

Department of Energy FY 2015 Congressional Budget Request



Budget Highlights

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FY 2015 BUDGET HIGHLIGHTS

TABLE OF CONTENTS

Introduction 1

Funding by Organization 7

Funding by Appropriation 8

Nuclear Security

- National Nuclear Security Administration 10
 - Weapons Activities 12
 - Defense Nuclear Nonproliferation 15
 - Naval Reactors 18
 - Federal Salaries and Expenses 20

Science and Energy

- Science 21
- Energy Efficiency and Renewable Energy 23
- Electricity Delivery and Energy Reliability 26
- Fossil Energy Research and Development 28
- Fossil Energy Petroleum Accounts 31
- Nuclear Energy 33
- Office of Indian Energy Policy and Programs 35

- Advanced Research Projects Agency–Energy 36

- Energy Information Administration 37

- Credit Programs
 - Title 17 – Innovative Technology Loan Guarantee Program 38
 - Advanced Technology Vehicles Manufacturing Loan Program 39

Management and Performance

- Environmental Management 40
- Office of Legacy Management 43
- Office of Hearings and Appeals 44
- Departmental Administration 45

Health, Safety and Security 47

Environment, Health, Safety and Security 48

Independent Enterprise Assessments 50

Office of the Inspector General 51

Power Marketing Administrations 52

Federal Energy Regulatory Commission 54

INTRODUCTION

The United States has made great strides strengthening its energy and nuclear security. In 2013, America's net oil imports fell to the lowest level in 25 years; the Nation is now the world's leading producer of natural gas; and our scientists, engineers and companies are at the forefront of fundamental science and new energy technology development. The United States, however, faces challenges in addressing the threat of climate change and capturing the jobs of tomorrow's clean energy economy. Global nuclear security threats endure, as do challenges to cleaning up the environmental legacy of our Cold War weapons programs.

The Department of Energy (DOE) requests \$27.9 billion in discretionary funds for fiscal year (FY) 2015 to help meet President Obama's goals to address these challenges—and to meet our obligations to future generations—by investing in innovative and transformative scientific and technological solutions to further our energy and nuclear security goals. By pursuing an all-of-the-above energy strategy to support a transition to a secure clean energy system, the Budget will help the Nation lead the global effort to combat climate change while creating U.S. jobs. The Budget also will continue the cleanup of our Cold War environmental legacy and modernize our nuclear deterrent while securing dangerous nuclear and radiological materials around the world.

The Budget Request reflects a reorganization of the Department into three Under Secretariats—Science and Energy, Nuclear Security, and Management and Performance—that recognizes the complex interrelationship among program offices. Through management reforms and crosscutting program proposals that coordinate across the organization, the Budget Request seeks to tap DOE's full capability to effectively and efficiently address the United States' energy, environmental, and national security challenges. Below are highlights of the FY 2015 Budget Request and the quadrennial update to DOE's Strategic Plan.

SCIENCE AND ENERGY

The President's Climate Action Plan (CAP) is a significant focus of the Department's clean energy request for FY 2015. The CAP aims to reduce America's greenhouse gas emissions to 17 percent below 2005 levels by 2020. At the same time, as the President said in June of 2013, "a low-carbon, clean energy economy can be an engine of growth for decades to come." The FY 2015 Budget Request includes \$9.8 billion for DOE's science and energy programs that will play a key role in achieving the CAP goals and keeping the United States at the forefront of science and technology innovation. The Budget supports activities in the transformational research, development, demonstration, and deployment of an extensive range of clean energy technologies that support the President's all-of-the-above energy strategy to mitigate the impact of climate change. DOE supports private and public efforts to modernize the electricity grid, enhance the security and resilience of energy infrastructure, and expedite recovery from energy supply disruptions. The Budget also supports DOE's role as the Secretariat for the development of the Quadrennial Energy Review (QER) due in FY 2015 that will provide a roadmap to help address challenges facing our Nation's infrastructure for transporting and delivering energy.

| Strategic Goal | |
|---|----------------|
| <i>Advance foundational science, innovate energy technologies, and inform data-driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of and enhance resilience against climate change.</i> | FY15 \$ |
| Supporting DOE Programs | 9.8B |
| ✓ Electricity Delivery and Energy Reliability | 180M |
| ✓ Energy Efficiency and Renewable Energy | 2.3B |
| ✓ Fossil Energy | 711M |
| ✓ Indian Energy Policy and Programs | 16M |
| ✓ Nuclear Energy | 863M |
| <i>Subtotal, Applied Energy</i> | 4.1B |
| ✓ Science | 5.1B |
| ✓ Advanced Research Projects Agency—Energy | 325M |
| ✓ Energy Information Administration | 123M |
| ✓ Energy Policy and Systems Analysis | 39M |
| ✓ International Affairs | 18M |
| ✓ Loan Programs | 11M |
| ✓ Power Marketing Administrations | 82M |

Within the \$9.8 billion, the Budget requests \$4.1 billion for applied energy activities, including:

- \$2.3 billion for Energy Efficiency and Renewable Energy (EERE) to continue a diverse suite of sustained investment in development of renewable generation technologies, sustainable transportation technologies, and advanced manufacturing technologies, as well as in improving energy efficiency in our homes, buildings and industries.
- \$863.4 million for Nuclear Energy for ongoing research and development (R&D) in advanced reactor and fuel cycle technologies as well as small modular reactor licensing technical support. The Budget also continues to lay the

groundwork for full implementation of the Administration's *Strategy for the Management and Disposal of Used Nuclear Fuel and High Level Radioactive Waste* released in January 2013, and it provides \$79 million for research, development, and integrated waste management system activities in the areas of transportation, storage, disposal, and consent-based siting.

- \$475.5 million for Fossil Energy Research and Development to advance carbon capture and storage and natural gas technologies.
- \$180 million for Electricity Delivery and Energy Reliability grid modernization activities to support a smart, resilient electric grid for the 21st century and fund critical emergency response and grid security capabilities.
- The Budget also provides \$16 million for the Office of Indian Energy Policy and Programs which consolidates all DOE Tribal energy programs and activities within the Office and expands DOE's ability to partner with the Department of the Interior to address the need for clean, sustainable energy systems on Indian lands.

The Budget requests \$325 million for the Advanced Research Projects Agency—Energy to continue research and development of transformational clean energy technologies.

DOE's world-leading research in the physical, chemical, biological, environmental, and computational sciences contributes fundamental scientific discoveries and the foundations for technological solutions that support the Nation's primacy in science and innovation. As the largest federal sponsor of basic research in the physical sciences, DOE's Office of Science supports 22,000 researchers at 17 National Laboratories and more than 300 universities. The Budget Request provides \$5.1 billion for Science to continue to lead basic research in the physical sciences and develop and maintain world-class scientific user facilities at the National Laboratories, including:

- \$1.8 billion for basic energy sciences activities to provide the foundations for new energy technologies, to mitigate the environmental impacts of energy use, and to support DOE missions in energy, environment, and national security by understanding, predicting, and ultimately controlling matter and energy.
- \$744 million for high energy physics to understand how the universe works at its most fundamental level by discovering the most elementary constituents of matter and energy, probing the interactions among them, and exploring the basic nature of space and time.
- \$628 million for biological and environmental research to support fundamental research and scientific user facilities to achieve a predictive understanding of complex biological, climatic, and environmental systems for a secure and sustainable energy future.
- \$594 million for nuclear physics research aiming to discover, explore, and understand nuclear matter in a variety of different forms.
- \$541 million for advanced scientific computing research in advanced computation, applied mathematics, computer science and networking, as well as development and operation of high-performance computing facilities.
- \$416 million for fusion energy sciences to understand the behavior of matter at high temperatures and densities and to develop fusion as a future energy source.

In FY 2013, DOE split its policy and international functions. This change consolidated policy functions into a new, crosscutting Office of Energy Policy and Systems Analysis (EPSA), for which the Request includes additional resources to enable a more robust energy policy analysis process and strengthened institutional support for cross-cutting activities such as those on grid modernization and the Quadrennial Energy Review. Additional funds for intergovernmental activities in Congressional and Intergovernmental Affairs will enhance state and local outreach and facilitate grid modernization activities in tandem with EPSA. The Office of International Affairs will continue its focus on strategic implementation of the United States' international energy policy, strategies and objectives by leading DOE's bilateral and multilateral R&D cooperation and representing the Department and the U.S. Government in interagency processes, intergovernmental forums, and bilateral and multilateral proceedings.

The Budget also includes \$2 billion over the next 10 years from existing federal oil and gas development revenue for the Energy Security Trust to fund research and development on cost-effective, advanced transportation alternatives utilizing cleaner fuels such as electricity, homegrown biofuels, renewable hydrogen, and domestically produced natural gas that reduce our dependence on oil.

The FY 2015 Budget Request proposes \$11.7 billion for the National Nuclear Security Administration (NNSA) to enhance national security by maintaining and modernizing the nuclear security enterprise, reducing global nuclear threats, and providing nuclear propulsion for the U.S. Navy. NNSA research and development programs sustain our confidence in the reliability of our nuclear weapons without underground testing; advance technologies to detect the proliferation of weapons of mass destruction worldwide; and innovate capabilities to detect, identify, and characterize foreign nuclear weapons programs. These nuclear security programs provide the scientific and engineering capabilities to advance our nuclear security priorities, and maintain the safety and security of our personnel, facilities, and nuclear weapons.

Strategic Goal

Enhance national security by maintaining and modernizing the nuclear stockpile and nuclear security infrastructure, reducing global nuclear threats, providing for nuclear propulsion, improving physical and cybersecurity, and strengthening key science, technology, and engineering capabilities.

| Supporting DOE Programs | FY15 \$ |
|--|----------------|
| ✓ National Nuclear Security Administration | 11.7B |
| ✓ Specialized Security Activities | 202M |
| ✓ International Affairs [see first Goal] | |

Highlights of the Budget Request include:

- \$8.3 billion for Weapons Activities to maintain a safe, secure, and effective nuclear deterrent as described in the Administration’s Nuclear Posture Review (NPR) of 2010. Building on last year’s jointly conducted planning process, the National Nuclear Security Administration (NNSA) and the Department of Defense (DOD) agreed on a prioritized plan to meet the NPR goals within current fiscal constraints. This revised strategy achieves the B61-12 LEP First Production Unit (FPU) by FY 2020 and completes production of the W76-1 warhead by FY 2019. The strategy defers the W78/88-1 Life Extension Program by five years, achieves the W88 ALT 370 FPU in the first quarter of FY 2020, and delays the Long-range Standoff warhead by three years to 2027 while evaluating the option for a future budget request to fund an earlier FPU if national priorities deem it necessary. Under the strategy, the Budget continues funding engineering design for the Uranium Processing Facility into FY 2015. The Budget Request continues to support the Nation's current and future defense posture and its attendant nationwide infrastructure of science, technology and engineering capabilities. Weapons Activities also includes funding for Defense Nuclear Security (DNS) to support DOE’s physical security reform efforts that emphasize mission performance, responsibility, and accountability. Additionally, funding is requested to sustain emergency response and nuclear counterterrorism capabilities that are applied against a wide range of nuclear or radiological incidents and threats.
- \$1.6 billion for nonproliferation activities to prevent the proliferation of nuclear weapons and nuclear terrorism. This funding supports Administration priorities by securing and eliminating unnecessary nuclear material including excess nuclear and radiological material both domestically and internationally, developing and fielding technologies to deter or detect nuclear proliferation, and implementing international nonproliferation regulatory controls and safeguards. As part of an ongoing analysis of options to dispose of surplus plutonium, the Budget provides funding to place the Mixed Oxide (MOX) Fuel Fabrication Facility in cold standby, while NNSA evaluates alternative plutonium disposition options that will achieve a safe and secure solution more quickly and cost-effectively. The Administration remains committed to the U.S.-Russia Plutonium Management and Disposition Agreement and will work with our Russian partners to achieve the goals of the agreement in a mutually beneficial manner.
- \$1.4 billion for Naval Reactors programs to ensure the safe and reliable operation of reactor plants in nuclear-powered submarines and aircraft carriers, constituting over 40 percent of the navy’s combatants, and to fulfill the Navy’s requirements for new nuclear propulsion plants that meet current and future national defense requirements. The Request continues operational support to nuclear powered submarines and aircraft carriers, and development of the reactor for the replacement to the *Ohio* class ballistic missile submarine.

The Budget also includes \$202 million for Specialized Security Activities in support of national security objectives through extensive analytical capabilities.

MANAGEMENT AND PERFORMANCE

The FY 2015 Budget Request provides \$5.6 billion for Environmental Management for DOE to meet its legal and moral imperatives for environmental remediation at DOE sites contaminated legacy during the Cold War. The Environmental Management (EM) program is responsible for the cleanup of millions of gallons of liquid radioactive waste, thousands of tons of used nuclear fuel and special nuclear material, and large volumes of transuranic, mixed, and low-level waste and contaminated soil and water. The program also supports the deactivation and decommissioning of thousands of excess facilities across the complex. As part of its environmental management efforts, the Request supports continued construction of the Hanford Waste Treatment and Immobilization Plant and efforts to resolve the project's remaining safety and technical challenges. The Budget also proposes \$172 million for Legacy Management (LM), the final element of site remediation and closure after active remediation is complete. LM fulfills the Department's commitments to ensure protection of human health and the environment and ensure all contractual obligations are met.

| Strategic Goal | |
|--|----------------|
| <i>Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue departmental missions.</i> | |
| Supporting DOE Programs | FY15 \$ |
| ✓ Environmental Management | 5.6B |
| ✓ Legacy Management | 172M |
| ✓ Chief Financial Officer | 47M |
| ✓ Chief Human Capital Officer | 25M |
| ✓ Chief Information Officer | 72M |
| ✓ Congressional and Intergovernmental Affairs | 6M |
| ✓ Economic Impact and Diversity | 7M |
| ✓ Environment, Health, Safety and Security | 181M |
| ✓ Independent Enterprise Assessments | 74M |
| ✓ General Counsel | 31M |
| ✓ Hearings and Appeals | 6M |
| ✓ Inspector General | 40M |
| ✓ Management | 68M |
| ✓ Public Affairs | 3M |
| ✓ Small and Disadvantaged Business Utilization | 2M |

The Request includes an increase of \$11 million for the Office of Management to support the establishment of the National Laboratory Operations Board, contract management enhancement, cost estimating and cost analysis improvements, and internal evaluations of Departmental program performance and operations.

CROSSCUTTING ACTIVITIES TO ADVANCE NATIONAL ENERGY GOALS

| Collaborative Efforts to Advance National Energy Goals |
|--|
| <i>Management collaboration and funding coherence on high-priority efforts</i> |
| ✓ Climate Action Plan (CAP) |
| ✓ Grid Modernization |
| ✓ Supercritical Carbon Dioxide in Electric Power Generation |
| ✓ Subsurface Engineering |
| ✓ Improving communication with states and local communities |
| ✓ Exascale Computing |
| ✓ Cybersecurity |

The FY 2015 Budget Request includes a range of initiatives to align work across multiple offices in support of the President's priorities. Increased coordination across both programs and Under Secretariats will further DOE's ability to efficiently and effectively fulfill its missions and will be a regular focus in planning and budgeting moving forward.

CAP and the "All-of-the-Above" Energy Strategy

DOE is using an integrated approach to implement its CAP activities. The 2013 CAP assigns to DOE a key role in the areas of efficiency technologies and standards, infrastructure resilience to climate impacts, energy project loan guarantees, and expanded clean energy international partnerships. The

President's all-of-the-above energy strategy also recognizes the need to develop and secure America's energy supplies and provide consumers with choices to reduce costs and save energy. The Budget advances both the CAP and the all-of-the-above energy strategy by capitalizing on DOE's robust capabilities from fundamental science through technology cost reduction and deployment activities and pursuing partnerships with other federal, state and local, international, and nongovernmental organization stakeholders. Several crosscutting initiatives directly related to these efforts are also described below.

Grid Modernization

The Budget provides \$314 million for a unified grid modernization strategy to address the institutional and technological challenges to creating a more resilient, flexible future grid. As part of this initiative, EERE will increase its work on energy systems integration. Electricity Delivery and Energy Reliability will expand efforts on energy storage and micro-grids, develop an enhanced capability for emergency response efforts, advance the cybersecurity of critical energy infrastructure,

and lay the foundation for the next generation of energy management systems for electricity distribution and transmission. Congressional and Intergovernmental Affairs (CI) and Energy Policy and Systems Analysis (EPSA) will convene key participants and explore market design options and business models for the future grid. A modernized electric grid is essential to the Nation's energy, economic, security, and environmental goals.

Supercritical Carbon Dioxide in Electric Power Generation

The Budget Request includes \$57 million for research, development, and demonstration of supercritical carbon dioxide technologies with the potential for significant improvements in energy and environmental performance over current power generation systems. The Request includes \$27.5 million in Nuclear Energy for the supercritical transformational electric power generation (STEP) initiative, a one year endeavor to establish pre-commercial supercritical carbon dioxide (sCO₂) pilot demonstration facilities. The Nuclear Energy STEP initiative will complement ongoing sCO₂ activities in other programs aiming to increase thermal-to-electric conversion efficiency of concentrated solar power systems, to support first-of-a-kind sCO₂-based enhanced geothermal system power generation pilot tests, and to develop fossil energy systems that are more efficient and lower in cost than existing systems.

Subsurface Engineering

Subsurface activities, such as energy production, energy storage, carbon dioxide storage, and the disposal of hazardous materials, share common challenges with regard to characterizing, engineering, and monitoring geologic environments. The Budget requests \$192 million for subsurface activities that bring together expertise from across DOE to conduct targeted research and development and field demonstrations in support of DOE missions.

Improving communication with states and local communities

The Budget Request funds activities and increased coordination to streamline DOE's state and local activities and efforts. Activities include increased funding to support a more robust intergovernmental effort; funding for grid analysis, technical assistance and policy coordination; funding to grid-related investments to support permitting and siting efforts; and increased funding for Weatherization Assistance Grants, the State Energy Program, and a new technical assistance program for local governments and agencies.

Exascale Computing

Capable and strategically high-impact exascale computing platforms would not only perform operations substantially faster than today's highest-performing systems, but provide substantially improved application performance enabling new realms of computing and simulation in support of science, national security, and applied research. For example, capable exascale systems could support climate models with unprecedented complexity and resolution, advanced simulations of combustion systems and nuclear reactor design performance not currently possible with today's computers, and long-term simulation and computing goals relevant to DOE's nuclear security while supporting increasing Federal needs for data-analytic and data-intensive computing. While capable exascale systems will support new arenas of simulation and research, their development requires technological innovation—such as improvements in energy efficiency, resiliency, memory access, and parallel computing. The Budget requests \$141 million, including \$91 million in Science and \$50 million in NNSA, for research and development leading towards scalable computing systems that provide sustained, capable exaflop performance.

Cybersecurity

The Budget includes more than \$300 million for the Cybersecurity initiative to strengthen the protection of DOE from cyber attacks, bolster the Nation's capabilities to address cyber threats, and improve the cybersecurity of the energy sector. DOE programs have collaboratively identified five strategies to enhance DOE's cybersecurity, ranging from selectively deploying additional sensors, to detecting hostile activity, to enhancing the Joint Cybersecurity Coordination Center. To further support these capabilities, this initiative will improve coordination of cybersecurity R&D across the Department, take advantage of technology under development, and position the Department as a strategic partner in U.S. Government activities and with industry.

OPPORTUNITY, GROWTH, AND SECURITY INITIATIVE (OGSI)

Recognizing the importance of the two-year budget agreement Congress reached in December, the Budget adheres to the 2013 Bipartisan Budget Act of 2013's (BBA) discretionary funding levels for 2015, giving Congress a roadmap for how to write a budget at those levels that promotes growth and opportunity, enhances national security, and makes important reforms.

However, the BBA levels are not sufficient to expand opportunity to all Americans or to drive the growth our economy needs, and the need for pro-growth investments in infrastructure, education, and innovation has only increased due to the Great Recession and its aftermath. For that reason, the Budget also includes a separate, fully paid for \$56 billion Opportunity, Growth, and Security Initiative (OGSI). The Opportunity, Growth, and Security Initiative, which will be split evenly between defense and non-defense funding, shows how additional discretionary investments in 2015 can spur economic progress, promote opportunity, and strengthen national security.

