

Steps to Sharing

Session II – Opportunities for Sharing in RWM

Vienna, 25th September 2019

Ole Kastbjerg Nielsen, Danish Decommissioning



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Highlights from this morning's presentation

- Areas for cooperation and sharing opportunities – also reflected in the projects listed in the feedback forms and your added areas/projects.
- Potential benefits – safety/security, economy, environment, knowledge management and maintenance.
- Means of cooperation – commercial, bilateral, joint financing etc.



Participants' feedback

Summary, feedback forms

	SUM	Percentage
1 Jointly financed RWM entity	17	34
2 Sharing knowledge/competences	39,5	79
3 Strategic technical and non-technical cooperation	39,5	79
4 Shared access to treatment/conditioning facilities	35	70
5 Harmonization of waste characterizations	33,5	67
6 Joint procurement of services/facilities	14	28
7 Borehole disposal - intermediate and deep	38	76
8 Disposal of RR fuel	17	34
9 Disposal costing and financing approaches	39	78



Participants' priorities

- Highest priority:
 - Sharing knowledge/competences
 - Strategic technical and non-technical cooperation
 - Disposal costing and financing approaches
 - Borehole disposal – intermediate and deep
 - High priority:
 - Shared access to treatment/conditioning facilities
 - Harmonization of waste characterizations



Participants' priorities

- Lower priority:
 - Jointly financed RWM entity
 - Disposal of RR fuel
 - Joint procurement of services/facilities



Participants' suggestions

- Stakeholder engagement (It)
- Shared access to interim storage facilities (It)
- Shared guidelines on disposability assessment and WAC (It)
- Shared treatment/conditioning facilities for challenging ILW streams (It)
- Availability of suitable geological formations within Eu related to ERDO mission (It)



Participants' suggestions (cont.)

- Safety assessment methodology (Hu)
- Harmonization of concept of site selection process (Hu)
 - ❑ Concept for record keeping of the information gained during site selection.
- Evaluation of possibility to develop uniform waste package type (Hu)



Participants' suggestions (cont.)

- Shared management of RW and SF, including disposal, as the political concern (SK)
 - ❑ Maximal depolitization of RW and SF management seems a crucial condition for implementation of any international and shared solutions.
- Waste packaging and sorting in different fractions (DK)
- Volume reduction (DK)
 - ❑ Both may be covered by the heading "Strategical cooperation"



Questions?

- More detailed presentation in Session III



Steps to Sharing Session III – Sharing Pre- Disposal Capabilities

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Session III structure

- Presentations:
 - Ole Kastbjerg Nielsen on participant feedback
 - Rebecca Robbins on IAEA experience and plans
 - Marja Vuorio on link to EURAD Routes project
- Participant presentations based on feedback forms
 - Italy, Greece, Croatia
 - Input from other participants



Participants' feedback

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Knowledge and competences (39,5/79%)

- Important step to be considered before future steps on facilities sharing
- Crucial to safe handling of RW in longer perspective
- Especially education of young colleagues and cooperation on specific topics.
- Important to coordinate and ensure synergy with other initiatives, a.o. KM projects in EURAD, IAEA and NEA initiatives, IGD-TP.



DK examples

- Visits to storage facilities and repositories, a.o. several visits to COVRA's intermediate storage facilities and Norway's repository in Himdalen.
- Recent visit to COVRA, JRC (Ispra) and KTE (Karlsruhe) to get inspiration in relation to construction of new, upgraded storage facility (design criteria, WAC etc.)
- Technical visit from Croatia later this year.
- ERDO-WG, Club of Agencies etc.



Knowledge/competences - challenges

- The intergenerational issue: You can share and save knowledge over longer time periods, but it takes competent people to use it – how do we ensure that?
 - ❑ How do we ensure that the relevant competences are available in the future? (Educational system)
- How do we motivate experts to stay aboard in small and maybe not so interesting working environments?
 - ❑ Establishment of joint competence centres/intellectual RW entities?



