

Fiscal Year 2015

Summary of Performance and Financial Information



Agency Reporting

The Reports Consolidation Act of 2000 authorizes federal agencies, with concurrence from the Office of Management and Budget, to consolidate various reports in order to provide performance, financial, and related information in a more meaningful and useful format. For FY 2015, the Department of Energy has produced an *Agency Financial Report*, an *Annual Performance Report*, and a *Summary of Performance and Financial Information*, pursuant to the OMB Circular A-136. These reports are located on the following website:

www.energy.gov/about-us/budget-performance

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Introduction

This report, the U.S. Department of Energy's (DOE) *Fiscal Year 2015 Summary of Performance and Financial Information*, provides key performance and financial information that demonstrates DOE's commitment to enhance America's security and economic growth through transformative science, technology innovation, and market solutions to meet energy, nuclear security, and environmental challenges.

Our [DOE Strategic Plan](#) provides a roadmap for our work through three broad strategic goals in *Science and Energy, Nuclear Security, and Management and Performance*. Progress was made in achieving each of these goals in FY 2015 through continued investments in scientific research, renewable energy, energy efficiency, nuclear security, and environmental cleanup. For example, DOE supported the interagency task force that released the Administration's Quadrennial Energy Review (QER) in April 2015, a key milestone in the implementation of the President's Climate Action Plan. The QER is a policy roadmap for meeting key energy objectives: enhancing energy infrastructure resilience, reliability, safety and security; modernizing the electric grid and our energy security infrastructures; and improving railways, waterways, ports and roads that move both energy and other commodities. In September 2015, DOE released its second Quadrennial Technology Review which highlights the potential for additional future technology breakthroughs to mitigate the risks of climate change, modernize energy infrastructure, and enhance energy security.

In FY 2015, the Department achieved a number of important financial milestones in support of these strategic objectives. We obligated \$1.7 billion in loan guarantees to three subsidiaries of the Municipal Electric Authority of Georgia to further support the construction of two advanced nuclear reactors at the Vogtle Project – the first new U.S. nuclear power reactors to be licensed in more than three decades. DOE also announced a \$525 million project to establish the Collaboration of Oak Ridge, Argonne, and Lawrence Livermore to deliver computers five to seven times more powerful than the current top supercomputers. These new high performance computers will support national security missions, renewable energy systems design, and materials, biological, and other sciences. Finally, in FY 2015 the Department completed its investment of over \$30 billion in American Recovery and Reinvestment Act projects that increased the use of renewable energy, modernized the electric grid, made homes and businesses more energy efficient, and created or sustained tens of thousands of jobs in the United States.

The Department must fulfill ongoing national security responsibilities, including annual certification of the nuclear weapons stockpile without a return to underground testing and successful implementation of the Department's strategy for modernizing our nuclear enterprise, its infrastructure, and nuclear life extension programs, as well as implementation of global nonproliferation initiatives. These global initiatives included removal of all highly enriched uranium from three countries; removal and disposition of four radioisotope thermoelectric generators from Antarctica which contained more than 100,000 curies of radioactive material; strengthening our export control of dual-use commodities while supporting U.S. industry competitiveness in the global marketplace; and successfully launched three Global Burst Detector sensor suites that enhance the United States' ability to detect and identify nuclear explosions anywhere in the world. Significant environmental cleanup achievements include the demolition of the K-31 Building at Oak Ridge's East Tennessee Technology Park and the completion of cleanup of mercury-contaminated soil at Los Alamos ahead of schedule, reducing the required cleanup time by more than one third.

DOE at a Glance

Mission

Enhance United States' security and economic growth through transformative science, technology innovation, and market solutions to meet our energy, nuclear security, and environmental challenges.

Strategic Goals

1. *Science and Energy* – Advance foundational science, innovative 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.
2. *Nuclear Security* – Strengthen 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.
3. *Management and Performance* – 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.

Organization

Three Under Secretaries manage the core functions that carry out the DOE mission with significant cross-cutting work spanning across the enterprise. The DOE enterprise is comprised of approximately 15,000 federal employees and over 90,000 contractor employees at the Department's headquarters in Washington, D.C., and at 85 field locations. DOE operates a nationwide system of 17 national laboratories that provides world-class scientific, technological, and engineering capabilities, including the operation of national scientific user facilities used by over 29,000 researchers from academia, government, and industry. The Department's organizational chart is located at: <http://energy.gov/about-us/organization-chart>. Offices, laboratories, and facilities are listed at: <http://energy.gov/offices>.

Performance

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Targets Met	165	142	127	138	110
Targets Not Met	25	27	24	31	25
Results Unknown	1	0	0	1	2
<i>Total Number of Measures</i>	<i>191</i>	<i>169</i>	<i>151</i>	<i>170</i>	<i>137</i>
<i>Share Met</i>	<i>86%</i>	<i>84%</i>	<i>84%</i>	<i>81%</i>	<i>80%</i>

Financials

(dollars in billions)	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Assets	\$ 182.0	\$ 180.9	\$ 179.9	\$ 181.1	\$ 182.8
Total Liabilities	\$ 371.4	\$ 398.6	\$ 404.5	\$ 427.1	\$ 475.2
Net Cost of Operations	\$ 44.0	\$ 55.4	\$ 33.6	\$ 51.5	\$ 71.4
Total Budgetary Resources	\$ 63.0	\$ 51.3	\$ 48.9	\$ 53.9	\$ 49.3
Net Agency Outlays	\$ 34.7	\$ 37.2	\$ 27.2	\$ 24.6	\$ 26.6
<i>Audit Opinion</i>	<i>unqualified</i>	<i>unqualified</i>	<i>unmodified</i>	<i>unmodified</i>	<i>unmodified</i>

DOE History

The Department of Energy's lineage can be traced back to the Manhattan Project and the race to develop the atomic bomb during World War II. Following that war, Congress created the Atomic Energy Commission (Commission) in 1946 to oversee the sprawling nuclear scientific and industrial complex supporting the Manhattan Project and to maintain civilian government control over atomic research and development (R&D). During the early Cold War years, the Commission focused on designing and producing nuclear weapons and developing nuclear reactors for naval propulsion. The creation of the Commission ended the exclusive Government use of the atom and began the growth of the commercial nuclear power industry, with the Commission having authority to regulate the new industry.

In response to changing needs and an extended energy crisis, the Congress passed the Department of Energy Organization Act in 1977, creating one of the most diverse agencies in the federal Government. That legislation brought together for the first time, not only most of the Government's energy programs, but also science and technology programs and defense responsibilities that included the design, construction and testing of nuclear weapons. The Department provided the framework for a comprehensive and balanced national energy plan by coordinating and administering the energy functions of the federal Government. The Department undertook responsibility for long-term, high-risk R&D of energy technology, federal power marketing, some energy conservation activities, the nuclear weapons programs, some energy regulatory programs, and a central energy data collection and analysis program.

Over its history, the Department has shifted its emphasis and focus as the energy and security needs of the nation have changed. During the late 1970s, the Department emphasized energy development and regulation but shifted to nuclear weapons research, development and production during the 1980s. With the end of the Cold War, DOE focused on environmental cleanup of the nuclear weapons complex, as well as non-proliferation and stewardship of the nuclear stockpile. Today, the Department is committed to meeting America's energy, nuclear security and environmental challenges through science and technology innovation.



The Weisenberger Mill, a Civil War-era family-owned and operated mill in Kentucky, used Department of Energy funding to install a generator and power electronics. The new system utilizes water flowing through the turbines more efficiently, generating enough power to run the mill when it is grinding.

