

# Establishing the Priorities: Views of the TSOs

8 September 2016  
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# Content of the Presentation

1. Starting point: the SITEX II Project's SRA
2. The setting of the TSO Working Group and the participants
3. Developing the necessary expertise & skills of TSOs
4. Boundary conditions of a JP from a TSO perspective
5. Views of TSOs on joint R&D activities
6. Views of TSOs on joint "Horizontal activities"
7. Conclusions

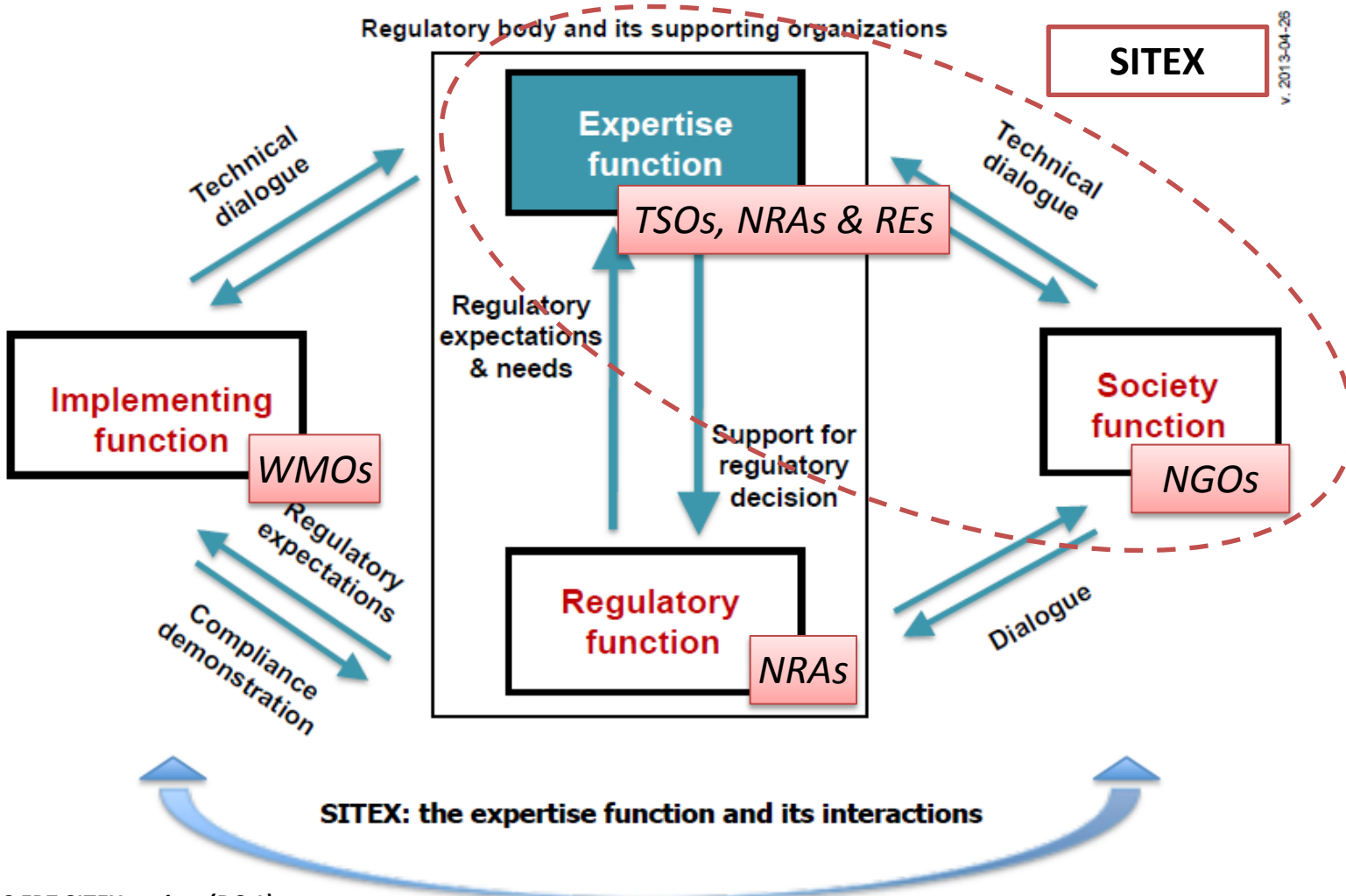
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# SITEX & the « Expertise Function »

