



“European Commission news & expectations in disposal RD&D programmes”

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European Commission
DG Research and Innovation
Unit K4 – Nuclear Fission

IGD-TP Exchange forum #4, Prague, October 2013

Outline

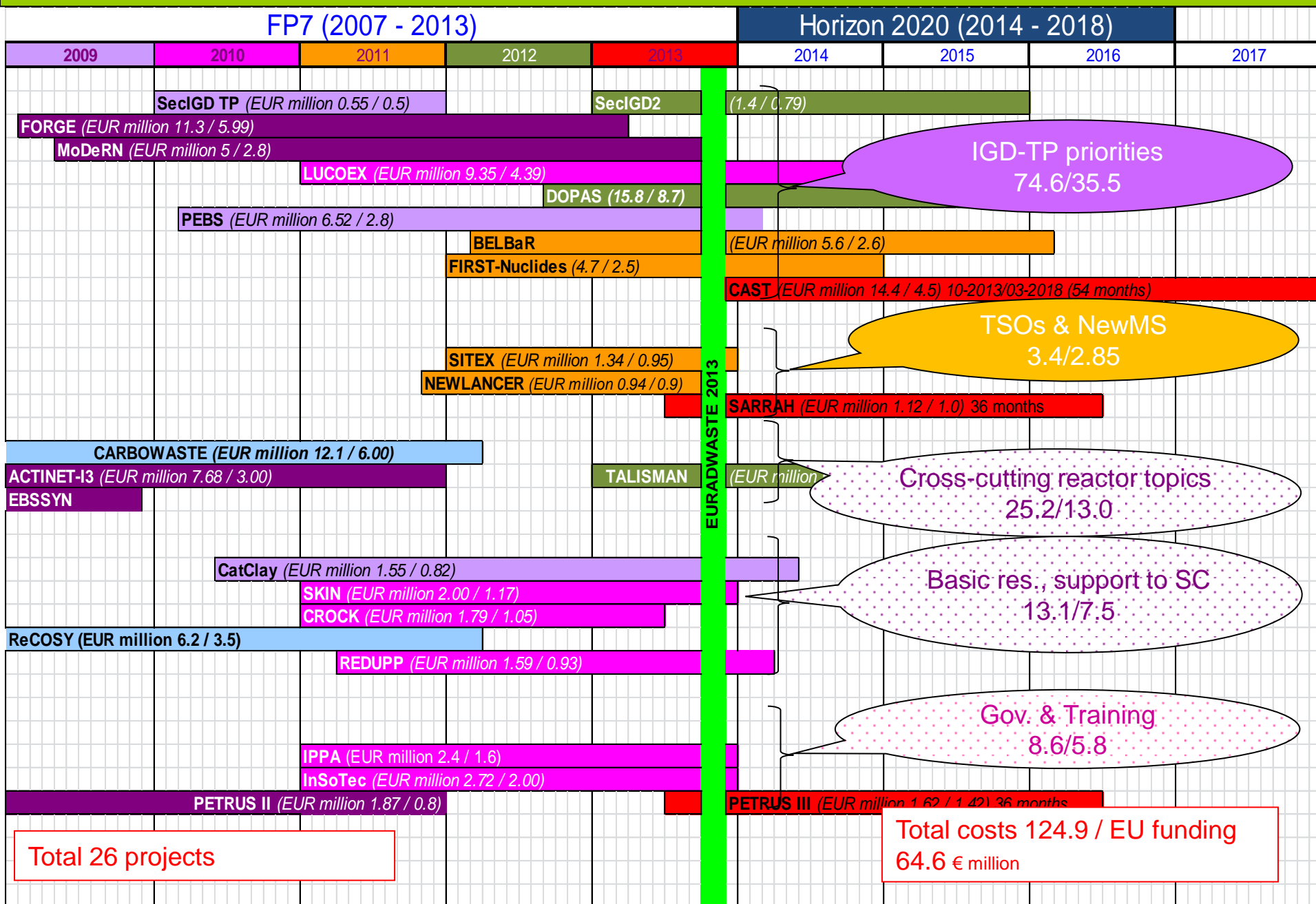
- **Euratom FP7 fission – final status**
- **EURADWASTE '13 conference**
- **Horizon 2020 – Euratom FP 2014/18**



EURATOM Fission FP7 2007-2013 - Funding

Activity area	Number of projects	Total cost €	EC contribution in €	% of total EC FP7 contribution	Avg EC contribution / project in €
Management of (Ultimate) Radioactive Waste	20	107,344,571	53,614,276	15	2,680,714
1. Reactor Systems	53	346,484,810	171,684,697		3,239,334
2. Infrastructures	13	40,090,628	26,819,677		2,063,052
Sub total 1 + 2	66	386,575,438	198,504,374	56	
Radiation Protection	29	133,988,513	84,649,586	24	2,918,951
Human Resources, Mobility and Training	15	23,129,345	14,565,455	4	971,030
Cross-cutting actions	5	5,165,031	3,825,793	1	765,159
Total FP7	135	656,202,898	355,159,484		