At DOE, OGSI provides funds to accelerate investment in key infrastructure and activities, in addition to the \$27.9 billion requested by the base budget.

OGSI would accelerate research and the development and deployment of new, high impact clean energy technologies by providing an additional \$484 million for activities leading to innovative materials, processes, and system designs; validation of new technologies; and increased federal energy cost savings. In support of the President's goal to double U.S. energy productivity by 2030, OGSI includes \$200 million for Race to the Top performance-based awards to support state governments that implement effective policies to cut energy waste and modernize the grid.

To accelerate modernization and maintenance of nuclear facilities, OGSI accelerates funding for infrastructure planning and improvements found in the Readiness in Technical Base and Facilities and the Site Stewardship programs. OGSI also accelerates non-proliferation research and development and expand international scientific engagement.

OGSI invests in strengthening national resilience to the effects of climate change. At DOE, funding supporting these efforts includes activities to: upgrade state institutional awareness of local and regional fuel systems and energy assurance planning; support state publicly utility commission staff training; expand distributed renewable generation and microgrid R&D, including R&D efforts to integrate new energy storage technologies with distributed generation applications and microgrids; and expanded weatherization of homes occupied by low-income households and additional State building code development for both resilience and energy efficiency so homeowners and renters experience fewer adverse impacts during extreme weather events.

FUNDING BY ORGANIZATION

(Discretionary dollars in thousands)

| Department Of Energy Budget by Organization | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|----------------|
| | | | | \$ | % |
| National Nuclear Security Administration | | | | | |
| Weapons Activities | 6,966,855 | 7,781,000 | 8,314,902 | +533,902 | +6.9% |
| Defense Nuclear Nonproliferation | 2,237,420 | 1,954,000 | 1,555,156 | -398,844 | -20.4% |
| Naval Reactors | 994,118 | 1,095,000 | 1,377,100 | +282,100 | +25.8% |
| Federal Salaries and Expenses/1 | 377,457 | 377,000 | 410,842 | +33,842 | +9.0% |
| Cerro Grande Fire Activities | -61 | 0 | 0 | 0 | N/A |
| Total, National Nuclear Security Administration | 10,575,789 | 11,207,000 | 11,658,000 | +451,000 | +4.0% |
| Science and Energy | | | | | |
| Science | 4,681,195 | 5,066,372 | 5,111,155 | +44,783 | +0.9% |
| Energy | | | | | |
| Energy Efficiency and Renewable Energy | 1,691,757 | 1,900,641 | 2,316,749 | +416,108 | +21.9% |
| Electricity Delivery and Energy Reliability | 129,196 | 147,242 | 180,000 | +32,758 | +22.2% |
| Fossil Energy | 699,059 | 779,290 | 711,030 | -68,260 | -8.8% |
| Nuclear Energy | 798,282 | 888,376 | 863,386 | -24,990 | -2.8% |
| Office of Indian Energy Policy and Programs | 1,928 | 2,506 | 16,000 | +13,494 | +538.5% |
| Total, Energy | 3,320,222 | 3,718,055 | 4,087,165 | +369,110 | +9.9% |
| Total, Science and Energy | 8,001,417 | 8,784,427 | 9,198,320 | +413,893 | +4.7% |
| Advanced Research Projects Agency - Energy | 250,636 | 280,000 | 325,000 | +45,000 | +16.1% |
| Energy Information Administration | 99,508 | 116,999 | 122,500 | +5,501 | +4.7% |
| Credit Programs | | | | | |
| Title 17 - Innovative Technology | | | | | |
| Loan Guarantee Program | 0 | 20,000 | 7,000 | -13,000 | -65.0% |
| Advanced Technology Vehicles Manufacturing Loan | 5,686 | 6,000 | 4,000 | -2,000 | -33.3% |
| Total, Credit Programs | 5,686 | 26,000 | 11,000 | -15,000 | -57.7% |
| Management and Performance | | | | | |
| Environmental Management | 5,298,742 | 5,830,315 | 5,621,688 | -208,627 | -3.6% |
| Civilian Radioactive Waste Management | -727 | 0 | 0 | 0 | N/A |
| Office of Legacy Management | 155,699 | 176,983 | 171,980 | -5,003 | -2.8% |
| Chief Information Officer | 78,885 | 82,062 | 71,959 | -10,103 | -12.3% |
| Management | 59,437 | 57,599 | 68,293 | +10,694 | +18.6% |
| Chief Human Capital Officer | 23,458 | 24,488 | 25,400 | +912 | +3.7% |
| Hearings and Appeals | 3,803 | 5,022 | 5,500 | +478 | +9.5% |
| Economic Impact and Diversity | 7,204 | 8,956 | 7,247 | -1,709 | -19.1% |
| Office of Small and Disadvantaged Business Utilization | 0 | 0 | 2,253 | +2,253 | N/A |
| Total, Management and Performance | 5,626,501 | 6,185,425 | 5,974,320 | -211,105 | -3.4% |
| Corporate Management | | | | | |
| Office of the Secretary | 4,849 | 5,008 | 5,008 | 0 | 0.0% |
| Cost of Work and Revenues | -63,086 | -59,651 | -77,171 | -17,520 | -29.4% |
| Chief Financial Officer | 49,576 | 47,825 | 47,182 | -643 | -1.3% |
| Congressional and Intergovernmental Affairs | 4,521 | 4,700 | 6,300 | +1,600 | +34.0% |
| Public Affairs | 3,664 | 3,597 | 3,431 | -166 | -4.6% |
| General Counsel | 31,863 | 33,053 | 31,000 | -2,053 | -6.2% |
| Policy and International Affairs | 25,991 | 0 | 0 | 0 | N/A |
| International Affairs | 0 | 15,873 | 18,441 | +2,568 | +16.2% |
| Energy Policy and Systems Analysis | 0 | 19,269 | 38,545 | +19,276 | +100.0% |
| Total, Corporate Management | 57,378 | 69,674 | 72,736 | +3,062 | +4.4% |
| Health, Safety and Security | 230,184 | 251,917 | 0 | -251,917 | -100.0% |
| Environment, Health, Safety and Security | 0 | 0 | 180,998 | +180,998 | N/A |
| Independent Enterprise Assessments | 0 | 0 | 73,534 | +73,534 | N/A |
| Specialized Security Activities | 171,396 | 202,242 | 202,152 | -90 | -0.0% |
| Office of the Inspector General | 39,803 | 42,120 | 39,868 | -2,252 | -5.3% |
| Power Marketing Administrations | 79,412 | 85,242 | 82,000 | -3,242 | -3.8% |
| Federal Energy Regulatory Commission | -279 | -26,236 | 0 | +26,236 | +100.0% |
| Total, Discretionary Funding by Organization | 25,137,431 | 27,224,810 | 27,940,428 | +715,618 | +2.6% |

1/Formerly Office of the Administrator

FUNDING BY APPROPRIATION

(Discretionary dollars in thousands)

Department of Energy Budget by Appropriation

Energy and Water Development and Related Agencies

Energy Programs

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|--------|
| | | | | \$ | % |
| Energy Efficiency and Renewable Energy | 1,691,757 | 1,900,641 | 2,316,749 | +416,108 | +21.9% |
| Electricity Delivery and Energy Reliability | 129,196 | 147,242 | 180,000 | +32,758 | +22.2% |
| Nuclear Energy | 708,429 | 888,376 | 863,386 | -24,990 | -2.8% |

Fossil Energy Programs

| | | | | | |
|--|---------|---------|---------|---------|--------|
| Clean Coal Technology | 0 | 0 | -6,600 | -6,600 | N/A |
| Fossil Energy Research and Development | 498,715 | 561,931 | 475,500 | -86,431 | -15.4% |
| Naval Petroleum and Oil Shale Reserves | 14,129 | 19,999 | 19,950 | -49 | -0.2% |
| Elk Hills School Lands Fund | 0 | 0 | 15,580 | +15,580 | N/A |
| Strategic Petroleum Reserve | 182,625 | 189,360 | 205,000 | +15,640 | +8.3% |
| Northeast Home Heating Oil Reserve | 3,590 | 8,000 | 1,600 | -6,400 | -80.0% |

Total, Fossil Energy Programs

| | | | | | |
|---|-----------|-----------|-----------|---------|--------|
| Uranium Enrichment D&D Fund | 448,231 | 598,574 | 530,976 | -67,598 | -11.3% |
| Energy Information Administration | 99,508 | 116,999 | 122,500 | +5,501 | +4.7% |
| Non-Defense Environmental Cleanup | 223,457 | 231,741 | 226,174 | -5,567 | -2.4% |
| Science | 4,681,195 | 5,066,372 | 5,111,155 | +44,783 | +0.9% |
| Advanced Research Projects Agency - Energy | 250,636 | 280,000 | 325,000 | +45,000 | +16.1% |
| Departmental Administration | 119,195 | 126,449 | 129,052 | +2,603 | +2.1% |
| Office of Indian Energy Policy and Programs | 0 | 0 | 16,000 | +16,000 | N/A |
| Office of the Inspector General | 39,803 | 42,120 | 39,868 | -2,252 | -5.3% |
| Title 17 - Innovative Technology | | | | | |
| Loan Guarantee Program | 0 | 20,000 | 7,000 | -13,000 | -65.0% |
| Advanced Technology Vehicles Manufacturing Loan Program | 5,686 | 6,000 | 4,000 | -2,000 | -33.3% |

Total, Energy Programs

Atomic Energy Defense Activities

National Nuclear Security Administration

| | | | | | |
|----------------------------------|-----------|-----------|-----------|----------|--------|
| Weapons Activities | 6,966,855 | 7,781,000 | 8,314,902 | +533,902 | +6.9% |
| Defense Nuclear Nonproliferation | 2,237,420 | 1,954,000 | 1,555,156 | -398,844 | -20.4% |
| Naval Reactors | 994,118 | 1,095,000 | 1,377,100 | +282,100 | +25.8% |
| Federal Salaries and Expenses/1 | 377,457 | 377,000 | 410,842 | +33,842 | +9.0% |
| Cerro Grande Fire Activities | -61 | 0 | 0 | 0 | N/A |

Total, National Nuclear Security Administration

Environmental and Other Defense Activities

| | | | | | |
|--------------------------------|-----------|-----------|-----------|----------|-------|
| Defense Environmental Cleanup | 4,627,054 | 5,000,000 | 5,327,538 | +327,538 | +6.6% |
| Other Defense Activities | 760,030 | 755,000 | 753,000 | -2,000 | -0.3% |
| Defense Nuclear Waste Disposal | -727 | 0 | 0 | 0 | N/A |

Total, Environmental and Other Defense Activities

Total, Atomic Energy Defense Activities

Power Marketing Administrations

| | | | | | |
|---|---------|---------|---------|--------|--------|
| Southeastern Power Administration | 0 | 0 | 0 | 0 | N/A |
| Southwestern Power Administration | 11,243 | 11,892 | 11,400 | -492 | -4.1% |
| Western area Power Administration (CROM) | 90,949 | 95,930 | 93,372 | -2,558 | -2.7% |
| Falcon and Amistad Operating and Maintenance Fund | 220 | 420 | 228 | -192 | -45.7% |
| Colorado River Basins | -23,000 | -23,000 | -23,000 | 0 | N/A |
| Transmission Infrastructure Program | 0 | 0 | 0 | 0 | N/A |

Total, Power Marketing Administrations

Federal Energy Regulatory Commission (FERC)

| | | | | | |
|--|---|---|---|---|-----|
| | 0 | 0 | 0 | 0 | N/A |
|--|---|---|---|---|-----|

Subtotal, Energy and Water Development and Related Agencies

| | | | | | |
|--|------|---------|----------|----------|---------|
| Uranium Enrichment D&D Fund Discretionary Payments | 0 | 0 | -463,000 | -463,000 | N/A |
| Excess Fees and Recoveries, FERC | -279 | -26,236 | 0 | +26,236 | +100.0% |

Total, Discretionary Funding by Appropriation

| | | | | | |
|--|-------------------|-------------------|-------------------|-----------------|--------------|
| | 25,137,431 | 27,224,810 | 27,940,428 | +715,618 | +2.6% |
|--|-------------------|-------------------|-------------------|-----------------|--------------|

1/Formerly Office of the Administrator

FUNDING BY APPROPRIATION (CONTINUED)

(Discretionary dollars in thousands)

| | FY 2015 Request | FY 2016 Request | FY 2017 Request | FY 2018 Request | FY 2019 Request |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| Department of Energy Budget by Appropriation | | | | | |
| Energy and Water Development and Related Agencies | | | | | |
| Energy Programs | | | | | |
| Energy Efficiency and Renewable Energy | 2,316,749 | 2,361,979 | 2,402,302 | 2,443,312 | 2,485,018 |
| Electricity Delivery and Energy Reliability | 180,000 | 183,060 | 186,172 | 189,337 | 192,556 |
| Nuclear Energy | 863,386 | 878,064 | 892,991 | 908,171 | 923,610 |
| Fossil Energy Programs | | | | | |
| Clean Coal Technology | -6,600 | 0 | 0 | 0 | 0 |
| Fossil Energy Research and Development | 475,500 | 483,584 | 491,804 | 500,165 | 508,668 |
| Naval Petroleum and Oil Shale Reserves | 19,950 | 20,289 | 20,634 | 20,985 | 21,342 |
| Elk Hills School Lands Fund | 15,580 | 0 | 0 | 0 | 0 |
| Strategic Petroleum Reserve | 205,000 | 208,485 | 212,029 | 215,634 | 219,300 |
| Northeast Home Heating Oil Reserve | 1,600 | 1,627 | 1,655 | 1,683 | 1,712 |
| Total, Fossil Energy Programs | 711,030 | 713,985 | 726,123 | 738,467 | 751,021 |
| Uranium Enrichment D&D Fund | 530,976 | 540,003 | 549,183 | 558,519 | 568,014 |
| Energy Information Administration | 122,500 | 124,583 | 126,700 | 128,854 | 131,045 |
| Non-Defense Environmental Cleanup | 226,174 | 230,019 | 233,929 | 237,906 | 241,950 |
| Science | 5,111,155 | 5,208,045 | 5,296,411 | 5,386,280 | 5,477,677 |
| Advanced Research Projects Agency - Energy | 325,000 | 330,525 | 336,144 | 341,858 | 347,670 |
| Departmental Administration | 129,052 | 131,246 | 133,477 | 135,746 | 138,054 |
| Office of Indian Energy Policy and Programs | 16,000 | 16,272 | 16,549 | 16,830 | 17,116 |
| Office of the Inspector General | 39,868 | 46,424 | 50,940 | 51,462 | 51,988 |
| Title 17 - Innovative Technology | | | | | |
| Loan Guarantee Program | 7,000 | 7,119 | 7,240 | 7,363 | 7,488 |
| Advanced Technology Vehicles Manufacturing Loan Program | 4,000 | 4,068 | 4,137 | 4,207 | 4,279 |
| Total, Energy Programs | 10,582,890 | 10,775,390 | 10,962,298 | 11,148,314 | 11,337,486 |
| Atomic Energy Defense Activities | | | | | |
| National Nuclear Security Administration | | | | | |
| Weapons Activities | 8,314,902 | 8,907,239 | 9,261,422 | 9,476,640 | 9,702,327 |
| Defense Nuclear Nonproliferation | 1,555,156 | 1,694,479 | 1,700,815 | 1,734,831 | 1,743,505 |
| Naval Reactors | 1,377,100 | 1,271,496 | 1,303,120 | 1,334,751 | 1,366,387 |
| Federal Salaries and Expenses/1 | 410,842 | 408,786 | 416,643 | 424,778 | 434,781 |
| Cerro Grande Fire Activities | 0 | 0 | 0 | 0 | 0 |
| Total, National Nuclear Security Administration | 11,658,000 | 12,282,000 | 12,682,000 | 12,971,000 | 13,247,000 |
| Environmental and Other Defense Activities | | | | | |
| Defense Environmental Cleanup | 5,327,538 | 5,418,106 | 5,510,214 | 5,603,888 | 5,699,154 |
| Other Defense Activities | 753,000 | 765,801 | 778,820 | 792,060 | 805,525 |
| Defense Nuclear Waste Disposal | 0 | 0 | 0 | 0 | 0 |
| Total, Environmental and Other Defense Activities | 6,080,538 | 6,183,907 | 6,289,034 | 6,395,947 | 6,504,678 |
| Total, Atomic Energy Defense Activities | 17,738,538 | 18,465,907 | 18,971,034 | 19,366,947 | 19,751,678 |
| Power Marketing Administrations | | | | | |
| Southeastern Power Administration | 0 | 0 | 0 | 0 | 0 |
| Southwestern Power Administration | 11,400 | 11,594 | 11,791 | 11,991 | 12,195 |
| Western area Power Administration (CROM) | 93,372 | 94,959 | 96,574 | 98,215 | 99,885 |
| Falcon and Amistad Operating and Maintenance Fund | 228 | 232 | 236 | 240 | 244 |
| Colorado River Basins | -23,000 | -24,000 | -25,000 | -25,000 | -25,000 |
| Transmission Infrastructure Program | 0 | 0 | 0 | 0 | 0 |
| Total, Power Marketing Administrations | 82,000 | 82,785 | 83,600 | 85,447 | 87,324 |
| Federal Energy Regulatory Commission (FERC) | 0 | 0 | 0 | 0 | 0 |
| Subtotal, Energy and Water Development and Related Agencies | 28,403,428 | 29,324,082 | 30,016,932 | 30,600,707 | 31,176,488 |
| Uranium Enrichment D&D Fund Discretionary Payments | -463,000 | -484,000 | -494,000 | -505,000 | -517,000 |
| Excess Fees and Recoveries, FERC | 0 | 0 | 0 | 0 | 0 |
| Total, Discretionary Funding by Appropriation | 27,940,428 | 28,840,082 | 29,522,932 | 30,095,707 | 30,659,488 |

1/Formerly Office of the Administrator

NATIONAL NUCLEAR SECURITY ADMINISTRATION

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| National Nuclear Security Administration | | | | | |
| Weapons Activities | 6,966,855 | 7,781,000 | 8,314,902 | +533,902 | +6.9% |
| Defense Nuclear Nonproliferation | 2,237,420 | 1,954,000 | 1,555,156 | -398,844 | -20.4% |
| Naval Reactors | 994,118 | 1,095,000 | 1,377,100 | +282,100 | +25.8% |
| Federal Salaries and Expenses/1 | 377,457 | 377,000 | 410,842 | +33,842 | +9.0% |
| Cerro Grande Fire Activities | -61 | 0 | 0 | 0 | N/A |
| Total, National Nuclear Security Administration | 10,575,789 | 11,207,000 | 11,658,000 | +451,000 | +4.0% |

1/Formerly Office of the Administrator

Overview

National Nuclear Security Administration (NNSA) directly contributes to meeting the DOE Strategic Plan for 2014-2018 Goal for “Nuclear Security” and plays a critical role in meeting many strategic objectives in the “Management and Performance” goal. The primary mission of NNSA is to support the security and safety of our nation. NNSA pursues four major national security endeavors consistent with DOE’s Strategic Plan: (1) use science to maintain a safe, secure, and effective nuclear weapons stockpile that deters any adversary and protects our allies; (2) reduce the threat posed by nuclear proliferation and terrorism, including unsecured or excess nuclear and radiological materials both domestically and internationally; (3) prepare to respond to, and mitigate, nuclear and radiological incidents worldwide; and (4) provide safe and effective nuclear propulsion for the U.S. Navy.

The FY 2015 Budget Request supports national security priorities articulated in the 2010 Nuclear Posture Review, the Stockpile Stewardship and Management Plan, and the 2010 National Security Strategy of the United States. These priorities are reflected in the DOE Strategic Plan for 2014-2018 and guide decisions on allocation of resources in the President’s Budget Requests.

