



## DEPARTMENT OF ENERGY

### Highlights:

- The mission of the Department of Energy is to advance U.S. security and economic growth through transformative science and technology innovation that promotes affordable and reliable energy and meets America's nuclear security and environmental clean-up challenges.
- The Budget protects American prosperity by making strategic investments to maintain global leadership in scientific and technological innovation and aggressively modernize the nuclear security enterprise that underpins the safety and security of Americans, both at home and abroad.
- The Budget requests \$29 billion for DOE, a more than 3-percent decrease from the 2017 enacted level.

### The President's 2019 Budget:

American leadership in science and technology is critical to achieving the Administration's highest priorities: national security; economic growth; and job creation. American ingenuity combined with free-market capitalism have driven, and will continue to drive, tremendous technological breakthroughs. The Budget for the Department of Energy (DOE) demonstrates the Administration's commitment to American energy dominance, making hard choices, and reasserting the proper role of the Federal Government. The Budget focuses resources on early-stage research and development (R&D) of energy technologies and reflects an increased reliance on the private sector to fund later-stage demonstration and commercialization activities. In so doing, the Budget emphasizes energy technologies best positioned to enable American energy independence and domestic job-growth in the near- to mid-term.

The Budget also reflects the critical role DOE has in protecting the safety and security of the American people, including by ensuring that nuclear and radiological materials worldwide remain secured against theft by those who might use them against the U.S. homeland or U.S. interests abroad. The Budget funds the modernization of nuclear weapons and ensures that the U.S. nuclear force is second-to-none. The Budget ensures continued progress on cleaning up sites contaminated from nuclear weapons production, and energy R&D. The Budget also continues support for a robust interim storage program and the licensing of the Yucca Mountain geologic repository, demonstrating the Administration's commitment to nuclear waste management.

In addition to the priorities laid out below, the Budget proposes the elimination of the Title XVII Innovative Technology Loan Guarantee Program, the Advanced Technology Vehicle Manufacturing Loan Program, and the Tribal Energy Loan Guarantee Program because the private sector is better positioned to finance the deployment of commercially viable energy and advanced vehicle manufacturing projects. The Budget also proposes the elimination of Advanced Research Projects Agency-Energy, recognizing the private sector's primary role in taking risks to commercialize breakthrough energy technologies with real market potential.

The Budget includes several reforms that realign, consolidate, or merge functions within the Department to improve efficiency and effectiveness, such as the consolidation of program-level international affairs activities into a single headquarters office. In addition, the Budget proposes a realignment of DOE program offices to elevate cybersecurity and energy security as priorities within the Department, with the goal of ensuring the security of the American people. DOE is also committed to eliminating waste, fraud, and abuse. For example, the Budget would avoid \$10 to \$12 billion in waste by terminating construction of the Mixed Oxide Fuel Fabrication Facility in favor of a plutonium disposition alternative. DOE will also continue to improve contract management and oversight to address potential fraud and abuse risks raised by the Government Accountability Office.

**Modernizes the Nuclear Arsenal.** The Budget for DOE nuclear security programs is aligned with Department of Defense requirements for deterring 21<sup>st</sup> Century threats and reassuring U.S. allies and partners. The Budget increases investments in the nuclear stockpile to guarantee it is modern, robust, flexible, safe, and effective. Specifically, the Budget supports completing production of the W76-1 Life Extension Program (LEP), preparing the B61-12 LEP and the W88 Alteration 370 for production in 2020, and continuing development of the W80-4 LEP.

**Revitalizes the Nuclear Security Enterprise's Aging Infrastructure.** Safe, secure, and modern infrastructure at the National Nuclear Security Administration's (NNSA) national laboratories, production plants, and Nevada National Security Site is essential to maintaining the U.S. nuclear deterrent and accomplishing DOE's other national security missions. The Budget makes significant investments in design and construction of facilities, with an emphasis on infrastructure related to strategic materials (e.g., uranium, plutonium, tritium, lithium) that are critical to the nuclear weapons stockpile. NNSA infrastructure is also an important part of a whole-of-government approach to supply chain assurance in microelectronics. NNSA must have a modern, secure, streamlined complex that would meet military requirements, keep the nuclear deterrent safe and effective, and enhance worker and public safety.

**Reduces Global Nuclear Threats.** Nuclear terrorism and the spread of nuclear weapons constitute two of the most critical threats to American safety and prosperity. The Budget invests in nonproliferation, counterterrorism, and emergency response programs to provide for the safety and security of the American people. The Budget accelerates the Cesium Irradiator Replacement Program, which would reduce the threat of radiological terrorism by permanently removing cesium sources that could be used in dirty bombs. The Budget begins procurement of replacement aircraft for NNSA's Aerial Measuring System to ensure the Nation maintains its radiation detection capabilities for emergency preparedness and response missions. In addition, the Budget supports the removal of additional nuclear materials from around the world and helping countries develop strong programs to secure those that remain, reducing opportunities for terrorists to acquire such material for use in a nuclear weapon.

