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# European Joint Programming on Radioactive Waste Management and Disposal: What changes for TSOs?



# OUTLINE

- Context
- SITEX-II project
- Joint Programming under development
- SITEX\_Network
- Conclusions

## Context

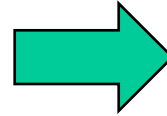
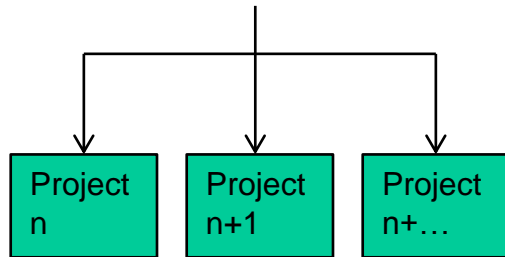
### *A leap forward in European research cooperation*

- The European Commission (EC) considerably supported the acquisition of knowledge on Radioactive Waste Management and Disposal (RWMD) by supporting collaborative R&D in individual projects (e.g. through EURATOM programme).
- Today, the EC promotes a leap forward in pan-European research cooperation, by:
  - Promoting the setting up of inclusive research and innovation joint programmes between the European Member States (MS);
  - Attracting and pooling a critical mass of national resources on specific objectives and challenges.
- In this framework, the EC supports the implementation of a Joint Programming (JP) on RWMD between European MS.

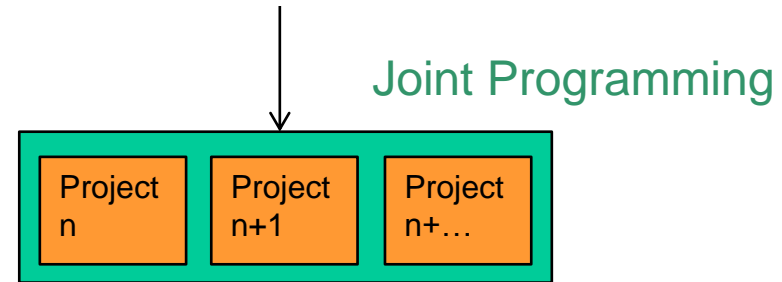
# Context

## *From individual projects to Joint Programming*

EC (Co-)Funding  
for research on RWMD



EC Co-funding  
for research on RWMD



### (Co-)Funding of **individual projects**:

- MS interested organisations can submit project proposals.
- Not required that the projects include the different categories of actors.

### Co-funding of a **Joint Programming**:

- MS mandated actors submit a JP proposal, comprising different projects identified based on a shared Strategic Research Agenda (SRA).
- Projects have to be inclusive (different categories of actors need to be involved).

### **Actors:**

Waste Management Organisations (**WMO**)

Technical Support Organisations (**TSO**)

Research Entities (**RE**)

