

SUSTAINABLE NETWORK FOR INDEPENDENT TECHNICAL EXPERTISE OF RADIOACTIVE WASTE DISPOSAL

INTERACTIONS AND IMPLEMENTATION

PROJECT SUMMARY

The coordination action SITEX-II was initiated in 2015 within the EC programme Horizon 2020 with a view to further developing the independent Expertise Function network in the field of deep geological disposal safety. It is aimed at practical implementation of the activities defined by the EURATOM FP7 SITEX project (2012–2013), using the interaction modes identified by that project. The network is expected to ensure a sustainable capability for developing and coordinating, at the international level, joint and harmonized activities, necessary for the technical review of a safety case for deep geological disposal of radioactive waste (GD).

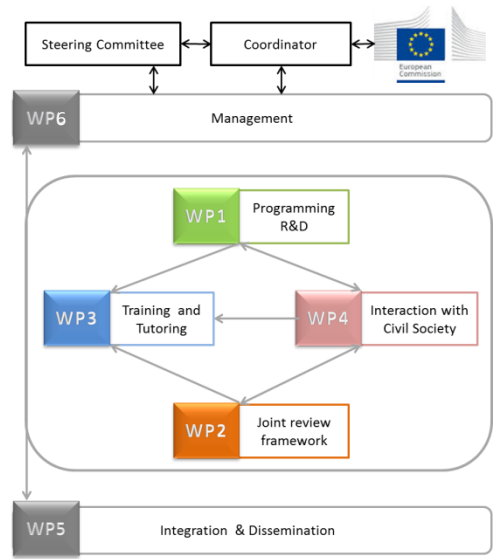
A COMMON VISION OF THE EXPERTISE FUNCTION

SITEX-II brings together representatives from 18 organisations involving regulatory authorities (FANC, ASN, CNSC), technical support organisations (Bel V, CVREZ, IRSN, NRG, GRS, DECOM), research organisations (GI-BAS, PSI, LEI), specialists in risk governance and interaction with general public, including NGOs (MUTADIS, ENERGIACLUB, MKG, REC, SYMLOG) and the education institute (ENSTTI)



SITEX-II main technical activities are:

- within the WP1, to further define the Expertise Function's R&D programme necessary to ensure independent scientific and technical capabilities for reviewing a safety case for GD. SITEX-II developed the Strategic Research Agenda (SRA) of expertise function, accounting for the concerns of the Civil Society (CS). The priority topics of this SRA were included in the R&D program carried out in the JOPRAD project for construction of the European Joint Programming of research for GD;
- for the WP2, to elaborate a joint review framework, by developing in position papers and technical guides a common understanding of the interpretation and proper implementation of safety requirements in the safety case for the successive phases of GD facility development, from conceptualization to post-closure;
- within the WP3, to provide a practical demonstration of training services that may be provided by the foreseen SITEX network. Training modules integrating the outcomes from the other tasks and supporting harmonisation of the technical review processes across Europe, were developed for generalists, with emphasis on the technical review of the safety case, based on national experiences, practices and prospective views. A pilot training programme has been organised and evaluated;
- For the WP4, to elaborate the conditions and means for developing interactions with CS in the framework of the foreseen SITEX network, in view of transparency of the decision-making process. This future network is expected to support development of these interactions at different levels of governance and at different steps of the decision-making process. Three thematic tasks -R&D, safety culture/review and governance- were addressed by SITEX-II representatives of CS and technical experts as well as externally through workshops with other CS organisations.



SITEX-II work packages (WP)

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According to the perspective developed by the SITEX project, transparency of the Decision-Making Process (DMP) includes several requirements such as to maintain over time consultations and interactions with interested parties in the DMP, in particular with Civil Society (CS). According to SITEX definition, one task of the expertise function is to improve the quality of interactions between institutional experts and CS. The future SITEX network is therefore expected to support the development of these interactions at different levels of governance and at different steps of the DMP. The IAEA INSAG 20 report² on "Stakeholder involvement in nuclear issues" indicates in section 2 that "operators and regulators confronted with questions and concerns from stakeholders may have to re-examine the basis for previous decisions. [...] Investigating such questions provides clarity, prevents complacency, and may expose unforeseen problem areas".

