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Radioactive Waste Management in Portugal

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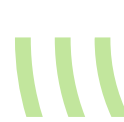


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Country Outline

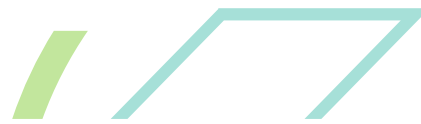
Surface area: 92 212 km²
(Source: Eurostat 2021)

Population: 10.3 million (Source:
Eurostat 2019)

Around 10.000 authorized
facilities that use radiation
sources

There is 1 Research Reactor
(currently in transition to
decommissioning)

There are no NPPs or SF in
Portugal



Regulatory Framework Overview

- Decree-Law 156/2013 – transposition of EU Directive 2011/70/Euratom into Portuguese Law;
- Decree-Law 108/2018, amended by Decree-Law 139-D/2023 - new legal regime of radiation protection, nuclear safety, and safe management of radioactive waste;
- Exemption, exclusion and clearance criteria are defined in DL 108/2018;
- Portugal National Programme first approved by RCM 122/2017 was updated by RCM 129/2022;
- Portugal is adherent to the Joint Convention since 2009 and to the Convention on Nuclear Safety since 1998;
- Portugal hosted an IAEA IRRS Mission in 2022 and an ARTEMIS Mission in 2023.



Current Practices

- In Portugal, radioactive waste originated in medicine and industry sectors and in research activities are VSLW, VLLW, LLW and ILW.
- Under Decree-Law 156/2013, the activity associated with the management of radioactive waste and the associated installations for storage need to be licensed by APA.
- Conditions for authorized discharges or short-term management of RW are set in the license for the practice.
- Portugal has a sole centralized interim storage facility for RW. The PRR, was built in the 1960s and is operated by IST – Instituto Superior Técnico, the School of Engineering and Architecture of the University of Lisbon, under a license issued by APA.



Current Practices

- At present, there are 52 radioactive waste management and storage facilities licensed. The PRR for a long term and 51 for short term mainly **at** hospitals and research centers.
- Since 2015 producers and holders of radioactive waste use an online tool developed to process the requests for clearance or exclusion of their radioactive waste or for authorizing its management at the PRR. This tool, named the Radioactive Waste platform also serves as a database and process management tool for licensing installations that store and manage radioactive waste for more than 30 days and allows for inventories of radioactive waste to be submitted and analysed.
- Updated National Programme established as the mandatory option for new sources the return to the manufacturer. This is also the preferred option for older sources already in the country.



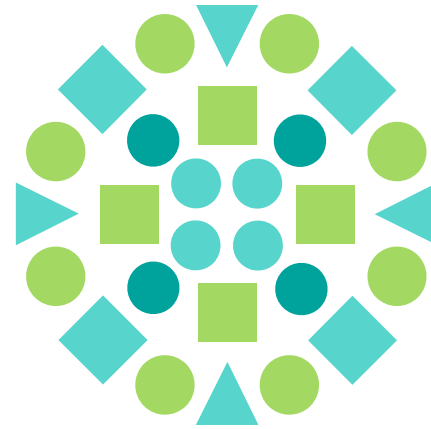
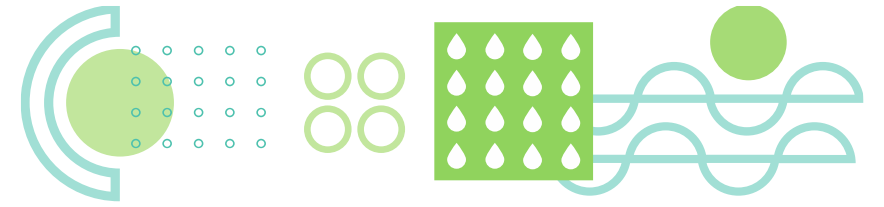
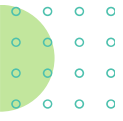
Challenges in RWM in Portugal

- The PRR is nearing its maximum storage capacity. As of mid-2024, the operator reported that approximately 74% of the total storage capacity (350 m³) was in use.
- Additional pressure on the facility arises from the potential need to manage significant quantities of NORM residues as radioactive waste (RW) and sealed sources that are not accepted by the providers/manufacturers.
- The future decommissioning of the Portuguese Research Reactor will also be a challenge for RW management.
- Furthermore, a large volume of historical RW is stored at the PRR—800 metallic drums, each with a capacity of 200 liters—occupying substantial storage space. These drums require proper characterization and conditioning.
- Recent changes in legislation have eliminated general exemption criteria, with the result that the competent authority can no longer apply those to exempt radioactive materials such as NORM residues that are slightly above the exemption values defined in the legislation.

Challenges in RWM in Portugal

- Alternative long term storage and disposal solutions have to be studied, and measures have been set in the updated National Programme.
- Other measures set in the updated National Programme aim the complete characterization of historical RW stored at the PRR and the promotion of research activities in RW management, such as complementary solutions for prolonged and/or definitive storage of RW, solutions for reuse or recycling of RW containing NORM and incineration of organic RW.





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