Civil Society (**CS**) organisations

## Context

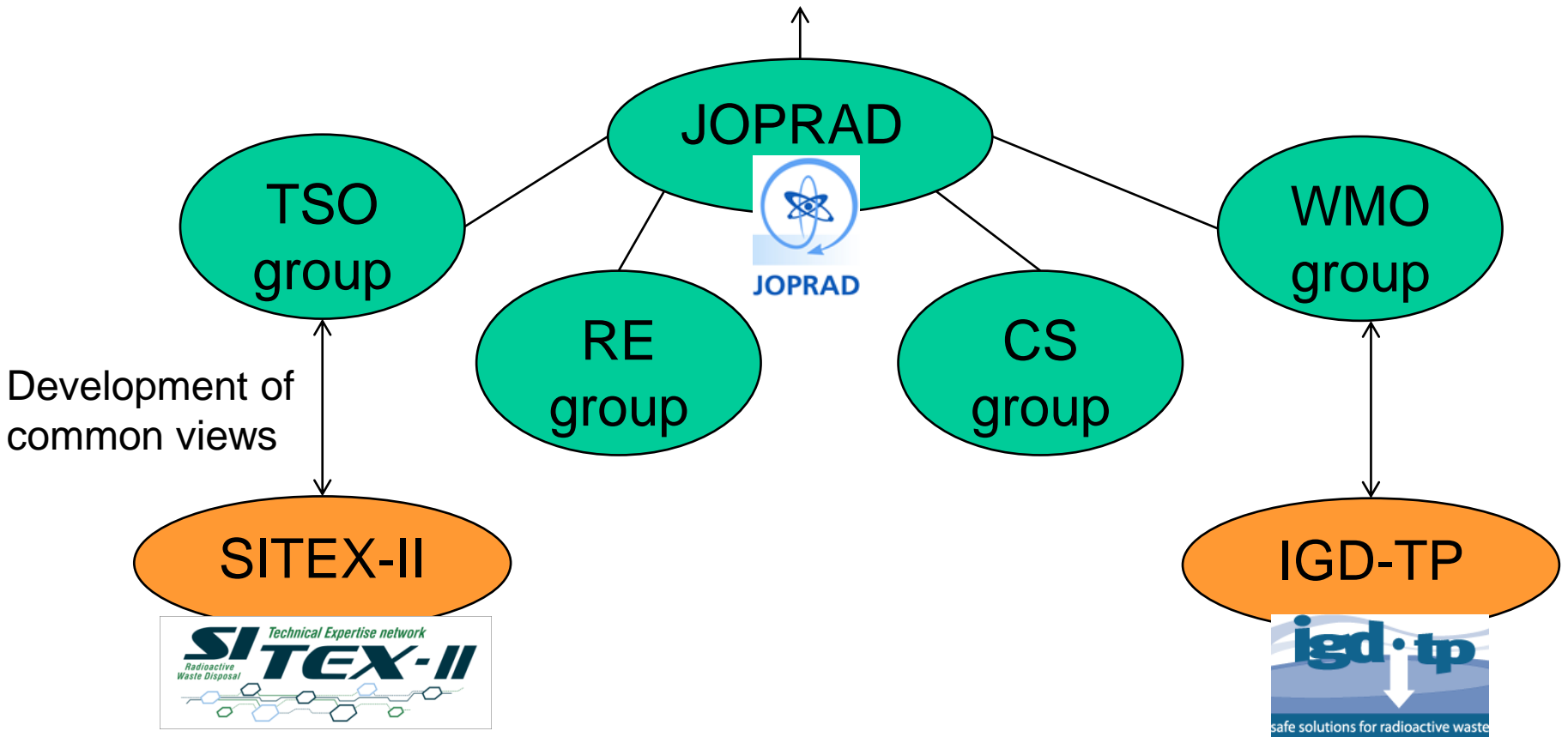
### *The JOPRAD project to assess the feasibility of JP on RWMD*

- The EC-JOPRAD project has been launched in June 2015 to:
  - Assess if the RWMD community could be integrated in such a JP;
  - Prepare its potential implementation.
- Key objectives of JOPRAD:
  - Identify the R&D actors in the field of RWMD;
  - Engage them in the process of developing a shared vision and a shared SRA.
- To identify the common views of the different actors on this vision and SRA, different groups of actors were set up inside JOPRAD.
- The TSO group of JOPRAD has worked in close collaboration with the SITEX-II project.

