

ASTRA–FORSAFF JOINT SESSION

Perspectives on the Management of Small and Emerging Inventories – Rapporteur Summary



Co-funded by the European Union under Grant Agreement n° 101166718



SHARED CHALLENGES AND SOLUTIONS

- **ASTRA (A) and FORSAFF (F) identified challenges in understanding waste characteristics**

- Incomplete data/information leads to uncertainty in waste management/disposal planning and safety assessment
- F: largely model based AMR waste characteristics absent validation data
- A: undetermined legacy waste inventories in SIMS countries

- **Predisposal/Disposal challenges**

- A: waste package ageing, treatment & conditioning gaps, WAC applicability
- F: targeted R&D spanning technology-specific challenges to understand and the long-term behaviour of novel wastes

- **Both WPs advocate for iterative processes between knowledge development, specification of regulatory and end user needs and design development**

Similar/Related Solutions

Advance Characterisation Tools & Methods	A + F
Improve Inventory Systems & Data Quality	A + F
Develop waste characterisation models for novel fuels	F
Develop Shared Treatment & Conditioning Infrastructure	A + (F)
Predictive Ageing & Integrity Assessment Tools	A



SCALABLE DISPOSAL NEEDS

- **A: Small inventories may need “scaled-down” disposal infrastructure.**
 - Implementing a waste management strategy without existing know-how and infrastructure is challenging
- **F: Arising SMR/AMR waste inventories can vary strongly based on use cases.**
 - Dynamic inventories → need for disposal systems that can be scaled-up over time either on an individual or co-located basis
- **Potential disposal pathways**
 - **Use existing pathways:** Mined geological repositories remain the reference solution
 - **Infrastructure sharing:** Shared or multinational repositories could provide a more proportionate solution for small inventories and limited SMR/AMR deployment.
 - **Deep Borehole Disposal (DBD):** boreholes could provide flexible disposal for smaller inventories, with a small surface footprint and potentially reduced operational burden.
 - Largest challenge is the lack of a demonstrator
 - What waste types is a DBD suitable for?



CIVIL SOCIETY PERSPECTIVE: COMMON PRIORITIES

- **We need to reflect on our participation and long-term engagement strategy**

Proportionate solutions for new and small inventories

Develop and institutionalise specific engagement frameworks tailored to SMR/AMR challenges

Disposal approaches should avoid disproportionate costs and burdens, while maintaining safety and security. For alternatives such as DBD, retrievability, long-term performance and societal acceptance require further discussion and evidence.



AUDIENCE PARTICIPATION



- **DBD**
 - Lack of a demonstrator is the biggest challenge
 - What waste types will DBD prove suitable for?
- **SMR/AMR challenges**
 - FORSAFF outcomes were of value to WMO