Program Highlights

The Weapons Activities FY 2015 Budget Request reflects an increase from FY 2014 Enacted levels to meet the Administration’s commitments to the programs and capabilities required to maintain a safe, secure, and effective nuclear stockpile. Increases are requested for Directed Stockpile Work – particularly for the B61 life extension program and the Science Campaign. The Weapons Request also includes funding for Defense Nuclear Security to support DOE’s physical security reform efforts to emphasize mission performance, responsibility, and accountability. In addition, there are increases in funding for the Information Technology and Cybersecurity program to research and develop information technology and cybersecurity solutions. Funding is also requested in this account to sustain emergency response and nuclear counterterrorism capabilities that are applied against a wide range of high-consequence nuclear or radiological incidents and threats.

The Defense Nuclear Nonproliferation FY 2015 Budget Request is driven by the imperative for U.S. leadership in nonproliferation initiatives both here and abroad. Emphasis continues to be on efforts to eliminate or secure vulnerable nuclear materials from around the world, counter nuclear smuggling, radiological security, and technology development needed for nonproliferation and arms control missions. As part of an ongoing analysis of options to dispose of U.S. surplus plutonium, it has become apparent that the Mixed Oxide (MOX) Fuel Fabrication Facility will be significantly more expensive than anticipated, and therefore, the Budget Request places the MOX Facility in cold stand-by while the Department evaluates plutonium disposition options.

The Naval Reactors FY 2015 Budget Request reflects an increase for the Navy’s fleet of nuclear-powered aircraft carriers and submarines and funds three major projects. The three projects consist of the *Ohio* Replacement, Land-based Prototype Refueling Overhaul, and Spent Fuel Handling Recapitalization, which are needed to deliver Navy-established mission requirements.

For NNSA Federal Salaries and Expenses (formerly the Office of the Administrator account), the FY 2015 Budget Request supports the staffing and Federal support needed to meet mission requirements. Funding is essentially unchanged from FY

2014 enacted levels, after adjusting for funding to pay for moving to a new leased facility for the NNSA Albuquerque Complex and a Congressionally-directed functional transfer out of the Weapons Activities account for Corporate Project Management.

WEAPONS ACTIVITIES – NNSA

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| National Nuclear Security Administration | | | | | |
| Weapons Activities | | | | | |
| Directed Stockpile Work | 1,930,057 | 2,442,033 | 2,746,604 | +304,571 | +12.5% |
| Science Campaign | 321,220 | 369,723 | 456,430 | +86,707 | +23.5% |
| Engineering Campaign | 124,414 | 149,911 | 136,005 | -13,906 | -9.3% |
| Inertial Confinement Fusion and High Yield Campaign | 456,676 | 513,957 | 512,895 | -1,062 | -0.2% |
| Advanced Simulation and Computing Campaign | 513,567 | 569,329 | 610,108 | +40,779 | +7.2% |
| Readiness Campaign | 115,311 | 55,407 | 125,909 | +70,502 | +127.2% |
| Readiness in Technical Base and Facilities | 2,089,417 | 2,067,425 | 2,055,521 | -11,904 | -0.6% |
| Nuclear Programs | 0 | 0 | 0 | 0 | N/A |
| Secure Transportation Asset | 201,533 | 210,000 | 233,813 | +23,813 | +11.3% |
| Counterterrorism and Counterproliferation Programs | 0 | 0 | 76,901 | +76,901 | N/A |
| Nuclear Counterterrorism Incident Response | 227,088 | 228,243 | 173,440 | -54,803 | -24.0% |
| Site Stewardship | 69,497 | 87,326 | 82,449 | -4,877 | -5.6% |
| Defense Nuclear Security | 0 | 664,981 | 618,123 | -46,858 | -7.0% |
| NNSA CIO Activities | 139,184 | 0 | 0 | 0 | N/A |
| Information Technology and Cybersecurity | 0 | 145,068 | 179,646 | +34,578 | +23.8% |
| Safeguards and Security | 665,463 | 0 | 0 | 0 | N/A |
| Defense Nuclear Security | 653,463 | 0 | 0 | 0 | N/A |
| Cybersecurity | 12,000 | 0 | 0 | 0 | N/A |
| Legacy Contractor Pensions | 170,191 | 279,597 | 307,058 | +27,461 | +9.8% |
| National Security Applications | 9,500 | 0 | 0 | 0 | N/A |
| Domestic Uranium Enrichment Research, Development, and Demonstration | 0 | 62,000 | 0 | -62,000 | -100.0% |
| Subtotal, Weapons Activities | 7,033,118 | 7,845,000 | 8,314,902 | +469,902 | +6.0% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | -66,263 | 0 | 0 | 0 | N/A |
| Rescission of Prior Year Balances | 0 | -64,000 | 0 | +64,000 | +100.0% |
| Total, Weapons Activities | 6,966,855 | 7,781,000 | 8,314,902 | +533,902 | +6.9% |

Appropriation Overview

One of the statutory missions of the National Nuclear Security Administration (NNSA) is to maintain and enhance the safety, security, and effectiveness of the U.S. nuclear weapons stockpile to meet national security requirements. The mission is carried out in partnership with the Department of Defense (DoD), with NNSA providing research, development, and production activities supporting the U.S. nuclear weapons stockpile.

The work performed by NNSA in the **Weapons Activities** programs ensures the accomplishment of the Department’s Strategic Objective 4 — Maintain the safety, security and effectiveness of the Nation’s nuclear deterrent without nuclear testing is accomplished as well as Strategic Objective 5 — Strengthen key science, technology and engineering talent, capabilities, and information resources and modernize the infrastructure, especially in nuclear science and technology, to enhance national security.

While the majority of this account supports the nuclear weapons program, NNSA’s critical security—both physical and cybersecurity—as well as emergency response and counterterrorism and counterproliferation programs are also funded here, in direct support of DOE Strategic Goal 6—Reduce global nuclear security threats.

Program Highlights

- **Directed Stockpile Work**

Directed Stockpile Work continues significant efforts to meet nuclear security priorities, to conduct the stockpile management program, and to continue leveraging science to enhance national security. The FY 2015 Budget Request is organized by Life Extension Programs (LEPs) and Major Alterations, Stockpile Systems, Weapons Dismantlement and Disposition, and Stockpile Services and reflects an investment strategy that sustains the existing stockpile while

providing a strong basis for transitioning to a smaller nuclear stockpile that continues to be safe, secure and effective. Key stockpile initiatives include continuations of the W76 LEP, the B61 LEP, the W88 ALT 370, and the initial study of the Cruise Missile Warhead LEP. Support activities include the production of tritium, plutonium infrastructure sustainment as well as surveillance and assessment activities. The requested increase reflects the ramp up of Phase 6.3 activities for the B61 LEP and an increase for Stockpile Systems, including maintenance (neutron generator activities), surveillance, tritium program requirements, and W88 ALT 370 arming, fuzing, and firing set development efforts.

- **Science Campaign**

Science Campaign develops and applies improved capabilities to assess the safety, reliability, and performance of the weapons' nuclear explosive package. The FY 2015 Budget Request provides increased funding for technical resources required for assessment of Life Extension Program (LEP) options incorporating the reuse or remanufacture of pits, secondaries, other nuclear explosive package components, and other improved safety technologies that may be implemented in future LEPs. Increased funding for experiments and evaluation of options for improved diagnostic capabilities at the U1a facility in Nevada supports certification and annual assessments.

- **Engineering Campaign**

Engineering Campaign develops capabilities to assess and improve the safety, reliability, and performance of the non-nuclear and nuclear explosive package engineering components in nuclear weapons. The FY 2015 Request reflects a balanced workload including decreases in activities associated with validation-related testing and aging/lifetime estimates as well as advanced diagnostic development tools required for current stockpile surveillance, assessments, and future refurbishments.

- **Inertial Confinement Fusion Ignition and High Yield Campaign**

Inertial Confinement Fusion Ignition and High Yield Campaign develops the scientific understanding and experimental capabilities in high-energy-density physics needed to support the stockpile without underground nuclear testing. Experiments in ignition will continue to look at the behavior and physics of ignition targets to improve the predictive capability of the simulations and to provide feedback to resolve the outstanding physics questions and improve target performance. At the end of FY 2015, progress in all three ignition concepts (Direct, Indirect, and Pulsed Power) will be externally reviewed to assess their progress.

- **Advanced Simulation and Computing Campaign**

Advanced Simulation and Computing Campaign (ASC) provides leading edge, high-end modeling, and simulation capabilities that capture and allow us to apply all that we know about weapons physics and engineering. These capabilities consist of weapon codes, weapons science, platforms, and computer facilities. Applications of these capabilities include the meeting of current stockpile assessment and certification requirements; evaluation of future stockpile manufacturing, safety, and security requirements; and assessment of foreign weapons, potential events and devices. The FY 2015 ASC budget request includes \$50 million for the Advanced Technology Development and Mitigation sub-program, established in FY 2014, that funds laboratory code and computer engineering projects that pursue long-term simulation and computing goals relevant to both exascale computing and the broad national security missions of the NNSA.

- **Readiness Campaign**

Readiness Campaign develops and deploys modern manufacturing capabilities to produce materials and components in compliance with weapon design and performance requirements, and in alignment with LEPs and refurbishment schedules. The increase from FY 2014 is driven by support requirements for the B61 LEP.

- **Readiness in Technical Base and Facilities**

Readiness in Technical Base and Facilities (RTBF) provides the underlying physical infrastructure and operational readiness for the national nuclear security enterprise, ensuring that facilities are operational, safe, secure, and compliant with regulatory requirements by sustaining essential infrastructure-focused activities and a defined level of readiness through facility and capability investment. RTBF plans, prioritizes, and constructs state-of-the-art facilities, infrastructure, and scientific tools for the enterprise while also maintaining the existing infrastructure and planning for the disposition of facilities.

- **Site Stewardship**
 Site Stewardship ensures the overall health and viability of the national nuclear security enterprise, with a focus on: long-term stewardship activities under the Environmental Projects and Operations program necessary to meet Federal and State environmental regulatory requirements identified in legally enforceable site permits, cleanup agreements, and legislation to ensure safe cleanup levels are met; stabilization, consolidation, packaging and disposition of nuclear materials under the Nuclear Materials Integration program; and research and education enhancements at under-represented colleges and universities funded by the Minority Serving Institution Partnership Programs (MSIPP) to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants.
- **Secure Transportation Asset**
 Secure Transportation Asset (STA) provides for the safe and secure movement of nuclear weapons, special nuclear materials, and weapon components to meet projected DOE and DoD requirements. Program Direction in this account pays for the secure transportation workforce, including Federal Agents. In FY 2015, STA will continue its asset modernization and workforce capability initiatives: the design of the Mobile Guardian Transporter, the phased deployment of the Advanced Radio Enterprise System, the First Production Unit of the upgrade to the Trailer Communications System, the continued replacement of vehicles and tractors, and the restoration of Federal Agent staffing levels. STA will ensure all supporting systems remain efficiently integrated to support Defense Programs.
- **Defense Nuclear Security**
 Defense Nuclear Security provides protection for NNSA personnel, facilities, nuclear weapons, special nuclear material, and information from a full spectrum of insider and outsider threats. The physical security budget is based on risk-informed decisions and is consistent with the Department's Graded Security Protection policy. FY 2015 reflects a rebalancing between functional security areas, most notably a reduction in protective force staffing at Los Alamos National Laboratory due to the completion of a new perimeter intrusion detection and assessment system, reduced estimates on the cost of providing protective force services through the Management and Operating partners at Y-12, and completion of minor construction projects.
- **Information Technology and Cybersecurity (formerly NNSA CIO Activities)**
 Information Technology and Cybersecurity (formerly NNSA CIO Activities) supports the national nuclear security enterprise, leading Federal efforts to research and develop information technology and cybersecurity solutions, including continuous monitoring, enterprise wireless and security technologies (i.e., identity, credential, and access management) to help meet security, proliferation resistance. In addition, by making the NNSA Data Centers more efficient, the program directly supports the climate goals mission of DOE through climate modeling. The increase in the Information Technology and Cybersecurity Request reflects expenses for: improvement to the cyber infrastructure at the NNSA sites; requirements for classified computing environment directed by the Committee on National Security Systems, an interagency body responsible for safeguarding the National Security Systems; limited Identity Credential and Access Management; network infrastructure costs for the NNSA sites; and Public Key Infrastructure tokens for authentication to Secret Networks and applications.
- **Nuclear Counterterrorism Incident Response**
 Nuclear Counterterrorism Incident Response (NCTIR) applies technical assets from the national nuclear security enterprise to resolve and manage nuclear and radiological incidents, especially those involving terrorism. It addresses this threat by maintaining and using response teams comprised of technical specialists to respond to and manage the consequences domestically or internationally should an attack result in radiation exposure to the public. NCTIR conducts training programs to train and equip response organizations and uses strategies that integrate NNSA expertise with law enforcement or military capabilities to locate, identify, and disable a terrorist nuclear device. It also manages the effects of an attack by collaborating with Federal, State, and local emergency management organizations.
- **Counterterrorism and Counterproliferation Programs**
 Counterterrorism and Counterproliferation Programs (CTCP) promotes the understanding of nuclear threat devices, including improvised nuclear devices, foreign nuclear weapons (with emphasis on loss of custody), and their constituents (namely nuclear and energetic materials). Key CTCP technical activities sustain and exercise the U.S. Government's ability to understand and prevent nuclear terrorism and to counter nuclear device proliferation.

DEFENSE NUCLEAR NONPROLIFERATION— NNSA

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| National Nuclear Security Administration | | | | | |
| Defense Nuclear Nonproliferation | | | | | |
| Defense Nuclear Nonproliferation Programs | | | | | |
| Global Threat Reduction Initiative | 462,892 | 442,102 | 333,488 | -108,614 | -24.6% |
| Nonproliferation and Verification R&D | 420,509 | 398,838 | 0 | -398,838 | -100.0% |
| Defense Nuclear Nonproliferation R&D | 0 | 0 | 360,808 | +360,808 | N/A |
| Nonproliferation and International Security | 143,106 | 128,675 | 141,359 | +12,684 | +9.9% |
| International Material Protection and Cooperation | 527,925 | 419,625 | 305,467 | -114,158 | -27.2% |
| Fissile Materials Disposition | 663,754 | 526,057 | 311,125 | -214,932 | -40.9% |
| Legacy Contractor Pensions | 51,438 | 93,703 | 102,909 | +9,206 | +9.8% |
| Subtotal, Defense Nuclear Nonproliferation | 2,269,624 | 2,009,000 | 1,555,156 | -453,844 | -22.6% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | -32,204 | -55,000 | 0 | +55,000 | +100.0% |
| Total, Defense Nuclear Nonproliferation | 2,237,420 | 1,954,000 | 1,555,156 | -398,844 | -20.4% |

Appropriation Overview

NNSA’s **Defense Nuclear Nonproliferation (DNN)** directly contributes to meeting the DOE Strategic Plan Goal for “Nuclear Security” and plays a critical role in meeting Strategic Objective 6 to “Reduce global nuclear security threats.” DNN is the lead U.S. Government element for developing and implementing programs to limit or prevent the spread of nuclear and radiological materials and associated technology and expertise, to advance technologies that detect nuclear and radiological proliferation worldwide, and to eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons. DNN participates in a whole-of-government policy process by formulating options and evaluating alternatives.

The FY 2015 Budget Request supports national security priorities articulated in the 2010 National Security Strategy of the United States and the 2010 Nuclear Posture Review, which are reflected in DOE’s Strategic Plan. These priorities include securing or eliminating the world’s most vulnerable nuclear weapon materials; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for nonproliferation; promoting the secure expansion of nuclear energy; and improving capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these nuclear security and organizational strategic objectives, the FY 2015 Budget requests funding for five DNN programs. These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation, and arms control treaties.

Program Highlights

- Global Threat Reduction Initiative**

Global Threat Reduction Initiative (GTRI) directly supports the international effort, initiated by President Obama’s Prague Agenda in 2009, to secure all vulnerable nuclear material around the world. GTRI directly supports DOE Strategic Objective 6 to reduce global nuclear dangers by preventing terrorists from acquiring nuclear and radiological materials that could be used in Weapons of Mass Destruction (WMD) or acts of terrorism by: 1) minimizing the civilian use of highly enriched uranium (HEU) in research reactors and isotope production by converting to low enriched uranium or verifying the permanent shutdown, 2) removing and disposing excess nuclear and radiological materials at home and abroad, and 3) protecting high-priority nuclear and radiological materials from theft. These GTRI convert-remove-protect approaches provide a comprehensive path to achieving its mission and denying terrorists access to nuclear and radiological materials. The FY 2015 Budget Request includes funding to convert or shutdown an additional 4 HEU-fueled reactors (cumulative total of 96 since program inception in 2004), remove an additional 125 kilograms of

vulnerable nuclear material (HEU and plutonium) (cumulative total of 5,332 kilograms since program inception), and protect an additional 105 buildings with high priority nuclear and radiological materials (cumulative total of 1,890 since program inception). The reduction in FY 2015 funding reflects the expected completion of a major milestone in early FY 2015 of the development of a new domestic, non-HEU-based supply of the critical medical isotope molybdenum-99 (Mo-99), which is being executed under multi-year contracts funded in previous fiscal years. Although President Obama's Four Year Initiative to secure the most vulnerable nuclear material by the end of 2013 was completed successfully, the emphasis on nuclear security remains a priority beyond the Four Year effort. The Budget includes funding for high priority nuclear security initiatives that continue and build on this accomplishment.

- **Defense Nuclear Nonproliferation Research and Development**

Defense Nuclear Nonproliferation Research and Development (DNN R&D) directly contributes to meeting the DOE strategic goal for nuclear security and enhances national security by developing technical capabilities that improve the detection, identification, and characterization of the full life-cycle of foreign nuclear weapons development programs. These include technical capabilities to detect foreign nuclear weapons development, nuclear detonations, and the movement or diversion of special nuclear materials; monitor compliance with nuclear arms control and nonproliferation commitments; and inform policymakers of current and future technical capabilities available for meeting potential nuclear nonproliferation and arms control treaty objectives.

DNN R&D will improve capabilities in nonproliferation and foreign weapons program activity monitoring through continued development of a series of national test beds, including capabilities to detect and identify extremely low-yield nuclear detonations with increased confidence. DNN R&D program will continue to support a complex warhead measurement campaign with NNSA's Defense Programs that, upon completion, will provide a robust basis for demonstrating a weapons and material accountability test bed to define technical limits and opportunities for end-to-end arms control transparency. The DNN R&D program will deliver nuclear detonation detection payloads for Global Positioning System (GPS) block III satellites in accordance with the schedule negotiated with the U.S. Air Force. It will support the payload-side technical integration, pre-launch and on-orbit testing activities for previously delivered payloads in accordance with host satellite schedules. Finally, DNN R&D will develop treaty monitoring focused payloads and support integration onto its designated satellite and conduct research in seismic, radionuclide and detonation forensics to support national capability in terrestrial and airborne monitoring and analysis methods. The reduction in FY 2015 funding reflects: the conclusion of field experimentation activities in FY 2014; the delay of other activities into FY 2016 to fund higher, emerging DNN R&D priorities in FY 2015; a return to baseline funding for the Nuclear Detonation Detection subprogram after a one-time Congressional increase in FY 2014; and a reduction in nuclear forensics research supporting the national technical nuclear forensics technology plan.

- **Nonproliferation and International Security**

Nonproliferation and International Security (NIS) supports national efforts to prevent the proliferation of WMD, including materials, technologies, and expertise, by states and non-state actors. NIS executes programs in four main areas that directly support the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and the President's 2010 Nuclear Posture Review: 1) Nuclear Safeguards and Security; 2) Nuclear Controls; 3) Nuclear Verification; and 4) Nonproliferation Policy. Working in concert, these programs: revitalize, strengthen, and sustain U.S., International Atomic Energy Agency and foreign partner nuclear safeguards and security capabilities; prevent illicit trafficking of materials, technology, strategic commodities, and expertise; develop policy and technical solutions for transparent nuclear reductions and treaty monitoring and compliance; and develop cross-cutting policy and technical solutions, programs, and strategies to strengthen international security and the nuclear nonproliferation regime.