In line with these conclusions, the SITEX-II project experimented ways of interaction between technical experts supporting the regulatory authorities and CS, in the perspective of the Aarhus Convention. The SITEX-II CS partners (Energyklub, MKG, Mutadis, REC, Symlog) interacted all along the project with a larger group of European Civil Society Organisations (CSO) and non-institutional experts engaged in following Radioactive Waste Management (RWM) activities at EU or national level, gathering representatives of 35 organisations from 18 countries in Europe, reflecting a variety of situations at national level. This CSO group has been assembled by the Working Group for Radioactive Waste Management of the Nuclear Transparency Watch (NTW) network co-ordinated by MKG. The CSO participants in this group were not expected to represent NTW as one organisation but rather to provide a variety of European CSO viewpoints. Strengthening and maintaining a high level of nuclear safety in Europe is a common concern for all members of this group without prejudice to their position vis-à-vis nuclear energy.

IMPROVING INTERACTIONS BETWEEN EXPERTISE AND SOCIETY FUNCTIONS¹

The SITEX-II work package 4 (WP4) led by Mutadis was dedicated to the interactions between institutional experts and CS, through three tasks.

- Task 4.1 formulated R&D key technical and socio-technical issues that CS expects to be developed in R&D programmes and reviewed the SITEX Strategic Research Agenda (SRA) by highlighting the CS interests in the developed research matrix, by discussing the possibility to include citizen and social science in the SRA and by developing a concept of "Knowledge Sharing and Interpretation" allowing CS participating in EU research projects on RWM.
- Task 4.2 investigated how safety culture can be shared through different interested parties and what concrete conditions and means are necessary for an efficient public engagement. Commonalities and differences were identified in the vision on safety culture in RWM of non-institutional (NGOs) and of institutional actors (regulators, TSO's, researchers), as well as their respective expectations regarding the engagement of CS in the safety case review of geological disposal facilities.
- Task 4.3 reviewed the literature in international projects dedicated to intergenerational governance and developed an exercise of participative and comparative assessment of different parallel alternatives scenarios of long-term RWM, entitled Pathway Evaluation Process (PEP), in the form of a board game to be used to support identification and discussion between different stakeholders on possible strategies for RWM. In addition, discussions were achieved on the provisions and requirements related to intergenerational aspects of RWM in different international and EU legislation.

During a first meeting (August 2015), it was discussed how representatives of NGOs could potentially be involved in the project. Three workshops of exchanges between institutional experts and CS were also organised by REC. In Ljubljana (February 2016), the overview of literature survey and first principles of the PEP approach were presented and discussed. In Budapest (June 2016), the PEP game was played by all participants coming from different groups (NGOs and institutional experts). Finally, in Brussels (November 2016), the different requirements and provisions coming from legal framework and international conventions related to the RWM and four sets of issues related to intergenerational aspects were discussed.

To conclude, the SITEX-II project offered an opportunity to test an original model of "double wing" involvement of CS in European Research allowing fruitful interactions between institutional experts and representatives of CS that will constitute the basis for the organisation of the future SITEX network and the potential involvement of CS in European Joint Programming.

¹ - As basis for the SITEX-II project, the SITEX project characterized the expertise function and its interaction with different stakeholders and developed the concepts of expertise, implementing, regulatory and society functions. See p. 1 of the Newsletter No. 1, 2016, December, http://sitexproject.eu/index_2.html#events_news, as well as pp 5-12 of SITEX D6.1, Conditions for establishing a sustainable expertise network, http://sitexproject.eu/index_1.html#deliverables

² - A report by the International Nuclear Safety Group (INSAG) of the International Atomic Energy Agency (IAEA), Stakeholder involvement in nuclear issues, October 30, 2006, IAEA publication.



