

# Curio Partners with PNNL to Commercialize DOE-Funded Tech: Noble Gas Separation from Used Nuclear Fuel

*Curio plans on pioneering sustainable practices and aims to carve out a niche for radioactive noble gas isotopes in the nuclear industry.*

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[Curio](#) is excited to announce a

groundbreaking project funded by the

Department of Energy (DOE) through its Technology Commercialization Fund. This initiative focuses on assessing the economic viability of various technologies for noble gas separation from nuclear reprocessing plants, part of 50 innovative clean energy projects receiving a combined \$41.4 million in federal funding from the DOE.



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*Edward McGinnis*

The primary goal of this project is to assess the economic viability of a room temperature metal-organic framework (MOF) based adsorption process for separating noble gases and to compare its energy costs and economic impacts with traditional cryogenic distillation methods and charcoal based adsorption process. This initiative aims to develop more energy-efficient and cost-effective solutions for noble gas separation, leveraging advanced MOF technology.

Pacific Northwest National Laboratory ([PNNL](#)) has partnered with Curio to utilize its extensive expertise in MOF technology and adsorption processes to conduct a comprehensive economic assessment. This project, co-led by PNNL researcher Praveen Thallapally, aims to demonstrate the potential of MOFs to enable selective and efficient capture of noble gases from a reprocessing off-gas stream, offering significant advantages in terms of energy savings and overall economic viability.

“We are thrilled to partner with PNNL on this innovative effort,” said Ed McGinnis, CEO of Curio.

“This project not only meets regulatory requirements for environmental release but also creates and sustains a market for noble gases. DOE’s investment in this project further underscores the importance of developing technologies that enhance the efficiency and sustainability of nuclear fuel recycling.”

This commercialization partnership aligns with Curio’s mission to revolutionize the nuclear industry through cutting-edge technologies and sustainable practices. By exploring the economic benefits of MOF-based noble gas separation, Curio aims to accelerate the adoption of this promising technology in the nuclear sector.

**\*\*About Curio\*\***

Curio, headquartered in Washington DC, is committed to advancing a closed fuel cycle through pioneering technologies such as NuCycle®, a patented process for nuclear fuel recycling. By addressing environmental, security, and market concerns, Curio aims to establish clean nuclear power as a catalyst for global prosperity and sustainability. With a vision of the United States as an energy exporter and a supplier of nuclear fuel, energy, and next-generation radioisotopes and nuclides, Curio is leading the charge towards a cleaner and brighter future.

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