The NIS FY 2015 Budget Request supports activities that prevent and counter WMD proliferation, including continued support of U.S. efforts to address proliferation by Iran, North Korea, and proliferation networks; implementation of statutory export control requirements; in coordination with DNN R&D, the applied development, testing, and evaluation of technologies to support U.S. arms control and nonproliferation initiatives, including treaty verification and transparency; implementation of the Next Generation Safeguards Initiative to strengthen International Atomic Energy Agency safeguards and to revitalize the U.S. technical and human capital base that supports them; efforts to reduce proliferation risks associated with the expansion of nuclear power; and the development and implementation of reliable fuel services as an alternative to the spread of enrichment and reprocessing capabilities. The increase in FY 2015 funding allows for: the development of a new U.S. Additional Protocol (AP) reporting system; implementation of safeguards technology development investments; implementation of the new physical protection security recommendations in INFCIRC 225/Rev 5 with foreign partners; the implementation of an e-licensing system, and other

efficiencies, to make the NIS Part 810 application process ISO 9001 compliant; additional Nuclear Suppliers Group (NSG) work implementing industry self-regulation; and the continuation and expansion of regional nuclear security engagement efforts in India, Pakistan, Myanmar, and China.

- **International Material Protection and Cooperation**

International Material Protection and Cooperation (IMPC) works to prevent nuclear terrorism and proliferation by cooperating with Russia and other countries to secure and eliminate vulnerable nuclear weapons and weapons-usable material through its Material Protection, Control and Accounting (MPC&A) Program and to deter and detect illicit smuggling of nuclear material at international border crossings and major seaports through its Second Line of Defense (SLD) program. The IMPC program will continue to support enhancing security at defense nuclear facilities; consolidating nuclear materials into fewer, more secure locations; downblending excess highly enriched uranium (HEU) into low-enriched uranium (LEU); and helping partner countries develop the nuclear security culture, infrastructure, and regulatory systems required to sustain a high level of nuclear security over the long term. By severely limiting the quantity, quality, and vulnerability of nuclear material at risk of illicit acquisition, the program helps prevent the threat of rogue states or terrorists developing a nuclear weapon or an improvised nuclear device. The reduction in FY 2015 funding reflects: the lack of coverage for the continuation of MPC&A work with the Russian Ministry of Defense under the new Multilateral Nuclear Environmental Programme in the Russian Federation Framework Agreement (MNEPR) Protocol which replaced the Cooperative Threat Reduction (CTR) Umbrella Agreement, that expired on June 17, 2013; and a reduction in Second Line of Defense activities in FY 2015 due to a funding increase to accelerate deployments in FY 2014 and a need to fund higher NNSA priorities within the budget ceiling.

- **Fissile Materials Disposition**

Fissile Materials Disposition (FMD) conducts activities in the United States to dispose of surplus weapon-grade fissile materials, and supports disposal of Russian surplus weapon-grade plutonium. The FMD program is vital to the nation's arms control and nuclear nonproliferation efforts; however, due to cost increases and the current budget environment, the Mixed Oxide Fuel Fabrication Facility (MFFF) will be placed in cold stand-by to further study more efficient options for plutonium disposition. The Department remains committed to plutonium disposition and its obligations under the Plutonium Management Disposition Agreement (PMDA) and will continue to engage with Russia during this analysis. The decrease in funding in FY 2015 reflects the decision to place the MFFF project in cold stand-by while the Department completes the analysis of the plutonium disposition options.

NAVAL REACTORS— NNSA

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| National Nuclear Security Administration | | | | | |
| Naval Reactors | | | | | |
| Naval Reactors Operations and Infrastructure | 352,535 | 356,300 | 412,380 | +56,080 | +15.7% |
| Naval Reactors Development | 404,879 | 414,298 | 425,700 | +11,402 | +2.8% |
| Ohio Replacement Reactor Systems Development | 81,300 | 126,400 | 156,100 | +29,700 | +23.5% |
| S8G Prototype Refueling | 112,100 | 144,400 | 126,400 | -18,000 | -12.5% |
| Program Direction | 43,212 | 43,212 | 46,600 | +3,388 | +7.8% |
| Construction | 92 | 24,373 | 209,920 | +185,547 | +761.3% |
| Subtotal, Naval Reactors | 994,118 | 1,108,983 | 1,377,100 | +268,117 | +24.2% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | 0 | -13,983 | 0 | +13,983 | +100.0% |
| Total, Naval Reactors | 994,118 | 1,095,000 | 1,377,100 | +282,100 | +25.8% |

Appropriation Overview

Naval Reactors activities directly contribute to meeting the DOE strategic goal for “Nuclear Security” and play a critical leadership role in meeting Strategic Objective 7 to provide safe and effective integrated nuclear propulsion systems for the United States Navy. The Naval Reactors program has responsibility for all naval nuclear propulsion work, from reactor plant technology development and design, continuing through reactor plant operation and maintenance, to reactor plant disposal.

Program Highlights

Funding for the program addresses challenges associated with the safe and reliable operation of the Navy's nuclear-powered fleet (72 submarines and 10 aircraft carriers), constituting over 40 percent of the Navy's major combatants. The program's development work consists of refining and improving existing technology to ensure that the U.S. Navy's nuclear propulsion plants are increasingly efficient and effective and will be capable of meeting future threats to national security.

In addition to its support to the fleet, Naval Reactor includes three major initiatives: the *Ohio*-class Ballistic Missile Submarine Replacement, Land-based S8G Prototype Refueling Overhaul, and the Spent Fuel Handling Recapitalization Project.

Naval Reactors supports the President's national security strategy with the continued development of the *Ohio*-class Replacement submarine and stewardship of naval nuclear infrastructure. Ensuring the continuity of a sea-based strategic deterrent, the Budget Request provides for the research, design, and development of the *Ohio*-class Replacement submarine. The budget further provides funding for the refueling and overhaul of the Land-based Prototype reactor, a critical research and development asset for the long-term, as well as the development of a life-of-ship reactor core for the *Ohio*-class Replacement. The Spent Fuel Handling Recapitalization Project will ensure the capability to refuel and defuel aircraft carriers and submarines over the long-term, which is critical to maintaining the nuclear fleet's operational availability for national security missions.

- Naval Reactors Operations and Infrastructure**
This funding increase will support critical prototype maintenance, facility and systems maintenance across the Program's four DOE sites, and necessary general plant projects to recapitalize aging infrastructure.
- Naval Reactors Development**
This increased funding funds the Advanced Test Reactor at the Idaho National Laboratory and the establishment of a capital equipment subprogram to support equipment procurement for subcategories within Naval Reactors Development.
- S8G Prototype Refueling**
S8G Prototype Refueling Technology development and equipment designs continue in FY 2015 in parallel with early production activities at the reactor and equipment vendors (e.g., advanced material, reactor heavy equipment). The FY

2015 funding decreases because major development efforts and designs are completed in FY 2015 and efforts transition to supporting production and performing analysis needed to support future operation.

- **Ohio Replacement Reactor Systems Development**

The increase supports reactor plant system and long lead time component development and production plans.

- **Construction**

The increase funds the Spent Fuel Handling Recapitalization Project, Remote-Handled Low-Level Waste Disposal Project, Security Upgrades at Knolls Atomic Power Laboratory, and the Radiological Work and Storage Building at the Kesselring Site, which is partially offset by decreases in construction funding for the Expended Core Facility M-290 Receiving/Discharge Station. This includes new construction requests for the Central Office and Prototype Staff Facility and the Team Trainer Facility at the Kesselring Site, the Knolls Laboratory Fire System Upgrade and the Naval Reactors Facility Overpack Storage Expansion 3 in Idaho.

- **Program Direction**

The increase is commensurate with the higher costs to attract and retain highly qualified and experienced engineering personnel.

FEDERAL SALARIES AND EXPENSES – NNSA

(Discretionary dollars in thousands)

| FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--------------------|--------------------|--------------------|---------------------|---|
| | | | \$ | % |

National Nuclear Security Administration

Federal Salaries and Expenses/1

Federal Salaries and Expenses

Program Direction

| | | | | |
|----------------|----------------|----------------|----------------|--------------|
| 377,457 | 377,000 | 410,842 | +33,842 | +9.0% |
| 377,457 | 377,000 | 410,842 | +33,842 | +9.0% |

Total, Federal Salaries and Expenses

1/Formerly Office of the Administrator

Appropriation Overview

Federal Salaries and Expenses funds the National Nuclear Security Administration (NNSA) workforce that provides Federal program oversight and financial management in close partnership with the national laboratories and our production facilities. The NNSA workforce consists of a diverse cadre of scientists, engineers, foreign affairs specialists, and managers who execute the NNSA’s critical nuclear and national security mission. This appropriation also funds mission support functions that provide financial management, human capital management, corporate project management, legal services, procurement and contract management, and security, safety and health. The account funds many NNSA contributions to the Department’s Working Capital Fund, NNSA space and occupancy expenses, and other administrative expenses.

In addition to headquarters and the Albuquerque complex, the organizational structure includes seven site offices across seven states that oversee NNSA laboratory and production facility operations located at Lawrence Livermore, Los Alamos, and Sandia National Laboratories; the NNSA Production Office including the Pantex Plant and the Y-12 National Security Complex; Kansas City Plant; the Savannah River Site; and the Nevada National Security Site.

Program Highlights

The FY 2015 Budget Request provides support for 1,710 full-time equivalents (FTE) and the Federal support needed to meet mission requirements. Requested FTEs are lower than in previous years as a result of NNSA’s ongoing efforts to streamline operations and provide efficient and effective Federal oversight to our programs. The Request constitutes a \$33 million increase due largely to a congressionally directed functional transfer and a large one-time cost associated with staff relocation. Funding for salaries and expenses is essentially unchanged from FY 2014 enacted levels, after adjusting for a \$20 million request to pay for moving to a different leased facility for the NNSA Albuquerque Complex and a Congressionally-directed functional transfer of \$12 million out of the Weapons Activities appropriation for Corporate Project Management.

The request is designed to support a more agile governance model for the national nuclear security enterprise, including the national laboratories, production plants, processing facilities, and the national security site, and to consistently succeed in meeting the NNSA’s diverse and critical mission in an effective and cost efficient manner. One of the many changes made in the past year includes implementing a more unified model of governance resulting in better NNSA mission integration between the NNSA Administrator and NNSA Field Office Managers and Lab/Plant Directors.

SCIENCE

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Science | | | | | |
| Advanced Scientific Computing Research | 405,000 | 478,093 | 541,000 | +62,907 | +13.2% |
| Basic Energy Sciences | 1,551,256 | 1,711,929 | 1,806,500 | +94,571 | +5.5% |
| Biological and Environmental Research | 560,657 | 609,696 | 628,000 | +18,304 | +3.0% |
| Fusion Energy Sciences | 377,776 | 504,677 | 416,000 | -88,677 | -17.6% |
| High Energy Physics | 727,523 | 796,521 | 744,000 | -52,521 | -6.6% |
| Nuclear Physics | 507,248 | 569,138 | 593,573 | +24,435 | +4.3% |
| Workforce Development for Teachers and Scientists | 17,486 | 26,500 | 19,500 | -7,000 | -26.4% |
| Science Laboratories Infrastructure | 105,673 | 97,818 | 79,189 | -18,629 | -19.0% |
| Safeguards and Security | 77,506 | 87,000 | 94,000 | +7,000 | +8.0% |
| Science Program Direction | 174,862 | 185,000 | 189,393 | +4,393 | +2.4% |
| Small Business Innovation Research (SBIR) | 176,208 | 0 | 0 | 0 | N/A |
| Total, Science | 4,681,195 | 5,066,372 | 5,111,155 | +44,783 | +0.9% |

Appropriation Overview

Science (SC) is the largest federal sponsor of basic research in the physical sciences and funds programs in physics, chemistry, biology, environmental science, applied mathematics, and computational science. SC supports researchers at all of the DOE laboratories and approximately 300 academic institutions. Approximately 28,000 researchers from universities, national laboratories, industry, and international partners are expected to use SC facilities in FY 2015. SC programs invest in foundational science, including basic research in clean energy, to transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation.

Program Highlights

- **Advanced Scientific Computing Research**

Advanced Scientific Computing Research (ASCR) supports advanced computational research, applied mathematics, computer science, and networking as well as development and operation of multiple, large high performance computing facilities. The Request funds:

- Research, development, and design to ultimately achieve capable exascale systems with a hundred to thousand fold improvement in true application performance over current high performance computers
- Research on the application of high performance computer simulation and modeling to science problems
- Research in data-intensive science to address end-to-end data management challenges, including the massive quantities of data generated by SC facilities and collaborations
- Operations and preparation for upgrades at ASCR facilities

- **Basic Energy Sciences**

Basic Energy Sciences (BES) supports fundamental research to understand, predict, and ultimately control matter and energy to provide the foundations for new energy technologies, to mitigate the environmental impacts of energy use, and to support DOE missions in energy, environment, and national security. The Request funds:

- Energy Frontier Research Centers (EFRCs) to overcome hurdles in basic science that hinder advances in energy technologies
- The Fuels from Sunlight and the Batteries and Energy Storage Energy Innovation Hubs
- A new investment in computational materials sciences to develop community codes for the design of functional materials
- Operation of BES national user facilities at optimal levels: four light sources, two neutron scattering centers, and five research centers for nanoscale science with electron beam characterization capabilities
- Continued construction of the Linac Coherent Light Source-II (LCLS-II) at the SLAC National Accelerator Laboratory
- Early operations of the National Synchrotron Light Source-II (NSLS-II), while NSLS ceases operations
- Equipment projects for the Advanced Photon Source Upgrade and the NSLS-II Experimental Tools

- **Biological and Environmental Research**

Biological and Environmental Research (BER) includes efforts to understand how genomic information is translated to functional capabilities, enabling more confident redesign of microbes and plants for sustainable biofuels production, improved carbon storage, and contaminant bioremediation. BER research advances our understanding of the role of atmospheric, terrestrial, ocean, and subsurface interactions in determining climate dynamics to predict future climate change and plan for future energy and resource needs. The Request funds:

- Research and scientific user facilities in bioenergy, climate, and environmental science , with a greater emphasis on integrative analysis of experimental datasets
- New research in climate model development and validation, combining advanced software code development and numerical methods with new Atmospheric Radiation Measurement Climate Research Facility data moving towards higher resolution Earth system models
- Research in foundational genomics, including the DOE Bioenergy Research Centers, to provide the fundamental biological system science to underpin advances in clean energy through bioenergy production and carbon cycling
- Integrated data management for a new Climate and Environmental Data, Analysis and Visualization activity, combining high resolution Earth system models with interdependent components involving energy and infrastructure sector models, raw data from environmental field experiments and observations, and analytical tools for system diagnostics, validation, and uncertainty quantification

- **Fusion Energy Sciences**

Fusion Energy Sciences (FES) supports research to understand the behavior of matter at high temperatures and densities, and to develop fusion as a future energy source. The Request funds:

- Major domestic experimental facilities, with NSTX at Princeton Plasma Physics Laboratory resuming operations after its upgrade
- The U.S. contribution to the International Thermonuclear Experimental Reactor (ITER) project
- International research partnerships, high-performance computer simulations based on theoretical models, advanced materials development, measurement technique innovation, basic plasma science, and high energy density laboratory plasma physics

- **High Energy Physics**

High Energy Physics (HEP) supports research to understand how the universe works at its most fundamental level by discovering the most elementary constituents of matter and energy, probing the interactions among them, and exploring the basic nature of space and time. The Request funds:

- Large Hadron Collider (LHC) detector operations and the initiation of fabrication of detector upgrades to continue exploring the behavior of fundamental particles at the highest energies
- Muon to Electron Conversion Experiment (Mu2e) project proceeding to the construction phase, to provide a unique window into charged lepton flavor violation
- Continued progress on the Large Synoptic Survey Camera and Dark Energy Survey, to deepen our understanding of dark energy
- Exploration of the feasibility of future experiments and collaborations in dark matter research and accelerator-and reactor-based neutrino research
- Support for collaborative advanced accelerator and detector R&D, including development of novel accelerator designs and related superconducting magnet technology

- **Nuclear Physics**

Nuclear Physics (NP) supports research to discover, explore, and understand nuclear matter in a variety of different forms. The Request funds:

- Facility for Rare Isotope Beam (FRIB) construction at Michigan State University to provide world-class capability and new discovery potential in nuclear structure and nuclear astrophysics
- Relativistic Heavy Ion Collider (RHIC) operations to continue research that explores new states of matter at high energy and density
- Argonne Tandem Linac Accelerator System to research the properties of nuclei and stellar nucleosynthesis.
- Beam development and commissioning activities for the 12 GeV Continuous Electron Beam Accelerator Facility (CEBAF) upgrade, which will open the opportunity for new discoveries and an improved understanding of quark confinement

ENERGY EFFICIENCY AND RENEWABLE ENERGY

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Energy Efficiency and Renewable Energy | | | | | |
| Vehicle Technologies | 303,165 | 289,737 | 359,000 | +69,263 | +23.9% |
| Biomass and Biorefinery Systems RD&D | 185,190 | 0 | 0 | 0 | N/A |
| Bioenergy Technologies | 0 | 232,290 | 253,200 | +20,910 | +9.0% |
| Hydrogen and Fuel Cell Technologies | 95,844 | 92,928 | 92,983 | +55 | +0.1% |
| Solar Energy | 269,050 | 257,058 | 282,300 | +25,242 | +9.8% |
| Wind Energy | 86,129 | 88,126 | 115,000 | +26,874 | +30.5% |
| Water Power | 54,687 | 58,565 | 62,500 | +3,935 | +6.7% |
| Geothermal Technology | 35,025 | 45,775 | 61,500 | +15,725 | +34.4% |
| Industrial Technologies | 114,254 | 0 | 0 | 0 | N/A |
| Advanced Manufacturing | 0 | 180,471 | 305,100 | +124,629 | +69.1% |
| Federal Energy Management Program | 28,265 | 28,248 | 36,200 | +7,952 | +28.2% |
| Building Technologies | 204,601 | 177,868 | 211,700 | +33,832 | +19.0% |
| Weatherization and Intergovernmental Program | | | | | |
| Weatherization Assistance Program | | | | | |
| Weatherization Assistance Grants | 128,879 | 170,898 | 224,600 | +53,702 | +31.4% |
| Training and Technical Assistance | 2,826 | 2,998 | 3,000 | +2 | +0.1% |
| Total, Weatherization Assistance Program | 131,705 | 173,896 | 227,600 | +53,704 | +30.9% |
| State Energy Program Grants | 47,108 | 49,970 | 63,100 | +13,130 | +26.3% |
| Tribal Energy Program | 9,421 | 6,996 | 0 | -6,996 | -100.0% |
| Clean Energy Economic Development Partnerships | 0 | 0 | 14,000 | +14,000 | N/A |
| Total, Weatherization and Intergovernmental Program | 188,234 | 230,862 | 304,700 | +59,838 | +25.9% |
| Facilities and Infrastructure | 24,880 | 45,973 | 56,000 | +10,027 | +21.8% |
| Program Direction | 160,455 | 162,000 | 160,000 | -2,000 | -1.2% |
| Strategic Programs | 23,554 | 23,540 | 21,779 | -1,761 | -7.5% |
| Subtotal, Energy Efficiency and Renewable Energy | 1,773,333 | 1,913,441 | 2,321,962 | +408,521 | +21.4% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | -81,576 | -2,382 | -5,213 | -2,831 | -118.8% |
| Rescission of Prior Year Balances | 0 | -10,418 | 0 | +10,418 | +100.0% |
| Total, Energy Efficiency and Renewable Energy | 1,691,757 | 1,900,641 | 2,316,749 | +416,108 | +21.9% |

Appropriation Overview

Energy Efficiency and Renewable Energy (EERE) is the U.S. government’s primary clean energy technology organization responsible for supporting high-impact applied research, development, demonstration, and deployment (RDD&D) activities in sustainable transportation, renewable power, and end-use energy efficiency. EERE seeks to create and sustain American leadership in the transition to a global clean energy economy, while also reducing our reliance on oil, saving families and businesses money, and reducing pollution. Toward that end, EERE supports the research, development, and demonstration of cutting-edge technologies, with the goal of supporting the innovations that will enable American businesses to manufacture clean energy technologies that are directly cost-competitive with conventional energy technologies.

