



U.S. DEPARTMENT OF ENERGY

LOAN PROGRAMS OFFICE

Draft Advanced Nuclear Energy Projects Loan Guarantee Solicitation

The Loan Programs Office (LPO) has issued a draft Advanced Nuclear Energy Projects Loan Guarantee Solicitation to support advanced nuclear energy technologies that will foster the deployment of future projects that replicate or extend a technological innovation. If finalized, this solicitation will make \$12.6 billion in loan guarantees available to support innovative nuclear energy projects in the United States that avoid, reduce, or sequester greenhouse gases.

Loan guarantees can help commercialize innovative nuclear energy technologies, as these projects may be unable to obtain full commercial financing due to the perceived risks associated with technology that has never been deployed in the United States at commercial scale.

The Advanced Nuclear Energy Projects Solicitation is authorized by Title XVII, Section 1703, of the Energy Policy Act of 2005. Currently, LPO supports a diverse portfolio of more than \$30 billion in loans, loan guarantees, and commitments, supporting more than 30 projects nationwide. The projects that LPO has supported include one of the world's largest wind farms; several of the world's largest solar generation and thermal energy storage systems; and more than a dozen new or retooled auto manufacturing plants across the country.

THE DRAFT SOLICITATION IDENTIFIES FOUR ADVANCED NUCLEAR TECHNOLOGY AREAS

If finalized, the solicitation would seek applications for projects that cover a range of technologies. These technologies could include any nuclear generation or front-end technology that reduces greenhouse gas emissions and is new or significantly improved, as compared to more established technologies in service in the United States. While eligibility will ultimately be evaluated on a project-by-project basis, LPO has identified four key technology areas of interest under this solicitation:

Technology Area 1: Advanced Nuclear Reactors

This area focuses on nuclear energy projects with evolutionary, state-of-the-art design improvements in the areas of fuel technology, thermal efficiency, modularized construction, safety systems (especially the use of passive rather than active systems), and standardized design.

Technology Area 2: Small Modular Reactors (SMRs)

This area focuses on nuclear energy projects with evolutionary, state-of-the-art design improvements in the areas of fuel technology, thermal efficiency, modularized construction, safety systems (especially the use of passive rather than active systems), and standardized design and are nominally 300 MWe or smaller in size.

Technology Area 3: Upgrades and Upgrades at Existing Facilities

This area focuses on projects consisting of improvements and/or modifications to an existing reactor that is (1) operating but that due to such improvements and/or modifications will operate more efficiently and/or will increase capacity; (2) is not operating and cannot operate without such improvements and/or modifications or; (3) is operating but would be required to cease operating unless such improvements and/or modifications are made.

Technology Area 4: Front-End Nuclear

This area focuses on advanced nuclear facilities for the “front-end” of the nuclear fuel cycle. Of the \$12.6 billion available under this solicitation, \$2 billion is available exclusively for “front-end” projects. This could include:

- a) Uranium Conversion - Projects that economically convert U₃O₈ powder into a gaseous form of uranium hexafluoride with reduced greenhouse gas emissions;
- b) Uranium Enrichment - Projects or facilities that transform natural uranium or uranium tails to a higher isotopic content of U²³⁵ including by (1) gas centrifuge or (2) laser isotope separation and;
- c) Nuclear Fuel Fabrication - Projects that fabricate nuclear fuel including (1) production of UO₂ powder that is “reconverted” from enriched UF₆ gas from enrichment plants; (2) formation of UO₂ pellets from UO₂ powder through compaction and sintering; (3) fuel assembly (i.e. insertion of pellets into zircaloy tubes and formation of a fuel assembly using fasteners); and (4) production of nuclear reactor components which could include reactor vessels, steam generators, steam turbines, coolant pumps, control rod mechanisms, valves, heat exchangers, instrumentation and controls, and any other equipment involved in utilization and control of nuclear fuel assemblies in a nuclear power facility.

THE PUBLIC COMMENT PROCESS

The Department welcomes public comment on a range of issues and will consider public feedback in defining the scope of the final solicitation. The comment period will be open for 30 days following publication of the draft solicitation. The draft solicitation can be found online at <http://energy.gov/lpo>.

To submit a public comment, please email: LPO.NuclearSolicitation.Comments@hq.doe.gov.