# Context

## JOPRAD and the SITEX-II project

### Shared vision & SRA



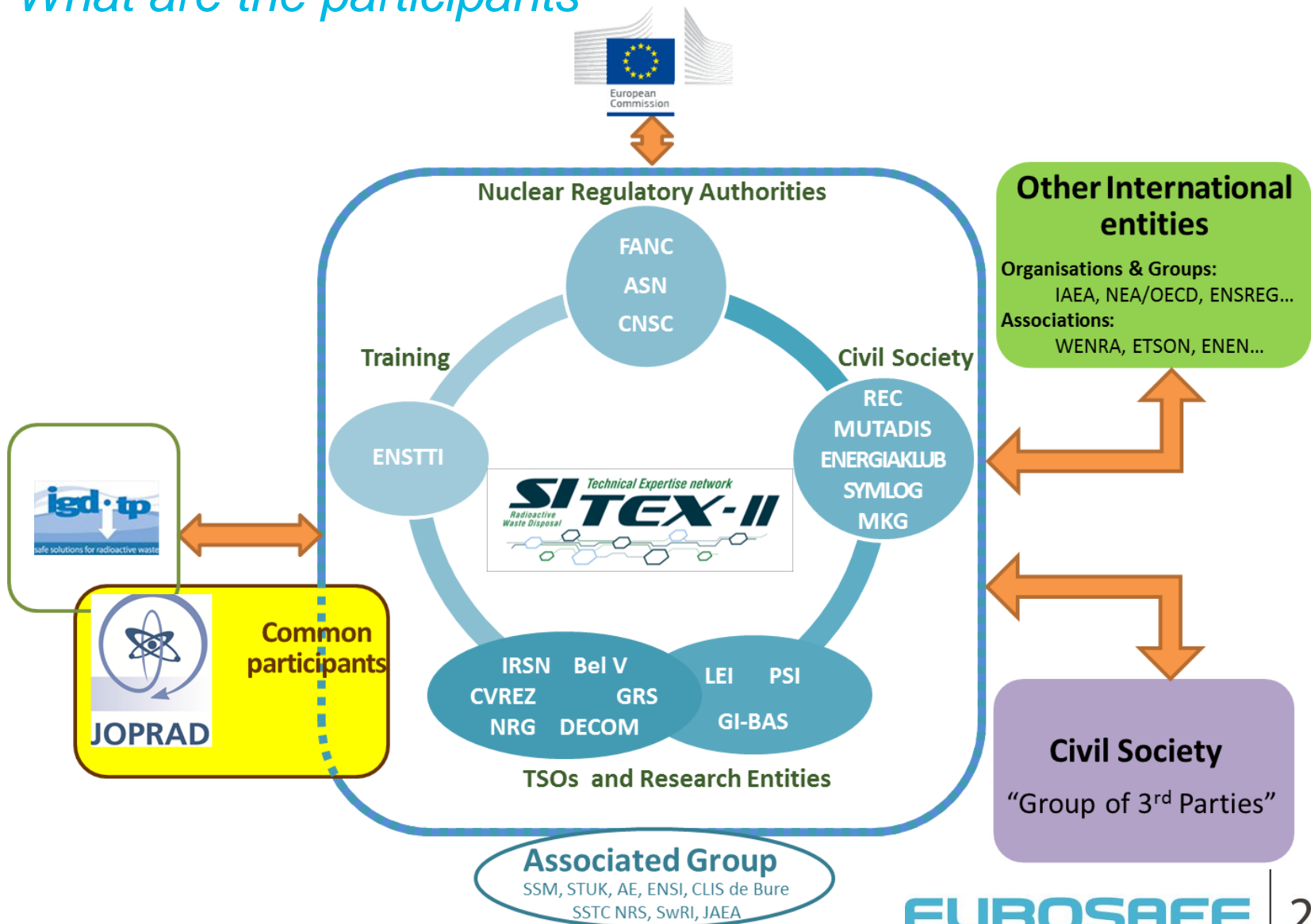
# SITEX-II Project

## *What is the SITEX initiative?*

- Sustainable network for Independent Technical Expertise of radioactive waste disposal
- General objective: fostering at the international level a high quality and independent *expertise function* in the safety of radioactive waste management and disposal.
- *Expertise function* provides the technical and scientific basis for notably supporting the decisions made within the regulatory function.
- Expertise function is fulfilled by TSOs and some REs or NRAs.