Program Highlights

Sustainable Transportation

• **Vehicle Technologies**

FY 2015 funding supports a number of aggressive vehicle technology goals: battery energy storage, electric drive research and development, and advanced power electronics initiatives in support of the EV Everywhere Grand Challenge; improvements in lightweight materials performance; more efficient combustion engine technologies; and alternative fuel vehicle community partner projects, which are new competitively-awarded projects to build strategically-placed, high-impact, community-scale demonstrations of alternative fuel vehicles.

• **Bioenergy Technologies**

FY 2015 funding emphasizes development of innovative processes to convert cellulosic and algal-based feedstocks to bio-based gasoline, jet, and diesel fuels at a cost of \$3.00 per gallon gasoline equivalent. In collaboration with the U.S.

Departments of Navy and Agriculture, commercial-scale biorefineries to produce military-specification fuels will be demonstrated.

- **Fuel Cell Technologies**

FY 2015 funding supports a focused R&D effort to reduce the cost and increase the durability of transportation fuel cell systems, with a targeted cost of \$40/kW and durability of 5,000 hours, equivalent to 150,000 miles, by 2020. In addition, the cost of hydrogen from renewable resources needs to be reduced to less than \$4.00/gge – dispensed and untaxed – by 2020. In FY 2015, Fuel Cell R&D will focus on stack component R&D, systems, and balance of plant components. Hydrogen Fuel R&D will focus on technologies and materials that will reduce hydrogen production, compression, transport, and storage costs. Funding also supports targeted early market fuel cell demonstrations and addresses codes and standards to overcome barriers to commercialization.

Renewable Power

- **Solar Energy Technologies**

FY 2015 funding supports the SunShot Initiative goal to achieve a cost of solar power of \$.06/kWh to make solar power cost-competitive without subsidies by 2020. This includes solar photovoltaic R&D; activities that enable a 50% reduction in non-hardware “soft costs”; and development and demonstration of innovative solar energy manufacturing technologies to increase U.S. competitiveness, in support of DOE’s Clean Energy Manufacturing Initiative. FY 2015 funding also supports development of advanced thermal storage and supercritical CO₂ power cycles so that concentrated solar power can achieve base-load grid parity.

- **Wind Power Technologies**

The increase in FY 2015 funding supports three advanced offshore wind demonstration projects planned for operation by 2017, as well as an Atmosphere to Electrons initiative, to optimize wind farms with improved performance and lower the cost of wind energy. FY 2015 funding also enables pursuit of new designs, materials and manufacturing processes for longer blades to capture greater wind resource and to address transportation barriers, in support of DOE’s Clean Energy Manufacturing Initiative and of achieving full market cost competition for wind energy.

- **Water Power Technologies**

FY 2015 funding supports the launch of HydroNEXT, a new EERE initiative that focuses on conducting R&D that would allow for increased hydropower opportunities at non-powered dams, water conveyance systems, and new stream reach development; development of new low cost modular systems will minimize civil works and environmental impact and maximize design for manufacturing. FY 2015 funding also supports marine and hydrokinetic activities to develop and validate open-source design tools and support testing of wave and tidal energy systems, to enable industry to develop robust next generation systems.

- **Geothermal Technologies**

FY 2015 funding continues site characterization of the Frontier Observatory for Research in Geothermal Energy (FORGE). FORGE is a dedicated site that enables testing of novel technologies and techniques, with a central focus on Enhanced Geothermal Systems optimization and validation. FY 2015 funding also accelerates “play fairway” analyses, which provide assessments of exploration risk and the probability of finding new resources on a regional scale, resulting in maps and studies that reduce the industry’s drilling and development risks.

Energy Efficiency

- **Advanced Manufacturing**

The increase in FY 2015 funding supports the deployment of at least one additional Clean Energy Manufacturing Innovation Institute, along with continued support of existing institutes, as part of a larger proposed interagency network aimed at bringing together universities, companies, and the government to jointly invest in solving industry-relevant problems and improving U.S. manufacturing competitiveness, in support of DOE’s Clean Energy Manufacturing Initiative and the President’s full vision of a National Network of Manufacturing Institutes. FY 2015 funding also supports high-impact R&D focused on advanced manufacturing and materials that will enable U.S. manufacturers to realize significant gains in energy productivity, environmental performance, product yield, and economic competitiveness.

- **Building Technologies**

FY 2015 funding emphasizes emerging technologies, to accelerate the development of lighting, heating and cooling, and other energy efficiency solutions for the Nation's buildings that offer savings of 50 percent or more; and supports the equipment and appliance standards programs to establish minimum energy efficiency requirements pursuant to federal statutes. FY 2015 funding also assists home builders build to high efficiency levels, improve access for homeowners to home improvement services, and improve the information, tools, and resources available to the commercial sector with a goal of achieving 20 percent energy savings by 2020.

- **Weatherization and Intergovernmental Programs**

FY 2015 funding supports the Weatherization Assistance Program at levels that maintain access to weatherization retrofit services for low income households in jurisdictions across the country. It also supports State Energy Program assistance to states for establishing and implementing clean energy plans, policies, and programs. In addition, new funding is included for Clean Energy and Economic Development Partnerships to assist regions in creating economic development roadmaps in sustainable shale gas growth zones as well as to assist local governments in their clean energy efforts.

- **Federal Energy Management Program**

FY 2015 funding continues core activities, with the focus of additional funding to support the establishment of a Data Center Energy Efficiency Center of Expertise, as well as other support to federal agencies as they pursue their energy saving requirements and other sustainability goals.

ELECTRICITY DELIVERY AND ENERGY RELIABILITY

(Discretionary dollars in thousands)

| FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--------------------|--------------------|--------------------|---------------------|---|
| | | | \$ | % |

| | | | | | |
|---|----------------|----------------|----------------|----------------|---------------|
| Electricity Delivery and Energy Reliability | | | | | |
| Clean Energy Transmission and Reliability | 23,393 | 32,383 | 36,000 | +3,617 | +11.2% |
| Smart Grid Research and Development | 19,968 | 14,592 | 24,400 | +9,808 | +67.2% |
| Cybersecurity for Energy Delivery Systems | 29,136 | 43,476 | 42,000 | -1,476 | -3.4% |
| Energy Storage | 18,356 | 15,192 | 19,000 | +3,808 | +25.1% |
| Permitting, Siting and Analysis | 6,626 | 0 | 0 | 0 | N/A |
| National Electricity Delivery | 0 | 5,997 | 7,000 | +1,003 | +16.7% |
| Infrastructure Security and Energy Restoration | 6,149 | 7,996 | 22,600 | +14,604 | +182.6% |
| Program Direction | 25,568 | 27,606 | 29,000 | +1,394 | +5.0% |
| Total, Electricity Delivery and Energy Reliability | 129,196 | 147,242 | 180,000 | +32,758 | +22.2% |

Appropriation Overview

Electricity Delivery and Energy Reliability (OE) drives electric grid modernization and resiliency in the energy infrastructure through research, demonstration, partnerships, facilitation, modeling and analytics, and emergency preparedness and response. OE is the Federal government’s energy sector-specific lead in responding to energy security emergencies, both physical and cyber. The OE mission is reflected in the Strategic Objective 2, support a more economically competitive, environmentally responsible, secure and resilient U.S. energy infrastructure, in the DOE Strategic Plan. OE also plays a critical role in implementation of the President’s Climate Action Plan to mitigate the risks and enhance resilience against climate change.

The FY 2015 Request supports the Administration’s all-of-the-above strategy and emphasizes priorities that increase electric grid resilience, including managing risks, increasing system flexibility and robustness, increasing visualization and situational awareness, and deploying advanced control capabilities.

Program Highlights

- Clean Energy Transmission and Reliability**

The Clean Energy Transmission and Reliability program develops the monitoring, analytical decision support, and control capabilities necessary to operate and plan the grid in the Transmission Reliability and Advanced Modeling Grid Research subprograms. It also targets enhancing reliability and resilience through modeling and analysis of the interdependent energy systems. The FY 2015 Request includes an increased investment in developing an analytical framework to assess energy system risks and to produce predictive analyses assessing the impact of emerging events.
- Smart Grid**

The Smart Grid program is focused on modernizing the electricity distribution system, with the goal of improving reliability as well as operational efficiency, resiliency, and disaster recovery. In FY 2015, the Request expands research and development on microgrids, localized grids that can disconnect from the traditional grid to operate autonomously and can help mitigate grid disturbances to strengthen grid resilience. It also invests in the evolution towards higher performance smart grids, or “Smart Grid 2.0”, which capitalizes on the recent surge in advanced technology deployments by expanding into how assets and information streams can be combined to greater advantage than traditional control and end-user involvement, leading to the transformation to a clean, efficient, and flexible future grid.
- Cybersecurity for Energy Delivery System**

The FY 2015 Request supports acceleration of efforts to strengthen the energy infrastructure against cyber threats, working closely with the Energy Sector and within the U.S. Government. The funds support research and development on cutting-edge cybersecurity solutions information-sharing of cyber threats in partnership with industry; implementation of tools to guide best practices and cybersecurity investment decisions in the electric sector; and efforts to build an effective, timely, and coordinated cyber incident management capability in the energy sector.

- **Energy Storage**

The Energy Storage program addresses critical challenges facing the development and deployment of grid energy storage technologies, which can enhance system reliability and resilience, enabling both greater adoption of renewable energy resources and more effective utilization of the existing electric system. The Request is focused on addressing challenges related to cost reduction, system engineering, performance improvement and validation, value recognition, and deployment confidence and acceptance. Advancements in these areas will be vital in the progress towards commercially sustainable deployment of energy storage solutions to enable more clean energy solutions.

- **National Electricity Delivery**

The National Electricity Delivery program provides technical assistance to States, regions, and Tribes to help them improve their programs, policies, and laws to facilitate the development of reliable and affordable electricity infrastructure. It also authorizes the export of electricity, issues permits for cross-border transmission lines, and coordinates Federal transmission permitting on Federal lands. The FY 2015 Request provides an increase for State and regional assistance in emerging issues, as well as implementation of new regulations for permitting of transmission projects involving Federal lands.

- **Infrastructure Security and Energy Restoration**

The Infrastructure Security and Energy Restoration (ISER) program helps secure the U.S. energy infrastructure against all types of hazards, respond to and reduce the impact of disruptive events, and assists in quickly restoring energy when events occur. The FY 2015 Request for the ISER program supports the development of advanced mitigation solutions for hardening infrastructure against all hazards, including events such as geomagnetic disturbance and physical threats as well as devastating weather events. The Operational Energy and Resilience (OER) subprogram, initiated in FY 2014, is an enhanced capability that enables the Department to better protect against and mitigate threats and hazards to the energy infrastructure. The FY 2015 Request supports the build-out of the Energy Resilience and Operations Center that will enable DOE to continually monitor energy system status and facilitate communication with sector stakeholders. It also provides for additional personnel to be located in each Federal Emergency Management Agency region to develop regionally tailored resiliency approaches, supports the National Incident Management Assistance Teams, and provides technical expertise, monitoring, and information sharing in support of the OER.

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| | | | | | |
| Fossil Energy | | | | | |
| Fossil Energy Research and Development | | | | | |
| Coal | | | | | |
| CCS Demonstrations | | | | | |
| Natural Gas Carbon Capture and Storage | 0 | 0 | 25,000 | +25,000 | N/A |
| CCS and Power Systems | | | | | |
| Carbon Capture | 63,725 | 92,000 | 77,000 | -15,000 | -16.3% |
| Carbon Storage | 106,745 | 108,766 | 80,084 | -28,682 | -26.4% |
| Advanced Energy Systems | 92,438 | 99,500 | 51,000 | -48,500 | -48.7% |
| Cross Cutting Research | 45,618 | 41,925 | 35,292 | -6,633 | -15.8% |
| NETL Coal Research and Development | 33,338 | 50,011 | 34,031 | -15,980 | -32.0% |
| Total, Coal | 341,864 | 392,202 | 302,407 | -89,795 | -22.9% |
| Natural Gas Technologies | 13,865 | 20,600 | 35,000 | +14,400 | +69.9% |
| Unconventional Fossil Energy Technologies | 4,621 | 15,000 | 0 | -15,000 | -100.0% |
| Program Direction | 114,201 | 120,000 | 114,202 | -5,798 | -4.8% |
| Plant and Capital Equipment | 15,982 | 16,032 | 15,294 | -738 | -4.6% |
| Fossil Energy Environmental Restoration | 7,515 | 5,897 | 7,897 | +2,000 | +33.9% |
| Special Recruitment Programs | 667 | 700 | 700 | 0 | 0.0% |
| Subtotal, Fossil Energy Research and Development | 498,715 | 570,431 | 475,500 | -94,931 | -16.6% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | 0 | -8,500 | 0 | +8,500 | +100.0% |
| Total, Fossil Energy Research and Development | 498,715 | 561,931 | 475,500 | -86,431 | -15.4% |

Appropriation Overview

Fossil Energy Research and Development (FER&D) advances technologies related to the reliable, efficient, affordable, and environmentally sound use of fossil fuels which are essential to our Nation’s security and economic prosperity. FE leads Federal research, development, and demonstration efforts on advanced carbon capture, and storage (CCS) technologies to facilitate achievement of the President’s climate goals. FE also develops technological solutions for the prudent and sustainable development of our unconventional domestic resources.

Program Highlights

- **Coal**

Carbon Capture and Storage (CCS) and Power Systems conduct research to reduce carbon emissions by improving the performance and efficiency of fossil energy systems and CCS technologies. FER&D manages the Clean Coal Power Initiative (CCPI) program and two American Recovery and Reinvestment Act (ARRA) CCS demonstration programs: FutureGen 2.0 and the Industrial Carbon Capture and Storage program under the CCS Demos program.

- **Natural Gas Carbon Capture and Storage (NG-CCS)**

In FY 2015, FER&D will establish a new demonstration program, NG-CCS, to support projects to capture and store carbon emissions from natural gas power systems. The ability to demonstrate advanced technologies at a scale that has been developed within the FER&D or other R&D programs is an important benefit of the demonstration programs.

- **Carbon Capture**

Carbon Capture is focused on the development of post-combustion and pre-combustion CO2 capture and compression technologies for new and existing fossil fuel-fired power plants and industrial sources. Post-combustion CO2 capture technology R&D is focused on capturing CO2 from flue gas after the fuel has been consumed/combusted. Pre-combustion CO2 capture is applicable to systems that capture and separate the CO2 from mixed gas streams prior to combustion or utilization of the gas.

- **Carbon Storage**
Carbon Storage develops and validates technologies to ensure safe and permanent geologic storage of captured CO₂. Development and validation of these technologies are critical to ensure industry and regulatory agencies have the capability to assess, monitor and mitigate risks for CO₂ onshore and offshore storage and ensure the viability of carbon storage as an effective technology solution that can be implemented on a large-scale to mitigate carbon emissions. Technologies developed and validated through the Carbon Storage Program will improve storage efficiency and reduce the overall cost of CCS with a goal of ensuring the cost effective ability to measure and account for 99 percent of injected CO₂ in all storage types while minimizing the environmental footprint of carbon storage activities.
- **Advanced Energy Systems (AES)**
AES increases the availability and efficiency of fossil energy systems integrated with CO₂ capture, while maintaining the highest environmental standards at the lowest cost. The program elements focus on gasification, oxy-combustion, advanced turbines, and other energy systems. While the primary focus is on coal-based power systems, improvements in these technologies will result in positive spillover benefits that also reduce the cost of converting other carbon-based materials, such as biomass, petcoke or natural gas, into power and value-added products in an environmentally-acceptable manner.
- **Cross-cutting Research**
Cross-cutting Research fosters the development of innovative systems for improving availability, efficiency, and environmental performance of advanced energy systems with CCS. The program serves as a bridge between basic and applied research by targeting concepts that offer the potential for transformational breakthroughs and step change benefits in the way energy systems are designed, constructed, and operated. In addition, the Cross-cutting Research Program leads efforts that support University-based energy research including science and engineering education at minority colleges and universities.
- **NETL Coal Research and Development (R&D)**
NETL Coal R&D supports the NETL staff directly associated with conducting in-house research activities for the Coal Research and Development programs. The in-house R&D activities are conducted by a staff of scientists, engineers, technicians and administrative personnel to support the various Coal program activities.
- **Natural Gas Technologies**
Natural Gas Technologies focuses on technologies to reduce the carbon footprint, emissions, and water use in order to enable safe and responsible development of unconventional domestic natural gas resources. The Department of Energy, Department of the Interior, and Environmental Protection Agency developed a focused, collaborative research effort to address high-priority challenges to safe and prudent development of unconventional resources. FER&D research includes advancements in technology, methodology, risk assessment, and mitigation consistent with the multiagency effort. The program will initiate a midstream natural gas infrastructure program focused on advanced cost-effective technologies to detect and mitigate methane emissions from natural gas transmission, distribution, and storage facilities and to communicate results on methane emissions mitigation to stakeholders. In addition, the program intends to conduct lab- and field-based research focused on increasing public understanding of methane dynamics in gas-hydrates bearing areas. These public sector-led efforts will be designed to evaluate the occurrence, nature and behavior of naturally occurring gas hydrates and resulting resource, hazard, and environmental implications.
- **Program Direction**
Program Direction provides the funding for all headquarters and field personnel and operational expenses in Fossil Energy R&D. In addition, it provides support for day-to-day project management functions and operational expenses for the National Energy Technology Laboratory (NETL). Also included is the Import/Export Authorization program, which will continue regulatory reviews and oversight of the transmission of natural gas across the U.S. borders.
- **Plant & Capital Equipment**
NETL has 109 buildings and related infrastructure located in Morgantown, West Virginia; Pittsburgh, Pennsylvania; and Albany, Oregon. The Plant and Capital Equipment program is essential for maintenance of these buildings, critical infrastructure, and for ensuring the safety of NETL employees and the public.

- **Environmental Remediation**

Environmental Remediation provides for the environmental cleanup of former and present Fossil Energy project sites; security and safeguard services for NETL, and health, safety; and environmental protection programs at NETL.

- **Special Recruitment Programs**

FE developed the Mickey Leland Energy Fellowship (MLEF) Program to provide students majoring in science, technology, engineering and mathematics (STEM) disciplines the opportunity to enhance their education and knowledge of fossil fuels. The goal of the program is to support an increase in the number of females and under-represented minorities entering the scientific and engineering career fields in the U.S. workforce.

FOSSIL ENERGY PETROLEUM ACCOUNTS

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Fossil Energy Petroleum Accounts | | | | | |
| Clean Coal Technology | | | | | |
| <i>Adjustments</i> | | | | | |
| Rescission of Prior Year Balances | 0 | 0 | -6,600 | -6,600 | N/A |
| Total, Clean Coal Technology | 0 | 0 | -6,600 | -6,600 | N/A |
| Naval Petroleum and Oil Shale Reserves | | | | | |
| Production Operations | 7,501 | 12,999 | 12,956 | -43 | -0.3% |
| Management | 6,628 | 7,000 | 6,994 | -6 | -0.1% |
| Total, Naval Petroleum and Oil Shale Reserves | 14,129 | 19,999 | 19,950 | -49 | -0.2% |
| Elk Hills School Lands Fund | | | | | |
| California Teachers' Pension Fund Payment | 0 | 0 | 15,580 | +15,580 | N/A |
| Total, Elk Hills School Lands Fund | 0 | 0 | 15,580 | +15,580 | N/A |
| Strategic Petroleum Reserve (SPR) | | | | | |
| Facilities Development and Operations | 161,974 | 164,714 | 178,999 | +14,285 | +8.7% |
| Management for SPR Operations | 20,651 | 24,646 | 26,001 | +1,355 | +5.5% |
| Total, Strategic Petroleum Reserve | 182,625 | 189,360 | 205,000 | +15,640 | +8.3% |
| Northeast Home Heating Oil Reserve | | | | | |
| Northeast Home Heating Oil Reserve | 9,590 | 8,000 | 7,600 | -400 | -5.0% |
| <i>Adjustments</i> | | | | | |
| Discretionary Rescission | -6,000 | 0 | 0 | 0 | N/A |
| Use of Prior Year Balances | 0 | 0 | -6,000 | -6,000 | N/A |
| Total, Northeast Home Heating Oil Reserve | 3,590 | 8,000 | 1,600 | -6,400 | -80.0% |
| Total, Fossil Energy Petroleum Accounts | 200,344 | 217,359 | 235,530 | +18,171 | +8.4% |

Overview

Fossil Energy Petroleum consists of two energy security programs authorized under the Energy Policy and Conservation Act, the Strategic Petroleum Reserve located at Government-owned Gulf Coast storage sites and the Northeast Home Heating Oil Reserve stored in Northeast commercial terminals. It also funds remaining DOE responsibilities involving the Naval Petroleum and Oil Shale Reserves with legacy environmental clean-up/remediation at the previously-sold Naval Petroleum Reserve No. 1 (NPR-1 at Elk Hills, California) and the sale of Naval Petroleum Reserve No. 3 (NPR-3 at Casper, Wyoming) with the execution of a disposition plan.