FP 7 projects final status, 2013



FP7 projects and relationship with IGD-TP priorities					
Inst type	Project name	Link to		FP7 budget allocation €	
		FP7 objectives	TP Joint Activities or priority	JA + TP priority projects	other
	Activity area Cross-cutting				
Coordination actions (CA)	Newlancer	CMEV	no		900.033
	Management of ultimate radioactive waste				
	EBSSYN	CMEV	no		25.000
	SEC IGD & SEC IGD2	CMEV	✓	1.290.000	
	SITEX	CMEV	no		950.080
Collaborative research projects (CP)	MODERN	Tech.Impl	JA	2.800.000	
	DOPAS	Tech.Impl	JA	8.700.000	
	PEBS	AS	JA	2.806.333	
	BELBAR	AS	JA	2.581.476	
	FIRST-NUCLIDES	AS	JA	2.494.513	
	CAST	BR	JA	4.511.183	
	REDUPP	BR	JA	929.303	
	FORGE	AS	✓	5.988.647	
	LUCOEX	Tech.Impl	✓	4.390.000	
	CARBOWASTE	BR	✓	6.000.000	
	RECOSY	BR	no		3.500.000
	CATCLAY	BR	no		819.498
	CROCK	BR	no		1.057.927
	SKIN	BR	no		1.171.470
CA	IPPA	CMEV	no		1.599.988
	INSOTEC	CMEV	no		1.998.856
	Human Resources, Mobility and Training				
CA	PETRUS I & II	CMEV	no		2.250.000
			# projects	12	11
			EC funding	42.491.455	14.272.852
			Total Cross-cutting, Waste & Training	€ 56.764.307	€ 56.764.307
			% EC FP7	74,86%	25,14%

Classification of the FP7 projects according to the Framework Programme objectives:

Implementation-oriented R&D activities on all remaining key aspects to establish a sound basis for the disposal of spent fuel and long-lived radioactive wastes in geological formations:

- 1) The technical basis for technology demonstrations
= Technology Implementation (Tech.Impl.)
- 2) The scientific basis for demonstrating the safety
= Applied Science (AS)
- 3) to underpin the development of a common European view on the main issues related to the management and disposal of waste:
= (CMEV)
- 4) *including support to basic research* (BR)

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Eight European Commission Conference on the Management of Radioactive Waste

14-16th October, Vilnius

Three themes

- Community policy: - EU radioactive waste Directive 2011, int.l perspectives
- Challenges in Geological Disposal programmes:
 - Establishment of a national RD&D programme
 - Regulatory expectations
 - Stakeholder involvement in developing repository programmes
 - Competence Maintenance and Education & Training develpt & impl.tion
- Challenges in science for disposal and repository technologies and construction :
 - Euratom FP7 research projects in Applied science, Basic research and Technology Demonstrations & Full-scale in situ Testing

Programme

Seven plenary and a poster session:

- 8 keynotes, 40 oral presentations, 4 panels and general discussions

Presentations

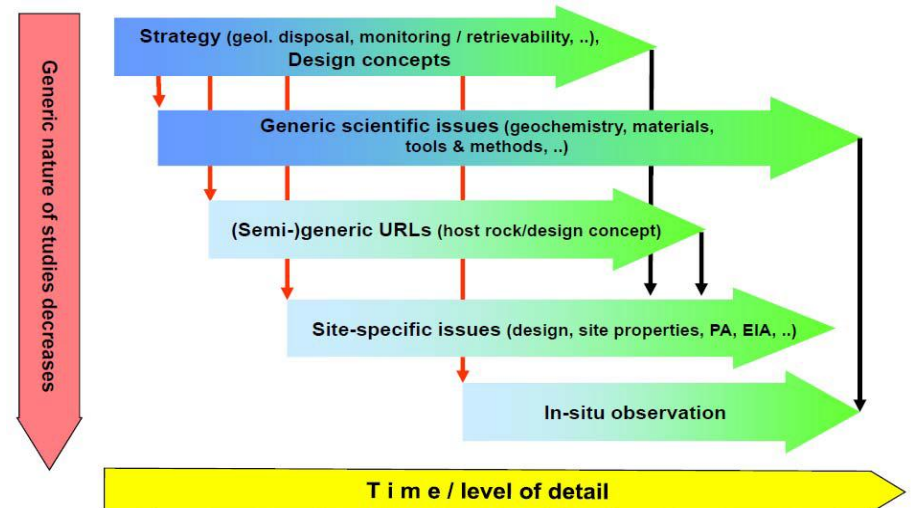
http://cordis.europa.eu/fp7/euratom-fission/fisa-euradwaste-2013_en.html
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Messages & Preliminary conclusions (1)