- The contribution of TSOs to the preparation of a “Programme document” comprised the development of a **Strategic Research Agenda (SRA)**
- This was carried out in the framework of the SITEX initiative (EC Project SITEX-II) bringing together **organisations fulfilling an “expertise function”**
- The **“expertise function”** entails activities carried out in the context of the regulatory review of the Safety Case to provide the technical and scientific basis for:
  - ✓ Decisions by the National Regulatory Authorities (NRAs)
  - ✓ Ensuring that regulatory expectations are clearly communicated to and interpreted by the implementer
  - ✓ Improving the quality of the interactions with Civil Society (CS) in the decision-making process with a view to improving the quality of the review
- Owing to the variety of national contexts and frameworks, the expertise function may be fulfilled by different types of actors (TSOs, NRAs and/or REs)

# SITEX & the « Expertise Function »



EC FP7 SITEX project (D6.1)



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- The SRA identifies **key priorities of the expertise function at the European level** i.e. for which a sufficient level of common interest has been expressed
- The needs identified in the SRA include **R&D and horizontal activities** (i.e. exchanging on practices, establishing states of the art & transferring knowledge)
- Scope of the SRA:
  - ✓ Topics relevant to assess whether **geological disposal** facilities are developed and will be constructed, operated and closed in a safe manner
  - ✓ Topics related to **pre- and post-closure safety** as well as to the **technical feasibility** of geological disposal
  - ✓ Topics related to **pre-disposal management** of radioactive waste and spent fuel having an impact on the safety of geological disposal
- The SRA was used by the TSO WG of JOPRAD as a **basis for the identification of the activities that TSOs could share in a JP** with WMOs and REs

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# What is a TSO ?

- The term « Technical Support Organisation » (TSO) refers in the JOPRAD Project to **organisations carrying out activities** aimed at providing the technical and scientific basis for notably **supporting the decisions made by the national regulatory body**
- These activities may include:
  - Conducting safety reviews
  - Developing the capacities to understand and assess the Safety Case
  - Contributing to inspections
  - Interacting with Civil Society along the review process and developing appropriate governance patterns to conduct this interaction
  - Implementing R&D in safety



# JOPRAD TSO Working Group

- The Working Group (WG) represents the views of **(potentially) mandated TSO actors** responsible for R&D on radioactive waste management including geological disposal at the national level
- 16 (potentially) mandated TSOs were identified in EU Member States and Switzerland
- **10 TSOs responded positively** to the invitation to participate in the WG
- The WG includes:
  - ✓ 3 members of the JOPRAD Consortium
  - ✓ 7 technical “3<sup>d</sup> parties”

# JOPRAD TSO Working Group

<i>Organisation</i>	<i>Country</i>
Bel V	Belgium
CV-REZ	Czech Republic
IRSN	France
GRS	Germany
TS Enercon Kft (TSE)	Hungary
Centre for Physical Sciences and Technology (CPST)	Lithuania
Nuclear Research and consultancy Group (NRG)	Netherlands
Instituto Superior Técnico (IST)	Portugal
DECOM, a.s.	Slovakia
Jozef Stefan Institute (JSI)	Slovenia

# JOPRAD TSO Working Group

- The WG includes a representation of **both advanced and less advanced programmes**
- Several Member States represented in the WG are still in the process of defining or initiating their national programme
- Geological disposal is currently identified or envisaged as the solution for the long-term management of a large variety of waste types (LLW, ILW, HLW & SF)



