# DEPARTMENT OF ENERGY
# FY 2019 BUDGET REQUEST
# FACT SHEET
# February 12, 2018

The President's Budget for FY 2019 requests $30.6B for the Department of Energy (DOE) to advance U.S. national security and economic growth through transformative science and technology innovation that promotes affordable and reliable energy through market solutions and meets our nuclear security and environmental cleanup challenges.

**DEPARTMENT OF ENERGY**

| DOE Programs | FY19 ($M) |
|---|---|
| • National Nuclear Security Administration | 15,091 |
| • Science | 5,391 |
| • Energy | 2,515 |
| • Environmental Management | 6,601 |
| • Other Defense Activities | 853 |
| • Administration and Oversight | 293 |
| • *Savings and Receipts* | *-137* |
| **DOE Total** | **30,609** |

The FY 2019 Budget Request provides:

- $15.1B to modernize and restore the nuclear security enterprise aligned with the Nuclear Posture Review (NPR) and National Security Strategy.

- $5.4B to conduct cutting-edge, early-stage scientific research and development (R&D) and build state-of-the-art scientific tools and facilities to keep U.S. researchers at the forefront of scientific innovation, including achieving exascale computing in 2021.

- $2.5B to promote America's energy dominance through technologies that will make our energy supply more affordable, reliable, and efficient.

- $6.6B to continue our commitment to cleaning up the Cold War nuclear legacy.

To accelerate progress on national priorities and advance the DOE mission, the FY 2019 Budget Request invests:

- $636M to achieve exascale computing in 2021, including $473M in the Office of Science and $163M in NNSA, $376M above the FY 2017 Enacted level, to support development of an exascale computing software ecosystem by preparing mission critical applications to address exascale challenges.

- $105M in quantum computing to address the emerging urgency of building U.S. competency and competitiveness in the developing area of quantum information science, including quantum computing and quantum sensor technology.

- $470M to prevent and address cyberattacks on the energy sector and to secure the DOE enterprise:
  - $75M for electric grid and energy sector cybersecurity R&D. It also establishes a separate account for Cybersecurity, Energy Security, and Emergency Response (CESER) that consolidates funding to execute the expanded cybersecurity responsibilities assigned to DOE.
  - $395M for DOE enterprise cybersecurity risk management.

- $432M for specific, cutting-edge, early-stage R&D efforts in energy storage solutions beyond batteries, advanced fossil-based power systems, and advanced reactor technologies including Small Modular Reactors to promote American energy dominance through an "all of the above" energy strategy.

- $11B to continue refurbishment of the nuclear weapon stockpile and replacement of degrading facilities that support nuclear stockpile operations, in alignment with the NPR.

## NATIONAL NUCLEAR SECURITY ADMINISTRATION

The FY 2019 Budget Request proposes $15.1B for the NNSA, $2.2B over FY 2017 Enacted. The Request makes necessary investments consistent with the NPR to: modernize and rebuild a nuclear force and nuclear security enterprise; prevent, counter and respond to nuclear proliferation and terrorism threats; and provide safe, reliable, and long-term nuclear propulsion to the Nation's Navy. The Budget Request includes:

**NATIONAL NUCLEAR SECURITY ADMINISTRATION**

| NNSA Programs | FY19 ($M) |
|---|---|
| • Weapons Activities | 11,017 |
| • Defense Nuclear Nonproliferation | 1,863 |
| • Naval Reactors | 1,789 |
| • Federal Salaries and Expenses | 423 |
| **NNSA Total** | **15,091** |

- $11B for Weapons Activities, $1.8B above FY 2017 Enacted, to maintain the safety, security, and effectiveness of the nuclear stockpile, to continue the nuclear modernization program, and to modernize NNSA's nuclear security infrastructure.

- $1.9B for Defense Nuclear Nonproliferation, $17M below FY 2017 Enacted, to address the entire nuclear threat spectrum by preventing the acquisition of nuclear weapons or weapons-usable materials, countering efforts to acquire such weapons or materials, and responding to nuclear or radiological incidents. The Budget Request also includes $220M to continue the orderly and safe closure of the Mixed Oxide (MOX) Fuel Fabrication Facility and $59M to pursue the proven dilute and dispose technology.