- ENWD (European local Network of radioactive Waste Dialogue) created for municipalities with waste disposal facilities
- Challenge in repository construct & operation for implementors and regulators
- Stakeholder involvement: build on regional and local involvement; added-value of partnership & continuous dialogue
- Challenges in: Cost assessments; Other waste forms; Meeting separate requirements of nuclear and mining safety regulations; Operational safety
- Continuity of RD&D
- Challenges in R&D on nuclear fuel cycles in view of geological disposal projects
i.e. anticipate new nuclear fuels asap and consequences of spent-fuels & waste from higher burn-up fuels

Messages & Preliminary conclusions (2)

- ➔ Recognition of challenges in establishing a national programme for RD&D for disposal
 - As each repository is unique implementation of geological repository is not possible without specific RD+D
 - So each programme needs experience in all areas to ensure proper integration
 - Resources needed: Team in charge of RD+D is essential & necessary infrastructure
 - Planning and implementation of RD+D to be carried out in a stepwise approach
 - With dif. types, focus & level of detail at each stage of programme considering
 - Be aware that in each programme there is a need for own projects
 - Open international collaboration supports effectiveness and efficiency



Messages & Preliminary conclusions (3)

→ Issues for safety authorities/TSOs

- Need to do R&D to ensure competence level in the reviews e.g. assess importance of uncertainties, to develop and use own tools for review work e.g. own models, to establish guidelines
- Need to pool resources to share scientific issues and the practice of reviews

→ Stakeholder involvement

- Examples demonstrate that effective involvement including on technology is possible
- Enabling stakeholders to verify data, engage their own 'independent' expertise and obtain a 'second opinion'
- Need to take whatever time and long lasting i.e. not temporary and on broad spectrum not narrow
- Engagement recommended throughout siting to hosting phases via involvement in DM from design to building, operating and closure

→ Competence Maintenance and Education and Training are critical for knowledge transfer and development because extreme situations: ageing and early phase programmes

Messages & Preliminary conclusions (4)

→ Needs for "small countries" is beyond 2025

- SRA topics are for advanced programmes but not necessarily need to change it. Suggestions to organise training on basic knowledge, help to plan national programmes, training and knowledge transfer to be included in each EC project, perform benchmark studies

→ Discussions on Research

- Continued EU support to advanced programmes still needed for 2025 but longer term vision and timescales and not only to implementers projects'
- Basic R&D needed to keep up with evolution of knowledge, methods and tools
- Recommend R&D on innovative , prospective technologies; data, tools and models still needed for PA
- Many other topics to be detailed in the session and panels reports (Mox fuels, source term alteration rates, new waste streams, near-field specific processes, performance of buffer materials and seals, communication of results to public, testing knowledge against NA,...)

HORIZON 2020

Euratom FP 2014-2018

Objectives for indirect actions
*include "contribute to the
development of solutions for
the management of ultimate
nuclear waste"*

EC implementation objectives in area management of ultimate nuclear waste



Introduction of **programme co-funding**

Why

- ✓ Further increase of research coordination and integration

How

- ✓ via support to programmes rather than projects

Objective in area management of ultimate waste (GD)