# Objectives of the TSO Working Group

1. identify what would be the **added value of a JP** from a TSO perspective
2. identify the **boundary conditions** for JP from a TSO perspective
3. define, from a TSO perspective, the **level of independence** between the different actors which is required for the different types of research needs and activities
4. identify **key aspects of SITEX's SRA that could be shared** in the framework of a JP and those that should remain independent from the other parties
5. identify the **timeframes** associated with potentially shared priorities
6. determine whether **sufficient areas of interest and interested parties exist** to initiate a JP

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7. Starting point for the establishment of the programme document

# Developing Expertise & Skills of TSOs

- **Article 8 of the 2011/70/EURATOM directive** on “expertise and skills” requires all parties to make arrangements for education and training for their staff as well as R&D activities in order to obtain, maintain and to further develop necessary expertise and skills
- Arrangements currently made by TSOs to obtain, maintain and further develop their expertise and skills include:
  - ✓ Companionship and on-the-job training
  - ✓ Literature reviews
  - ✓ Training
  - ✓ Participation in international conferences and working groups
  - ✓ Modelling work
  - ✓ Experimental work (with own facilities and/or through cooperation with other organisations)

R&D

# Focus & Merits of « Regulatory R&D »

- Regulatory R&D is oriented towards safety issues and informing regulatory decisions
- Regulatory R&D is essential because:
  - it maintains or improves **competence**
  - it contributes to **independence**
  - it helps to achieve **public confidence** in the regulatory system

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# Boundary Conditions of a JP from a TSO Perspective

- Conditions for preserving the independence of TSOs
- Scope of Joint Programming
- Boundary conditions linked to governance
- Administrative constraints
- Financial constraints
- Necessary room and resources for autonomous joint “expertise function” activities

# Boundary Conditions of a JP from a TSO Perspective

- **Conditions for preserving the independence of TSOs**
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# Preserving the Independence of TSOs

- Independence = **Key boundary condition !**
- Elements contributing to the independence of the expertise function:
  - ✓ Competence, experience and knowledge provided by resources and skills independent from implementers in order to avoid conflicts of interests
  - ✓ Transparency and proximity to the public
  - ✓ Impartiality when delivering a technical opinion
- These elements need to be considered when:
  - ✓ Establishing and implementing a JP
  - ✓ Using the results produced by or jointly with actors fulfilling or supporting the implementing function

# Preserving Independence in R&D Activities

- Independence in “**joint R&D**” activities can be preserved as long as the work is focused on:
  - ✓ data acquisition
  - ✓ process understanding
  - ✓ benchmarking of tools and approaches
- In these cases, there is benefit **to share as far as possible research programmes**
- It is of crucial importance that WMOs and TSOs **use and interpret separately the results** obtained in terms of their implication for safety
- There are also situations in which “**autonomous R&D**” is required:
  - ✓ so that suitable critical considerations in the review and assessment can be applied
  - ✓ where it is considered that there is a need for additional studies beyond those undertaken by the implementer

# Preserving Independence in Horizontal Activities

The following conditions for **ensuring impartiality of horizontal activities** were identified by the WG to avoid conflicts of interests and preserve the independence of the expertise function:

- State-of-knowledge should reflect the views of the different types of actors
- Training should be given by REs or a good representation of different actors to ensure that the different views are reflected
- Joint WG activities could be carried out without jeopardising independence when these activities are aimed at :
  - ✓ **fostering a common understanding of safety-relevant issues** (e.g. content of a Safety Case, interpretation of safety requirements, etc.)
  - ✓ giving a **picture of current practices and views** on issues related to the safety strategy (i.e. approaches, methods and processes) or management