Technical and non-technical strategic cooperation (39,5/79%)

- Use already existing experience for extending strategic cooperation.
- Can be useful for education of young colleagues and cooperation on e.g. public and political acceptance.
- DK has a dialogue with IAEA and SKB on strategy for long term solution.
- Big interest in the area – can we define two pilot projects of mutual interest? E.g. one technical and one non-technical.



Disposal costing and financing approaches (39/78%)

- Very important for decision makers in MS. SIMs are needing commensurate solutions that they can pay.
- Very interesting for RWM programs and future R&D.
- Disposal costing often difficult to assess – decision makers interested in as precise figures as possible.



Borehole disposal – intermediate and deep (38/76%)

- No current priority for Italian RW (sources etc.) but of interest considering the not too large ILW-HLW inventory.
- From the point of view of development of regional (e.g. states of former Yugoslavia, Caucasian states etc.) DSRS disposal.
- Strong interest, ongoing work on IAEA CRP on borehole disposal.
- Very interesting for small amounts. Research needed.



Borehole disposal (cont.)

- Deep borehole disposal could be an alternative to geological disposal of CANDU SF and RR SF.
- Currently not a priority, but has great potential as a technology that can be used in the future.
- Could be relevant for smaller fractions, primarily spent research fuel.



Shared access to treatment and conditioning facilities (35/70%)

- Desirable step in framework of EU MS collaboration on RWM
- Not only for HLW
- Possible difficulties in characterization/WAC, capacity, transportation, avoidance of relevant cross contamination, avoiding of mixing of waste from different producers.



Shared access... (cont.)

- Potentially useful for all countries with small inventory to reduce overall predisposal and disposal costs. Regional orientation to ensure cost-benefit.
- Good economic reasons – RW technology and equipment often very expensive.
- Possible savings compared to commercial solutions.
- Important to be aware of mentioned challenges.
- What kind of facilities are of interest?



DK examples

- DK has sent combustible waste for incineration in Sweden twice. Purpose: volume reduction and reduction of the amount of combustible waste to deposit. The radioactive fraction returned.
- Assessment of the opportunity of melting radioactive metals and recycling of smoke detectors and selected radioactive sources.



Harmonization of waste characterizations etc (33,5/67%)

- And set of WAC.
- A subject of many international programmes and activities, also under auspices of IAEA (Labonet)
- Very important for sharing of facilities. Cost of techniques should be considered.
- The project could be prerequisite to implementation of proposal 1.3 or at least facilitate implementation of that proposal.
- Essential if end point is shared repositories where each organization has to meet same WAC.



Jointly financed RWM entity (17/34%)

- Of benefit for countries with small amounts of RW and limited resources, knowledge and competences
- Difficulties for joining – could be of legal, political and economic character.
 - ❑ Difficult to co-finance supplementary to national entity.
 - ❑ Too early. Activities can be coordinated within ERDO-WG.
- An intellectual or waste handling entity?
 - ❑ Transport of waste can be an issue.
 - ❑ Pooling competences could be a long term benefit.



Disposal of RR fuel (17/34%)

- Most RR SF to be returned to country of origin.
- Most of RR SF from former socialist states returned to Russian Federation.
- Very important for some countries.
- No RR in the country.
- Many smaller countries have had some sort of return agreements. For countries like DK with a small amount of SF not covered by agreements, it could be interesting.



Joint Procurement of Services and Facilities (14/28%)

- Difficult, different budget of each user, different options.
- Very dependent on national legislation.
- Could be very important for Croatia and Slovenia due to joint NPP and obligations regarding decommissioning and SF/RW management.
- Possible alternative: one country purchasing, selling services to other countries.



- **Thank you for your attention!**
- **Questions?**



Discussion

- **What?** Priorities
- **Why?** Desired benefits compared to single organization/national initiative
- **How?** Forms of cooperation
- **With whom?**
- **Why not?** Predicted challenges and how can they be overcome?