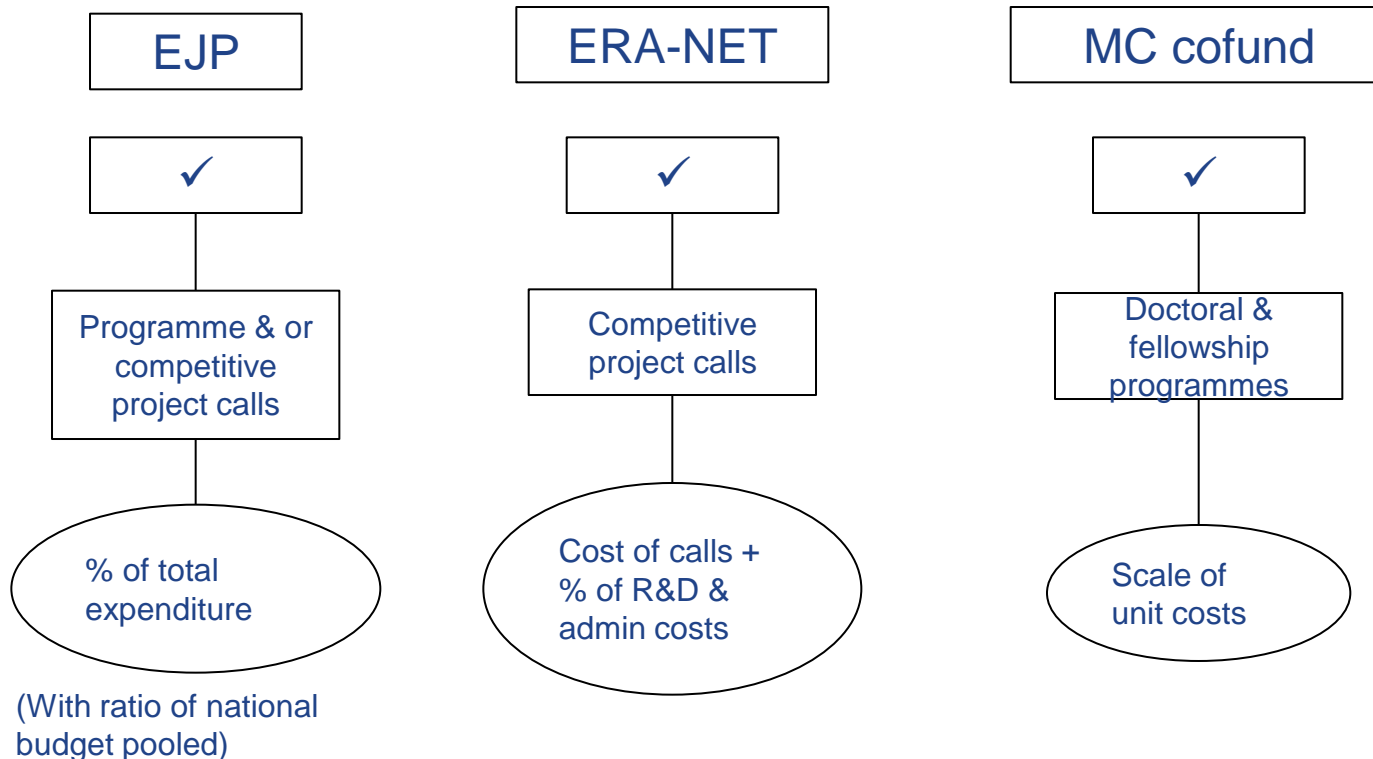
- ✓ Support IGD-TP priorities, and wider needs:
 - Continued innovative basic research
 - Support to less advanced geological disposal programmes
 - Needs of regulators / TSOs
 - Engagement of citizens and civil society
 - Competence maintenance and Education & Training
 - Knowledge management and dissemination of results
 - Include support to socio-economic impact studies
 - Promotion of int. cooperation

Actions

EC call

Applicants for

EC funding



Objectives: Pooling national resources, Achieve economies of scales and create European transnational joint-programme

Eligible participants to create EJP are legal entities owning (funders) or managing (or mandated to manage) public research programmes

Activities of EJP include direct (own programme) or indirect (via calls for third party implementation) research,
e.g. research, coordination, networking activities, training, demonstration, dissemination

Execution following:

- Annual work programme
- Transparent process to define activities
- EC annual follow-up of the activities and results via peer review

EU funding determined by: multiannual co-funding up to 70% of the total expenditure of the EJP (sum of national & EU contributions)

- Ratio of national budget pooled, by reimbursement of eligible costs and the total expenditures of the coordinated programmes

- **First EURATOM Work Programme and call to cover two years (2014-2015)**
- **Indicative budget - 94 M€**
- **Thirteen topics in draft WP:**
 - *Safety of reactor systems,*
 - *Management of Ultimate Radioactive Waste,*
 - *Radiation protection,*
 - *Nuclear competence & socio-economic issues,*
 - *Cross-cutting: fuels for medical radioisotopes and application of Transmutation of minor actinides,*
 - *Infrastructure*

- ***Three topics in Radioactive Waste:***
 - 1.** EU concerted development of Joint Programming of Member States research programmes,
 - 2.** EU coordination action for harmonised regulatory reviews for licensing geological repositories,
 - 3.** R&D on IGD-TP priority topics & other public R&D programmes,

Event	Date
Call publication	11/12/2013
WP official adoption	January 2014
Call deadline	17/09/2014
Evaluation	29/09-24/10/2014
Contract negotiations	Nov. 2014 – Jan. 2015
Projects launch	March 2015

Conclusions



1. Euratom FP7 in the Management of (Ultimate) Radioactive Waste has funded:
20 projects + 2 in Training & 1 cross –cutting / 135 FP7 ca.
16% of the EU budget
 2. Funding to IGD-TP JA & priorities was 12 projects for ca. 75%
of the waste budget
- ➔ Reflection needed on respective proportions:
waste/total programme and TP priorities / CMEV & basic
research
 - ➔ Need to clarify nature of continued long-term research including
BR needed
 - ➔ EURADWASTE '13 clarified the challenges and requirements for
national programmes with longer-term impl. time-scales
 - ➔ EJP prog. hopefully appropriate vehicle to organise transparent
& agreed R&D for all purposes & needs

Thank you
for your
attention