Program Highlights

- **Strategic Petroleum Reserve (SPR)**

SPR provides strategic and economic security against foreign and domestic disruptions in oil supplies via an emergency stockpile of crude oil. The program fulfills U.S. obligations under the International Energy Program, which avails the U.S. of International Energy Agency assistance through its coordinated energy emergency response plans.

In 2012, SPR completed the replacement of an existing storage cavern at its Bayou Choctaw site that posed a major environmental risk. Oil was transferred to the new cavern during FY 2013, and the decommissioning plan, which includes subsidence monitoring, will be in place by September 2014. In FY 2013, the degasification plant moved from the Bryan Mound site to the West Hackberry site, and operations will resume in June 2014 to treat oil to safe vapor pressure levels so it is once again available for emergency use.

Funding FY 2015 will provide for the management, operations, maintenance, and security of the Government's four storage sites and infrastructure, and maintains SPR readiness and capability to respond to energy supply disruptions. The program will continue to address cavern maintenance, testing, and remediation; mitigation of loss of cavern

storage capacity; degasification of crude oil inventory to ensure its availability; and increased support for major maintenance requirements, including the repair of a drawdown-essential crude oil tank at the Bryan Mound site that will restore the program's maximum drawdown rate to 4.4 million barrels per day.

- **Naval Petroleum and Oil Shale Reserves**

Following the sale of the Government's interests in NPR-1 (Elk Hills, CA) mandated by the National Defense Authorization Act for Fiscal Year 1996 (P.L. 104-106), post-sale activities, required by legally binding agreements, involve the environmental cleanup/remediation under the Corrective Action Consent Agreement with the State of California Department of Toxic Substances Control (DTSC). FY 2015 program activities for NPR-1 will continue work on environmental assessment and remediation encompassing execution of a technical baseline, interim measures, environmental sampling and analysis, corrective measures, waste removal and disposal, confirmatory sampling, and requests to DTSC for release from further corrective action for 131 areas of concern within the oil field which are DOE's responsibility.

The account also funds activities at the Naval Petroleum Reserve 3 (NPR-3) in Wyoming (Teapot Dome field), a stripper well oil field. Disposition of NPR-3 through sale to private ownership will be the primary focus. Transfer of NPR-3 to private ownership will take place by the second quarter of FY 2015. Production facilities at NPR-3 will remain operational until transferred to the new owner, and then deposits of revenues into the U.S. Treasury from the sale of crude oil will cease. All testing at the Rocky Mountain Oilfield Testing Center (RMOTC) has been discontinued. Environmental remediation of NPR-3 facilities will continue through the date of transfer to facilitate the sale of the property. Closeout of the Casper, Wyoming site will commence in FY 2015.

- **Northeast Home Heating Oil Reserve**

Northeast Home Heating Oil Reserve (NEHHOR) continues to maintain a 1 million barrel inventory of ultra-low sulfur distillate (ULSD), stored in two Northeast commercial storage terminals, to provide a short-term supplement to the Northeast systems' commercial supply of heating oil for deployment in the event of an emergency. The FY 2015 request also represents the solicitation of new contracts to replace expiring contracts at both Northeast commercial storage terminals. New storage costs are subject to a potential location change, as well as increased commercial market rates. The request includes the use of prior- year balances to maintain the minimum anticipated funding level required to solicit follow-on commercial storage contracts for the Government's 1 million barrels of ULSD.

- **Elk Hills School Lands Fund**

The Elk Hills School Lands Fund for the California State Teachers' Retirement System as a result of a settlement with the State of California with respect to its longstanding claim to title of two sections of land within NPR-1. In 2011, the Department and the State of California agreed on the final, last payment of \$15,579,815.

NUCLEAR ENERGY

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Nuclear Energy | | | | | |
| Nuclear Energy Enabling Technologies | 67,904 | 71,109 | 78,246 | +7,137 | +10.0% |
| Integrated University Program | 4,677 | 5,500 | 0 | -5,500 | -100.0% |
| Reactor Concepts RD&D | 104,780 | 112,822 | 100,540 | -12,282 | -10.9% |
| Fuel Cycle Research and Development | 169,896 | 186,205 | 189,100 | +2,895 | +1.6% |
| International Nuclear Energy Cooperation | 2,806 | 2,496 | 3,000 | +504 | +20.2% |
| SMR Licensing Technical Support | 62,670 | 110,000 | 97,000 | -13,000 | -11.8% |
| Radiological Facilities Management | 65,370 | 24,968 | 5,000 | -19,968 | -80.0% |
| Idaho Facilities Management | 144,981 | 196,276 | 185,910 | -10,366 | -5.3% |
| Idaho Sitewide Safeguards and Security | 0 | 94,000 | 104,000 | +10,000 | +10.6% |
| STEP (Supercritical CO2) | 0 | 0 | 27,500 | +27,500 | N/A |
| Program Direction | 85,118 | 90,000 | 73,090 | -16,910 | -18.8% |
| Subtotal, Nuclear Energy | 708,202 | 893,376 | 863,386 | -29,990 | -3.4% |
| <i>Adjustments</i> | | | | | |
| Transfer from State Department | 227 | 0 | 0 | 0 | N/A |
| Use of Prior Year Balances | 0 | -5,000 | 0 | +5,000 | +100.0% |
| Total, Nuclear Energy | 708,429 | 888,376 | 863,386 | -24,990 | -2.8% |
| Other Defense Activities | | | | | |
| Idaho Sitewide Safeguards and Security | 89,853 | 0 | 0 | 0 | N/A |
| Total, Nuclear Energy | 798,282 | 888,376 | 863,386 | -24,990 | -2.8% |

Appropriation Overview

Nuclear Energy (NE) supports the diverse civilian nuclear energy programs of the U.S. Government, leading Federal efforts to research and develop nuclear energy technologies, including generation, safety, waste storage and management, and security technologies, to help meet energy security, proliferation resistance, and climate goals.

Program Highlights

- **Small Modular Reactor Licensing Technical Support**

The Small Modular Reactor (SMR) Licensing Technical Support (LTS) program accelerates the timelines for the commercialization of small modular reactor technologies. The mission of the program is to support first-of-a-kind costs associated with design certification and licensing activities for SMR designs through cost-shared arrangements with industry partners (industry contributions are a minimum of 50% of the cost) to promote the deployment of SMRs that can provide safe, clean, affordable power. If industry chooses to widely deploy these technologies in the U.S., they could help meet the Nation's economic, energy security and climate change goals. DOE will have all awarded cooperative agreements in place by FY 2014.

- **Supercritical Transformational Electric Power Generation**

The Budget Request reflects a new collaborative effort focused on the research, development, and demonstration of supercritical carbon dioxide technologies with the potential for significant improvements in energy and environmental performance over current power generation systems. As part of this effort, the budget provides \$27.5 million within NE for a Supercritical Transformational Electric Power Generation (STEP) initiative, a pilot-scale demonstration project to accelerate pre-commercial development and validation of advanced supercritical carbon dioxide (sCO₂) Brayton cycle energy conversion technology. This demo is a collaborative DOE project across DOE offices and will complement ongoing sCO₂ activities in other programs.

- **Reactor Concepts Research, Development and Demonstration**

The Reactor Concepts Research, Development and Demonstration (RCRD&D) program is designed to advance the state of reactor technology to improve its competitiveness, and help advance nuclear power as a resource capable of meeting the Nation's energy, environmental, and national security needs. RD&D activities are designed to address technical, cost, safety and security issues associated with reactor concepts including advanced small modular reactors (SMRs) and other advanced reactor technologies.

- **Fuel Cycle Research and Development**

The Fuel Cycle Research and Development (FCR&D) will continue the implementation of the *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste*. Activities in this area will focus on research and development and process development in the areas of waste transportation, storage, disposal, and siting activities. The FCR&D program will also conduct R&D a suite of technology options that will enable future decision makers to make informed decisions about how better to manage nuclear waste and used fuel from reactors. The program employs a long-term, science-based approach to foster innovative, transformational technology solutions to achieve this mission.

- **Nuclear Energy Enabling Technologies**

Nuclear Energy Enabling Technologies (NEET) conducts research and development in crosscutting technologies that directly support the development of new and advanced reactor designs and fuel cycle technologies, as well as the potential extension of life of the current fleet of nuclear reactors. These technologies are expected to help advance the state of nuclear technology, improving its competitiveness, and promoting continued contribution to meeting our Nation's energy and environmental challenges. Included are efforts to accelerate the development of advanced nuclear energy modeling and simulation capabilities.

- **Radiological Facilities Management**

Radiological Facilities Management provides fresh reactor fuel to, and removes used fuel from, 26 operating university reactors.

- **International Nuclear Energy Cooperation**

International Nuclear Energy Cooperation serves as the Department's overall lead for all international activities related to civil nuclear energy, including analysis, development, and implementation of international civil nuclear energy policy. These activities support international bilateral and multilateral engagement and civil nuclear energy research and development (R&D) activities with countries with an established or planned civilian nuclear power sector.

- **Idaho Facilities Management and Idaho Sitewide Safeguards and Security**

Idaho Facilities Management (IFM) and Idaho Sitewide Safeguards and Security (S&S) manage the planning, acquisition, operation, maintenance, security, and disposition of the NE-owned facilities and capabilities at the Idaho National Laboratory (INL). The IFM and S&S programs maintain DOE mission-supporting facilities and capabilities at INL in a secure, safe, compliant status to support the Department's nuclear energy research, testing of naval reactor fuels and reactor core components, and range of national security technology programs that support the National Nuclear Security Administration (NNSA) and other Federal agencies in the areas of critical infrastructure protection and nuclear nonproliferation. FY 2015 activities include the completion of the Advanced Test Reactor Life Extension program and continuation of the Remote-Handled Low Level Waste Disposal Project.

OFFICE OF INDIAN ENERGY POLICY AND PROGRAMS

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|------------|
| | | | | \$ | % |
| Office Of Indian Energy Policy and Programs | | | | | |
| Office of Indian Energy Policy and Programs (IE) | 0 | 0 | 2,510 | +2,510 | N/A |
| Office of Indian Energy Policy and Programs (DA) (non-add) | 1,928 | 2,506 | 0 | N/A | N/A |
| Tribal Energy Program (IE) | 0 | 0 | 13,490 | +13,490 | N/A |
| Tribal Energy Program (EE) (non-add) | 9,421 | 6,996 | 0 | N/A | N/A |
| Total, Office of Indian Energy Policy and Programs | 0 | 0 | 16,000 | +16,000 | N/A |

Appropriation Overview

Office of Indian Energy Policy and Programs (IE) directs, fosters, coordinates, and implements energy planning, education, management, and competitive grant programs to assist Tribes with clean energy development and infrastructure, capacity building, energy costs, and electrification of Indian lands and homes. IE coordinates programmatic activity across DOE related to the development of clean energy resources on Indian lands and works with, other Government agencies; Indian Tribes and organizations to promote Indian energy policy and initiatives. IE performs these functions consistent with the federal government's trust responsibility, Tribal self-determination policy, and government-to-government relationship with Indian Tribes.

Program Highlights

In FY 2015, the Office of Indian Energy Policy and Programs is moving out of the Departmental Administration (DA) account and being established as a new stand-alone office, with a separate appropriation under Energy Programs. Energy Efficiency and Renewable Energy's Tribal Energy Program and the DA's Office of Indian Energy Policy and Programs are being consolidated under the new IE appropriation to promote alignment of the Department's Indian energy policies and financial assistance programs. Consolidation will result in more efficient and effective administration and management of Tribal activities and programs via a single program office. Additional resources are being directed into technical assistance and competitive grant programs for Tribes. Technical and financial assistance is necessary to help support clean energy development, energy efficiency improvements, electrification projects, and other greenhouse gas emission mitigation technologies for Indian Tribes, including, but not limited to, fossil fuel electric generating plants or peaking units that utilize carbon sequestration systems, and/or operate in conjunction with solar, wind, or other sources of renewable energy.

ADVANCED RESEARCH PROJECTS AGENCY—ENERGY

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Advanced Research Projects Agency - Energy | | | | | |
| ARPA-E Projects | 226,647 | 252,000 | 295,750 | +43,750 | +17.4% |
| Program Direction | 23,989 | 28,000 | 29,250 | +1,250 | +4.5% |
| Total, Advanced Research Projects Agency - Energy | 250,636 | 280,000 | 325,000 | +45,000 | +16.1% |

Appropriation Overview

Advanced Research Projects Agency—Energy (ARPA-E) catalyzes transformational energy technologies that could create a more secure and affordable American future by advancing high-potential, high-impact energy technologies in areas that industry by itself is not likely to undertake because of technical and financial uncertainty. ARPA-E focuses on energy technologies that can be meaningfully advanced with a small investment over a defined period of time. Since its inception, ARPA-E has invested over \$900 million in 362 projects across 39 states.

Program Highlights

ARPA-E categorizes its research portfolio into two primary thrusts: Transportation Systems and Stationary Power Systems. In FY 2015 ARPA-E envisions building new programs across both thrusts in transportation fuels; energy materials and processes; energy storage; and sensors, information, and integration, with the allocation between thrusts depending on details of the programs run and proposals received.

- In FY 2015, ARPA-E plans to release an open funding opportunity announcement for approximately \$150 million designed to catalyze transformational breakthroughs across the entire spectrum of energy technologies.
- With the remaining requested funds, ARPA-E plans to release 4-5 focused programs to target gaps where high-impact, high-potential investment could lead to transformational technologies, developing entirely new ways to generate, store, and use energy.
- Assuming successful piloting in FY 2014, ARPA-E plans to continue its rolling open solicitation (Innovative Development in Energy-Related Applied Science) which allows seed funding for proof of concept ideas that may provide the impetus for future focused programs.

ENERGY INFORMATION ADMINISTRATION

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Energy Information Administration | | | | | |
| National Energy Information System | 99,508 | 116,999 | 122,500 | +5,501 | +4.7% |
| Total, Energy Information Administration | 99,508 | 116,999 | 122,500 | +5,501 | +4.7% |

Appropriation Overview

Energy Information Administration (EIA) is the statistical and analytical agency in DOE. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. As the Nation’s premier source of energy information, EIA conducts a data collection program covering the full spectrum of energy sources, end uses, and energy flows; generates short- and long-term domestic and international energy projections; and performs timely, informative energy analyses.

Program Highlights

The FY 2015 Budget Request maintains EIA’s core energy information program; continues the modernization of EIA’s data infrastructure to introduce new processing efficiencies across the agency’s largest operational area; and addresses evolving customer needs by enabling EIA to:

- Develop an interface that enables groups with common interests to crowd-source, or pool information to determine the actual effectiveness of specific building efficiency technologies, practices, and characteristics in reducing energy use while maintaining energy services.
- Build a mid-term analysis capability with a greater international focus to better explain domestic energy markets within the broader context of the world energy system, including the global markets for liquefied natural gas, crude oil, and refined products.
- Improve the capability to track and report on rapidly-changing domestic market dynamics, including expanded collection of domestic oil and gas production and collaboration with member states of the Ground Water Protection Council to make EIA a repository for well-level data from states.

TITLE 17 – INNOVATIVE TECHNOLOGY LOAN GUARANTEE PROGRAM

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Title 17 - Innovative Technology Loan Guarantee Program | | | | | |
| Administrative Operations | 36,088 | 42,000 | 42,000 | 0 | 0.0% |
| Loan Guarantee Program, Offsetting Collections | -36,088 | -22,000 | -35,000 | -13,000 | -59.1% |
| Total, Title 17 - Innovative Technology Loan Guarantee Program | 0 | 20,000 | 7,000 | -13,000 | -65.0% |

Appropriation Overview

Innovative Technology Loan Guarantee Program (LGP), as authorized under Title XVII of the Energy Policy Act of 2005, encourages early commercial use of new or significantly improved technologies in energy projects. Projects supported by DOE loan guarantees must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; employ new or significantly improved technologies compared to commercial technologies in service in the United States at the time the guarantee is issued; and offer a reasonable prospect of repayment of the principal and interest on the guaranteed obligation. LGP supports the goals and objectives in the President’s Climate Action Plan by supporting the deployment and efficient use of all-of-the-above energy resources. LGP has closed over \$22 billion in loan guarantees and issued over \$4 billion in conditional commitments, including loan guarantees for the first new commercial nuclear power plant to be licensed and begin construction in the U.S. in three decades.

The FY 2015 Loan Programs Office (LPO) budget request will allow LGP to continue active monitoring of closed projects while increasing efforts to deploy \$28 billion in loan authority and \$169.6 million in section 1703 credit subsidy appropriations for innovative energy technologies.

Program Highlights

The FY 2015 budget request supports American competitiveness in clean energy while responding to the threat of climate change. Furthermore:

- As part of the President’s Climate Action Plan, LGP issued the Advanced Fossil Energy Projects Solicitation in FY 2014. Over the course of FY 2015 and FY 2016, LGP will review applications under the new solicitation and work to obligate the remaining \$8 billion in loan guarantee authority for advanced fossil energy technologies that reduce greenhouse gas emissions.
- Consistent with the Climate Action Plan’s objective to support the deployment of all-of-the-above energy resources, LGP plans to issue new solicitations for make available loan guarantee authority for innovative nuclear, renewable, and energy efficient end-use technologies.
- The \$7 million net appropriation will offset LGP’s administrative costs that exceed the amount LGP expects to collect in fees in FY 2015.

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING LOAN PROGRAM

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Advanced Technology Vehicles Manufacturing Loan Program | | | | | |
| Advanced Technology Vehicles Manufacturing Loan Program | 5,686 | 6,000 | 4,000 | -2,000 | -33.3% |
| Total, Advanced Technology Vehicles Manufacturing Loan Program | 5,686 | 6,000 | 4,000 | -2,000 | -33.3% |

Appropriation Overview

Advanced Technologies Vehicles Manufacturing (ATVM) Loan Program supports the development of advanced technology vehicles and associated components in the United States. ATVM accelerates the domestic commercial deployment of advanced technology vehicles at a scale sufficient to meaningfully contribute to the achievement of our national clean energy objectives—including reduced dependence on oil; mitigation of greenhouse gas emissions; and enhancement of American competitiveness in the global economy of the 21st century.

The FY 2015 Loan Programs Office (LPO) Budget Request for ATVM will allow LPO to monitor closed projects and conduct underwriting on new projects. The appropriation will cover ATVM’s administrative expenses, including salaries for its full time employees, as well as the cost of outside advisors for financial, legal, engineering, credit, and market analysis. ATVM is not authorized to collect fees; therefore, the appropriation must cover the costs for originating new loans as well as monitoring existing loans. LPO/ATVM has begun conducting industry outreach in an effort to solicit new applications from qualified vehicle and component manufacturers and originate new loans using existing loan authority.

Program Highlights

The FY 2015 Budget Request supports the President’s goals to halve the Nation’s net oil imports by 2020 and strengthen U.S. leadership in advanced vehicle development and production. The Budget Request also supports American competitiveness in clean energy while responding to the threat of climate change. Furthermore:

- ATVM’s current portfolio of projects is reducing petroleum usage by over 250 million gallons per year and has the capacity to manufacture 100,000 electric vehicle batteries per year.
- ATVM’s projects have created or saved over 40,000 jobs domestically.