**Maintains Safe Naval Nuclear Propulsion.** The Budget provides \$1.8 billion to support a strong U.S. Navy through NNSA's Naval Reactors (NR) program. NR works to provide the U.S. Navy with safe, reliable nuclear propulsion plants for submarines and aircraft carriers. The Budget includes

major investments to modernize NR's spent fuel handling infrastructure and develop the reactor systems for the *Columbia*-class ballistic missile submarine.

**Supports Cutting-Edge Research and Invests in Leading Scientific User Facilities to Enable Future Breakthroughs in Energy.** The Budget provides \$4.2 billion for the Office of Science to continue its mission to focus on early-stage research, operate the national laboratories, and continue high priority construction projects. Within this amount, \$445 million is for Exascale computing to help secure a global leadership role in supercomputing. The Budget would continue to ensure access to critical scientific user facilities including \$100 million for the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment and \$75 million to complete the Facility for Rare Isotope Beams.

**Continues Support for Cyber and Energy Security Initiatives across the Department.** Ranging from cybersecurity of the electrical grid to prioritization of early-stage R&D focused on hardening energy infrastructure, the Budget prioritizes the energy security for all Americans through continued investments that address cyber threats across the Nation's electrical grid. To ensure robust cybersecurity programs across the energy sector, the Budget Request provides funding in multiple programs, including slightly more than \$95 million in the reorganized Office of Cybersecurity, Energy Security, and Emergency Response with a renewed focus on early-stage activities that improve cybersecurity and resilience to harden and evolve critical grid infrastructure. These activities include early-stage R&D at national laboratories to develop the next generation of cybersecurity control systems, components, and devices including a greater ability to share time-critical data with industry to detect, prevent, and recover from cyber events.

**Unleashes an Era of Energy Dominance through Strategic Support for Innovation.** The United States has among the most abundant and diverse energy resources in the world, including oil, gas, coal, nuclear, and renewables. The ability of entrepreneurs and businesses to commercialize technologies that take full advantage of those resources is paramount to promoting U.S. economic growth, security, and competitiveness. That is why the Budget provides more than \$1.7 billion across the applied energy programs at DOE, which support early-stage R&D that enables the private sector to deploy the next generation of technologies and energy services that usher in a more secure, resilient, and integrated energy system.

*"When it comes to the future of America's energy needs, we will find it, we will dream it, and we will build it."*

President Donald J. Trump  
June 29, 2017

Within this amount, the Budget provides \$757 million for the Office of Nuclear Energy, prioritizing support for early-stage R&D on advanced reactor technologies, including small modular reactors, and advanced instrumentation and manufacturing methods. The Budget also provides more than \$300 million for R&D by the Office of Fossil Energy to support national laboratory research on clean, efficient fossil fuels and systems, and bolster early-stage critical materials R&D. In addition, the Budget provides more than \$180 million for the Department's Grid Modernization Initiative, a joint effort funded by the Office of Electricity Delivery, the Office of Energy Efficiency and Renewable Energy, and the new Office of Cybersecurity, Energy Security, and Emergency Response. The initiative aims to maintain progress on innovative technologies and operational approaches for achieving a more reliable, resilient, and secure electricity delivery system integrated with energy storage, renewable generation, smart buildings, and electric vehicles.

**Implements Reforms in the Environmental Management Program to Accelerate Clean Up of Waste and Contamination from Nuclear Weapons Production.** The Budget includes \$6.6 billion for 16 sites remaining to be completed. The Budget provides \$150 million to carry forward the 2018 Budget initiative to accelerate deactivation and decommissioning of selected high-risk excess facilities to protect human health and the environment, and support modernization of the Nuclear Security Enterprise.

**Proposes to Divest Federally Owned and Operated Transmission Assets and Authorize the Power Marketing Administrations (PMAs) to Charge Market Based Rates for Power.** The Budget proposes to sell the transmission assets owned and operated by PMAs, including those of Southwestern Power Administration, Western Area Power Administration, and Bonneville Power Administration. The Budget also proposes to authorize PMAs to charge rates based on comparable rates charged by for-profit investor-owned utilities, rather than being limited to cost-based rates, for electricity. The vast majority of the Nation's electricity needs are met through investor owned utilities. Reducing or eliminating the Federal Government's role in electricity transmission infrastructure ownership—thereby increasing the private sector's role—and introducing more market-based incentives, including rates, for power sales from Federal dams, would encourage a more efficient allocation of economic resources and mitigate risk to taxpayers.