U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

DOE Support for Advanced Reactors

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- In the United States, we are committed to getting to:
  - 100 percent clean energy on our transmission grid by 2035, and
  - net-zero carbon emissions by 2050.

- Investments in clean energy technologies will ensure the U.S. is the global leader in research, development, and deployment of critical energy technologies to combat the climate crisis, create good-paying union jobs, and strengthen our communities in all pockets of America.

Recent Legislature Builds Momentum for Advanced Nuclear

- Bipartisan Infrastructure Law (BIL) provides support to help transition the U.S. to clean energy economy, including leveraging advanced nuclear
  - Provides $2.477 billion to support the two Advanced Reactor Demonstration Program (ARDP) demonstration projects.
  - $500M to innovative mine land conversion to clean energy projects (Advanced nuclear is included as possible demonstration technology)
  - Allocates $8 billion to demonstrate regional clean hydrogen hubs, including at least one hub dedicated to the production of hydrogen with nuclear energy
- Inflation Reduction Act (IRA) incentivizes Advanced Nuclear Deployment
  - Support for new advanced reactors through either a production tax credit of $25 per megawatt-hour for the first ten years of plant operation or a 30% investment tax credit on new zero-carbon power plants placed into operation in 2025 or after
  - Provides $700M to support the development of a domestic supply chain for high-assay low-enriched uranium (HALEU)
  - Clean Hydrogen Credit

Advanced Reactor Technologies (ART) Research Programs

Mission: Support the development and commercialization of innovative concepts including microreactor, fast reactor, molten salt reactor (MSR), and high temperature gas-cooled reactor (HTGR) technologies through national laboratory-led R&D, university research programs, and cost-shared private-public industry partnerships

- **Fast Reactor Technologies**
  - Demonstrate feasibility of advanced systems and component technologies
  - Methods and code validation to support design and licensing
- **Gas Reactor Technologies**
  - Advanced alloy qualification
  - Scaled integral experiments to support design and licensing
- **MSR Technologies**
  - Investigate fundamental salt properties
  - Materials, models, fuels and technologies for salt-cooled and salt-fueled reactors
- **Microreactors**
  - Non-nuclear and nuclear integrated system testing supporting commercial demonstrations and end-user applications
  - Maturation of innovative components and semi-autonomous operating regimes
- **FY23 Appropriations for Advanced Reactor Technologies - $49M**
  - up to $20,000,000 for MARVEL

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Questions?