ENVIRONMENTAL MANAGEMENT

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Environmental Management by Site | | | | | |
| Carlsbad/Waste Isolation Pilot Plant (WIPP) | 202,293 | 221,170 | 220,475 | -695 | -0.3% |
| Idaho National Laboratory | 360,629 | 391,993 | 372,103 | -19,890 | -5.1% |
| Oak Ridge | 402,680 | 429,541 | 384,975 | -44,566 | -10.4% |
| Paducah | 149,533 | 324,524 | 269,773 | -54,751 | -16.9% |
| Portsmouth | 217,437 | 199,465 | 221,804 | +22,339 | +11.2% |
| Richland/Hanford | 943,327 | 1,012,620 | 914,301 | -98,319 | -9.7% |
| River Protection | 1,097,441 | 1,210,216 | 1,235,000 | +24,784 | +2.0% |
| Savannah River | 1,214,284 | 1,255,430 | 1,282,302 | +26,872 | +2.1% |
| Lawrence Livermore National Laboratory | 1,998 | 1,476 | 1,366 | -110 | -7.5% |
| Los Alamos National Laboratory | 192,033 | 224,789 | 224,617 | -172 | -0.1% |
| Nevada | 60,795 | 61,897 | 64,851 | +2,954 | +4.8% |
| Sandia National Laboratories | 2,588 | 2,814 | 2,801 | -13 | -0.5% |
| Separation Process Research Unit (SPRU) | 21,795 | 23,700 | 0 | -23,700 | -100.0% |
| West Valley Demonstration Project | 61,077 | 66,015 | 60,457 | -5,558 | -8.4% |
| Brookhaven National Laboratory | 7,471 | 0 | 0 | 0 | N/A |
| Energy Technology Engineering Center | 8,868 | 9,404 | 8,959 | -445 | -4.7% |
| Lawrence Berkeley National Laboratory | 9,478 | 17,786 | 0 | -17,786 | -100.0% |
| Moab | 31,480 | 38,000 | 35,837 | -2,163 | -5.7% |
| SLAC National Accelerator Laboratory | 3,793 | 0 | 0 | 0 | N/A |
| Other Sites | 4,943 | 5,702 | 13,297 | +7,595 | +133.2% |
| Headquarters Operations | 28,029 | 35,979 | 27,986 | -7,993 | -22.2% |
| Program Direction | 295,770 | 300,000 | 280,784 | -19,216 | -6.4% |
| Federal Contribution to Uranium Enrichment D&D Fund | 0 | 0 | 463,000 | +463,000 | N/A |
| Subtotal, Environmental Management by Site | 5,317,742 | 5,832,521 | 6,084,688 | +252,167 | +4.3% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances | -19,000 | -2,206 | 0 | +2,206 | +100.0% |
| UED&D Fund Discretionary Payment | 0 | 0 | -463,000 | -463,000 | N/A |
| Total, Environmental Management by Site | 5,298,742 | 5,830,315 | 5,621,688 | -208,627 | -3.6% |

Appropriation Overview

Environmental Management (EM) supports the Department’s Strategic Plan through cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities.

EM is responsible for the cleanup of millions of gallons of liquid radioactive waste, thousands of tons of spent (used) nuclear fuel and special nuclear material, disposition of large volumes of transuranic and mixed/low-level waste, huge quantities of contaminated soil and water, and deactivation and decommissioning of thousands of excess facilities. This is the largest cleanup program in the world brought about from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research, and it involves some of the most dangerous materials known to humankind.

Program Highlights

- **Savannah River**

At the Savannah River Site, the largest portion of the Request supports the Tank Waste Management Program, which includes operation of the Defense Waste Processing Facility, where high-level radioactive tank waste is turned to a glass form suitable for permanent disposal. It also includes management of the tank farms themselves, as well as, operation of Actinide Removal Process and Modular Caustic Side Solvent Extraction units being used to separate the various tank-waste components for the most efficient and cost-effective treatment. In addition, it supports continued construction of the Salt Waste Processing Facility, which will eventually process 31 million gallons of the tanks’ lower-activity radioactive salt waste, as well as, construction of an additional disposal unit for solidified salt waste. The Request also funds the Savannah River Site’s continued support for national security priorities and international agreements, including: managing Special Nuclear Materials, processing aluminum-clad spent (used) nuclear fuel in H

Canyon; and furthering the Global Threat Reduction Initiative through continued receipt of foreign and domestic research reactor spent (used) nuclear fuel. This Request also supports continued activities to reduce the residual plutonium contamination in Building 235-F, consistent with Defense Nuclear Safety Facilities Board Recommendation 2012-1, and continued operation and maintenance of soil and groundwater remedial systems.

- **Office of River Protection**

The Office of River Protection's primary goal is the safe management and treatment of approximately 56 million gallons of radioactive liquid waste currently stored in 177 aging underground storage tanks at Hanford. Its mission includes operation, maintenance, engineering, and construction activities in the tank farms, as well as, managing a multi-year construction project to build a Waste Treatment and Immobilization Plant (WTP) to process and immobilize the tank waste in a solid glass form safe for permanent disposal. The FY 2015 Budget Request is designed to maintain safe operations for the tank farms; achieve regulatory commitments related to emptying tanks and processing the waste; and develop the infrastructure necessary to enable waste treatment operations. It also supports continuing construction on the WTP's Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory. Consistent with the Department's revised option for WTP, which is designed to move the WTP toward immobilization of waste as soon as practicable while resolution of technical issues continues, the FY 2015 budget includes support for analysis and preliminary design of an Interim Pretreatment System.

- **Hanford Site (Richland)**

The Richland Operations Office manages all cleanup activities at Hanford not managed by the Office of River Protection, while also providing site-wide services shared by the two offices. Cleanup activities include soil and groundwater remediation, facility decontamination and decommissioning (D&D), stabilization and disposition of nuclear materials and spent nuclear fuel, and disposition of waste other than the tank waste managed by the Office of River Protection. EM's strategy is to significantly shrink the active cleanup footprint by completing the majority of cleanup in the Hanford site's Columbia River Corridor in 2015. The FY 2015 Request supports the following significant activities: maintaining safe operations and site-wide services; completing the majority of the River Corridor cleanup; and continuing progress towards Plutonium Finishing Plant cleanout and demolition to Slab-on-Grade, as well as, Building 324, its associated waste site, and the 100 K Area. In addition, EM will initiate construction of the K West Basin Sludge Treatment Project in FY 2015.

- **Oak Ridge**

At Oak Ridge, the FY 2015 Request will support the completion of preliminary design for the Mercury Treatment Facility at Outfall 200, as well as continued study and development of mercury characterization techniques and remediation technologies. The Request also provides funds to design and prepare for construction of the sludge build-out capital asset project at the Transuranic Waste Processing Center, which is needed to dispose of the sludge wastes stored in the Melton Valley storage tanks. The Center will also continue to process for disposal both contact-handled and remote-handled transuranic waste as required by legally enforceable regulatory commitments. Building on EM's successful demolition of the K-25 facility, once the world's largest building, the Request also supports continuing deactivation activities at the K-27 Building in the East Tennessee Technology Park. Additionally, in FY 2015 the site will continue uranium-233 (U-233) direct-disposition activities initiated in FY 2012, while maintaining Building 3019, where the U-233 is stored, in a safe operating condition.

- **Idaho**

The Idaho Cleanup Project is responsible for the treatment, storage and disposition of a variety of radioactive and hazardous waste streams, including removal and disposition of targeted buried waste sitting above the Snake River Plain Aquifer. The project is also responsible for removing or deactivating unneeded facilities, and removing DOE's inventory of spent (used) nuclear fuel and high-level waste from Idaho. The FY 2015 Request will support the completion of operations at the Sodium Bearing Waste Treatment facility, which will treat approximately 900,000 gallons of waste stored in tanks that are 35 to 45 years old. The treatment of this waste, which completes the treatment of all liquid tank waste in Idaho, will enable EM to clean out and close the final four tanks at the site. The Request also supports activities required to comply with a settlement agreement with the State of Idaho, including: disposal of remote-handled low-level waste at the Radioactive Waste Management Complex and mixed low-level waste at appropriate off-site disposal facilities; and packaging, characterizing and certifying remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center. In addition, the requested funds will support use of the Advanced Mixed Waste Treatment Facility to ship stored contact-handled transuranic waste, and for

receipt, characterization, and certification of a small volume of transuranic waste from other DOE sites that do not have characterization capabilities.

- **Carlsbad**

The Carlsbad Field Office is responsible for managing the National Transuranic Waste Program and the Waste Isolation Pilot Plant (WIPP), the Nation's only mined geologic repository for the permanent disposal of defense-generated transuranic waste. As manager of the transuranic waste program, Carlsbad coordinates with all DOE sites that have defense-generated transuranic waste to ensure the safe and regulatory compliant retrieval, repackaging, characterization, shipment and disposal of the waste. Its mission is critical to the successful cleanup of defense sites across the country, to reducing worker, public and environmental risks at those sites, and to decreasing the nuclear footprint across the DOE complex. Since opening WIPP, which is located near Carlsbad, New Mexico, EM has sent more than 11,000 shipments of transuranic waste for permanent disposal, safely emplacing nearly 90,000 cubic meters of waste through the end of calendar year 2013. The FY 2015 Request will continue to prioritize shipments of transuranic waste from Los Alamos National Laboratory in accordance with a Framework Agreement between the Department and the State of New Mexico, while also supporting shipments from other defense sites.

- **Paducah**

The Paducah site is responsible for a multifaceted portfolio of processing and cleanup activities. The site operates one of two depleted uranium hexafluoride (DUF6) conversion facilities in the EM portfolio, with the Paducah facility expected to continue operations for approximately thirty more years. Additionally, Paducah manages high-priority groundwater remediation; deactivation and decommissioning of excess facilities; and disposition of mixed and low-level waste, all with close involvement of local community stakeholders. In addition to ongoing environmental cleanup and DUF6 operations, the FY 2015 Request supports the continued transition of the Paducah Gaseous Diffusion Plant from the United States Enrichment Corporation (USEC) to DOE after USEC announced its decision to terminate its leased operations of the facility. This includes support for the initiation and completion of several projects chosen to reduce risks and lifecycle costs. The Request also supports preliminary design and evaluation work for the Paducah Potential On-Site Waste Disposal Facility project. This project will provide on-site disposal capacity for anticipated demolition debris and environmental remediation waste, should the on-site facility be selected as the appropriate remedy.

- **Portsmouth**

The Portsmouth site is responsible for operating the second of DOE's two DUF6 conversion facilities, with the Portsmouth facility expected to operate for approximately twenty more years. The site is also responsible for the D&D of the Portsmouth Gaseous Diffusion Plant; disposing of all low-level and mixed low-level waste resulting from D&D activities; disposing of all excess materials; and removing trichloroethylene source material contaminating groundwater at and around the site. EM will use the FY 2015 Request to fund the foregoing activities, as well as, the design and construction of an on-site landfill for the disposal of waste expected to be generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities.

OFFICE OF LEGACY MANAGEMENT

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---------------------------------|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Legacy Management | | | | | |
| Legacy Management | 144,603 | 163,271 | 158,639 | -4,632 | -2.8% |
| Program Direction | 11,096 | 13,712 | 13,341 | -371 | -2.7% |
| Total, Legacy Management | 155,699 | 176,983 | 171,980 | -5,003 | -2.8% |

Appropriation Overview

Legacy Management (LM) ensures the long-term protection of human health and the environment after site cleanup is completed. LM’s responsibilities include DOE closure sites, former uranium mills, sites in the Formerly Utilized Sites Remedial Action Program, and selected sites conveyed to DOE under other authority. LM also funds the pensions and post-retirement benefits for former contractor personnel after site closure.

The LM program supports the DOE Strategic Plan goal of Management and Performance: Position DOE to meet the challenges of the 21st century and the Nation’s Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue departmental missions. LM is also a leader in cutting resource waste, supporting energy efficiency and reducing energy use in Federal buildings, including certification by the U.S. Green Building Council for the LM records storage facility and Fernald Preserve Visitors Center.

Program Highlights

The majority of LM’s activities are long-term and focus on maintaining DOE legal, regulatory, community, and contractual commitments. Management of closure site activities by LM enables other DOE programs to focus on risk reduction and site closure. By the end of FY 2015, LM expects to have responsibility for long-term management for 96 sites.

LM’s functions span both physical and human resources. In the physical environment, LM conducts long-term surveillance and maintenance of environmental remedies (e.g., groundwater monitoring and disposal cell maintenance) to protect human health and the environment. For each of the sites LM maintains both the physical and electronic records and responds to over 1,000 requests for information each year. LM is also responsible for maintaining the records and information systems for the Yucca Mountain site, including the Licensing Support Network. LM funds the pension plan contributions and post-retirement benefits (e.g., medical and life insurance) for former contractor workers from eight sites. In addition, LM manages the sites’ natural resources, promotes reuse, is responsible for DOE uranium leasing program and, where possible, transfers sites to external parties.

OFFICE OF HEARINGS AND APPEALS

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|------------------------------------|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Hearings and Appeals | | | | | |
| Program Direction | 3,803 | 5,022 | 5,500 | +478 | +9.5% |
| Total, Hearings and Appeals | 3,803 | 5,022 | 5,500 | +478 | +9.5% |

Appropriation Overview

Office of Hearings and Appeals (OHA) is responsible for all DOE adjudicative processes except those administered by the Federal Energy Regulatory Commission. OHA’s jurisdiction includes Freedom of Information Act and Privacy Act appeals, evidentiary hearings to determine an employee’s eligibility for a security clearance, appeals, and agency decisions on contractor employee whistleblower complaints, and requests for exception from DOE regulations and orders, such as exceptions from the appliance efficiency regulations. In FY 2013, OHA achieved significant accomplishments in management and operational excellence, including the increased use of technology to reduce costs and processing time for cases. Over the last five years, OHA has reduced its case-processing time by over 60 percent without reducing the quality of its decisions.

Program Highlights

The Request supports salaries and benefits for 22 FTEs operating in OHA’s Personnel Security and Appeals Division, Employee Protection and Exceptions Division, and Office of Conflict Prevention and Resolution.

DEPARTMENTAL ADMINISTRATION

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|---------------|
| | | | | \$ | % |
| Departmental Administration | | | | | |
| Administrative Operations | | | | | |
| Office of the Secretary | 4,849 | 5,008 | 5,008 | 0 | N/A |
| Chief Financial Officer Management | 49,576 | 47,825 | 47,182 | -643 | -1.3% |
| Chief Human Capital Officer | 59,437 | 57,599 | 68,293 | +10,694 | +18.6% |
| Chief Information Officer | 23,458 | 24,488 | 25,400 | +912 | +3.7% |
| Congressional and Intergovernmental Affairs | 78,885 | 82,062 | 74,164 | -7,898 | -9.6% |
| Office of Indian Energy Policy and Programs | 4,521 | 4,700 | 6,300 | +1,600 | +34.0% |
| Office of Small and Disadvantaged Business Utilization | 1,928 | 2,506 | 0 | -2,506 | -100.0% |
| Economic Impact and Diversity | 0 | 0 | 2,253 | +2,253 | N/A |
| General Counsel | 7,204 | 8,956 | 7,247 | -1,709 | -19.1% |
| Policy and International Affairs | 31,863 | 33,053 | 33,000 | -53 | -0.2% |
| Energy Policy and Systems Analysis | 25,991 | 0 | 0 | 0 | N/A |
| International Affairs | 0 | 19,269 | 38,545 | +19,276 | +100.0% |
| Public Affairs | 0 | 15,873 | 18,441 | +2,568 | +16.2% |
| Funding from Other Defense Activities | 3,664 | 3,597 | 3,431 | -166 | -4.6% |
| | -109,095 | -118,836 | -118,836 | 0 | N/A |
| Subtotal, Administrative Operations | 182,281 | 186,100 | 210,428 | +24,328 | +13.1% |
| Cost of Work for Others | 48,537 | 48,537 | 42,000 | -6,537 | -13.5% |
| Miscellaneous Revenues | -111,623 | -108,188 | -119,171 | -10,983 | -10.2% |
| <i>Adjustments</i> | | | | | |
| Use of Prior Year Balances (GC) | 0 | 0 | -2,000 | -2,000 | N/A |
| Use of Prior Year Balances (CIO) | 0 | 0 | -2,205 | -2,205 | N/A |
| Total, Departmental Administration | 119,195 | 126,449 | 129,052 | +2,603 | +2.1% |

Appropriation Overview

Departmental Administration (DA) funds 11 management organizations that support headquarters operations in administration, accounting, budgeting, contracting, and project management, Congressional and intergovernmental liaison, domestic and international energy policy, information management, life-cycle asset management, legal services, workforce diversity and minority economic impact, ombudsman services, small business advocacy, and public affairs. Funding for the Office of the Secretary is provided separately from the other administrative functions within the DA appropriation. The DA appropriation also budgets for Cost of Work for Others and receives Miscellaneous Revenues from other sources.

Program Highlights

Overall, in FY 2015, the Budget Request reflects increases in budget authority to expand programmatic scope and invest in crosscutting initiatives with potential for innovative and collaborative endeavors in the energy sector, as outlined below:

- **Congressional and Intergovernmental Affairs (CI)**
\$1.6 million increase to support increased engagement and interface with State, local and Tribal governments and enhanced and coordinated grid modernization efforts.
- **Chief Information Officer (CIO)**
\$4.2 million to support the Energy IT Services modernization initiative, which will assist in transitioning all remaining Federal employees and direct support contractors (~9,000 individuals) to CIO's Commodity IT services.
- **Management (MA)**
\$11 million increase to support four Secretarial initiatives: (1) the National Laboratory Operations Board; (2) Contract Management Improvement; (3) Cost Estimating/Cost Analysis Improvement; and (4) Internal Evaluations.

- **Energy Policy and Systems Analysis (EPSA)**

\$19.3 million increase to enable a more robust energy policy analysis process and strengthened institutional support for grid modernization and Quadrennial Energy Review activities.

In FY 2015, significant program office restructuring and realignments are occurring within the DA account to ensure statutory requirements and Secretarial priorities have adequate resources and programs are operating efficiently and effectively to support mission critical areas of the Department. The objective of these shifts in activities/programs is to establish a streamlined flow of information and work in the Department across energy disciplines.

- The Office of Indian Energy Policy and Programs is established as a stand-alone office under Energy Programs as a separate appropriation with resources and activities of the Energy Efficiency and Renewable Energy tribal energy program consolidated into the new office.
- The Office of Small and Disadvantaged Business Utilization (OSDBU), formerly in the Office of Economic Impact and Diversity (ED), is established as a separate program office within the DA account. In FY 2014, OSDBU is operating under a Memorandum of Understanding with ED until all of the functions are transferred and fully funded in FY 2015. The new OSDBU program office has direct report authority to the Secretary, ensuring that Small Business Administration goals are being met or exceeded at the Department.
- The Office of the Chief Information Officer is reducing its cybersecurity program funding by approximately \$9.4 million with the expectation of corporate support for cybersecurity activities through the Department's Working Capital Fund.

Additionally, in FY 2015, revised estimates for Cost of Work for Others and miscellaneous revenues have resulted in the Cost of Work for Others estimate being reduced by approximately \$6.5 million and in the estimate of miscellaneous revenues being increased by \$17.5 million.

HEALTH, SAFETY AND SECURITY

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|----------------|
| | | | | \$ | % |
| Health, Safety and Security | | | | | |
| Health, Safety and Security | 136,545 | 143,616 | 0 | -143,616 | -100.0% |
| Program Direction | 93,639 | 108,301 | 0 | -108,301 | -100.0% |
| Total, Health, Safety and Security | 230,184 | 251,917 | 0 | -251,917 | -100.0% |

Appropriation Overview

On February 12, 2014, the Secretary of Energy announced the reorganization of **Health, Safety and Security (HSS)**. The existing HSS health, safety, environment, and security policy, assistance, and corporate program activities and DOE Headquarters security operations will be integrated under the Office of the Under Secretary for Management and Performance in the new Office of Environment, Health, Safety and Security. The existing HSS independent oversight, enforcement, safety and security training, and outreach activities will comprise the new Office of Independent Enterprise Assessments reporting directly to the Office of the Secretary. The FY 2015 Request realigns the HSS budget between the two new offices, described on the following pages.