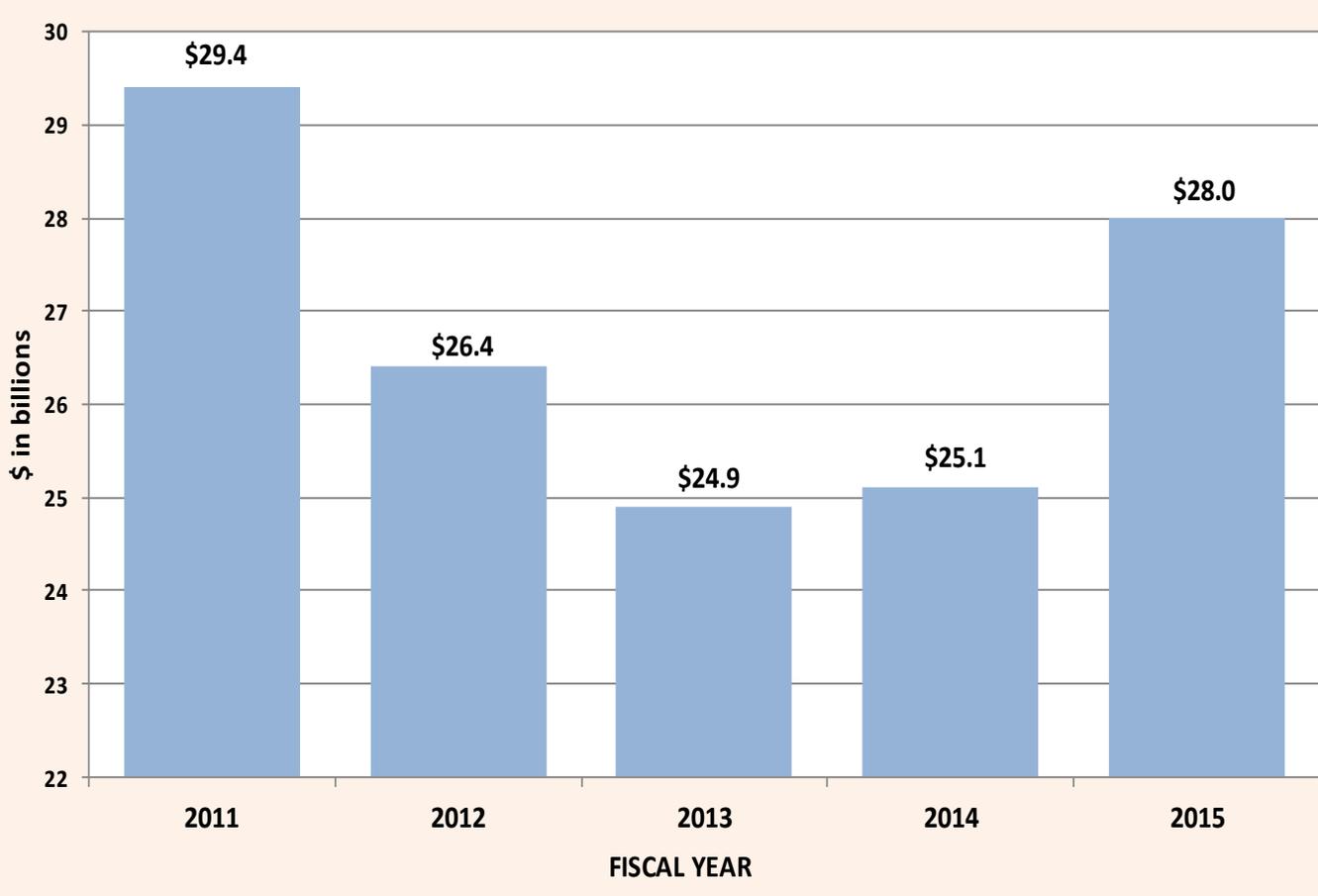


President Barack Obama, Deputy Secretary of Energy Dr. Elizabeth Sherwood-Randall (2nd from right), DOE Headquarters Energy Manager, Eric Haukdal, and the Council on Environmental Quality's Environmental Executive, Kate Brandt, tour DOE's rooftop solar panels on March 19, 2015.

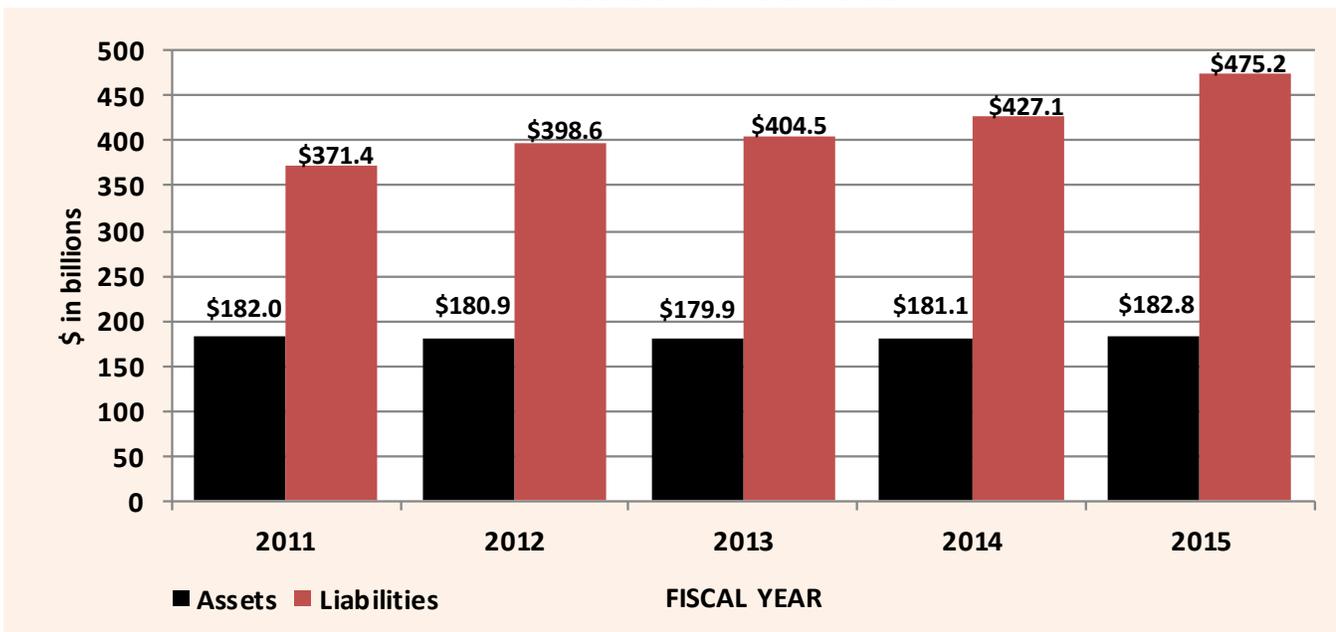
Financial Resources

Appropriations

(Appropriations are defined per the FY 2015 *Combined Statements of Budgetary Resources*)

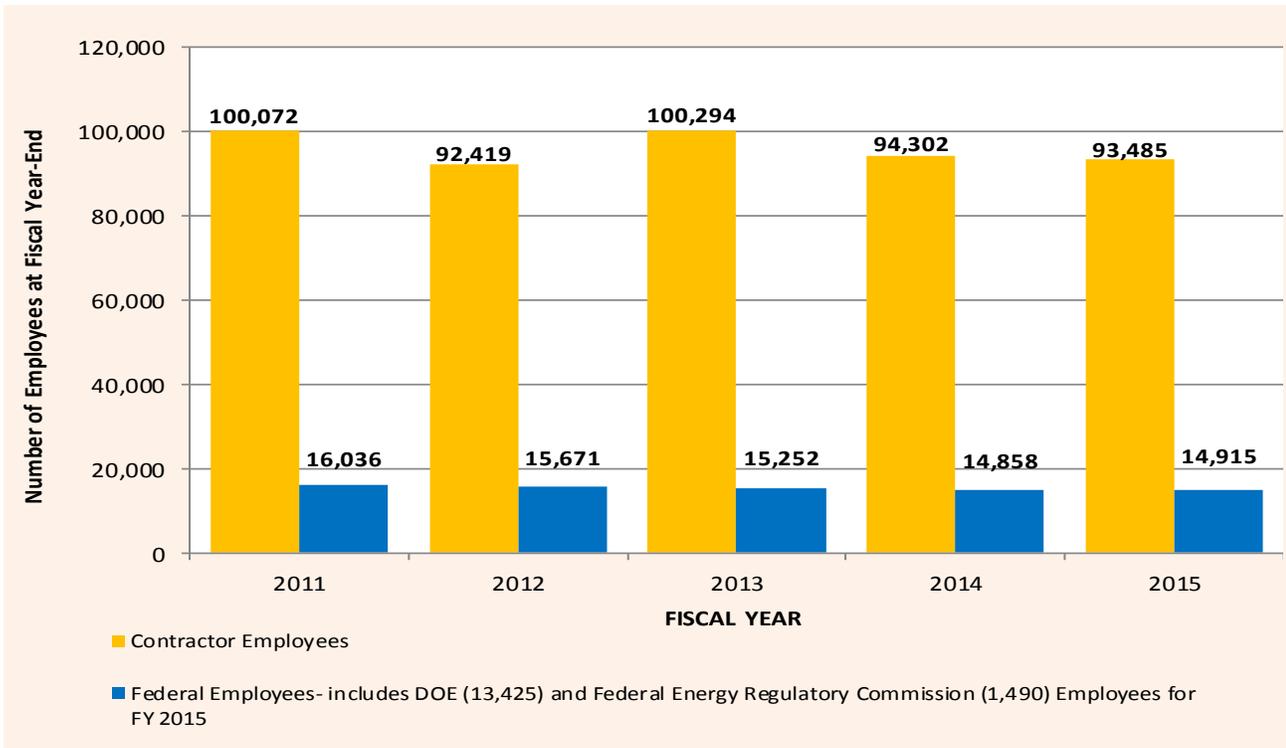


Assets and Liabilities



Human Capital Resources

Federal and Contractor Employees



Financial Management Report Card

COMPLIANCE		REQUIREMENT OR INITIATIVE	SUPPORTING INDICATORS (see page references for more detail)
YES	NO		
<input checked="" type="checkbox"/>		Government Management Reform Act –Financial Statement Audit	Unmodified Audit Opinion (see pages 10x-11x)
<input checked="" type="checkbox"/>		Federal Managers’ Financial Integrity Act – Internal Controls (Section II) Financial Systems (Section IV)	No Material Weaknesses (Section II) (see pages 2x-2x and 12x) Financial Systems generally conform to (Section IV) requirements and no FISMA significant deficiencies identified (see pages 25-26 and 122)
<input checked="" type="checkbox"/>		OMB Circular A-123, Appendix A	No Material Weaknesses (see pages 2x-2x and 12x)
<input checked="" type="checkbox"/>		Federal Financial Management Improvement Act	Substantially comply with federal financial management system requirements (see pages 2x-2x and 12x)
<input checked="" type="checkbox"/>		Federal Information Security Management Act (FISMA)	Substantially comply with FISMA requirements as evidenced by annual FISMA reporting data (see pages 2x-2x and 12x)
<input checked="" type="checkbox"/>		Improper Payments Information Act, as amended by the Improper Payments Elimination & Recovery Act and the Improper Payments Elimination and Recovery Improvement Act	<1% overall Erroneous Payment Rate and not susceptible to significant improper payments (see pages 12x-12x)

Strategic Plan and Program Performance

The narrative below discusses FY 2015 results and outcomes for DOE programs as aligned with the strategic goals presented in the [2014-18 DOE Strategic Plan](#). A detailed discussion of results for the Department's FY 2015 performance goals, assessment methodologies, metrics, external reviews, and documentation of performance data will be presented in the *FY 2015 DOE Annual Performance Report* to be released in February 2016. Additional performance information is available at <http://energy.gov/about-us/budget-performance>.

