



Press Release

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U.S. Department of Energy Provides Nearly \$20 Million for Domestic Advanced Nuclear Technology Projects

WASHINGTON, D.C. — U.S. Secretary of Energy Rick Perry today announced today the Department of Energy (DOE) has selected nine domestic projects to receive nearly \$20 million in funding for cost-shared research and development for advanced nuclear technologies. These awards are through the Office of Nuclear Energy's (NE) funding opportunity announcement (FOA) [*U.S. Industry Opportunities for Advanced Nuclear Technology Development*](#) and are the second group selected under this solicitation. The [first group](#) was announced on April 27, 2018.

Subsequent quarterly application review and selection processes will be conducted over the next five years. The Department intends to apply approximately \$30 million of additional FY 2018 funding to the next quarterly award cycle for innovative proposals under this FOA.

These activities are important because they support various aspects of existing and advanced reactor development, and they establish domestic capabilities for safer, more efficient, clean baseload energy that will support the U.S. economy and energy independence.

“DOE is investing in advanced nuclear technologies, because we are looking to the future. Nuclear energy is a critical part of our all-of-the-above energy strategy for the country, and early-stage research can help ensure it will continue to be a clean, reliable, and resilient source of electricity,” said Secretary Perry.

These awards are examples of the private-public partnerships needed to help successfully develop innovative domestic nuclear technologies. The projects will allow industry-led teams, which include participants from federal agencies, public and private laboratories, institutions of higher education, and other domestic entities, to advance the state of U.S. commercial nuclear capability. The solicitation is broken into three funding pathways:

1. First-of-a-Kind (FOAK) Nuclear Demonstration Readiness Project pathway, intended to address major advanced reactor design development projects or complex technology advancements for existing plants which have significant technical and licensing risk and have the potential to be deployed by the mid-to-late 2020s.

2. Advanced Reactor Development Projects pathway, which allows a broad scope of proposed concepts and ideas that are best suited to improving the capabilities and commercialization potential of advanced reactor designs and technologies.

3. Regulatory Assistance Grants pathway, which provide direct support for resolving design regulatory issues, regulatory review of licensing topical reports or papers, and other efforts

focused on obtaining certification and licensing approvals for advanced reactor designs and capabilities.

DOE is also announcing voucher awards selected under the Gateway for Accelerated Innovation in Nuclear (GAIN) initiative. All awards selected under this FOA and the GAIN Voucher Request for Assistance (RFA) will be funded under existing NE programs.

The following project was selected under the FOAK Nuclear Demonstration Readiness Project pathway:

- *Calendar Year 2018 Activities for Phase 2 of NuScale Small Modular Reactor project* – NuScale Power (Corvallis, OR) will build on Phase 1 project activities to advance the licensing and design maturity to meet a commercial operation date of 2026 for the first NuScale plant. The specific project scope being funded represents calendar year 2018 activities associated with the next phase (Phase 2) of the U.S. product realization effort required to bring the NuScale design to market. Specific project activities include completion of the independent verification and validation licensing report; completion of the reactor building design optimization; and conduct of level sensor prototypic testing. There is potential for extension of this award to complete calendar year 2019 activities associated with Phase II of the NuScale project if the 2018 activities are completed successfully. DOE Funding: \$7,000,000; Non-DOE: \$7,100,000; Total Value: \$14,100,000

The following five projects were selected under the Advanced Reactor Development Projects pathway:

- *Conceptual Engineering for a Small Modular Reactor Power Plant Based on Lead-Bismuth Fast Reactor (LBFR) Technology* – This work proposed by Columbia Basin Consulting Group (Kennewick, WA) aims to develop a pre-conceptual design and preliminary cost estimate for a lead-bismuth small modular reactor. DOE Funding: \$400,000; Non-DOE: \$100,000; Total: \$500,000
- *Reactor Plant Cost Reduction to Compete with Natural Gas Fired Electrical Generation* – Under this proposal, GE-Hitachi Nuclear Energy (Wilmington, NC) will examine ways to reduce reactor plant construction and maintenance costs on their BWRX-300 small light water reactor concept through (a) elimination of Loss of Coolant Accidents (LOCAs), (b) the use of an embedded (below grade) design and construction and (c) the use of pooled off-site resources that can be applied simultaneously at multiple sites. DOE Funding: \$1,925,038; Non-DOE: \$481,260; Total Value: \$2,406,298
- *Experimental Verification of Post-Accident Integrated Pressurized Water Reactor (iPWR) Aerosol Behavior, Phase 3* – The Electric Power Research Institute (Palo Alto, CA) will further improve the models used to estimate the post-accident radionuclide releases from integral pressurized water reactors (iPWRs) with a goal of reducing regulatory requirements for emergency planning zones. DOE Funding: \$1,119,699; Non-DOE: \$279,923; Total Value: \$1,399,622
- *Fluorination of Lithium Fluoride-Beryllium Fluoride (FLiBe) Molten Salt Processing* – Fluibe Energy (Huntsville, AL) has teamed with Pacific Northwest National Laboratory (Richland, WA) to examine the use of nitrogen trifluoride as an agent to remove uranium from a molten-salt fuel mixture as a preliminary step for the removal of fission products. DOE Funding: \$2,101,982; Non-DOE: \$525,500; Total Value: \$2,627,482

- *Advancing and Commercializing Hybrid Laser Arc Welding (HLAW) for Nuclear Vessel Fabrication, Including Small Modular Reactors* – Holtec International (Camden, NJ) will advance hybrid laser arc welding for use in fabrication of small modular reactors and other nuclear components to achieve improvements in the reliability, quality and cost associated with traditional multi-pass welding. DOE Funding: \$6,314,612; Non-DOE: \$6,314,612; Total Value: \$12,629,224

The following project was selected under the Regulatory Assistance Grant pathway:

- *Regulatory Support for Advanced Light Water Reactor Deployment: Advanced Boiling Water Reactor Source Term Reduction* – Pittsburgh Technical LLC, (Pittsburg, PA) will develop a technical basis to reduce source terms associated with Level II and Level III probabilistic risk assessment for advanced boiling water reactor designs. DOE Funding: \$498,000; Non-DOE: \$124,500; Total Value: \$622,500

Finally, DOE has selected two companies to receive GAIN technology development vouchers in this second review cycle. The companies selected are Yellowstone Energy (Knoxville, TN) in the amount of \$160,000, and ThorCon US (Stevenson, WA) in the amount of \$400,000. Further detail and description of these awards can be found under the [GAIN website](#).

NE funds research, development, and demonstration projects to reduce the risk and cost of advanced nuclear technologies, and to improve nuclear energy's contribution to meeting the nation's economic, energy security, and environmental challenges. More information on the Office of Nuclear Energy and its programs can be found [here](#).

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