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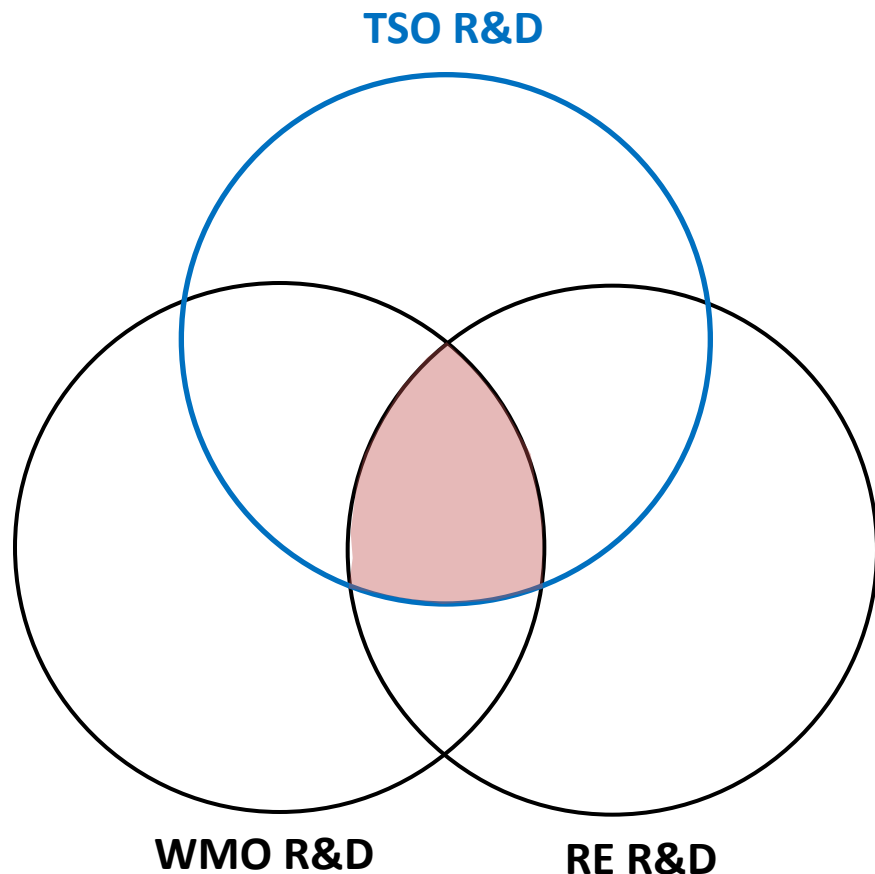
# Views of TSOs on Joint R&D Activities

- The main **topics** for which needs for joint R&D activities are identified are as follows:
  - ✓ Pre-disposal radioactive waste and spent fuel management
  - ✓ Waste inventory and source term
  - ✓ Transient THMBC conditions in the near-field
  - ✓ Evolution of EBS material properties
  - ✓ Radionuclide behaviour in disturbed EBS and host rocks
  - ✓ Safety-relevant operational aspects
  - ✓ Social and citizen sciences
- It was found that there is generally **no restriction on the topics** that can be shared among all actors **but only on the type of joint activities** that can be undertaken