Goal 1: Science and Energy

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

Objective 1

Advance the goals and objectives in the President's Climate Action Plan by supporting prudent development, deployment, and efficient use of "all of the above" energy resources that also create new jobs and industries

Objective 2

Support a more economically competitive, environmentally responsible, secure and resilient U.S. energy infrastructure

Objective 3

Deliver the scientific discoveries and major scientific tools that transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation

Contributing Programs

Advanced Research Projects Agency-Energy, Electricity Delivery and Energy Reliability, Energy Efficiency and Renewable Energy, Energy Information Administration, Energy Policy and Systems Analysis, Fossil Energy, Indian Energy Policy and Programs, International Affairs, Loan Programs, Nuclear Energy, Power Marketing Administrations, Science, Strategic Petroleum Reserve

The DOE leads the nation in the transformational research, development, demonstration, and deployment of an extensive range of clean energy and efficiency technologies, supporting the President's Climate Action Plan and an "all of the above" energy strategy. The DOE identifies and promotes advances in fundamental and applied sciences; translates cutting-edge inventions into technological innovations; and accelerates transformational technological advances in energy areas that industry by itself is not likely to undertake because of technical or financial risk. The DOE also leads national efforts to develop technologies to modernize the electricity grid, enhance the security and resilience of energy infrastructure, and expedite recovery from energy supply disruptions. The DOE conducts robust, integrated policy analysis and regional engagement to support the nation's energy agenda. The DOE is the largest federal sponsor of basic research in the physical sciences. Below are examples of FY 2015 program accomplishments in these areas.

Loan Guarantees: The DOE obligated \$1.7 billion in loan guarantees to 3 subsidiaries of the Municipal Electric Authority of Georgia to further support the construction of

two advanced nuclear reactors at the Alvin W. Vogtle Electric Generating Plant. This is the last of 3 conditional

commitments that were first announced by the Administration in 2010, which, when combined with the previously obligated \$6.2 billion in loan guarantees to Georgia Power Company and Oglethorpe Power Corporation, allow the project to be fully financed. This project is a crucial part of America's revitalized nuclear energy industry and will further support the nation's clean energy economy. The Vogtle project is the first new nuclear power plant to be licensed and begin construction in the United States in more than 3 decades. The 2 new 1,100 megawatt Westinghouse AP1000® nuclear reactors at Vogtle represent the first U.S. deployment of this innovative technology. Once they come on line, the new nuclear reactors are expected to provide enough reliable electricity to power nearly 1.5 million American homes and avoid nearly 10 million metric tons of carbon dioxide emissions annually.

Carbon Capture, Storage: The DOE reached a milestone: a group of carbon capture and storage (CCS) projects supported by the Department have safely stored 10 million metric tons of carbon dioxide (CO₂)—the equivalent of removing more than 2 million passenger vehicles from the

nation's roads for 1 year. CCS is the separation and capture of CO₂ from power plant and industrial emissions. The captured CO₂ is then injected and stored in deep underground geologic formations. In a number of CCS projects, the CO₂ is used to enhance oil recovery from mature wells. The projects are part of DOE's Regional Carbon Sequestration Partnership Initiative and the Industrial Carbon Capture and Storage Major Demonstrations programs.

Wind Energy: The DOE released a report in May 2015, *Enabling Wind Power Nationwide*, describing how the United States can unlock the vast potential for wind energy deployment in all 50 states—made possible through the next-generation of larger wind turbines. It also builds upon the recently released *Wind Vision* report and highlights the potential for technical advancements to unlock wind resources in regions with limited wind deployment today, such as the Southeast. Technological advancements, such as taller wind turbine towers of 110 and 140 meters and larger rotors—currently under development by the DOE and its private sector partners—can more efficiently capture the stronger and more consistent wind resources typically found at greater heights above ground level, compared with the average 80-meter wind turbine towers installed in 39 states today.

This potential expansion represents an additional 700,000 square miles—or about one-fifth of the United States—bringing the total area of technical wind potential to 1.8 million square miles. These advanced wind energy systems will generate more electricity per dollar invested and further drive down the cost of wind energy. The DOE supports research and development that has already helped the wind industry install nearly 66 gigawatts of wind power capacity—enough to power more than 17 million homes—and has helped decrease the cost of wind energy by more than 90%.

Solar Energy: The DOE committed \$32 million in funding to help train American workers for the solar energy workforce and to further drive down the cost of solar by developing innovative low-cost concentrating solar power collectors and increasing access to critical solar data. The Department is making up to \$12 million available to develop a diverse, well-trained solar support workforce, including professionals in the insurance, real estate, and utility industries. An additional \$5 million will fund projects aimed at increasing market transparency and access to key solar energy datasets, and \$15 million will fund projects to develop new designs for concentrating solar power collectors. Altogether, this funding will help make solar energy more accessible and affordable for American families and businesses.

Lighting Technology: The DOE selected nine research and development projects that will receive \$8.2 million in funding to support solid-state lighting core technology

research, product development, and U.S. manufacturing. The projects will help accelerate the development of high-quality light-emitting diode (LED) and organic light-emitting diode (OLED) products that can significantly reduce overall U.S. energy consumption and save consumers money. Solid-state lighting technologies, based on LEDs and OLEDs, are about 10 times more energy-efficient, last 25 times longer, and significantly reduce the amount of lamp toxins in landfills compared to conventional incandescents. DOE-funded R&D will foster technology breakthroughs to unlock new levels of performance and energy savings; for example, DOE targets look to increase the efficiency of LEDs by an additional 66% from the current baseline. As solid-state electronic technology, LED lighting also offers new potential for advanced lighting control, including color tuning and intelligent, adaptive lighting.

Geothermal Energy: The DOE selected five projects for a total of \$2 million for the first part of the multiphase Frontier Observatory for Research in Geothermal Energy (FORGE) effort. This field laboratory, dedicated to cutting-edge research on enhanced geothermal systems (EGS), could unlock access to a domestic, geographically diverse, and carbon-free source of clean energy with the potential to supply power to up to 100 million homes in the United States. The first two phases of FORGE will provide a total of up to \$31 million over 2 years for selected teams.

EGS are engineered geothermal reservoirs, created beneath the surface of the earth, where there is hot rock but limited pathways through which fluid can flow. During EGS development, underground fluid pathways are safely created and their size and connectivity increased. These enhanced pathways allow fluid to circulate throughout the hot rock and carry heat to the surface to generate electricity. EGS development could lead to more than 100 gigawatts of economically viable electric generating capacity in the continental United States, representing a two-orders-of-magnitude increase over present geothermal capacity.

Hydropower: The DOE released the 2014 *Hydropower Market Report* in April 2015, the first report to quantify the current size, scope, and variability of the nation's hydropower supplies. Hydropower currently provides approximately 7% of the U.S. electricity supply – enough to power more than 20 million homes and has experienced significant growth industry-wide. Within the last decade, the industry has supported more than 55,000 direct domestic jobs across the country and helped offset 200 million metric tons of carbon emissions per year, equivalent to the emissions from more than 42 million passenger vehicles. The report also highlights how hydropower can be rapidly integrated with other renewable energy sources into the electric grid.

Residential Energy: The DOE's Advanced Research Projects Agency-Energy (ARPA-E) announced \$25 million in funding for 12 innovative projects as part of ARPA-E's new program: GENERators for Small Electrical and Thermal Systems (GENSETS). GENSETS projects are aimed at developing generator technologies that will improve efficiencies in residential Combined Heat and Power generation (CHP). Compared to conventional electricity generation and transmission, CHP captures the otherwise wasted heat and makes it available for useful application. By making CHP affordable for home use, this heat can be used for water and home heating, reducing the residents' energy costs.

Natural Gas Exports: In FY 2015 the DOE issued several final authorizations to export domestically produced liquefied natural gas (LNG) to countries that do not have a Free Trade Agreement with the United States: the Sabine Pass LNG Terminal in Cameron Parish, Louisiana; the Freeport LNG Terminal on Quintana Island, Texas; the Corpus Christi Liquefaction Project in Corpus Christi, Texas; the Cove Point LNG Terminal in Calvert County, Maryland and the small-scale Hialeah liquefaction facility near Medley, Florida. The development of U.S. natural gas resources is having a transformative impact on the U.S. energy landscape, helping to improve our energy security while spurring economic development and job creation around the country.

Better Buildings: As part of DOE's effort to support U.S. businesses working to save money by saving energy, the Better Buildings Alliance's Lighting Energy Efficiency in Parking Campaign recognized 18 organizations for leading the way in efficient outdoor lighting today. From 2014 to 2015, these organizations committed to installing efficient lighting across more than 470 million square feet of parking space —cutting energy use on average by 60%. American building owners could save more than \$9 billion annually across the 215 billion square feet of parking facilities. More than 140 U.S. businesses and organizations are participating in the campaign and planning or installing energy efficient lighting in their parking lots and garages. As a cornerstone of President Obama's Climate Action Plan, the Better Buildings program aims to make commercial, public, industrial, and residential buildings 20% more energy efficient over the next decade.

Advanced Technology Vehicles: As part of the Administration's effort to strengthen U.S. leadership in manufacturing vehicles, and reduce greenhouse gas emissions through increased fuel efficiency, the DOE announced a conditional commitment for a \$259 million loan to Alcoa, Inc. This conditional commitment is the first issued by the Department under the Advanced Technology Vehicles Manufacturing (ATVM) loan program since Secretary Moniz announced a number of improvements to the program last year and is the first step toward issuing a final loan to Alcoa. If finalized, the loan will partially

finance the company's Alcoa, Tennessee, upgraded manufacturing facility that will produce high-strength automotive-grade aluminum for North American automakers to reduce the weight of their vehicles.

Low-Level Waste Disposal: The Nuclear Energy program reached a major milestone in FY 2015, successfully completing design efforts and initiating construction of infrastructure for a new remote-handled low-level waste disposal facility at the Idaho National Laboratory. The project includes installation of 400+ concrete disposal vaults, construction of supporting infrastructure, completion of facility nuclear safety documentation, and extensive environmental performance analyses to ensure the safe, permanent disposal of remote-handled low-level wastes at the Idaho Site.

