Research Entities Grouping

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THE ROLE OF RESEARCH ENTITIES

A schematic vision on separation and role of actors

General and local public interest: parliamentary offices, government, regions assure procedures, review, transparency decisions of implementation

Research organism (interest: generation of high quality knowledge)

Waste producer (interests: business, energy, defense, industry)

Waste management organization (interest: best technical solution)

Regulator (interest: safety and security)

options, research
WHY RE GROUPING?

• What is our “raison d’être”? 
  • REs are at the center of long term knowledge management and further development of applied and fundamental research on radioactive waste management beyond national borders
    • Link to Council Directive 2011/70/Euratom
  • Inherent role of R&D (scientific and technical challenges) in waste management and disposal
    • Providing credibility through the coupling with scientifically prudent and intellectually independent RE members
  • Education and training of young scientists (keeping competence; providing for the next generation experts)
    • Through promotion of attractive and frontier research
    • By networking for maintaining and developing infrastructure and expertise
  • Preparing for EURAD role (RE college)
    • Complement IGD-TP and SITEX with own accents and needs
    • Intellectually independent
RESEARCH ENTITIES

• Whom do we address?

• Aim
  • To work inclusive towards mandated actors
    • Urgency with respect to EURAD governance
  • To selectively involve other research organisations
    • Setting up a structure and reflection on role of the grouping
  • Transparency

• Invited REs
  • Formally mandated actors under EURAD
    • 20 individual organisations
  • LTPs, identified as (important) research organisations
    • Only limited number selected so far
  • Some TSOs, identified as research organisations, if interested
    • VTT, CIEMAT
• First discussion June 2018 (Brussels)
  • Interest of ~20 research entities

• Further preparatory work through smaller group to prepare all necessary documents/meetings/…
  • Total RE group could encompass 100 organisations
    • → not productive anymore
  • Working group to obtain mandate to work on behalf of bigger organisation
  • Meeting October 2018
LEGAL STRUCTURE

• No priority
  • → Getting things moving first.

• Participation fee?
  ✓ Allows to increase visibility: webpage, marketing, etc.
  ✓ Ensures commitment
  ✘ Need in terms of longer-term mission?
  ✘ Not needed in frame of EURAD
DEVELOPMENT OF A STRATEGIC RESEARCH AGENDA

• Associated to the JOPRAD project, REs grouped to define their own Strategic Research Agenda (SRA) in a record time
  • Meetings in Brussels (June 2015), Paris (September 2015), Nantes (November 2015), Paris (March 2016)
  • Final draft in May 2016

• RE working group (22 partners)
  • Advanced and less advanced programmes
Within the RE-SRA (JOPRAD), it is acknowledged that needs for demonstration of required level of safety and environmental protection of radioactive waste disposal facilities are associated with prominent scientific-technical challenges:

- Time-scales of consideration (passive safety features)
- Stringent demands to prevent radiotoxic material effecting the environment and quality of life for future generations
- Complexity of disposal system and its components
  - Spatial scale features from nm to km
  - Time scale features from s to Myears
  - Multi-disciplinarity
  - Process coupling
- Time-scales for implementing geological disposal
FROM JOPRAD TO EURAD... 

- RE interest in EURAD
  - Building confidence in safety assessments and underlying scientific assumptions for many decades to come
  - Decrease of abstraction/simplification (and conservatism) in safety assessment calculations in view of progressive scientific insight into complex systems behaviour
  - Embedding techno-scientific research in a progressively demanding societal context
    - Serving society with independent science/building confidence and credibility in radioactive waste management
  - EURAD as a tool for Building a European knowledge platform on waste disposal
  - EURAD as a tool for structured, long-term R&D commitment
    - Develop and maintain high-level research infrastructures across Europe
  - Structured communication and interaction with other Platforms
FROM JOPRAD TO EURAD...

• RE interest in EURAD
  • Define state of the art in understanding of system components behaviour, beyond national programme boundaries
  • Continuously further develop scientific knowledge promoting confidence building and keeping up to speed with scientific progress in a pro-active manner
    • Striving for scientific excellence within radwaste R&D
  • Safeguarding existing knowledge and attracting next generation of experts
  • Monitor and further elaborate upon the scientific basis for developments beyond the presently favoured options subject to implementation programmes
  • Exchange forum to discuss and identify research priorities
  • Dialogue with WMOs and TSOs (triangle rather than bilateral)
UPDATING THE RE-SRA

• Focus shift from “geological disposal” (JOPRAD) to “from cradle to grave” (nuclear back-end, EURAD), including
  • Pre-disposal activities
  • Legacy waste, including small (problematic) inventories
  • (Near-)surface disposal
  • (New) nuclear developments

• Providing and developing cutting-edge nuclear research facilities and instrumentation (for applied and fundamental scientific studies)

• Attracting young scientists’ interest (educating and training of next generation experts)

• Re-thinking priorities in view of EURAD research programme
UPDATING THE RE-SRA

• Some examples (non-exhaustive, non-binding)
  • Innovative waste forms (ceramic, geopolymers, plasma, spray coatings, organo-mineral composites, etc.)
  • Natural analogues/site-specific analogues
  • Biosphere models: how to increase credibility?
  • Further development of complete, transparent and quality assured thermodynamic databases
  • Linking bottom up to top down approaches using very complex systems, including mineral assemblages, competition effects, micro-organisms, redox, colloids
  • Develop and evaluate concepts and methods for handling, characterization, treating, conditioning, storing and re-disposal of historical (very old) wastes
    • Also in view of retrieval
UPDATING THE RE-SRA

• Some examples (non-exhaustive, non-binding)
  • Integral experiments with high-level waste
  • Deep Borehole disposal
  • Atomistic simulations

• Networking and sustaining the European research infrastructures
FURTHER STEPS

• Meeting on December 5th, BMWi, Berlin, Germany
  • 17 organisations from 10 countries
    • Additional 4 organisations (4 countries) declared interest
  • Centered on “who, why, how”
  • Aiming to be fully ready before start of EURAD
WELCOME TO…

The EuradScience Network
ANY QUESTIONS?