



Overview

The U.S. Department of Energy (DOE) established the Office of Clean Energy Demonstrations (OCED) to help scale the emerging technologies needed to tackle our most pressing climate challenges and achieve net-zero emissions by 2050.










OCED received more than \$25 billion in funding from the Bipartisan Infrastructure Law and Inflation Reduction Act to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized system.

Project Oversight

To ensure the success of its projects, OCED is focused on demonstration project management oversight excellence. OCED will apply lessons learned from past DOE demonstrations and the private sector to enhance how it oversees projects. OCED will also support other offices to ensure a consistent approach to implementing these projects across DOE.

OCED also seeks to ensure excellence as it advances energy and environmental justice in large-scale demonstration projects to support an equitable clean energy transition. OCED will ensure the workforce and local communities are a key part of the solution to build an equitable clean energy future.

Project Portfolio

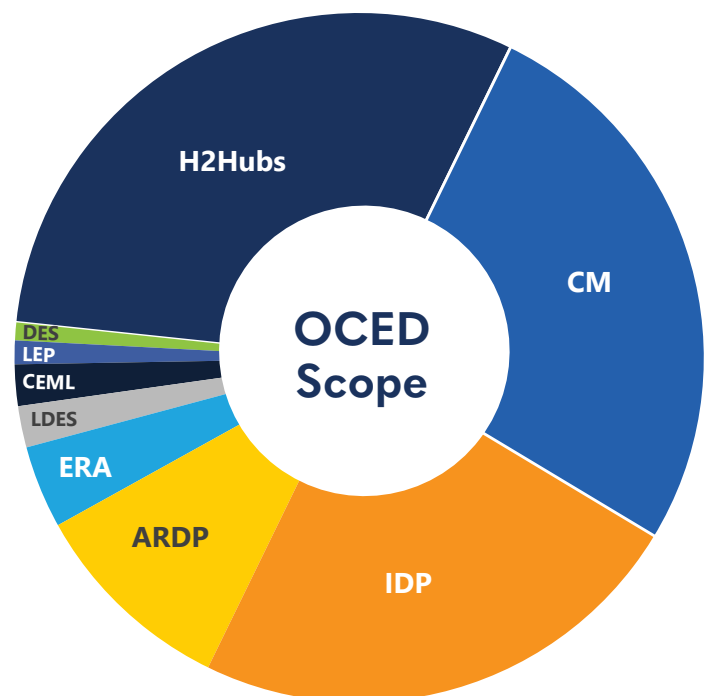
 Regional Clean Hydrogen Hubs (H2Hubs) \$8 billion	 Energy Improvements in Rural or Remote Areas (ERA) \$1 billion
 Carbon Management (CM) Regional Direct Air Capture Hubs, Carbon-Capture Demos & Large-Scale Pilot Projects \$7 billion	 Long-Duration Energy Storage Demonstrations (LDES) \$505 million
 Industrial Demonstrations (IDP) \$6.3 billion	 Clean Energy Demonstrations on Mine Land (CEML) \$500 million
 Advanced Reactor Demonstration Projects (ARDP) \$2.5 billion	 Liftoff Enabling Programs (LEP) \$133 million
	 Distributed Energy Systems Demonstrations (DES) \$50 million

What Does OCED Do?

OCED is a multi-technology office with demonstrations that include clean hydrogen, carbon management, industrial decarbonization, distributed energy systems, advanced nuclear reactors, long-duration energy storage, demonstration projects in rural or remote areas and on current and former mine land, and more.

The technologies in OCED's portfolio face significant barriers to scale. OCED's role is to address these barriers and help de-risk them. Central to OCED's approach is consistent engagement with a wide range of stakeholders and pursuit of projects that advance an equitable transition by providing benefits to communities across America.

Most of OCED's projects are structured as collaborative partnerships that use cost share agreements. OCED will provide up to 50 percent of the funding in its public-private partnerships, assisting its industry partners with the early steps to commercialization and deployment.



Advanced Reactor Demonstration Projects

Funding Amount: \$2.5 billion

Program Info

Overview: Advanced nuclear reactors hold enormous potential to power our homes and businesses because they emit close to zero greenhouse gas emissions, efficiently use fuel, leverage inherently safe designs, and are well-suited to provide clean, firm power in complement with renewables like solar and wind. These reactors also have the potential to create new short- and long-term jobs, many of which are expected to be filled by union members with positive, lasting economic impacts on the communities in which they operate. The Advanced Reactor Demonstration Projects (ARDP) will speed the demonstration of advanced reactors through cost-shared partnerships with U.S. industry. ARDP received \$2.5 billion from the Bipartisan Infrastructure Law to support design, licensing, construction, and operation of two advanced reactor technologies, the TerraPower Sodium and the X-energy Xe-100 reactors. This funding builds on the initial \$160 million from DOE's Office of Nuclear Energy, awarded in 2020.

TerraPower, LLC – Sodium Reactor

- Single-unit, 345 MWe-net plant to be built in Kemmerer, Wyoming near the retiring Naughton coal plant; the choice of this location has been well received by local leaders and the community
- The sodium-cooled fast reactor design leverages decades of reactor technology and fuel development
- This high temperature reactor, coupled with thermal energy storage for flexible electricity output, is well suited for a renewable-heavy grid
- Visit: natriumpower.com

X-energy – Xe-100 Reactor

- Four-unit, 320 MWe-net plant
- X-energy is exploring the potential for this reactor to meet process heat and electricity needs for an industrial site on the Gulf Coast with Dow Chemical Company
- The high-temperature gas-cooled design leverages decades of development and a robust fuel form
- Advanced design provides flexible electricity output well suited for integration in a renewable-heavy grid
- Can meet the process heat needs for a wide range of industrial heat applications that are difficult to decarbonize
- Visit: x-energy.com



Contact Info

Email: OCED@hq.doe.gov

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More Resources

Office of Nuclear Energy: energy.gov/NE

Idaho National Laboratory: Leads the nation's research in advanced nuclear energy technology and acts as a key advisory partner to ARDP. Visit: inl.gov