# SITEX-II Project

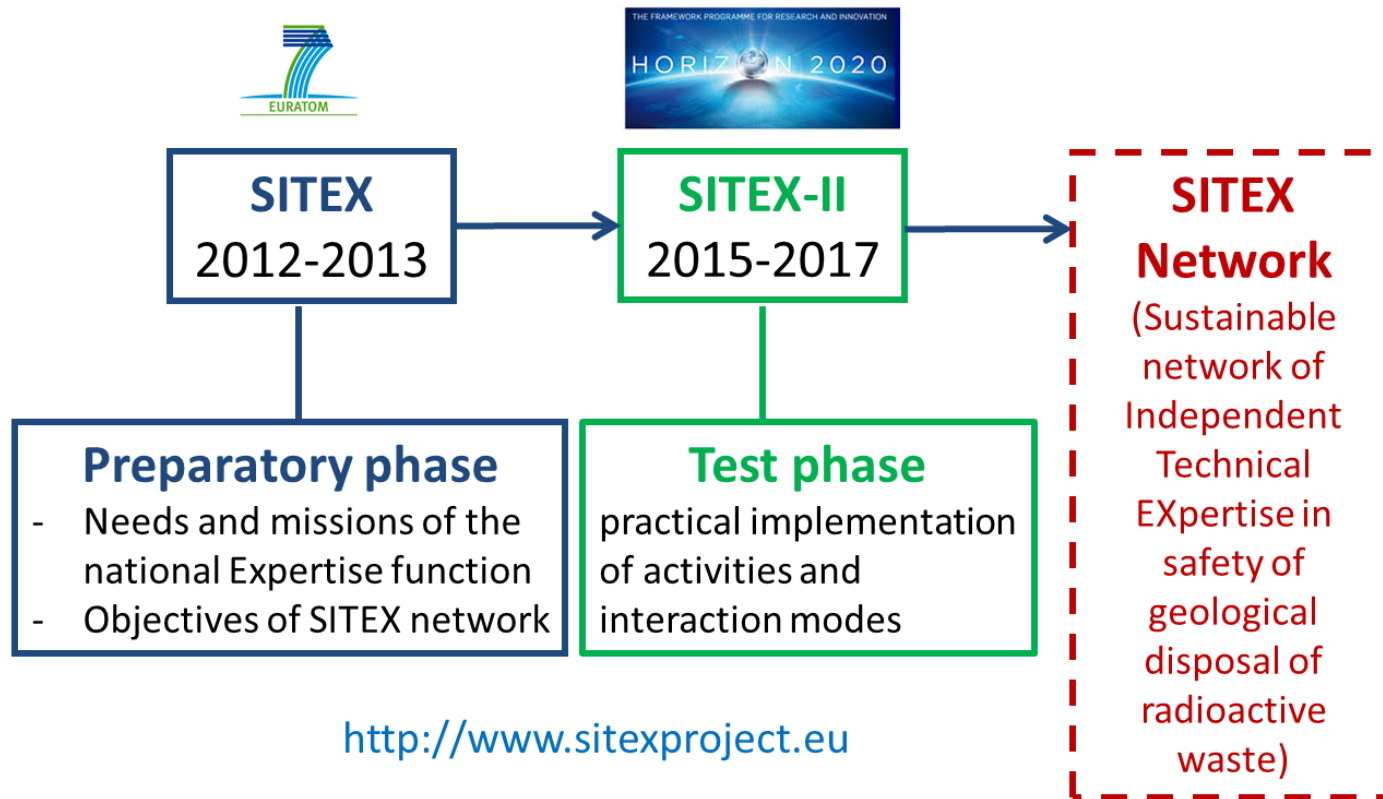
*What are the participants*





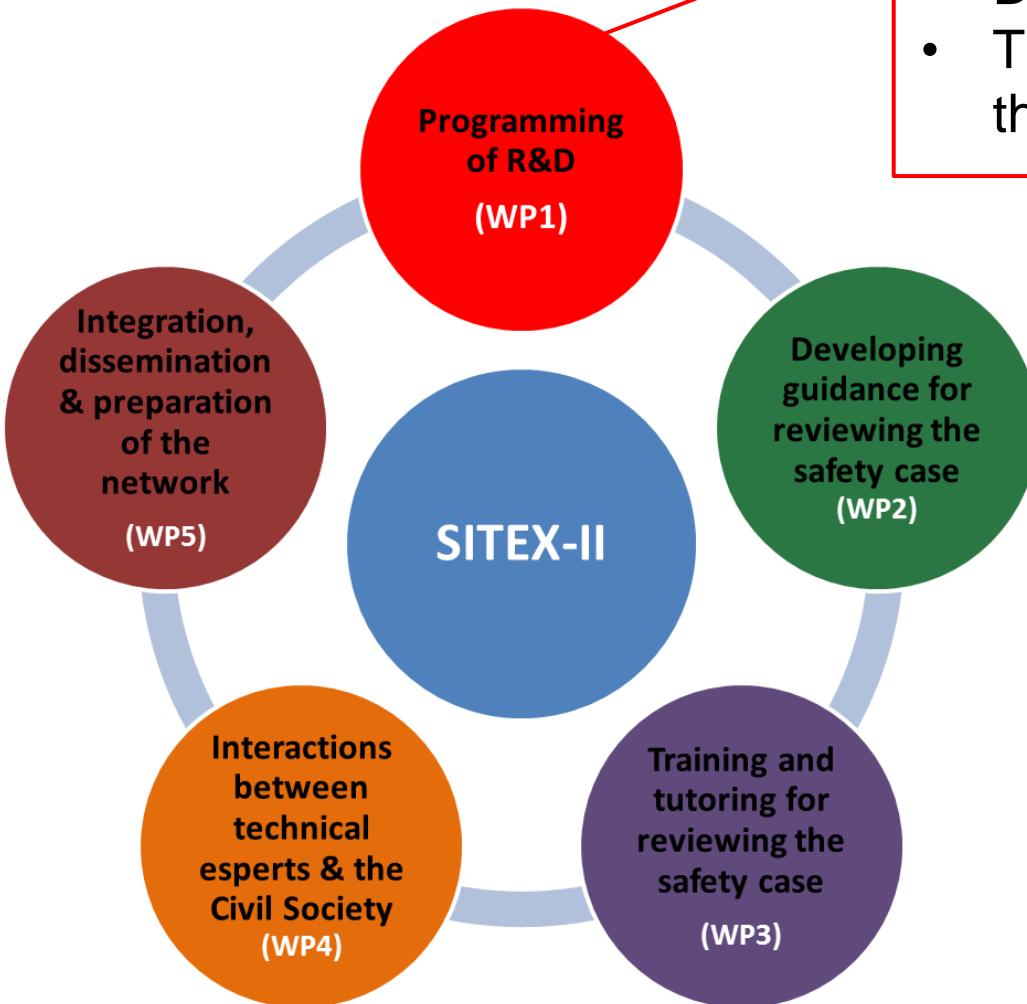
# SITEX-II Project

*A step before a SITEX network*



# SITEX-II Project

## Key Work Packages and the SRA



- Development of the SITEX-II SRA.
- This SRA was an important input to the TSO group of JOPRAD.



Available at <http://sitexproject.eu>

## Joint Programming under development

*JOPRAD demonstrated the feasibility of a JP*

- JOPRAD has demonstrated the feasibility of creating such a JP on RWMD.
- The EC confirmed its willingness to cofund such a JP.
- The draft EURATOM call WP2018 includes a topic to call for the establishment of a first implementation phase of 5 years of JP on RWMD, based on the JOPRAD results (European Joint Programming 1, EJP1).
- EC Budget: between 26 and 32.5 million EUR (co-funding).
- A JP proposal (to be submitted in september 2018) is under preparation. It is facilitated and coordinated by a Core Group.
- TSO representatives in the Core Group: Bel V and IRSN.

# Joint Programming under development

## *The JP vision*



*“Implement a joint strategic Programme of research and knowledge management activities at European level bringing together and complementing EU Member State programmes in order to ensure cutting-edge knowledge creation and preservation in view of delivering safe, sustainable and publicly acceptable solutions for the management and disposal of radioactive waste across Europe now and in the future.”*

# Joint Programming under development

## *JP governing principles*

- **Inclusiveness** – i.e. to ensure that the different categories of Actors and Groups of Interest are involved in the definition and implementation of the Joint Programme;
- **Transparency** – i.e. to ensure that decisions are taken in a transparent way, especially regarding how, why and by whom projects and activities are evaluated, selected and implemented;
- **Excellence** – i.e. to assure that highest scientific standards are applied in all research works;
- **Balance and equity** – i.e. to strive for the highest level of balance and equity by covering interests in RD&D/horizontal activities of the different categories of Actors/Groups and by fair distribution of budget;

# Joint Programming under development

## *JP governing principles*

- **Preservation of independence** – i.e. to avoid conflicts of interests and preserve the independence between the “Expertise function” and the “Implementing function”;
- **Flexibility** – i.e. to ensure that new Actors can get involved and new activities can be launched in the course of an implementation phase;
- **Efficiency and effectiveness** – i.e. make the best possible use of available resources by avoiding duplication of previous/ongoing work.