Tribal Energy: The DOE announced that 11 tribal communities will receive nearly \$6 million to accelerate the implementation of renewable energy and energy efficiency technologies on tribal lands. As part of the Administration's commitment to partner with Tribal Nations, these projects provide Indian Tribes and Alaska Native villages clean energy options that will reduce fossil fuel use and save money. With tribal renewable energy resources comprising approximately 5% of all U.S. renewable energy resources, these facility- and community-scale projects support national energy goals to strengthen tribal energy self-sufficiency, create jobs, and further economic development. The projects represent a total investment value of \$13.5 million. The Department's funding is expected to be leveraged by nearly \$7.5 million in cost share by the selected Indian Tribes.

Electric Infrastructure: The DOE's Western Area Power Administration and a group of Arizona utilities celebrated the energizing of a new transmission infrastructure project that will serve the state's growing electrical energy needs, attract renewable energy development to the area, and strengthen the transmission system in the Southwestern United States. The 109-mile Electrical District No. 5-to-Palo Verde Hub transmission project in Arizona advances America's energy infrastructure by eliminating system constraints and providing increased capacity access to affordable energy in the region.

Energy Information: The Energy Information Administration (EIA) significantly expanded its domestic energy coverage in 2015 in response to the rapid growth of U.S. oil and gas production. EIA added 10 states to its monthly natural gas production survey, including Pennsylvania, which is now the second largest gas-producing state. EIA also launched monthly collection of oil production data directly from producers in 15 states plus the Gulf of Mexico, including a measure of the API gravity, a quality indicator. To improve understanding of crude oil logistics, EIA also began publishing monthly data on movements of crude oil by rail, a mode that has grown

from near-zero in 2010 to nearly a million barrels per day in 2015. The data were integrated into EIA's Petroleum Supply Monthly report that shows the movements of products through five regions of the country by pipeline, tanker, barge, and now rail. Together these data provide industry, researchers, media, and policymakers with standardized and universally-accessible information on important trends in U.S. energy production and distribution.

This year EIA also launched the hourly collection of electricity demand data from the nation's 67 balancing authorities that manage the grid for the Lower-48 states. These near real-time data, interactively displayed on EIA's website, will enable researchers to study regional differences and time-series trends in how power is dispatched, which could lead to improvements in peak load management to prevent brownouts or price spikes.

Grid Modernization: The DOE awarded 6 research and development projects to teams of utilities and software vendors to develop advanced applications for utility control rooms using real-time data. These software applications will give grid operators insight into the behavior of the grid and help them to take corrective actions to run the system more efficiently and reliably. By operating the system more efficiently, these projects will allow utilities to avoid billions of dollars in investments in new infrastructure and integrate renewable and distributed energy resources more effectively, thus helping the United States reduce greenhouse gas emissions. As part of their participation, the teams committed to deploying the applications in their control rooms, ensuring real-world testing and a path forward to commercialization.

Quadrennial Energy Review and Quadrennial Technology Review: DOE supported the interagency task force that released the Administration's Quadrennial Energy Review (QER) in April 2015 on energy transmission, storage and distribution - a key milestone in the implementation of the President's Climate Action Plan. Vice President Biden announced the release of the QER report with Secretary Moniz at an event in Philadelphia, PA. The Electric Power Supply Association worked with interagency partners and key stakeholders to verify information and data for the review and to develop policy recommendations. The QER is a policy roadmap for meeting key energy objectives: enhancing energy infrastructure resilience, reliability, safety and security; modernizing the electric grid and our energy security infrastructures; and improving railways, waterways, ports and roads that move both energy and other commodities. In September 2015, DOE released its second Quadrennial Technology Review, which highlights the potential for additional future technology breakthroughs to mitigate the risks of climate change, modernize energy infrastructure, and enhance energy security.

Pluto Mission: The National Aeronautics and Space Administration's (NASA) New Horizons spacecraft accomplished one of the most exciting feats in the history of space exploration. After a 9 1/2-year, 3-billion-mile journey the mission's historic flyby of Pluto provided the first, close-up views of the frozen world at the edge of the solar system. This remarkable achievement had a little help from the DOE through the development of a radioisotope thermoelectric generator (RTG). This simple form of nuclear power takes heat from the radioactive decay of plutonium-238 and converts it into electricity using devices called "thermocouples." The RTG provides about 200 watts of electricity to the spacecraft. Used by the United States in space exploration since the 1960s, RTGs are rugged and reliable, with no moving parts to wear out or break. That durability made an RTG the perfect candidate to power a deep-space mission like New Horizons. To build it, NASA turned to DOE's national laboratories. The heat-producing ceramic "fuel pellets" of plutonium dioxide for the RTG—designed and safety-tested by DOE scientists—were manufactured at Los Alamos National Laboratory in New Mexico, with special iridium and graphite shielding provided by Oak Ridge National Laboratory in Tennessee. The final product was assembled at Idaho National Laboratory in September 2005, just three years after the DOE decided to relocate its RTG program there in 2002.

Energy Innovation Hub: The DOE committed \$75 million in funding to renew the Joint Center for Artificial Photosynthesis, a DOE Energy Innovation Hub originally established in 2010 with the goal of harnessing solar energy for the production of fuel. The Center is led by the California Institute of Technology in partnership with Lawrence Berkeley National Laboratory and operates research sites at both institutions. The researchers are focused on achieving the major scientific breakthroughs needed to produce liquid transportation fuels from a combination of sunlight, water, and carbon dioxide, using artificial photosynthesis. While the scientific challenges of producing such fuels are considerable, this Center will capitalize on state-of-the-art capabilities developed during its initial five years of research, including sophisticated characterization tools and unique automated high-throughput experimentation that can quickly make and screen large libraries of materials to identify components for artificial photosynthesis systems.

Small Modular Reactors: NuScale is making significant progress on the technical work needed to support their design certification application, which they are on schedule to submit to the Nuclear Regulatory Commission (NRC) by December 2016. This year they completed testing and analysis of key primary system components, such as the first-of-a-kind, full-length helical coil steam generator; fabrication and assembly of a full-scale mockup of the upper head assembly of the reactor module; Level 1 probabilistic risk assessment; several design reviews on

major systems, including the reactor building and module protection system; and, annotated outlines on all chapters of their design certification application. Design certification is required to build new plants in the United States and an important feature for international sales since NRC certification is considered the “gold standard” of safety designations.

Light Water Reactor Sustainability: The LWRS program is developing computer-based procedure technology and successfully demonstrated the technology on the process of swapping out auxiliary salt-water pumps at the Diablo Canyon Nuclear Plant. Field-based computer-based procedures are one of the top enablers of improved efficiency and human performance for nuclear power plants. Digital technologies such as these benefit plant efficiency and safety, and benefit plant economics.

Modeling and Simulation Hub: The Nuclear Energy Modeling and Simulation Energy Innovation Hub (the Hub) operated by the Consortium for the Advanced Simulation of Light Water Reactors (CASL) completed its first 5-year phase by simulating all 12 of the fuel cycle cores for the entire life of the TVA operated Watts Bar #1 reactor. During the year, CASL also successfully completed its application to be extended into a second 5-year phase based on the Hub’s demonstrated Phase One accomplishments and plans for Phase Two to extend the virtual reactor to other reactor types. The virtual reactor modeling and simulation tools will be used by the nuclear energy industry to gain insights into performance and safety issues with existing reactors that will lead to increased electricity production.

Joint Fuel Cycle Studies: In a significant cost-shared technical collaboration with the Republic of Korea, DOE designed an engineering-scale demonstration and is now installing it at the Idaho National Laboratory (INL) for operation over the next several years. While the facilities at INL have used electrochemical processing in the past, this comprehensive demonstration will begin with actual commercial spent fuel in oxide form, convert it to a metallic form, process it in an electrorefiner to extract the useful transuranic elements, and use them to cast metallic fast reactor fuel, all at an engineering scale. Over the long term, electrochemical processing may offer significant improvements compared to the existing once-through light water reactor fuel cycle now employed in the United States.

Collaboration of Oak Ridge, Argonne, and Lawrence Livermore: DOE announced a \$525 million project to establish the Collaboration of Oak Ridge, Argonne, and Lawrence Livermore to deliver computers 5 to 7 times more powerful than the current top supercomputers. These new high-performance computers will support national security missions, renewable energy systems design, and materials, biological, and other sciences. Advances in exascale/HPC technology research, development, and deployment are needed to ensure that our nation can continue to meet critical exascale-relevant national security needs, fully leverage exascale for economic competitiveness and scientific discovery, and position our country for sustained technical leadership. Additionally, DOE has worked to create the preliminary conceptual design document for the exascale initiative, which identifies drivers and technical requirements to achieve the Department’s exascale goals, and incorporates interagency and community comments.

Goal 2: Nuclear Security

Strengthen 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

Objective 4

Maintain the safety, security, and effectiveness of the nation's nuclear deterrent without nuclear testing

Objective 5

Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure

Objective 6

Reduce global nuclear security threats

Objective 7

Provide safe and effective integrated nuclear propulsion systems for the U.S. Navy

Contributing Programs

National Nuclear Security Administration, Intelligence and Counterintelligence, International Affairs

The DOE national security mission supports nuclear security, intelligence and counterintelligence operations, and related national security needs. The President's 2010 National Security Strategy, the Nuclear Posture Review (NPR), and the ratification of the New Strategic Arms Reduction Treaty underscored the importance of the DOE's nuclear mission, and renewed the mandate for DOE to maintain a safe, secure, and reliable stockpile for as long as nuclear weapons exist. The NPR presented a path to reduce global nuclear security threats while permitting access to peaceful nuclear power for nations that respect the international nonproliferation regime. DOE advances the President's vision to move toward a world free of nuclear weapons by both dismantling retired weapons and improving global stability through increased transparency and confidence building measures.

Through the National Nuclear Security Administration's (NNSA) nuclear security enterprise, DOE plays a central role in sustaining a safe, secure, and effective nuclear deterrent and combating proliferation and nuclear terrorism. The science, technology, engineering and manufacturing capabilities resident in the nuclear security enterprise underpin our ability to conduct stockpile stewardship and solve the technical challenges of verifying treaty compliance, combating nuclear terrorism and proliferation, and guarding against the threat posed by nuclear technological surprise. For example, the unique knowledge gained in nuclear weapons design developed to support the U.S. stockpile plays a critical role in the nation's ability to understand strategic threats worldwide. DOE is responsible for providing the design, development, and operational support required to provide militarily effective naval nuclear propulsion plants and ensure their safe, reliable, and long-lived operations.

