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Geological Disposal of Carbon Dioxide and Radioactive Waste: A Comparative Assessment

Edited by:

Ferenc L. Toth, *International Atomic Energy Agency (IAEA), Vienna, Austria*

Fossil fuels will remain the backbone of the global energy economy for the foreseeable future. The contribution of nuclear energy to the global energy supply is also expected to increase. With the pressing need to mitigate climate change and reduce greenhouse gas emissions, the fossil energy industry is exploring the possibility of carbon dioxide disposal in geological media.

Geological disposal has been studied for decades by the nuclear industry with a view to ensuring the safe containment of its wastes. Geological disposal of carbon dioxide and that of radioactive waste gives rise to many common concerns in domains ranging from geology to public acceptance. In this respect, comparative assessments reveal many similarities, ranging from the transformation of the geological environment and safety and monitoring concerns to regulatory, liability and public acceptance issues. However, there are profound differences on a broad range of issues as well, such as the quantities and hazardous features of the materials to be disposed of, the characteristics of the targeted geological media, the site engineering technologies involved and the timescales required for safe containment at the disposal location.

There are ample opportunities to learn from comparisons and to derive insights that will assist policymakers responsible for national energy strategies and international climate policies.



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