



**International Framework for Nuclear Energy Cooperation
Reliable Nuclear Fuel Services Working Group
11 December 2018, Paris, France**

**Workshop on Approaches to Financing a
Multinational Repository**

**—
Challenges and Alternate Approaches**

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International Framework for Nuclear Energy Cooperation Reliable Nuclear Fuel Services Working Group

IFNEC: 34 Participants, 31 Observer countries and 4 Observer organisations

RNFSWG: membership open to all IFNEC Participants and Observers

RNFSWG : 19 Countries and three international organizations

Argentina, Armenia, Australia, Bahrain, Bulgaria, Canada, China, France, Italy, Hungary, Japan, Jordan, Korea, Russia, Mexico, Singapore, Slovenia, Ukraine and United States

EURATOM, IAEA and OECD NEA



RNFS Working Group Topics & MNR

IFNEC addressed **multinational repository** subject since 2009. In 2011 dedicated this subject to RNFSWG.

The focus of the Working Group is the back end of the fuel cycle, particularly disposal, as outlined in the 2016 “Dual Track” paper. Disposal in deep geological repository recognized as safe end-point for SF and/or HLW.

The current topic of inquiry; **financing** a multinational repository, was selected by the members through a survey.

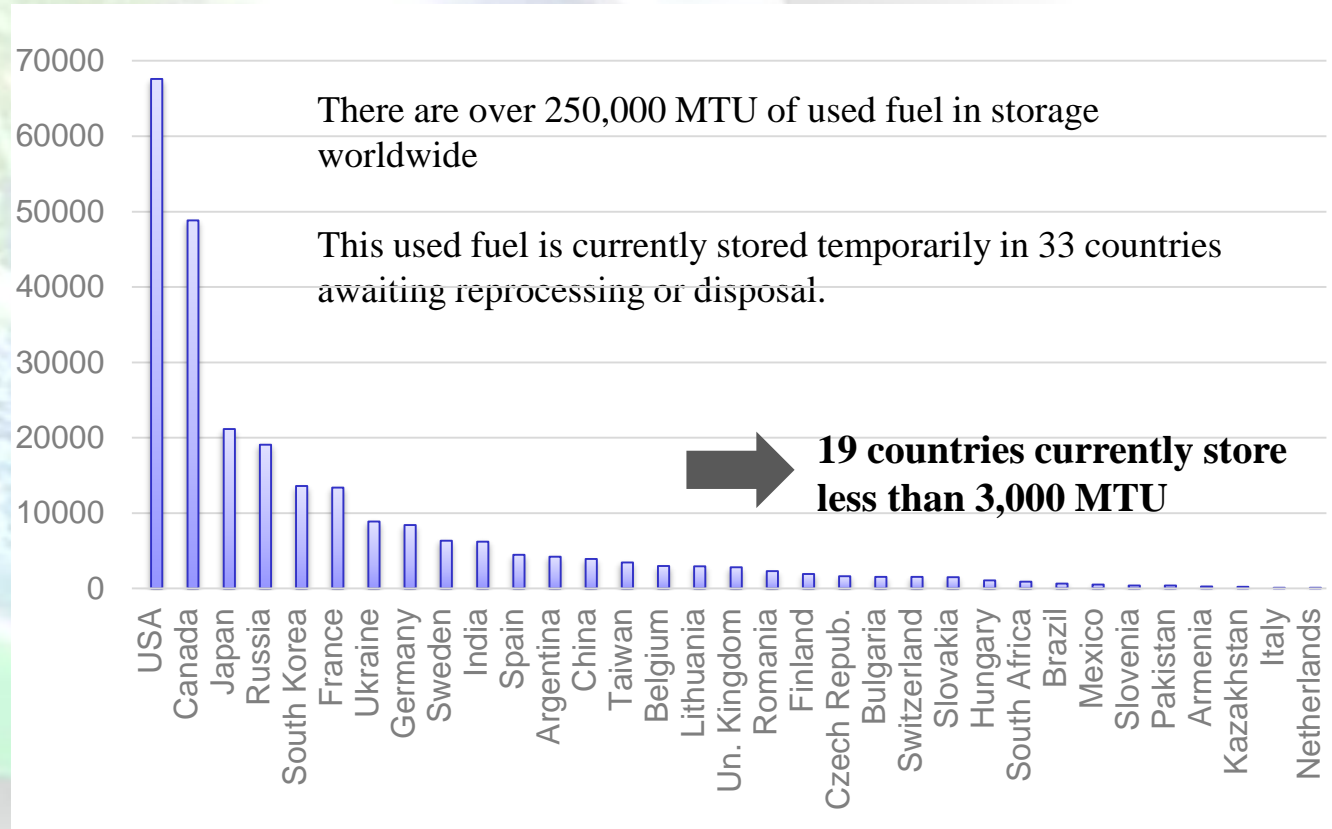
The term “multinational repository” (MNR) refers to arrangements where customer countries enter into agreements to have their SF/HLW disposed of in a country that has disposal capability, the service provider country.