By providing a modernized, responsive infrastructure, DOE prepares the nation for a range of potential future nuclear deterrence challenges. With its extensive science and technology capabilities and nuclear expertise, DOE provides support to defense, homeland security, and intelligence missions, primarily through DOE's system of national laboratories and sites. DOE also provides expert knowledge and operational capabilities for physical security, classification, emergency preparedness and response, nuclear forensics and cybersecurity. Below are examples of FY 2015 program accomplishments in these areas.

B61-12 Life Extension: The NNSA and United States Air Force completed the second development flight test of a non-nuclear B61-12 gravity bomb at Tonopah Test Range in Nevada on August 11, 2015. The flight test asset consisted of hardware designed by Sandia National and Los Alamos National Laboratories, manufactured by the National Security Enterprise Plants, and mated to a tail-kit assembly section designed by The Boeing Company under contract with the Air Force Life Cycle Management Center. This test is the second of three development flight tests for the B61-12 Life Extension Program (LEP), with one additional development flight test scheduled for later this calendar year. This test provides additional confidence in the weapon system and instrumentation designs before authorizing Phase 6.4, Production Engineering, in 2016.

Enriched Uranium Strategy: NNSA's efforts continue at the Y-12 National Security Complex in Oak Ridge, TN, to sustain enriched uranium manufacturing capabilities and replace aging infrastructure. In September 2014, the NNSA approved a Uranium Mission Strategy outlining the overall modernization plan which includes constructing the Uranium Processing Facility (UPF) and making investments in the current plant to reduce mission and

safety risks. The UPF is scheduled for completion by 2025, and NNSA completed initial site readiness work to prepare the construction site. NNSA made measurable progress towards its commitment of ceasing all enriched uranium programmatic operations in Building 9212 no later than 2025 by removing more than 9.4 tons of enriched uranium metal from inside the processing facilities. The metal was transported to the Highly Enriched Uranium Materials Facility for storage where it is safer and more secure. This action also reduces the overall hazard for the public by reducing inventory to working levels. Finally, programmatic investment this year in the analytical laboratory, the machining center, and in the casting system have improved the reliability of equipment and improved NNSA's ability to deliver on the enriched uranium mission.

Emergency Management Progress: NNSA responded to over 1,400 actual and training Triage calls, and the Triage system maintained 100% availability and expanded methods for data submission to include mobile platforms. NNSA participated in the Southern Exposure 2015 exercise, the first exercise for a nuclear power plant with full Federal participation in over 20 years, with over 600 Federal, state, and local players and observers, including 52 international radiological experts from 11 countries and 2 international organizations. NNSA also completed Large Scale Operations including the State of the Union, Super Bowl XLIX, U.S. Air Force Academy Graduation, and the Operation Sonar and Radiological Anomaly.

Export Control Regulation: NNSA updated the federal rule (10 C.F.R. Part 810, or Part 810) that regulates the export of unclassified nuclear technology and assistance. The final rule was published in the Federal Register on February 23 and went into effect on March 25, 2015. Part 810 enables civil nuclear trade by ensuring that nuclear technology and assistance exported from the United States will be used for peaceful purposes only. The revision was initiated by NNSA in 2011, and this final version takes into account comments received from industry, academia, and other interested parties during the four-year rulemaking process. As the first comprehensive update to the rule since 1986, this revision makes Part 810 consistent with current global civil nuclear trade practices and the President's U.S. export control reform. Recognizing the importance of nuclear technology in today's society, NNSA has made Part 810 into a regulation that both meets the requirement to ensure peaceful uses of nuclear power and the expanded use of nuclear technology worldwide. The updated rule is in line with and supports the President's export control reform initiative. (To view a copy of the new rule on the Federal Register, visit the site: <http://www.gpo.gov/fdsys/pkg/FR-2015-02-23/pdf/2015-03479.pdf>.)

Nuclear Detonation Detection: In FY 2015, NNSA collaborated with the U.S. Air Force (USAF) to launch three 300-pound Global Burst Detector (GBD) sensor suites on

GPS IIF navigation satellites. The GBD sensor suite detects, identifies, and precisely locates nuclear explosions. This is the latest space-based sensor addition to the U.S. Nuclear Detonation Detection System, which monitors compliance with the international Limited Test Ban Treaty. The treaty, signed by 108 countries, prohibits nuclear testing in the atmosphere, outer space, and underwater. The launch is another milestone in the successful 52-year partnership between the USAF, NNSA, and the national laboratories. These organizations continue to work together to employ advanced technologies for nuclear detonation detection instruments. Currently, research is being conducted to improve future systems so they collect more data and process information faster to monitor globally for nuclear events.

Nonproliferation and Arms Control Verification: In 2015, NNSA successfully conducted the fourth in a series of experiments designed to improve our ability to detect underground nuclear explosions as a fundamental step forward in the U.S. effort to improve arms control verification. These source physics experiments generate terabytes of data for validating models, testing hypotheses, and improving tools that the US can use to independently verify international compliance with treaties and commitments. Nevada National Security Site, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratories, the University of Nevada (Reno), and the Defense Threat Reduction Agency all participated in the experiment. As a matter of test site transparency, data from this series of experiments are archived and available on the IRIS (Incorporated Research Institutions for Seismology) web site: <http://www.iris.edu/hq>.

Plutonium Experiments: Lawrence Livermore National Laboratory's National Ignition Facility has successfully performed several experiments on the material properties of plutonium. The three completed experiments are the first in a planned series using small quantities – less than 10 milligrams, or about the size of a poppy seed – plutonium to study the behavior of this material at the temperatures and pressures that occur in the nuclear phase of a weapon. Up to 12 similar experiments could be conducted each year. All facility operations, including safety systems, proceeded as intended in all three experiments and excellent data on phase transitions of plutonium were collected.

Reducing Global Nuclear Dangers: In January 2015, NNSA announced the successful removal of 36 kilograms of highly enriched uranium (HEU) from the VVR-K research reactor in a joint operation with the Russian Federation. NNSA also removed 2.9 kilograms of fresh HEU from Canada in October 2014. As of August 2015, NNSA had removed or confirmed the disposition of a cumulative total of 5,359 kilograms of nuclear material and eliminated all HEU from 26 countries and Taiwan.

Training on Insider Threats: NNSA supported an International Atomic Energy Agency (IAEA) International Training Course held in Helsinki, Finland, on the Preventive and Protective Measures Against Insider Threats. This course was held in June 2015 and included case studies of actual insider events and multiple practical exercises on measures to prevent and mitigate the threat of the insider at nuclear facilities. The course was attended by 38 participants from 20 countries including: Algeria, Belgium, Brazil, Bulgaria, China, Egypt, Finland, Indonesia, Japan, Lithuania, Malaysia, Mexico, Netherlands, Japan, Republic of Korea, Spain, Sweden, Thailand, Turkey, and United Arab Emirates. Six instructors representing Canada, Finland, Pakistan, Russia, and the United States conducted the course for the IAEA. The participants consisted of regulators, operators, physicists, and engineers – representing many disciplines such as Physical Security Systems, Cyber Security, and Material Control and Accounting.

Preventing Illicit Trafficking: In December 2014, NNSA responded to urgent needs of the State Border Guard Service (SBGS) of Ukraine, as a result of the Russian incursion in Ukraine. NNSA provided new and replacement equipment to detect and interdict illicit trafficking of nuclear and radiological materials at newly created checkpoints and along uncontrolled regions. NNSA's rapid response included the provision of handheld and mobile detection systems along with operator training support. NNSA has partnered with the SBGS since 2005 and has equipped key locations with fixed and mobile radiation detection equipment and handheld and man-portable equipment, and provided associated training and maintenance support.

In addition, in January 2015, NNSA transferred responsibility for a radiation detection system at the Port of Yangshan to the General Administration of Customs of China (GACC). This system enhances China's capabilities to deter, detect, and interdict illicit trafficking of nuclear and radiological materials that may be moving through the global maritime shipping system. This transition of responsibility indicates GACC's commitment to operate and maintain the system over the long term. The Nuclear Smuggling Detection and Deterrence Program and GACC continue to build upon the success of the work at Yangshan through a recently established joint working group. As China works to expand its national detection program, this group of subject matter experts will continue to share lessons learned and best practices in the design, operation, and sustainment of radiation detection systems.

Recovering Disused Radioactive Sources: NNSA recovered its one millionth curie (Ci) of disused and unwanted radioactive sources from domestic sites through its Off-Site Source Recovery Project (OSRP) in December 2014. These removals were part of DOE/NNSA's global campaign to prevent terrorists from acquiring nuclear and radiological material. The radioactive source that achieved the millionth curie milestone was a small stainless steel capsule, about the size of a pencil, containing 100 Ci of the radioactive isotope Cobalt-60 (Co-60). This source was recovered from an industrial facility in Maryland. Since 1999, OSRP's mission to remove excess, unwanted, abandoned or orphaned radioactive sealed sources that pose a potential risk to health, safety, and national security has resulted in the successful recovery of more than 38,000 radioactive sources from more than 1,100 domestic locations. Cumulatively, this amount of radioactive material is enough to produce 100,000 radiological dispersal devices (aka "dirty bombs").

New Alarm Response Training Academy: NNSA's new Alarm Response Training Academy at the Y-12 National Security Complex opened in October 2014. The facility houses NNSA's Alarm Response Training program, which trains local law enforcement and other critical first responders around the country. The program features a three-day course where participants develop and discuss tactics, techniques, procedures, and protocols for responding to a theft or sabotage event involving radioactive materials. After 2 days of classroom instruction, Y-12 experts facilitate live-action scenarios allowing participants to test their knowledge and exercise their revised response plans.

