



*Euratom Treaty,  
1957*



HORIZON 2020

# European Joint Programme in Radioactive Waste Management



*JOPRAD programme document workshop,  
London, 04 April 2017*

HORIZON 2020

DG Research and Innovation  
Unit G4 – Fission Energy  
**Christophe Davies**  
Project Officer

[Christophe.davies@ec.europa.eu](mailto:Christophe.davies@ec.europa.eu)

# EC Policy change, and Joint Programming: the issue and aim



The EC now advocates the  
Joint Programming of  
research between Member  
State programmes instead of  
funding individual projects

The justification is the continuous evolution of the research landscape at EU level since the 1<sup>st</sup> Euratom research and training programme in 1975

The aim is to ensure the continued "raison d'être" of the Euratom programme in the next decades, be of use to all Member States (MS) and associated States



and, eventually, demonstrate  
the need for a substantial  
budget in the next Euratom  
Research and Training  
Framework Programme,  
2021-2025

# Milestones in the Euratom Programme and status in the MSs

- Since end of 90's (FP5 -1998 >)  
**Geological disposal: main challenge**
- In first decade, 2002<sub>(FP6)</sub> → 2009<sub>(in FP7)</sub>  
**Objective: integration of implementers**  
**Result: IGD-TP with vision of 1st repositories by 2025**



➤ In 2011, EC policy on Partnering in Research and Innovation: EC Communication, COM(2011) 572

## i.e Joint Programming

In TFEU treaty: Public-Public & Public-Private Partnerships

In Euratom treaty: Programme co-fund, (ERA-NET, European Joint Programme & Marie Curie)



- In 2012, recognition EC & NEA RWMC of need to support competence & interactions for regulatory expertise functions:  
**EC SITEX I & II projects (2012-13 & 2015-17)**

- EC Euradwaste'13, concluding conference of Euratom FP7 in RWM: **Key recommendations:**
- need long-term science R&D for radioactive waste management solutions
  - need R&D for GD in each programme as each repository is unique

## ➤ In 2015-16:

- First GD licenses for HLW & SF in FIN & SE
- Wide gaps among MSs on schedules, knowledge and readiness
- IGD-TP considers knowledge sufficient to progress towards 2025 implementation

## ➤ Overall situation in RWM & disposal:

Many diverse cases in the MSs:

- nuclear and non-nuclear waste,
- need for strategy on R&D for GD and specific waste types,
- often priority development for other waste categories and types than HLW & SF,

## ➤ Overall situation in RWM & disposal:

- Key concern in MSs on knowledge management and Euratom role on dissemination and transfer towards Member States with less developed waste management and disposal programme,
- Public acceptance of disposal: still a challenge



# European Joint research Programme in the management and disposal of radioactive waste

# AIM:

- To increase knowledge throughout incremental development for the safe start of operation of the world's first geological disposal facilities for high-level waste / spent nuclear fuel in the leading Member States within the next decade, while also advancing all Member States national programmes as rapidly as possible in line with requirements under the waste Directive (2011/70/Euratom);
- To improve, innovate and develop science and technology for the management and disposal of other radioactive waste categories and;
- To manage and transfer knowledge and competence between generations and across Member States' national programmes,

# ACTORS:

*Those with scientific and technical responsibilities and a national mandate for research in RWM i.e. waste producers, waste management organisations (WMO), regulatory support organisations (TSO) and research entities (RE),*

# COMMITMENTS:

*To pool resources in order to improve critical mass, efficiency and effectiveness in the implementing of solutions across Europe.*



# BASIS:

*Material produced in the JOPRAD project with extensive consultation of the Member States national programmes and the research community.*

# Objective and SCOPE:

*Activities to be goal-oriented, with clear and agreed high-level milestones for easy progress monitoring;*

*The scope to include all the scientific and technical areas covered in the SRA (Strategic Research Agenda) agreed by the Member States via JOPRAD;*

*The SRA to enable joint research activities on all the domains of management (pre-disposal) and disposal of radioactive waste (RW) as defined in the IAEA (2016) safety glossary,*

# Example of scope in the 4th Euratom Radioactive Waste Management Programme, (1990-1994)



**PART A**

Waste management and associated R & D projects

**A1 Studies of management systems** 5,4

Task 1: Study of systems including analytical models for minimizing the transport of waste. Harmonization of policies and practices concerning the management of waste, including waste from dismantling operations and irradiated fuels. Information for the general public. The system studies will concern the evaluation of various scenarios for the management of different types of waste. Harmonization work will mainly involve the development of common waste-management criteria and schemes.