- $1.8B for Naval Reactors, an increase of $369M from FY 2017 Enacted, to support the current fleet and create the future fleet.

## SCIENCE

The FY 2019 Budget Request includes $5.4B for the Office of Science, the same as FY 2017 Enacted, to focus on its core mission of conducting cutting edge, early-stage research. Highlights of the Request include:

**SCIENCE**

| Science Programs | FY19 ($M) |
|---|---|
| • Advanced Scientific Computing Research | 899 |
| • Basic Energy Sciences | 1,850 |
| • Biological and Environmental Research | 500 |
| • Fusion Energy Sciences | 340 |
| • High Energy Physics | 770 |
| • Nuclear Physics | 600 |
| • Science Laboratory Infrastructure | 127 |
| • Security and Administration | 286 |
| • Workforce Development for Teachers and Scientists | 19 |
| **Science Total** | **5,391** |

- $2.2B for discovery at the frontiers of science, maintaining 40% of its budget for research, including $578M to achieve exascale and quantum computing.

- $2.1B to operate national labs and world-class scientific instruments for over 30,000 researchers.

- $760M to construct the next generation of scientific facilities and tools, including the new Advanced Light Source Upgrade (ALS-U) at Lawrence Berkeley National Laboratory and the Linac Coherent Light Source-II High Energy project at SLAC; continuation of construction of the Long Baseline Neutrino Facility at Fermi, the Facility for Rare Isotope Beams at Michigan State University, two significant upgrades to the Large Hadron Collider, and $75M for the ITER project.

## ENERGY

The FY 2019 Budget Request advances energy dominance by investing in America's leadership in energy innovation. The FY 2019 Request provides $2.5B for energy and related programs, $1.9B below FY 2017 Enacted, and continues the Administration's prioritization of the early-stage R&D that takes place at the National Laboratories. Highlights include:

- $696M for Energy Efficiency and Renewable Energy, $1.3B below FY 2017 Enacted, focusing on early stage R&D on energy technologies including new approaches to energy storage beyond current battery technologies.

- The Budget proposes to split the Electricity Delivery and Energy Reliability (OE) account, which totals $157M, into two accounts to increase focus on grid reliability (Electricity Delivery) and cybersecurity (CESER).

- $502M for Fossil Energy R&D, $81M above FY 2017 Enacted, to focus on cutting-edge, early stage R&D to improve the reliability and efficiency of advanced fossil-based power systems.

**ENERGY**

| Energy Programs | FY19 ($M) |
|---|---|
| • Energy Efficiency and Renewable Energy | 696 |
| • Electricity Delivery | 61 |
| • Cyber Security, Energy Security, & Emergency Response | 96 |
| • Fossil Energy Research and Development | 502 |
| • Petroleum Reserves | 195 |
| • Nuclear Energy | 757 |
| • Yucca Mountain and Interim Storage | 120 |
| • Indian Energy | 10 |
| • Office of Policy | 3 |
| • Advanced Research Projects Agency—Energy | – |
| • Loan Programs | -1 |
| • Power Marketing Administrations | 77 |
| **Energy Total** | **2,515** |

- $757M for Nuclear Energy, $259M below FY 2017 Enacted, to revive and expand the U.S. nuclear energy sector through early-stage R&D, prioritizing support for advanced manufacturing methods, instrumentation, and reactor technologies, including $54M for advanced Small Modular Reactor R&D.

- $120M for the Yucca Mountain and Interim Storage Program, demonstrating the Administration's commitment to nuclear waste management by restarting Nuclear Regulatory Commission licensing activities for the Yucca Mountain nuclear waste repository and establishing a robust interim storage program to develop a capability for earlier acceptance of spent nuclear fuel.

- $10M, $6M below FY 2017 Enacted, to provide financial and technical assistance critical to advancing electrification and energy development and deployment and reducing energy costs on Indian lands.