# What could be shared among all Actors ?

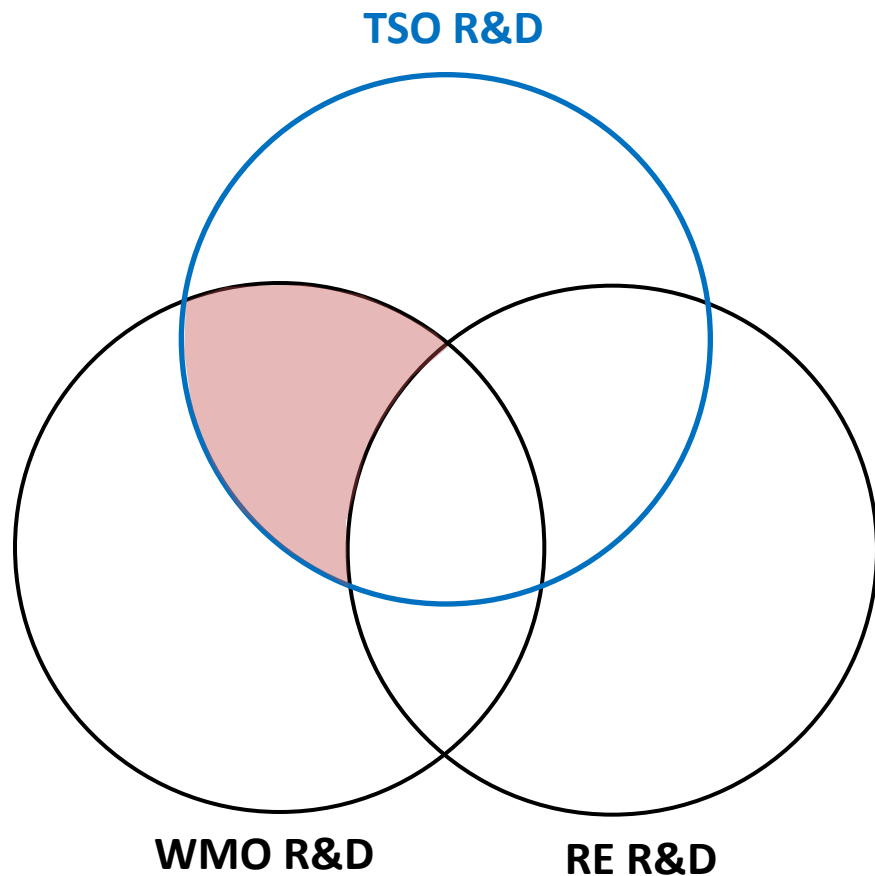
## Criteria:

- R&D activities focusing on the **development of knowledge and long-range science relevant for safety & implementation** and compatible with the conditions for preserving independence
- This includes:
  - **Identification, understanding & characterization of events and processes** (phenomenological understanding)
  - Data acquisition for the **characterization of safety-relevant parameters** and uncertainties
  - **Benchmarking** of methods, models & tools





# What could be shared between TSOs & WMOs ?



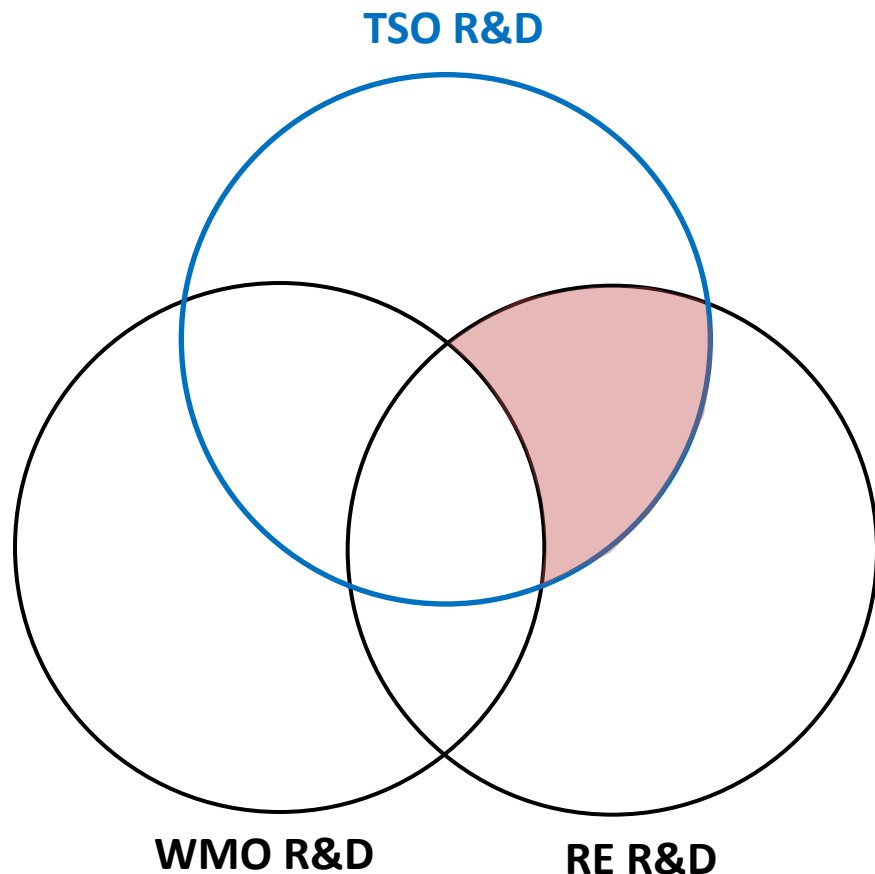
## Criteria:

- R&D focusing on **other safety & implementation issues** compatible with the conditions for preserving independence
- Same activities as those identified on the previous slide but in which REs would express a low level of interest

## Motivations:

Technical topics in which REs would express a low level of interest may also be addressed if a sufficient level of interest is expressed by TSOs and WMOs

# What could be shared between TSOs & REs ?



## Criteria:

- All R&D focusing on the development of knowledge and long-range science possibly relevant for safety could be shared between TSOs & REs
- Requirements for independence may apply for REs supporting WMOs

## Motivations:

- Needs requiring “autonomous R&D” could also be addressed in a JP
- The lack of interest of WMOs for a given topic would not preclude the capacity of TSOs to initiate activities necessary to the development of their expertise and skills

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# Views of TSOs on Joint Horizontal Activities

The **main topics** for which needs for joint horizontal activities are identified are as follows:

- ✓ Pre-disposal radioactive waste and spent fuel management
- ✓ Waste inventory and source term
- ✓ Transient THMBC conditions in the near-field
- ✓ Evolution of EBS material properties
- ✓ Safety-relevant operational aspects
- ✓ Managing uncertainties and the safety assessment
- ✓ Lifecycle of a disposal programme and its safety case

# Views of TSOs on Joint Horizontal Activities

- Specific needs were identified for the following types of horizontal activities:
  - ✓ State-of-Knowledge activities
  - ✓ Training activities
  - ✓ Guidance & strategic studies
- Guidance & strategic studies could have an added value from the viewpoint of TSOs in case they would be intended to:
  - ✓ foster a common understanding of safety-relevant issues between the different types of actors
  - ✓ exchange on good practices, recent developments/results, etc.
  - ✓ give a picture of current practices and views on the topic

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# Key Messages from a TSO Perspective

- TSOs need to develop and maintain their skills and expertise to fulfil their missions effectively
- This can be done through various types of activities including:
  - ✓ Knowledge transfer activities
  - ✓ State-of-the art activities
  - ✓ Activities aimed at exchanging on practices and developing common positions
  - ✓ Experimental & modelling studies (i.e. R&D)
- => Both R&D and horizontal activities would be beneficial from a TSO perspective
- Several and substantial added values of JP have been identified by the TSO WG

# Key Messages from a TSO Perspective

- Scope:
  - ✓ all waste types for which geological disposal is envisaged or identified as the solution for their long-term management
  - ✓ including related pre-disposal issues
- The necessity to preserve the independence between the actors is not seen as an obstacle to a JP provided that:
  - ✓ clear rules are defined
  - ✓ specific “autonomous” activities can still be carried out by organizations fulfilling an expertise function if needed to develop their necessary expertise and skills



# Key Messages from a TSO Perspective

- The participants in the TSO WG expressed a **strong interest** in the project and in participating in a JP as this would constitute a **unique opportunity to further develop and maintain skills and expertise efficiently and effectively**
- Support from national authorities is therefore needed for obtaining the necessary mandate to participate in a JP

# Starting Point for the Programme Document

The following information identified by the TSO WG is serving as input to the establishment of the Programme Document:

- **Boundary conditions** identified by the WG:
  - ✓ Conditions for preserving the independence of TSOs
  - ✓ Scope of Joint Programming
  - ✓ Boundary conditions linked to governance
  - ✓ Administrative constraints
  - ✓ Financial constraints
  - ✓ Necessary room and resources for autonomous joint “expertise function” activities
- **TSOs’ needs for joint R&D activities**
- **TSOs’ needs for joint “Horizontal activities”**