ENVIRONMENT, HEALTH, SAFETY AND SECURITY

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|------------|
| | | | | \$ | % |
| Environment, Health, Safety and Security | | | | | |
| Environment, Health, Safety and Security | 0 | 0 | 118,763 | +118,763 | N/A |
| Program Direction | 0 | 0 | 62,235 | +62,235 | N/A |
| Total, Environment, Health, Safety and Security | 0 | 0 | 180,998 | +180,998 | N/A |

Appropriation Overview

Environment, Health, Safety and Security demonstrates DOE’s unwavering commitment to maintain a safe and secure work environment for all Federal and contractor employees; ensure that operations do not adversely affect the health and safety of surrounding communities; and protect the national security and other entrusted assets. The Office of Environment, Health, Safety and Security is central to achieving DOE’s mission in a safe, secure, environmentally responsible manner by providing sound and consistent policy, technical assistance, and corporate leadership for environment, health, safety and security program areas.

Program Highlights

- **Environment, Health and Safety (EHS)**

EHS provides technical and analytical expertise used to protect and enhance the safety of all DOE workers, the public, and the environment in support of Departmental missions and goals. EHS maintains policies and guidance that promote safe, environmentally sustaining work practices ensure best-in-class performance in the areas of occupational, facility, nuclear, and radiation safety; cultural and natural resources; environment; waste management; property recycling, reuse and release; and quality assurance. EHS provides technical assistance to DOE program and site offices and laboratories through site-specific activities such as nuclear facility safety bases reviews and through corporate-wide services such as accrediting commercial laboratories used by DOE sites for regulatory compliance and employee radiological monitoring programs; and the operation of the Filter Test Facility. It also maintains corporate safety and environmental databases; administers the accident investigation, the DOE Federal employee occupational safety, and health and voluntary protection programs; and assists in the implementation of environmental management systems. EHS also supports Departmental and national preparedness and response efforts associated with radiation emergencies and accidents. Health activities support domestic and international research on exposures of workers and the public to nuclear, radiological, and other hazardous materials. It provides health and environmental services to the people of the Marshall Islands; and medical screenings for former DOE and DOE-related vendor employees, and supports the Department of Labor in implementation of the Energy Employee Occupational Illness Compensation Program Act.

- **Security**

Security provides technical and analytical expertise support to develop and assist in the implementation of safeguards and security programs that protect national security assets entrusted to DOE; and to implement the U.S. Government nuclear weapons-related technology classification and declassification program. Security maintains policies and guidance related to physical, personnel, and information security and nuclear materials accountability, in order to be responsive to national security needs and evolving threats. Security provides technical assistance to DOE programs, site offices and laboratories to implement cost effective security measures tailored to the mission. It maintains corporate security-related information management systems to determine the potential for an undue risk to individual sites, DOE, and national security. Security also provides for the protection of DOE facilities and information in the National Capital Area and access authorization investigations for DOE Headquarters personnel. Additionally, Security implements the information control program for the U.S. Government to mitigate national security threats by preventing the release of information related to weapons of mass destruction and other information that, if released, has the potential to damage the U.S. energy infrastructure. Support is also provided to review over 400 million pages of historical documents backlogged at the National Archives for potential release as required by Executive Order.

The FY 2015 Budget Request includes funding for the Office of Environment, Health, Safety, and Security’s share of the Department’s insider threat program as outlined in Executive Order 13587 and the President’s guidance in November 2012 in the form of the ‘National Insider Threat Policy’ and ‘Minimum Standards for Executive Branch Insider Threat

Programs.' The insider threat program cross-cuts several components of the Department of Energy and these efforts have been coordinated with those components.

- **Program Direction**

Program Direction (PD) provides Federal staffing, travel, support services, and other resources required for execution of Office of Environment, Health, Safety and Security program activities. PD also provides technical support for liaison activities with the Defense Nuclear Facilities Safety Board.

INDEPENDENT ENTERPRISE ASSESSMENTS

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|------------|
| | | | | \$ | % |
| Independent Enterprise Assessments | | | | | |
| Independent Enterprise Assessments | 0 | 0 | 24,068 | +24,068 | N/A |
| Program Direction | 0 | 0 | 49,466 | +49,466 | N/A |
| Total, Independent Enterprise Assessments | 0 | 0 | 73,534 | +73,534 | N/A |

Appropriation Overview

Independent Enterprise Assessments (IEA) provides the Secretary, Deputy Secretary, and DOE leadership with independent oversight and evaluation of the effectiveness of DOE policies and line management performance in the areas of nuclear and worker safety, physical and cybersecurity, and other areas as directed by the Secretary. IEA provides a long-term view of performance and will institutionalize an assessment process using an efficient systematic process that emphasizes performance and performance testing; the conduct of follow-up activities to determining the effectiveness of corrective actions; and the promotion of line management self-assessment activities thereby enhancing overall performance in safety, security, and other programs as directed by the Secretary of Energy.

In addition to independent assessments of DOE's program and site operations, IEA provides the Department with an expanded investigative capability to conduct enforcement functions in the areas of worker safety and health, nuclear safety, and classified information security, complementing the Department's self-reporting mechanisms and providing an integrated, alternative source of discovery of violations. IEA also operates the DOE National Training Center to ensure the timely incorporation of lessons learned from inspections, reviews, and assessments into training courses. IEA conducts outreach activities with labor unions, other U.S. government entities, private sector industrial and education organizations to inform the Secretary of outside inputs/positions as well as to drive appropriate outcomes.

Program Highlights

- **Independent Enterprise Assessments**

IEA provides the Secretary, Deputy Secretary, and DOE leadership with evaluation of the effectiveness of DOE policies and line management performance in the areas of nuclear safety; provides the Department with an expanded investigative capability to conduct enforcement functions in the areas of worker safety and health, nuclear safety, and classified information security; and operates the DOE National Training Center to ensure the timely incorporation of lessons learned from inspections, reviews and assessments into training courses. IEA conducts outreach activities with labor unions, other U.S. government entities, private sector industrial, and education organizations to inform the Secretary of outside inputs/positions as well as to drive appropriate outcomes.

- **Program Direction**

Program Direction (PD) provides Federal staffing, travel, support services, and other resources required for execution of IEA program activities. PD also provides technical support for independent oversight of safeguards and security; cybersecurity; emergency management, nuclear safety, environment, safety, and health programs and performance; providing feedback to DOE leadership, program and site offices, and site contractors.

OFFICE OF THE INSPECTOR GENERAL

(Discretionary dollars in thousands)

| FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | | |
|---|--------------------|--------------------|---------------------|---------------|--------------|
| | | | \$ | % | |
| Office of the Inspector General | 39,803 | 42,120 | 39,868 | -2,252 | -5.3% |
| Total, Office of the Inspector General | 39,803 | 42,120 | 39,868 | -2,252 | -5.3% |

Office of the Inspector General

Office of the Inspector General

Total, Office of the Inspector General

Appropriation Overview

Office of the Inspector General (OIG) bolsters the integrity, economy, and efficiency of DOE programs and operations, including the National Nuclear Security Administration and the Federal Energy Regulatory Commission. The OIG has the authority to inquire into all DOE programs and activities as well as related activities. Audits, inspections, investigations, and other reviews are used to detect and prevent fraud, waste, abuse, and violations of law.

Statutory requirements direct the OIG to conduct an annual evaluation of DOE’s information security systems, as required by the Federal Information Systems Management Act of 2002. The OIG is also charged with reviewing the Department’s efforts to track and improve performance, per the Government Performance and Results Modernization Act of 2010. The OIG routinely conducts reviews of the most significant management challenges facing the Department and continues to provide oversight activities of Recovery Act funds. In addition, the OIG addresses alleged violations of law that impact Department programs, operations, facilities and personnel.

Program Highlights

The OIG focuses its efforts to enhance the efficiency and effectiveness of DOE programs and operations in the following key areas:

- **Support Costs:** OIG assists in identifying potential costs savings in areas such as the estimated \$3.5 billion spent each year on national laboratory support costs.
- **Key Programs and Projects:** OIG evaluates the efficacy of the Department’s management of key programs and projects such as those under the Environmental Management program, which annually expends approximately \$6 billion, including approximately \$13 billion in life-cycle costs for the Hanford Waste Treatment Plant.
- **NNSA Modernization Efforts:** NNSA is undertaking a massive modernization effort that involves major projects (e.g., weapons complex transformation) that benefit from OIG reviews to proactively identify efficient and effective operations.
- **Loan Guarantee Programs:** Implementation phase of the Loan Guarantee programs will most likely require that the OIG hire experts to assist with reviews. Most agreements extend well into the future and will require reviews to confirm compliance with loan terms and conditions to protect taxpayer interests. In addition, new loans issued by the Program will further extend the necessity for such experts/in-depth reviews.
- **Cost Accounting Standards (CAS):** OIG provides reviews of Department contractors’ incurred costs and compliance with CAS.
- **Contract Review:** OIG assesses the Department’s administration of approximately \$25 billion in contracts.

POWER MARKETING ADMINISTRATIONS

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|--|--------------------|--------------------|--------------------|---------------------|--------------|
| | | | | \$ | % |
| Power Marketing Administrations | | | | | |
| Southeastern Power Administration | | | | | |
| Southeastern Power Administration | 123,298 | 101,034 | 96,930 | -4,104 | -4.1% |
| Less Alternative Financing (for PPW)/Offsetting Collection | -123,298 | -101,034 | -96,930 | +4,104 | +4.1% |
| Total, Southeastern Power Administration | 0 | 0 | 0 | 0 | N/A |
| Southwestern Power Administration | | | | | |
| Southwestern Power Administration | 106,358 | 101,764 | 122,666 | +20,902 | +20.5% |
| Less Alternative Financing/Offsetting Collection | -95,115 | -89,872 | -111,266 | -21,394 | -23.8% |
| Total, Southwestern Power Administration | 11,243 | 11,892 | 11,400 | -492 | -4.1% |
| Western Area Power Administration | | | | | |
| Western Area Power Administration (CROM) | | | | | |
| Western Area Power Administration (CROM) | 834,291 | 830,098 | 837,731 | +7,633 | +0.9% |
| Less Alternative Financing/Offsetting Collection | -743,342 | -734,168 | -744,359 | -10,191 | -1.4% |
| Total, Western Area Power Administration (CROM) | 90,949 | 95,930 | 93,372 | -2,558 | -2.7% |
| Falcon and Amistad Operating and Maintenance Fund | | | | | |
| Operation and Maintenance | 4,169 | 6,196 | 5,529 | -667 | -10.8% |
| Offsetting Collections | -3,949 | -4,911 | -4,499 | +412 | +8.4% |
| Less Alternative Financing | 0 | -865 | -802 | +63 | +7.3% |
| Total, Falcon and Amistad Fund | 220 | 420 | 228 | -192 | -45.7% |
| Colorado River Basins Power Marketing Fund | | | | | |
| Spending Authority from Offsetting Collection | 220,397 | 180,844 | 228,209 | +47,365 | +26.2% |
| Offsetting Collections | -243,397 | -203,844 | -251,209 | -47,365 | -23.2% |
| Total, Colorado River Basins Fund | -23,000 | -23,000 | -23,000 | 0 | N/A |
| Transmission Infrastructure Program | | | | | |
| Operating Expenses | 8,947 | 9,718 | 15,629 | +5,911 | +60.8% |
| Offsets and Funding Sources | -8,947 | -9,718 | -15,629 | -5,911 | -60.8% |
| Total, Transmission Infrastructure Program | 0 | 0 | 0 | 0 | N/A |
| Total, Western Area Power Administration | 68,169 | 73,350 | 70,600 | -2,750 | -3.7% |
| Total, Power Marketing Administrations | 79,412 | 85,242 | 82,000 | -3,242 | -3.8% |

Appropriations Overview

The four **Power Marketing Administrations (PMAs)** sell electricity primarily generated by federally owned hydropower projects. Preference in the sale of power is given to public entities and electric cooperatives. Revenues from the sale of Federal power and transmission services are used to repay all related power costs.

Program Highlights

- Southeastern Power Administration**

Southeastern markets and delivers all available Federal hydroelectric power from 22 U.S. Army Corps of Engineers (Corps) multipurpose projects to preference customers in an eleven-state area in the southeastern United States. Southeastern does not own or operate any transmission facilities, and contracts with regional utilities that own electric transmission systems to deliver the Federal hydropower to Southeastern’s customers. Southeastern’s use of receipts and alternative financing offsets its appropriations resulting in a net-zero balance for the program.
- Southwestern Power Administration**

Southwestern markets and delivers Federal hydroelectric power from 24 Corps multipurpose projects to preference customers in a six-state area and participates with other water resource users in an effort to balance diverse interests with power needs. To deliver power to its customers, Southwestern maintains 1,380 miles of high-voltage transmission lines, 25 substations/switchyards, and 51 microwave and VHF radio sites.

- **Western Area Power Administration**

Western markets and transmits Federal power to a 1.3-million-square-mile service area in 15 central and western states from 56 Federally-owned hydroelectric power plants primarily operated by the Bureau of Reclamation (the Bureau), the Corps, and the International Boundary and Water Commission.

- **Bonneville Power Administration**

Bonneville provides electric power, transmission, and energy services to a 300,000-square-mile service area in eight states in the Pacific Northwest. Bonneville wholesales the power produced at 31 Federal projects operated by the Corps and the Bureau and from certain non-Federal generating facilities. From these revenues, Bonneville funds the expense portion of its budget and the power operations and maintenance costs of the Bureau and the Corps in the Federal Columbia River Power System (FCRPS). The capital portion of the budget is funded mostly through borrowing from the U.S. Treasury at market rates for similar projects and with some non-Federal financing.

Bonneville receives no direct annual appropriations from Congress. In FY 2015, total requirements of all Bonneville programs include estimated budget obligations of \$4,307 million. This amount includes operating expenses of \$2,996 million, capital investments of \$1,055 million, and \$46 million in projects funded in advance, with \$209 million in capital transfers. These investments provide electric utility and general plant requirements associated with the FCRPS's transmission services, capital equipment, hydroelectric projects, conservation, and capital investments to mitigate impacts on the environment, fish, and wildlife.

FEDERAL ENERGY REGULATORY COMMISSION

(Discretionary dollars in thousands)

| | FY 2013 Current | FY 2014 Enacted | FY 2015 Request | FY 2015 vs. FY 2014 | |
|---|--------------------|--------------------|--------------------|---------------------|----------------|
| | | | | \$ | % |
| Federal Energy Regulatory Commission (FERC) | | | | | |
| Federal Energy Regulatory Commission Revenues | | | | | |
| Just and Reasonable Rates, Terms, and Conditions | 165,346 | 142,408 | 152,124 | +9,716 | +6.8% |
| Safe, Reliable, Secure, and Efficient Infrastructure | 139,254 | 107,098 | 116,105 | +9,007 | +8.4% |
| Mission Support through Organizational Excellence | 0 | 55,094 | 59,048 | +3,954 | +7.2% |
| FERC Revenues | -304,600 | -304,600 | -327,277 | -22,677 | -7.4% |
| Subtotal, Federal Energy Regulatory Commission | 0 | 0 | 0 | 0 | N/A |
| Excess Fees and Recoveries, FERC | -279 | -26,236 | 0 | +26,236 | +100.0% |
| Total, Federal Energy Regulatory Commission | -279 | -26,236 | 0 | +26,236 | +100.0% |

Appropriation Overview

The **Federal Energy Regulatory Commission (FERC or the Commission)** is an independent agency that regulates the transmission and wholesale sale of electricity in interstate commerce; the transmission and sale of natural gas for resale in interstate commerce; and the transportation of oil by pipeline in interstate commerce. FERC also reviews proposals to build liquefied natural gas (LNG) terminals as well as interstate natural gas pipelines, and licenses and inspects non-Federal hydropower projects. The Commission protects the reliability of the Nation’s bulk-power system and oversees environmental matters related to natural gas pipeline and non-Federal hydro projects. The Commission enforces its regulatory requirements through civil penalties and other means.

FERC’s mission is to assist consumers in obtaining reliable, efficient, and sustainable energy services at a reasonable cost through appropriate regulatory and market means. FERC seeks to ensure that rates, terms and conditions of service are just, reasonable and not unduly discriminatory or preferential, relying on competitive markets where appropriate. Through its oversight and enforcement authorities, FERC seeks to increase compliance with its rules and regulations and deter market manipulation. FERC’s responsibilities also include promoting the development of strong and secure energy infrastructure that operates safely, reliably, and efficiently in the public interest.

Program Highlights

- **Ensure Just and Reasonable Rates, Terms, and Conditions**
To ensure just and reasonable rates, terms and conditions of service, the Commission will rely on competition and appropriate regulatory policies. Competition will benefit energy consumers by encouraging new entry among supply-side and demand-side resources, spurring innovation and deployment of new technologies, improving operating performance, and exerting downward pressure on costs. The Commission will continue to pursue market reforms to allow all types of resources to compete on a level playing field in jurisdictional markets. The Commission will also continue to support an open and transparent electric transmission planning process. Such coordination between transmission providers will support the development of an efficient transmission system and enhance competition in wholesale electric markets. In addition, the Commission approves cost-based, and where appropriate, market-based rates for the interstate transportation of natural gas and oil on jurisdictional pipelines, and for the interstate transmission, and wholesale sales of electric energy. FERC also prevents the accumulation and exercise of market power by reviewing merger and other transactions in the electric industry to ensure that these proposals will not harm the public interest. The Commission accepts tariff provisions, as appropriate, to allow natural gas and oil pipelines, and public utilities to modify their services to meet their customers’ needs.

Oversight and enforcement are essential complements to the Commission’s approach to ensure that rates, terms, and conditions of service are just and reasonable and not unduly discriminatory or preferential. The Commission takes proactive steps to detect problems in energy markets and to reduce the probability that violations will occur. FERC uses a balanced approach to oversight and enforcement efforts: conducting surveillance and analysis of market trends and data; promoting internal compliance programs; employing robust audit and investigation programs; and, when appropriate, exercising the Commission’s civil penalty authority to deter violations. When violations of sufficient seriousness are discovered, the Commission attempts to resolve the investigation through settlement with appropriate

sanctions and future compliance improvements before recommending that the Commission initiate further enforcement proceedings.

- **Promote Safe, Reliable, Secure, and Efficient Infrastructure**

The Commission has an important role in the development of safe, reliable, secure, and efficient energy infrastructure. The Commission's infrastructure siting authority rests in licensing non-Federal hydropower projects, certifying interstate natural gas pipelines and storage projects, authorizing LNG facilities, and, in certain circumstances, permitting electric transmission lines. Post-authorization, the Commission relies heavily on physical inspections of hydropower and LNG facilities to ensure safety.

Maintaining the reliability of the Nation's electric transmission grid is also a critical responsibility of the Commission. FERC will oversee the development and enforcement of mandatory electric reliability standards and critical infrastructure protection standards. In addition, the Commission will provide leadership, expertise, and assistance in identifying, communicating and seeking comprehensive solutions to potential risks to Commission-jurisdictional facilities from cyber attacks, and certain physical threats.

- **Mission Support Through Organizational Excellence**

The Commission strives to achieve organizational excellence by using resources effectively, adequately equipping employees for success, and executing responsive and transparent processes that strengthen public trust. Trust and understanding increase acceptance of FERC decisions and reduces the potential for contentiousness toward FERC rules and regulations, thus enabling the creation and enforcement of policy. The Commission advances this objective by promoting transparency and open communication with respect to conduct of the Commission's business, thereby increasing awareness and understanding of the Commission's activities.

The Commission is making new investments in its human capital, information technology resources, and physical infrastructure. The Commission allocates the majority of its budget to directly cover employee compensation costs and, therefore, places extremely high value on its employees, and is focused on ensuring their success. Also, the Commission continues to focus its human capital efforts on the competencies and positions most affected by the potential loss of approximately 30 percent of its staff to retirement by FY 2018. At the same time, the headquarters building lease term expires in September 2015 and the Commission is seeking to exercise the lease extension and will oversee a complex multi-year renovation effort to realize mandated space savings.