

Nuclear Energy Leadership Act

Section-by-Section



Section 1: Short Title.

The Nuclear Energy Leadership Act

Section 2: Authorization of Long-Term Power Purchase Agreements.

Defining and Establishing a Domestic Market – Nuclear energy is at a disadvantage when competing for federal power purchase agreements (PPA), due to a law that pre-dates commercial nuclear power and limits PPAs to 10 years. Initial capital costs for nuclear reactors are paid for over a period beyond ten years, which means 10-year PPAs don't work for nuclear projects. This section updates the law to extend the maximum length of federal PPAs from 10 to 40 years.

Section 3: Long-Term Nuclear Power Purchase Agreement Pilot Program.

Establishing a Pilot Program – The federal government can partner with industry to be an early adopter of new technologies that increase electric reliability and resilience, especially for grid assets that are critical to our national security. This section establishes a pilot program to enter into a federal nuclear power purchase agreement that exceeds 10 years.

Section 4: Advanced Nuclear Reactor Research and Development Goals.

Advanced Nuclear R&D Goals – In order for the American nuclear industry to compete with state-owned or state-sponsored developers in rival nations – especially China and Russia – significant collaboration between the federal government, National Labs, and private industry is needed to accelerate innovation. This provision directs the Department of Energy (DOE) to establish specific goals to align these sectors and send a strong and coherent signal that the U.S. is re-establishing itself as a global leader in clean advanced nuclear technology.

Section 5: Nuclear Energy Strategic Plan.

Strategic Plan – There has not been a cohesive long-term strategy for the direction of U.S. nuclear science and engineering research and development policy across administrations. This section requires DOE's Office of Nuclear Energy to develop a 10-year strategic plan that supports advanced nuclear R&D goals that will foster breakthrough innovation to help advanced nuclear reactors reach the market.

Section 6: Versatile, Reactor-Based Fast Neutron Source.

Facilities Required for Advanced Reactor R&D – For the U.S. to be a global leader in advancing nuclear technology, we need the ability to test reactor fuels and materials. Currently, the only machines capable of producing a fast neutron spectrum are located in Russia and China. This measure directs DOE to construct a fast neutron-capable research facility, which is necessary to test important reactor components and demonstrate their safe and reliable operation – crucial for licensing advanced reactor concepts.

Section 7: Advanced Nuclear Fuel Security Programs.

High-Assay Low-Enriched Uranium Availability – A healthy domestic uranium mining, enrichment, and fuel fabrication capability that meets industry needs is another prerequisite for reestablishing U.S. nuclear leadership. Many advanced reactors will rely on high-assay low-enriched uranium (HALEU), but no domestic capability exists to produce it. This section establishes a program to provide a minimum amount of HALEU to U.S. advanced reactor developers from DOE stockpiles, until a long-term domestic supply is developed.

Section 8: University Nuclear Leadership Program.

Workforce Development – The nuclear energy industry, the Nuclear Regulatory Commission, and the National Nuclear Security Administration all require a world-class, highly-skilled workforce to develop, regulate, and safeguard the next generation of advanced reactors. This section creates a university nuclear leadership program to meet these workforce needs.