PROGRESS WITHIN WORK PACKAGES DURING DECEMBER 2016 – JUNE 2017

WP1 PROGRAMMING R&D (LEAD BY BEL V)

- A document synthesizing how the comments received during the SRA review process by Associated Group Members were handled by WP1 was issued. The SRA and this document have closed the work of WP1 for task 1.1 of the project.
- Task 1.2 was initially foreseen to develop terms of reference for activities related to R&D topics for which joint activities with other actors (WMOs and REs, in the framework of joint programming of R&D at the EU level) could not be envisaged (e.g. because of independence issues). However, it was concluded that all R&D topics identified in the SRA could be implemented in the framework of a joint programme (see section 7 of the SRA). Thus, a decision on task 1.2 will be taken during the next SITEX-II Steering Committee.

WP2 DEVELOPING A JOINT REVIEW FRAMEWORK (LEAD BY FANC)

- SITEX-II partners shared national experience and prospective views on the interpretation and implementation of safety requirements on site characterization program for geological disposal and on operational issues with regard to post closure safety, which will be documented in positions papers. Position papers on optimization of protection and on waste acceptance criteria were drafted and sent to the partners for comments. The development of the guidance on reviewing a safety case has continued: relevant information was summarized and an operative articulation was set out. An excel tool to support the review of safety at successive phases of a geological repository lifecycle cases has been developed.
- 1 WP meeting was organized during this period (30/01 to 01/02/2017, Brussels)

WP3 TRAINING AND TUTORING FOR REVIEWING THE SAFETY CASE (LEAD BY LEI)

- WP3 meeting No. 4 was held (9th February, 2017, Fontenay-aux-Roses, France)
- During this reporting period Dec 16-June 17, the material for pilot training session has been developed (lectures, exercises).
- Preparation of draft deliverables D3.2 “Development of a training module for generalist experts in geological disposal” and D.3.3 Material for training module for generalist experts in geological disposal” is ongoing.
- SITEX training course for generalist experts on „**Regulatory review of the safety case for geological disposal**“ was organized on 12th–16th June 2017 in Kaunas. The training event attracted participants: from Bulgaria, Belgium, Czech Republic, United Kingdom, France, Lithuania, Ukraine, and Germany. The lectures and practical exercises were given by the lecturers from SITEX-II Project partners: Bel V (Belgium), CV Rez (Czech Republic), Decom (Slovakia), FANC (Belgium), Mutadis (France), IRSN (France) and SSTC NRS (Ukraine). The training was organized jointly by LEI and ENSTTI (European Nuclear Safety Training and Tutoring Institute).



Panel of lecturers of Day 3 (SITEX-II pilot training session in Kaunas)



Participants at lectures



Working in groups (practical exercises)

PROGRESS WITHIN WORK PACKAGES: 2016 DECEMBER-2017 JUNE

WP4 INTERACTIONS WITH CIVIL SOCIETY (LEAD BY MUTADIS)

- During the second SITEX-II workshop, the Pathway Evaluation Process (PEP) - the innovative approach of multi-stakeholders interactions developed inside WP4 as an exercise of participative and comparative assessment of different parallel alternative scenarios on long-term management of radioactive waste- was tested a first time.
- After this first test, the Steering Committee of SITEX-II decided to include a second test of the PEP in the research activities of the WP4 of the SITEX-II project, based on the project proposal of Olga Kalisova, a civil society representative who participated to the second workshop.
- This second exercise was organised in the perspective of testing the PEP as an Interactive Process of Education of the Civil Society on Radioactive Waste Management. It was held in Prag on 24 May 2017 and gathered a dozen of participants with three facilitators.
- Preparation of draft deliverable D4.1 is ongoing and will include results of this second test in addition to the results of the different task of the WP4.