A1B Reactor Plant Design: NNSA continued development on the A1B naval reactor; achievements include the engineering of safeguard systems installation on the lead and follow primary plants, and hydrostatic testing of the lead primary plant. The reactor design increases core energy, increasing availability between refueling overhauls; provides nearly three times as much electrical power, essential for the greater power demands of modern technology; and halves the number of required sailors, significantly reducing personnel costs.

Goal 3: Management and Performance

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

Objective 8

Continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities

Objective 9

Manage assets in a sustainable manner that supports the DOE mission

Objective 10

Effectively manage projects, financial assistance agreements, contracts, and contractor performance

Objective 11

Operate the DOE enterprise safely, securely, and efficiently

Objective 12

Attract, manage, train, and retain the best federal workforce to meet future mission needs

Contributing Programs

Congressional and Intergovernmental Affairs, Economic Impact and Diversity, EERE Sustainability, Enterprise Assessments, Environmental Management, Financial Management (CFO), General Counsel, Environment, Health, Safety and Security, Hearings and Appeals, Human Capital, Information Technology (CIO), Inspector General, Legacy Management, Management, Public Affairs

Attaining mission success requires a sustained commitment to performance-based management and expectations of excellence from DOE headquarters to every site office, service center, laboratory, and production facility. At the center of this goal is a highly qualified, capable, and flexible federal workforce that can execute the mission in a safe, secure, efficient, and sustainable manner. DOE cultivates a performance-based system that links work to meeting agency and Administration goals and achieves results. Management of research and development involves prioritization of those activities with the greatest potential and likelihood for impact. Research decisions are informed by rigorous peer reviews at the portfolio level and solicitation levels. A top priority has been to improve contract and project management across the DOE enterprise, along with vigilant protection of DOE's cyber networks. Below are examples of FY 2015 program accomplishments in these areas.

Rocky Flats: A project to reconfigure the East Trenches Plume Treatment System (ETPTS) at the Rocky Flats Colorado site, to improve treatment effectiveness and meet the strict water quality standards in the area, was completed in January 2015. The ETPTS was installed in 1999. The system was designed to intercept and treat groundwater contaminated with chlorinated solvents, chemicals commonly used in dry cleaning and to clean tools. At Rocky Flats, the solvents were used primarily as degreasers and lathe and machining coolants. During the 1950s and 1960s, a common disposal practice around the world for these chemicals was to bury them in trenches dug into the ground. Rocky Flats followed this practice at

that time, which led to the groundwater contamination at the site.

Los Alamos: DOE's Los Alamos Field Office in New Mexico completed a cleanup of mercury-contaminated soil on DOE property. The project was finished successfully in about 5 weeks — approximately 3 weeks ahead of schedule. Experts used a specialized telescoping crane and spider excavator to remove 160 cubic yards of mercury-contaminated soil from the rugged canyon side. The contaminants resulted from the Manhattan Project and early Cold War era operations at a Solid Waste Management Unit at the former Technical Area 32, which was the site of a small medical research facility. This legacy cleanup project was a cooperative effort with Los Alamos County and the DOE.

Idaho: The Nuclear Energy program reached a major milestone in FY 2015, successfully completing design efforts and initiating construction of infrastructure for a new remote-handled low-level waste disposal facility at the Idaho National Laboratory. The project includes installation of over 400+ concrete disposal vaults, construction of supporting infrastructure, completion of facility nuclear safety documentation, and extensive environmental performance analyses to ensure the safe, permanent disposal of remote-handled low-level wastes generated as a result of Nuclear Energy and Naval Reactors mission activities at the Idaho Site.

Strategic Sourcing Savings: The Department expanded use of the Federal Strategic Sourcing Initiative (FSSI) to

DOE federal procurement operations while continuing focus on Contractor Supply Chain Council activities to achieve cost savings against actionable spending in FY 2015. As of March 31, 2015, only six months into the fiscal year, DOE surpassed FSSI savings for all of FY 2014 by 133%. Current FSSI actions and trends will continue the increase in savings in coming years. Office Supplies 3 was awarded in 2014 and it is expected to significantly impact the savings related to FSSI. As Category Management Leadership Council initiatives and new vehicles continue to emerge, we anticipate that savings will continue to increase.

Oak Ridge: DOE, community leaders, and local officials gathered in the summer of 2015 to witness the completion of K-31 Building's demolition at Oak Ridge's East Tennessee Technology Park, marking the removal of the fourth of five gaseous diffusion buildings at the former

uranium enrichment site. This project was completed ahead of schedule and under budget. The demolition of the gaseous diffusion building—one of the most complex aspects of cleanup at the site—improves the chances of meeting the major DOE milestone of having all five gaseous diffusion plant buildings demolished by the end of calendar year 2016.

Exercised Direct Hire Authority for DOE Headquarters:

The Department further developed its workforce by concentrating on delivering improvements to professional development program requirements and management, as well as making improvements to the information technology tools and systems used by our professional workforce to accomplish the Agency's mission. For example, DOE extended direct hire authority for Contract Specialists, expediting the selection and time-to-hire cycle.

Analysis of Financial Statements

The Department's financial statements, as presented in the *FY 2015 DOE Agency Financial Report*, report the financial position and results of operations of the entity, pursuant to the requirements of 31 U.S.C. 3515(b) (United States Code). The Department's management is responsible for the integrity and objectivity of the financial information presented in these financial statements.

The statements have been prepared from the Department's books and records in accordance with

generally accepted accounting principles prescribed by the Federal Accounting Standards Advisory Board and the formats prescribed by the Office of Management and Budget (OMB). The financial statements are prepared in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

Balance Sheet

As shown in Chart 1, the Department's total liabilities exceed total assets. Significant balance changes are detailed in Charts 2 and 3. Chart 4 provides a detailed trend analysis of the changes in the Department's environmental liability balances over the past 5 years. The largest component of the Department's environmental liabilities is managed by the Environmental Management (EM) program which addresses the legacy of contamination from the nuclear weapons complex and includes managing thousands of contaminated facilities formerly used in the nuclear weapons program, overseeing the safe management of large quantities of radioactive waste and nuclear materials, and cleanup of large volumes of contaminated soil and water. The active facilities

liability includes anticipated remediation costs for active and surplus facilities managed by the Department's ongoing program operations and which will ultimately require stabilization, deactivation, and decommissioning. Other legacy liabilities are divided between environmental liabilities for active sites, including estimated cleanup; and the Office of Legacy Management (LM) for post-closure responsibilities, including surveillance and monitoring activities; soil and groundwater remediation; and disposition of excess material from sites after the EM program activities have been completed. The other legacy liabilities also include the Department's share of the estimated future costs of dispositioning its inventory of high-level waste and spent nuclear fuel (SNF).

Chart 1: Total Assets and Liabilities with Breakdown of FY 2015 Liabilities

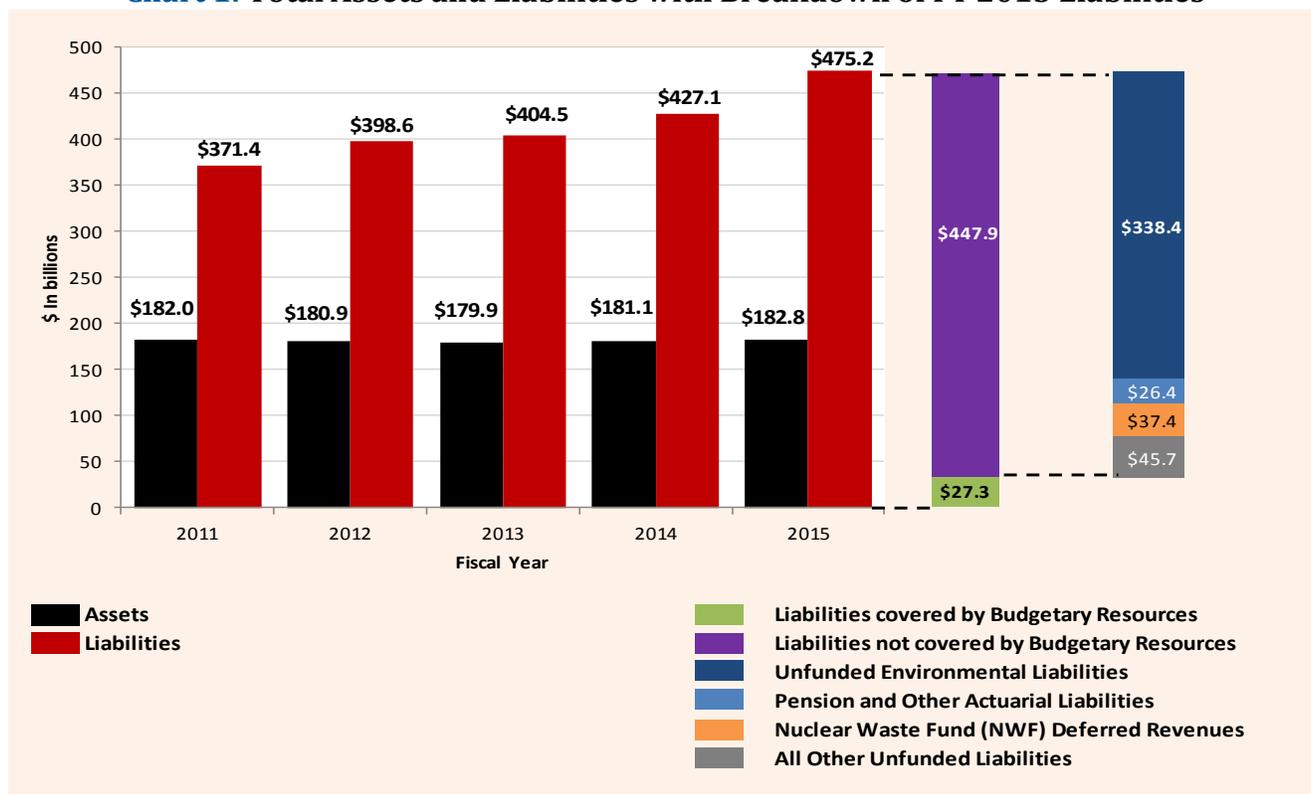
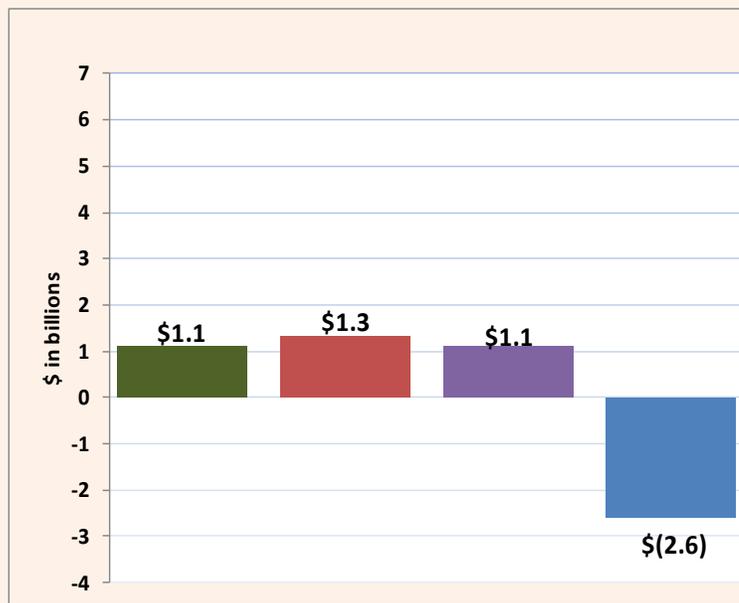