**A2 Treatment of waste** 7,5

Task 2: Treatment and packaging of waste, including unprocessed irradiated fuel, where this is considered as waste. Treatment of radioactive waste. The work will concern the development of advanced processes for minimizing the production of waste, minimizing the discharge of radioactive effluent into the environment and reducing the volume of waste for disposal and study of the potentialities of transmutation.

**A3 Safety of the multi-barrier system of geological disposal** 39,2

Task 3: Characterization and description of waste forms, packages and their environment. The various waste packages will be studied in an environment representative of final storage so that the safety of their long-term behaviour can be ascertained. The quality control of waste forms will also be developed.

Task 4: Disposal of radioactive waste: research to back up the development of underground repositories. The work will concern the radionuclide isolation properties of the various types of rock envisaged for the disposal of waste, and also some design aspects of the construction and operation of underground repositories in such environments, the aim being to evaluate their feasibility and safety.

Task 5: Methods of evaluating the safety of disposal systems. The methods developed hitherto will be perfected and extended to new types of waste, in order to carry out a comprehensive safety assessment of radioactive waste storage facilities, taking into account their radiological and environmental impact and nuclear safety.

**PART B**

Construction and/or operation of underground facilities open to Community joint activities 27,5

Project 1 Pilot underground facility in the **Asse salt mine** in the Federal Republic of **Germany**

Project 2 Pilot underground facility in the argillaceous layer under the **Mol** nuclear site in **Belgium**

Project 3 Underground validation facility in France

Project 4 Underground validation facility in the United Kingdom

Other projects could be added in the course of the execution of the programme

Total 79,6 (1)

# Deployment strategy / roadmap:

*The SRA should be translated into a deployment strategy, or roadmap, with clear objectives, deliverables and high-level milestones for :*

*technical solutions per waste streams and waste types and on knowledge management.*

*The roadmap may extend beyond the duration of the EJP, or the duration of support from the Euratom programme,*

# Implementation:

- Via project-oriented approach,*
- With specific projects defined by technical scope aimed at scientific and technical activities,*
- broken down into work packages,*
- to which all actors (EJP partners) with the appropriate competences can participate, but not be reserved for just one type of actor*

# Prioritisation and participation:

*Projects should not only cover areas of interest for the leading waste management programmes but also areas of interest in countries with smaller and less advanced programmes, and participation should allow later inclusion of new partners,*

# Governance & operation:

- The governance should be established via a consortium agreement, and include a 'programme office', perhaps housed in the premises of the Coordinator, to which staff from the partners can be seconded on a full-time basis,*
- The 'programme office' will have a strategic role in ensuring implementation of the EJP as well as managing day-to-day activities,*
- The involvement of external stakeholder groups should be foreseen in the governance mechanism, e.g. to enable Civil Society Organisations (CSOs) to advise and comment on activities,*

# Mechanisms:

- Financial support to third parties under article 15 of the model grant agreement does not apply. Therefore, no open calls for proposals for third party grants are requested.*
- Means of allocation of project tasks and funding amongst the partners will need to be established on a yearly basis and taking into account emerging Science and Technology (S/T) as well as European Commission (EC) policy issues*

# Activities:

- The EJP should cover all related activities: common research and strategic studies, sharing of facilities, knowledge management, mobility and training of researchers,*
- To maximise knowledge management and especially the impact on the smaller and less advanced national programmes, horizontal activities should be prioritised, including i) the development of State-of-the-art text books, guidance documents for planning and implementing research, ii) training courses organised, as appropriate, with European forums and their activities on education and international organisations, and iii) hands-on-training via mobility measures,*
- In addition, the EJP should be open to international R&D cooperation*



# Important messages:

- the Grant implies co-funding of activities by MSs, i.e. no full funding (50 to 70% reimbursement rate), no direct segregated funding to a category of actors and associated operation,
- substantial budget need to be set aside for new yearly activities and new partners, i.e. no fixed and complete allocation of budget and to activities at the start,
- significant number of projects and horizontal activities need to be of direct use to small and less advanced programmes
- the proposed EJP need to include a ready strategy, implementation scheme and first activities

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# Work Programme 2018

Call schedule tbc

Open: ca. Oct.2017

Deadline: ca. March 2018

EJP start: ca. Jan. 2019



*Together  
since 1957*

***60 years Anniversary on 27 March 2017***

***THANK YOU  
for your attention***