Nuclear Energy Research and Development Act

Access to electricity is essential for our way of life, and access to clean electricity is essential to reduce the impacts and threats of climate change. Nuclear power plants currently provide more than 55 percent of the nation's emissions-free electricity, but to achieve deep decarbonization by mid-century, several independent studies have determined that nuclear energy will likely need to be included as a significant portion of the U.S. energy portfolio.[1,2] Keeping existing plants safely operational and furthering innovation in nuclear energy technology will also help the U.S. to maintain influence and leadership over nuclear safety and nuclear nonproliferation worldwide, which is essential to U.S. national security.

The *Nuclear Energy Research and Development Act* addresses these issues by authorizing critical research, development, and demonstration programs at the Department of Energy's Office of Nuclear Energy.

Specifically, the *Nuclear Energy Research and Development Act* would:

- authorize a light water reactor sustainability program with goals of extending the safe operation of existing nuclear power plants;
- authorize research and development on advanced proliferation-resistant and passively safe reactor technologies, including an advanced reactor demonstration program;
- authorize a hybrid energy systems research and development program, which includes applications such as desalination, hydrogen production, heat for industrial processes, and carbon capture, use, and storage, among others;
- authorize a high-assay, low enriched uranium research and development program, including considerations for fabrication and transportation, with the goal of having the capability of producing amounts that will be needed for advanced nuclear reactors;
- authorize a used nuclear fuel research and development program, including both open and closed fuel cycle technologies;
- authorize an advanced fuels program for both light water and advanced reactors;
- authorize a suite of nuclear educational research and development programs, including an apprenticeship program and university facilities support;
- authorize appropriations for all above programs, and the versatile neutron source;
- authorize an international nuclear energy coordination effort;
- instruct the Secretary to complete a biennial budget plan and coordinate work amongst other federal agencies and national laboratories;
- create an education and outreach program to promote public understanding of nuclear energy;
- establish a nuclear energy technical assistance program.

---

[1] "Nuclear Power and the Paris Agreement." IAEA. https://www.iaea.org/sites/default/files/16/11/np-parisagreement.pdf

[2] "The Future of Nuclear Energy in a Carbon-Constrained World." Massachusetts Institute of Technology. https://energy.mit.edu/wp-content/uploads/2018/09/The-Future-of-Nuclear-Energy-in-a-Carbon-Constrained-World.pdf