Chart 2: FY 2015 Significant Changes in Assets



Loans and Loan Guarantees

Changes are primarily due to loan activity which includes disbursements, principal repayments, capitalized interest and change in present value.

Investments

The increase is primarily from investment income in excess of current expenses, which is reinvested in U.S. Treasury securities.

Inventory

The increase is primarily due to an increase in nuclear materials.

Fund Balance with Treasury

This decrease is primarily due to undisbursed Recovery Act funding that was returned to Treasury's General Fund at the end of the 5th expired year so the accounts could be closed.

Chart 3: FY 2015 Significant Changes in Liabilities



Environmental Cleanup

The increase is primarily due to modifications of liability estimates driven by changes in technical approach, scope of activities, regulatory and legal changes, and inflation adjustments.

Pension and Other Actuarial Liabilities

Contractor pension plan liabilities increased by \$2.9 billion and other postretirement benefits plan liabilities decreased by \$.1 billion. The most significant component of the pension plan liabilities increase resulted from a lower than expected return on plan assets.

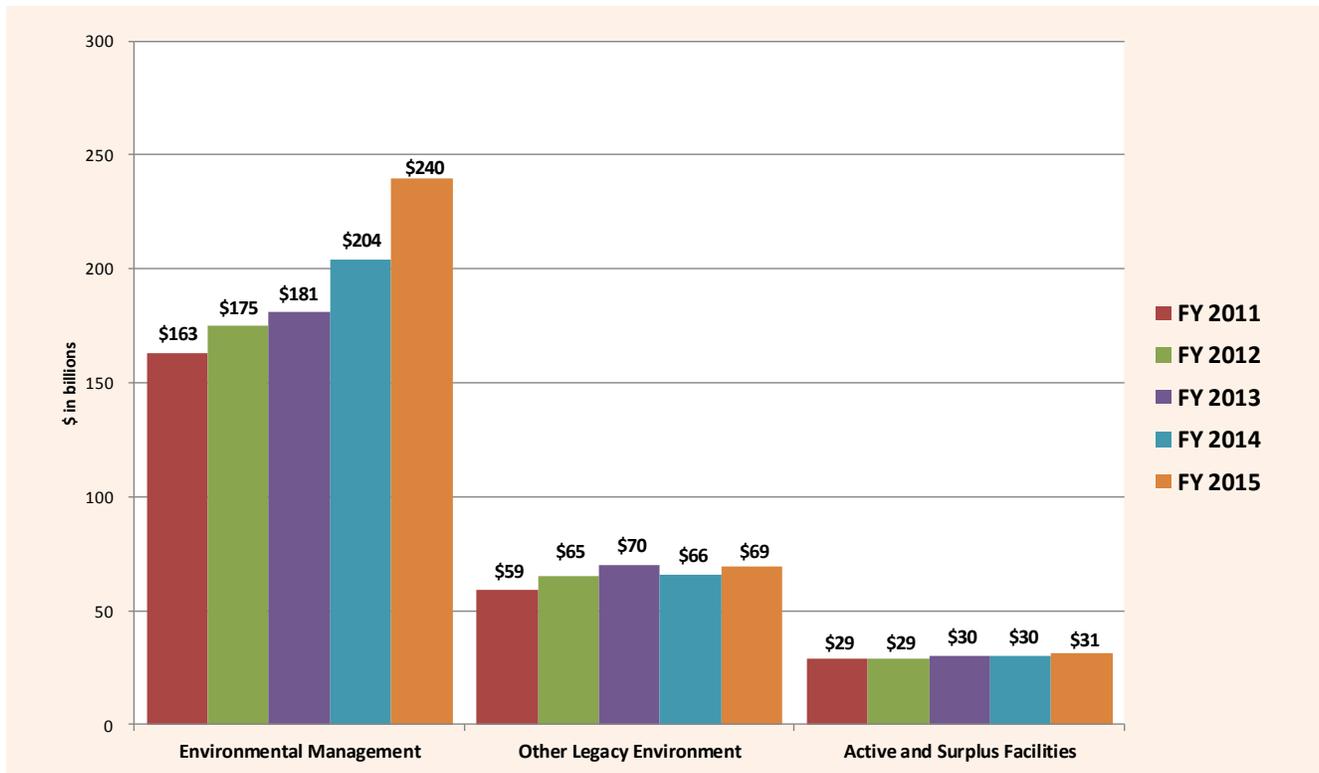
Intragovernmental Debt

Increase attributable primarily to borrowing from the Federal Financing Bank to fund disbursements and borrowing from Treasury to fund negative subsidy disbursements.

Deferred Revenues and Other Credits

Increase is from investment income in the NWF in excess of current expenses, which is recorded as an increase to deferred revenue.

Chart 4: Composition of Environmental Cleanup and Disposal Liability



Net Cost of Operations

The major elements of net cost are shown in Chart 5. A breakdown of program costs (gross) by the Department’s three programmatic goals, reimbursable work and other programs is provided in Chart 6.

The Department’s overall net costs are primarily affected by changes in environmental and other unfunded liability estimates. Since these estimates mostly relate to past years of operations, they are not included as current year program costs, but rather reported as “Costs Not Assigned” on the *Consolidated Statements of Net Cost*. Components of the FY 2015 unfunded liability estimate changes are shown in Chart 7.

A net increase to the Department’s environmental liabilities estimate during FY 2015 resulted from inflation adjustments to reflect constant dollars for the current year; improved and updated estimates for the same scope of work, including changes resulting from deferral or acceleration of work; revisions in technical approach or scope; and regulatory and legal changes (see Chart 4).

The Department’s FY 2015 unfunded liability estimates increased by \$2.9 billion for contractor pension plans and decreased by \$0.1 billion for contractor postretirement benefits other than pensions (PRB) plans. The major components of these estimate changes are shown in Chart 8. The most significant component of the change in the contractor pension plan liabilities resulted from a lower

than expected return on plan assets. The most significant component of the change in contractor PRB liabilities resulted from changes made by contractors during the year in an effort to control the future cost growth associated with these benefits. There were also changes in both pension and PRB liabilities because of differences in actual plan experience for the year compared to the actuarial assumptions for rates of retirement, termination of employment, compensation increases, health care inflation, and other demographic factors, including changes made to those assumptions to better reflect anticipated future experience. The discount rate used to discount the liabilities to present value was unchanged from FY 2014.

The Department’s Research & Development (R&D) expenses are shown in Chart 9. These R&D expenses facilitate the creation, advancement, and deployment of new technologies and support the Department’s mission to ensure America’s security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. Overall, Research & Development expenses increased by \$2.4 billion in FY 2015, primarily due to the inclusion of Program Direction, Safeguards & Security, and Infrastructure costs that support R&D activities. Excluding those support costs, the FY 2015 reported total would have been approximately \$10.3 billion or essentially the same level as FY 2014.

Chart 5: Elements of Net Cost

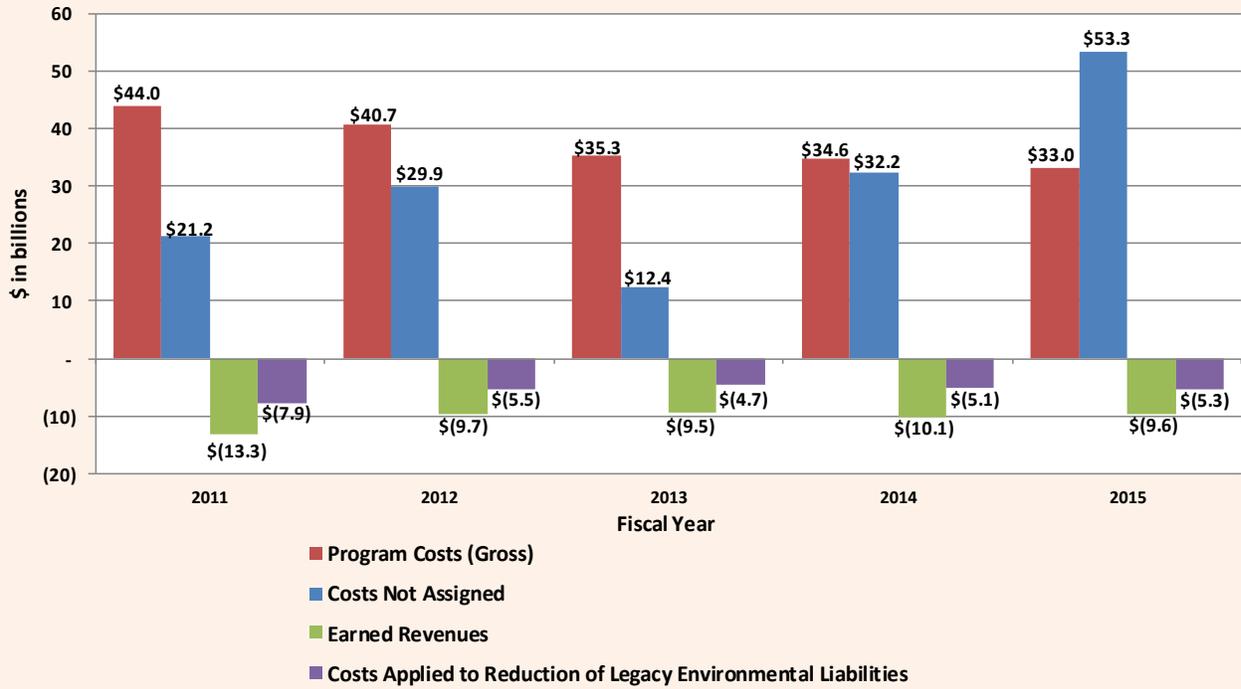


Chart 6: FY 2015 Program Costs (Gross)