WP5 INTEGRATION AND DISSEMINATION OF PROJECT RESULTS (LEAD BY CV REZ)

- W5 meeting No.3 was organized by CV REZ in the Czech Republic. It was held on February 15, 2017 with a goal to proceed with the development of an Action plan for future expertise function network (called SITEX_network) establishment, according to SITEX-II grant agreement n°662152 (deliverable D5.5).
- A significant part of activities was given to its Statutes creation and SITEX_network leaflet draft. As SITEX network is intended as a legal entity it was decided to survey a possibility to build it on the bases of French legislative rules.
- Two contributions (abstracts) to the EUROS SAFE 2017 conference were submitted and accepted within its Seminar 3 - Waste Management and Decommissioning & Dismantling:
 - About SITEX-II experience in training and tutoring for reviewing a safety case for geological disposal;
 - About Optimisation of radiological protection applied to the development and implementation of a geological disposal system.
- Joint meeting IGSC-SITEX was organized in Paris (France), 21-22nd February 2017.

WP6 MANAGEMENT AND COORDINATION (LEAD BY IRSN)

- The main activity by WP6 was the coordination of the mid-term report issued end of January 2017
- The SITEX-II website was updated (notably regarding communication outside the project) and the SITEX-II brochure was completed



Participants of SITEX pilot training session in Kaunas, Lithuania (12-16 June 2017)

NEWS AND EVENTS

EVENT ANNOUNCEMENT

20 September, 2017
Fontenay-aux-Roses, France

SITEX-II **STEERING COMMITTEE MEETING** No. 4

10-15 September, 2017
Barcelona, Spain

MIGRATION CONFERENCE 2017 (The 6th International Conference on the Chemistry and Migration Behaviour of Actinides and Fission Products in the Geosphere)

24-27 September 2017
Davos, Switzerland

CLAY CONFERENCE 2017 (The 7th International Conference on Clays in Natural and Engineered Barriers for Radioactive Waste Confinement)

For further information visit: www.clayconferencedavos2017.com

30-31 October, 2017
Paris/Fontenay-aux-Roses,
France

SITEX-II **PLENARY MEETING** No. 4.

October- November, 2017

SITEX-II **INTERNATIONAL MEETING**

6-7 November 2017
Paris, France

EUROSAFE 2017

For further information visit: www.eurosafe-forum.org

JOINT PROGRAMMING

SITEX-II SRA was a key input for the TSO working group of the JOPRAD project, as it was the basis for defining the R&D priorities of the JOPRAD “TSO working group”. Based on these priorities and those of the Research Entities and Waste Management Organisations, a draft JOPRAD programme document was developed (see <http://www.joprad.eu>). Accounting for this document, a “Core Group” with representatives from TSOs (IRSN, Bel V and CV REZ), WMOs, REs and Civil Society organisations (Mutadis) is now facilitating the preparation of a proposal for the future call of the EC on Joint Programming. At this stage, a common interest between TSOs, REs and WMOs in projects or networking activities on the following themes has been identified:

- **Cement-Organics-Radionuclides-Interactions**
- **Fundamental understanding of radionuclide mobility**
- **Spent Fuel characterization and evolution until disposal**
- **Assessment of chemical evolution of ILW and HLW disposal cell including different components in interface at the cell scale**
- **Influence of temperature on clay-based material behavior**
- **Mechanistic understanding of gas migration (mainly in clay-based materials)**
- **Modelling of process couplings and numerical tools applied to performance assessment**
- **Understanding of uncertainty, risk and safety by different actors**
- **Waste management routes in Europe**

September 2017

The common interest in these themes was confirmed by the answers received to a call for interest sent by the Core Group to all potential EJP participants (TSOs, REs and WMOs) identified by the JOPRAD project.

In the end of June, 2017, the Core Group sent an email to all interested TSOs, REs and WMOs organisations launching the formation of Working Groups for developing project proposals on these themes.

The first meetings of these Working Groups should be organized in September 2017.

18 October 2017

A (first) general meeting for the proposal development of RMWD EJP1 will be held on 18th October, at Espace Vasarelyhttps, in Antony (France) from 9:30 (welcome coffee, meeting will start at 10:00) until 16:00. Contact RWMD-EJP1@andra.fr for more details.