Taxonomy Regulation Complementary Delegated Act, the Commission has concluded that nuclear energy, subject to strict safety and environmental conditions, can play a role in the transition towards climate neutrality in line with the Green Deal. This is also a practice of some EU Member States. It encourages the development and improvement of safety standards for nuclear technologies, including advanced waste-minimising technologies and new nuclear energy generation projects.

The portfolio aims to:

Provide scientific evidence on the safety and sustainability of evolutionary nuclear energy technologies, including radioactive waste management and disposal

Contribute to a continuous update and improvement of the technical screening criteria for nuclear energy as a climate neutral energy system

Maintain Europe's nuclear technology leadership in nuclear safety while fostering autonomy of energy supply and economic growth

Delivering on anticipation, integration and impact of EU policies

- ▶ providing independent scientific evidence addressing proposed nuclear technology innovation proposed for implementation in the EU Member States, related to the safety of reactors, materials, fuels, including waste management and disposal,
- ▶ supporting the adoption of state-of-the-art solutions for the long term operation of current systems, the final disposal of high-level waste and the introduction of advanced designs,
- ▶ contributing to discussions about nuclear energy as a safe, sustainable, and viable low-carbon power-generating source, based on its merits.

Time frame

This portfolio ensures continuity between **short- and long-term research** and competences in the context of the energy transition and decarbonisation of the EU economy **by 2050**, through a number of research activities that contribute to safety optimisation of existing and new nuclear technologies.

Main partners

Partner DGs

ENER, GROW, RTD

Selected stakeholders

IAEA, OECD/NEA

Nuclear energy

Climate neutrality

Safety of nuclear energy installations

Technological sovereignty

Advanced reactor concepts

Green transition

Strategic autonomy

Radioactive waste management

Nuclear waste disposal

Nuclear technology innovation

Find out more



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<https://joint-research-centre.ec.europa.eu/jrc-research-portfolios/safe-nuclear-technology>

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PRINT
PDF

ISBN 978-92-76-99471-8
ISBN 978-92-76-99470-1

doi:10.2760/250953
doi:10.2760/549107

KJ-04-23-204-EN-C
KJ-04-23-204-EN-N