

Our approach



ANTICIPATION

Horizon scanning, nuclear foresight and anticipating EU policy needs for decades to come



INTEGRATION

Support to EU policies with independent nuclear scientific evidence throughout the whole policy cycle



IMPACT

Implementation of EURATOM regulations to improve nuclear safety, security and safeguards

JRC - a nuclear research institution, a training centre and a think-tank, with active partnerships with national and international stakeholders in the nuclear and related fields.

Science for policy

The Joint Research Centre (JRC) provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society



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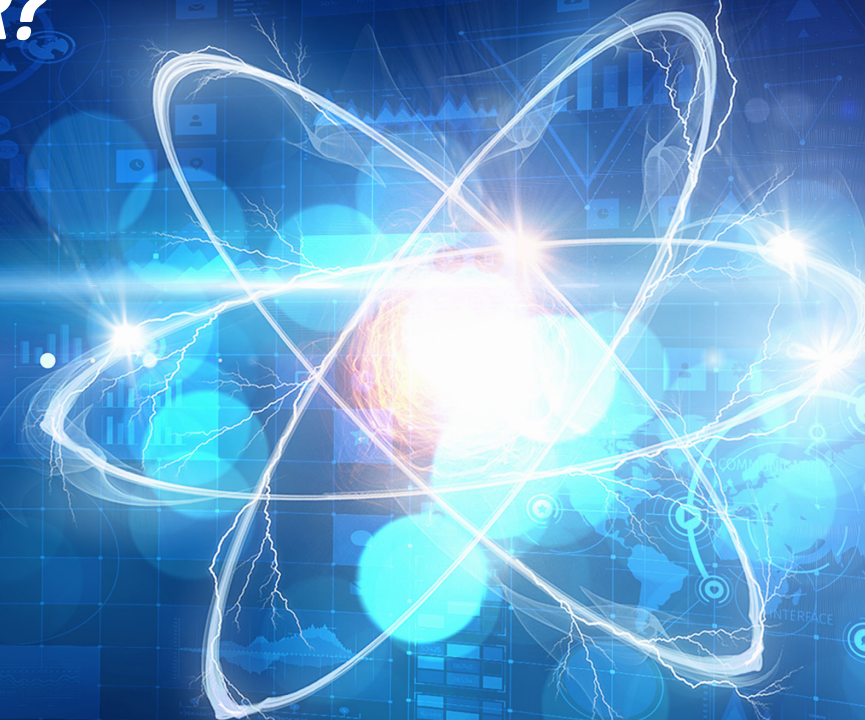
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of the European Union



JRC FACTSHEET

Joint Research Centre Nuclear Activities

NUCLEAR RESEARCH: WHAT FOR?



Joint
Research
Centre

Your Questions – Our Contribution

1. Response to global security challenges

I AM IN CHARGE OF THE HARBOUR IN MY CITY, AND WE HAVE NO NUCLEAR FACILITIES IN OUR COUNTRY. HOW CAN WE GET HANDS-ON TRAINING FOR FIRST RESPONDERS WHO INTERCEPT RADIOACTIVE SCRAP OR ILLICIT TRAFFICKING?
Your customs and security officers are welcome to join EUSECTRA, our European Nuclear Security Training Centre where advanced training for the detection of non-regulated nuclear radioactive materials is provided. Our experts have trained over 2000 EU first responders since 2010.



Prevention of illicit traffic



Crime scene management



+100 samples/year analysed for preventing nuclear weapons proliferation



Assuring nuclear materials are not diverted from peaceful use

*JRC – the European nuclear research organisation whose activities and results are independent from Industry, National Governments or any other partial interests.
Our purpose is to serve all EU Citizens.*



2. Energy autonomy and green transition

I AM WORKING IN THE ENERGY DEPARTMENT OF MY MINISTRY. WE ARE CONSIDERING HYDROGEN PRODUCTION. AMONG DECARBONISED SOLUTIONS, NUCLEAR CONSISTENTLY STANDS OUT. HOW COULD THE JRC SUPPORT THIS RESEARCH?
The JRC typically combines nuclear and non-nuclear expertise to ensure optimum application of nuclear processes in carbon neutral applications. Supporting the green transition via integrated solution is JRC's approach.



Contribution to decarbonisation



Safe extension of reactor operation



Exchange of experience between reactor operators to improve safety standards



Nuclear fuel and reactor safety



3. Emerging nuclear technologies

AS MEMBER OF THE ENERGY COMMITTEE IN THE EU PARLIAMENT, I AM INTERESTED IN SMRS. THE GOAL IS TO DECARBONISE INDUSTRIAL PROCESSES THAT NEED ELECTRICITY AND HEAT BY PHASING OUT COAL AND FOR THIS WE NEED DATA AND KNOWLEDGE. CAN THE JRC HELP?

We can guide you through the risks and advantages of design concepts for most advanced nuclear reactors and fuels. Safety, costs, reliabilities, potential applications, as well as the level of various fission technologies: we have the data and knowledge you would need.



Small Modular Reactors



Next generation of nuclear reactors



Nuclear Space applications

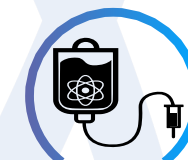
4. Innovation in beating cancer

IN 2022, EU LOST APPROXIMATELY 1.3 MILLION CITIZENS TO CANCER. THE SAME YEAR, 2.8 MILLION NEW CASES OF CANCER WERE REPORTED: I HEARD JRC IS CONTRIBUTING TO THE FIGHT AGAINST CANCER, HOW SO?

The JRC is the pioneer in the development of new radioisotopes for cancer treatments with Targeted Alpha Therapy (TAT), where only tumour cells are destroyed without damaging the healthy tissue. The JRC is collaborating globally with research centres, hospitals and industries to make these life changing treatments accessible to all.



EU leadership in R&D for health applications of radionuclides



1000+ cancer patients received treatment with our research products



Pioneering new medical uses of radioisotopes



Supporting access to targeted alpha therapy to cancer patients in the EU and beyond

5. Nuclear skills and future workforce

OUR REACTORS ARE OLD, WE NEED TO DECOMMISSION THEM AND SAFELY HANDLE THE WASTE: WHAT HELP DOES THE JRC OFFER IN ESTABLISHING BEST PRACTICES?

We have a department committed to developing innovative safe approaches for decommissioning activities. You can count on our vast experience, in support of your national assessments and requirements, and to help create the skilled nuclear workforce needed to deal with these issues.



Education and training:

For nuclear capacity building in nuclear safety, security, safeguards, strategic trade control, non-power applications, decommissioning and waste management.



European Human Resources Observatory for the Nuclear Sector (EHRO-N):

Monitoring nuclear HR demand and supply – methodologies for nuclear workforce assessments.



Open Access of the JRC nuclear laboratories:

In Karlsruhe, Petten and Geel for nuclear material research by EU and Euratom partner scientists.