Spent Fuel Stored by Country

Many countries have small nuclear programs and small amounts of spent fuel

MNR has safety, security and environmental benefits



Source: US DOE data

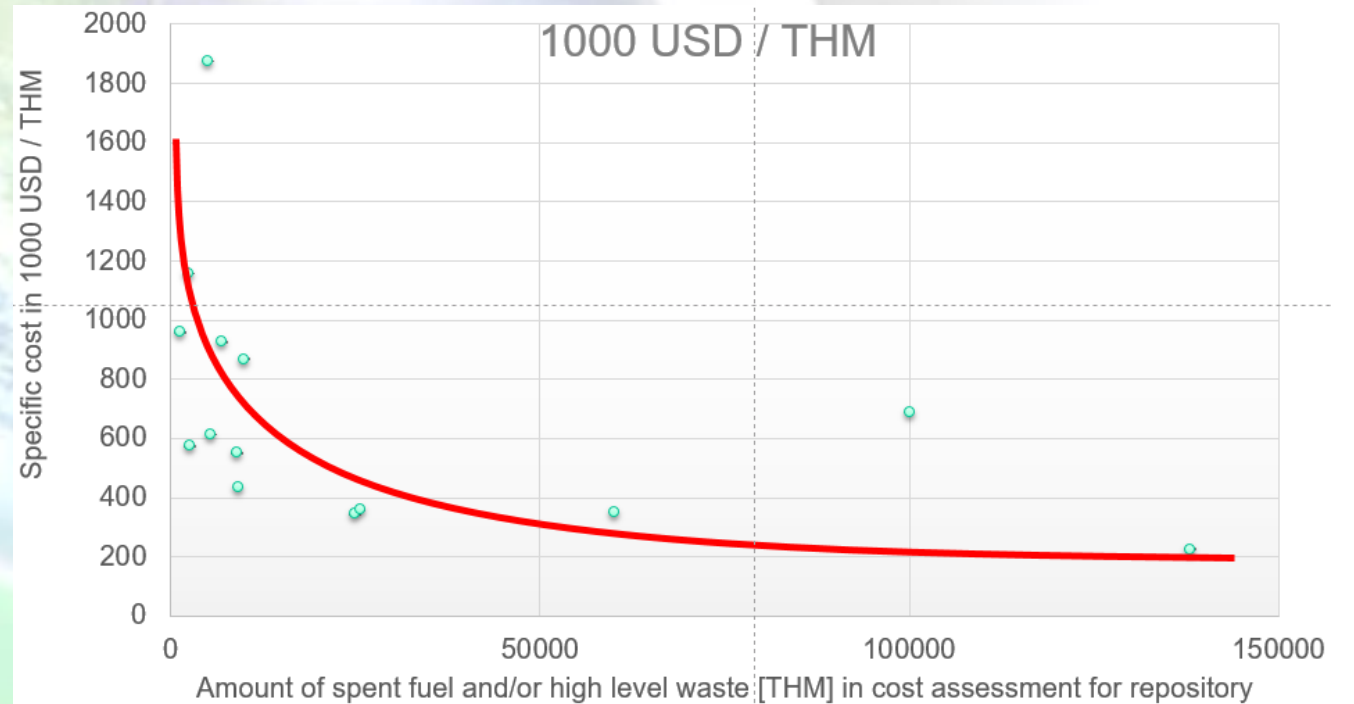
MTU – metric tones of uranium, THM – tones of heavy metal



Total Cost of Repository

Specific cost is smaller for larger repository

MNR has clear economic benefits



Sources:

SAPIERR (2008), IAEA TecDoc 1323 (2002), South Australia NFCRC (2016), DeepGeoInc (2017)



Preparations for this Workshop

- Japan, Russia, Singapore, IAEA and OECD NEA as IFNEC secretariat volunteered to assist Co-Chairs on the **Workshop Planning Committee**.
- The Planning Committee participated in several conference calls and reviewed multiple drafts of the agenda as we developed session topics and identified speakers.
- **Andra** hosted a technical visit for WG
The Meuse & Haute-Marne Centre (Cigeo)





Workshop Agenda

Session 1. What are the phases of any geological repository project and its spending profiles

The presentation will provide a “business oriented” description of a repository project: from siting to closure with cost distribution.

Session 2. What is the cost of a MNR?

What are the sources of that information (ranges, variables, uncertainties).

Session 3. What are the financial risks?

Project risks and liabilities that will need to be distributed for assumption by the various parties in any MNR financing arrangement.



Workshop Agenda

Session 4. Past projects, lessons learned, planning related to financing

Contributions and experience from national programs.

Session 5. Approaches to financing an MNR responding to the hypothetical scenario?

Invited experts will present their own approaches to financing ...
The session will be interactive with participants involvement.

Session 6. Round table, questions, conclusions