- Terminates the Loan Programs and the Advanced Research Projects Agency—Energy, while maintaining monitoring of the existing loan portfolio and overseeing existing awards to completion.

- $195M for the Petroleum Reserves, including the Strategic Petroleum Reserve (SPR), Naval Petroleum and Oil Shale Reserves, and Northeast Home Heating Oil Reserve. The President's Budget continues the sale of SPR oil for the Energy Security and Infrastructure Modernization Fund authorized by the Bipartisan Budget Act of 2015 to support an effective modernization program for the SPR.

- The request includes $77M for the Power Marketing Administrations, $6M below FY 2017 Enacted. As part of the President's mandatory budget proposals, the Request proposes to sell the PMA transmission assets and would repeal the $3.25B WAPA emergency borrowing authority authorized by the Recovery Act of 2009 and would permit consideration of comparable utilities' rates when setting prices.

## ENVIRONMENTAL MANAGEMENT

The Budget Request includes $6.6B for Environmental Management, $182M above FY 2017 Enacted, to continue managing the cleanup resulting from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research. Highlights of the FY 2019 Budget Request include:

- $1.7B, $287M above FY 2017 Enacted, to provide support at the Savannah River Site for the Liquid Tank Waste Management Program, including a significant increase in the production at the Defense Waste Processing Facility and startup of the Salt Waste Processing Facility.

- $1.4B, $61M below FY 2017 Enacted, for the Office of River Protection, to continue cleanup activities at Hanford, including ongoing construction, startup and commissioning activities at the Waste Treatment Plant supporting the direct feed of low-activity waste for immobilization by December 2023.

- $747M, $169M below FY 2017 Enacted, for Richland cleanup at Hanford.

- $415M, $33M above FY 2017 Enacted, for the decontamination and decommissioning project and other cleanup at the Portsmouth Site.

- $409M, $90M less than FY 2017 Enacted, for cleanup activities at the Oak Ridge site, including continued deactivation and demolition at the East Tennessee Technology Park.

**ENVIRONMENTAL MANAGEMENT**

| DOE Cleanup Sites and Program | FY19 ($M) |
|---|---|
| • Savannah River | 1,656 |
| • River Protection | 1,438 |
| • Richland/Hanford | 747 |
| • Portsmouth | 415 |
| • Oak Ridge | 409 |
| • Carlsbad/Waste Isolation Pilot Plant (WIPP) | 403 |
| • Idaho | 359 |
| • Program Direction | 300 |
| • Paducah | 270 |
| • Los Alamos | 192 |
| • Excess Facilities | 150 |
| • West Valley Demonstration Project | 64 |
| • Nevada | 60 |
| • Moab | 35 |
| • Uranium Thorium Reimbursements | 30 |
| • Technology Development | 25 |
| • Separation Process Research Unit (SPRU) | 15 |
| • Headquarters Operations | 13 |
| • Energy Technology Engineering Center | 8 |
| • Other Sites | 5 |
| • Sandia National Laboratory | 3 |
| • Brookhaven | 2 |
| • Lawrence Livermore National Laboratory | 2 |
| **Environmental Management Total** | **6,601** |

- $403M, $79M above FY 2017 Enacted, to safely continue waste emplacement at the Waste Isolation Pilot Plant (WIPP), the Nation's only mined geologic repository for permanent disposal of defense-generated transuranic waste, including $85M for ventilation system and utility shaft projects to increase underground airflow for simultaneous mining and waste emplacement operations.

- $359M, $31M less than FY 2017 Enacted, to continue cleanup at the Idaho site, including the commissioning and startup of the Integrated Waste Treatment Unit and operating the Advanced Mixed Waste Treatment Project.

- $270M, $2M less than FY 2017 Enacted, for the Paducah site to continue ongoing cleanup activities.

- $150M to deactivate and decommission specific high-risk excess contaminated facilities at Y-12 National Security Complex and Lawrence Livermore National Laboratory not currently in the program's inventory.