# Joint Programming under development

## *JP objectives and activities*

Objectives	Means/Activities
Develop/maintain/consolidate necessary scientific and technical Knowledge	Collaborative RD&D
Share/exchange Knowledge	Experience sharing/ Networking
Preserve/capitalize, transfer and disseminate Knowledge	Knowledge Management
Bring science Knowledge closer to society	Citizen science / Knowledge sharing with CS

Horizontal activities

# Joint Programming under development

## *Involvement of CS*

- The EC is supporting the involvement of Civil Society (CS) organisations in the JP.
- This could contribute to bringing scientific Knowledge closer to and actively engaging with Civil Society.
- Interacting with CS will contribute to create a shared basis of information supporting decisions.
- This could enhance the possibilities of public participation in situations where there will be consultations in the future as a part of safety case reviews.



# Joint Programming under development

## *EJP1 R&D and networking activities under development*

- Based on the JP SRA and on a further prioritisation of SITEX, IGD-TP and RE group, activities have been identified as high priority for the first JP.
- Their scope, objectives and tasks are currently developed by several coordination teams composed of WMOs, TSOs and REs.
- **R&D activities**
  - Modelling of process couplings and numerical tools applied to Performance Assessment
  - Assessment of chemical evolution of ILW and HLW disposal cells

# Joint Programming under development

## *EJP1 R&D and networking activities under development*

- Mechanistic understanding of gas migration (mainly in clay-based materials)
  - Influence of temperature on clay-based material behaviour
  - Cement-Organics-Radionuclide-Interactions
  - Fundamental understanding of radionuclide mobility
  - Spent Fuel characterization and evolution until disposal
- **Networking activities**
    - Waste management routes in Europe from cradle to grave
    - Understanding of uncertainty, risk and safety by different actors

## Joint Programming under development

*Need to maintain a strong cooperation between TSOs*

- The identification of the TSO views on the JP preparation is facilitated by the SITEX-II project.
- This SITEX-II project now comes to its end and there is thus a strong necessity to set up a new structure to maintain this important cooperation between the TSOs.
- One of the objectives of SITEX\_Network is to fulfill this role.

# SITEX\_Network

## *Purpose of the SITEX\_Network*

- It will take the form of an association.
- Opened to TSOs, REs, NRAs and CS organisations willing to contribute to the following purpose:

*„To enhance and foster cooperation at the international level in order to achieve a high quality expertise function, independent from organizations responsible for the implementation of waste management programmes, aiming at supporting the Regulatory Authorities, as well as the CS, in the field of safety of radioactive waste management.“*

# SITEX\_Network

## *Expected activities*

- R&D related activities (programmed via a SITEX\_Network SRA)
  - development of, or contribution to, high quality R&D project proposals
  - joint research within the network
  - advice to organizations fulfilling an Expertise Function in initiating R&D activities related to waste management safety
- Activities related to Safety Case Review methodology and practices.
- Training activities for experts reviewing Safety Cases on RWMD.
- Work on how to promote efficient interaction with CS and its experts.

## SITEX\_Network

### *Anticipated benefits for its participants*

- Added value compared to other existing TSOs and regulator's networks: different categories of contributors to / end-users of the expertise (TSOs, REs, NRAs and CS). It ensures a plurality of views in all the foreseen activities.
- In addition to the benefits from activities described on previous slide, being a SITEX\_Network Member will allow to exchange and to develop common views with other TSOs, NRAs, REs and CS on:
  - the joint research and related horizontal activities implemented at EU level on RWMD;
  - the development of high quality and balanced proposals having more chance to be selected for funding through the EJP.

## Conclusions

- EC is willing to implement a first JP on RWMD, starting in 2019.
- The JOPRAD project confirmed the feasibility and prepared the bases of such a JP.
- The SITEX-II project has contributed to develop common views of TSOs on the JP vision and research priorities (SRA).
- SITEX-II project now comes to its end and there is thus a strong necessity to set up a new structure to maintain this important cooperation between the TSOs.
- One of the objectives of SITEX\_Network is to fulfill this role.

## Interested by the SITEX\_Network?

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