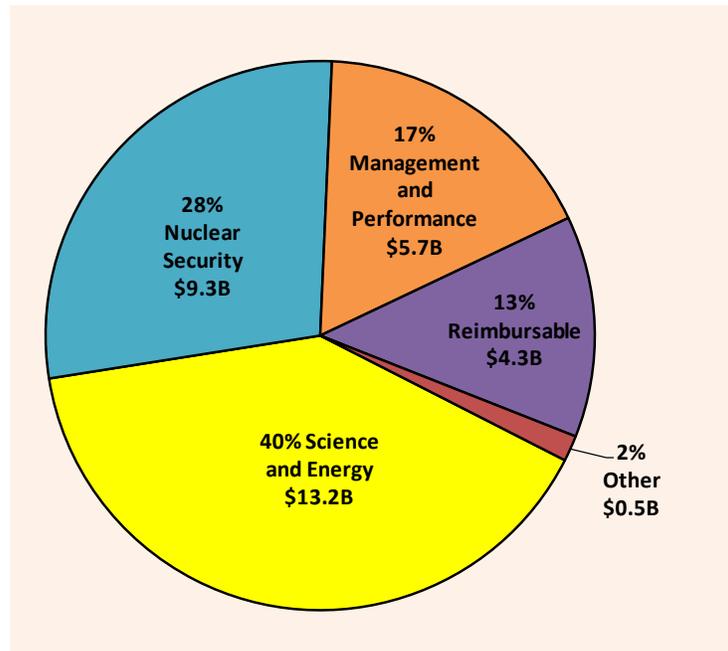


Chart 7: Major Elements of Costs Not Assigned

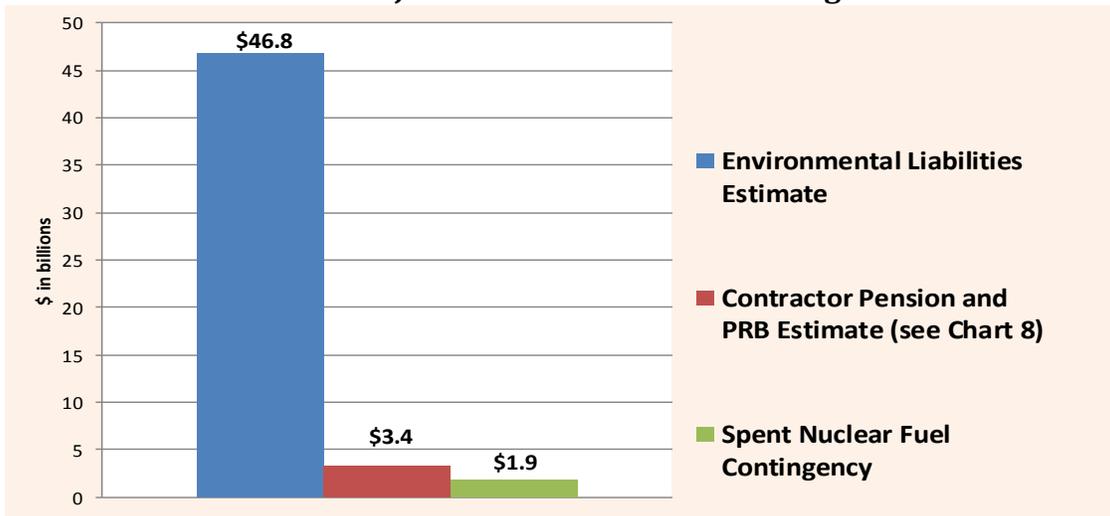


Chart 8: FY 2015 Contractor Employee Pension and Other Postretirement Benefit Plans Liability Estimate Changes

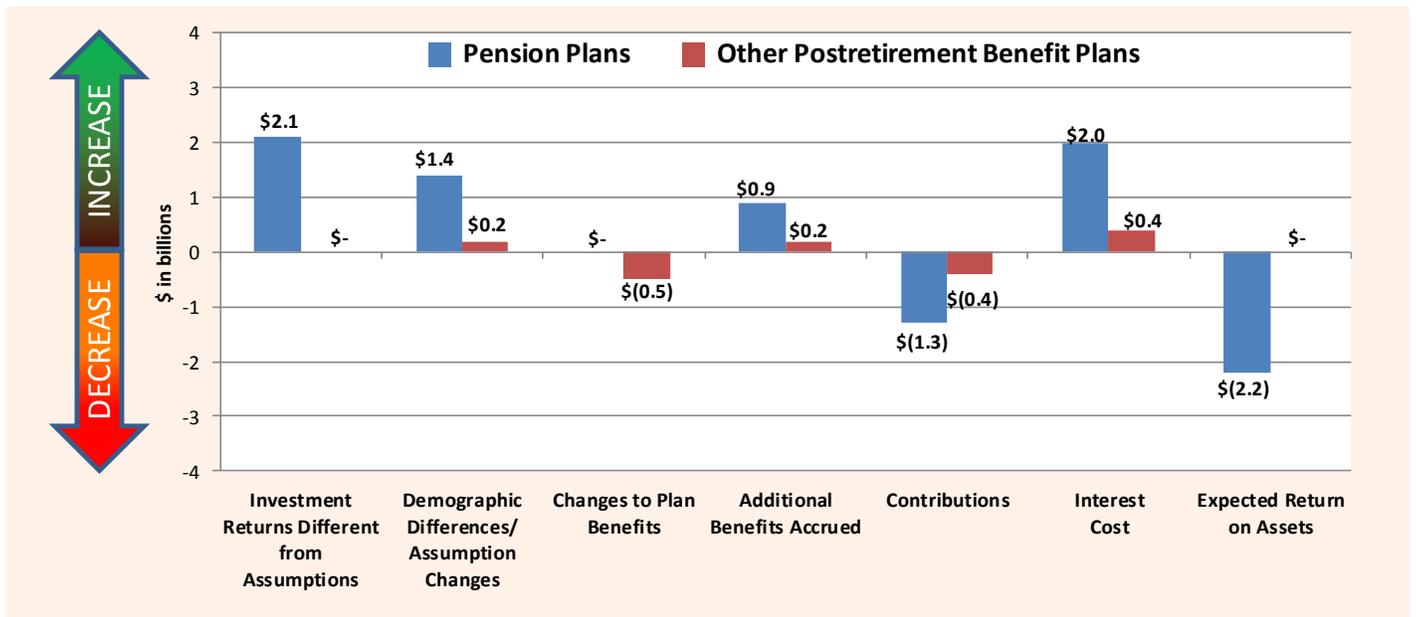
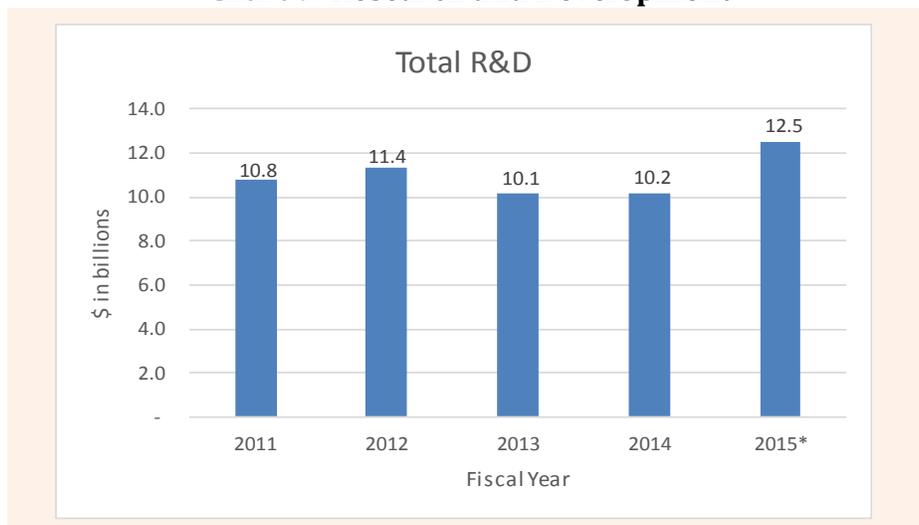


Chart 9: Research and Development



Budgetary Resources

The Department's financial statements are included in the Financial Results section of the *FY 2015 DOE Agency Financial Report*. The *Combined Statements of Budgetary Resources* provides information on the budgetary resources available to the Department for the year and the status of those resources at the end of the fiscal year. The Department receives most of its funding from general Government funds administered by the Department of the Treasury (Treasury) and appropriated for DOE's use by Congress. Since budgetary accounting rules and financial accounting rules recognize certain transactions at different

points in time, Appropriations Used on the *Consolidated Statements of Changes in Net Position* will not match costs for that period. The primary difference results from recognition of costs related to changes in unfunded liability estimates. Budget authority from appropriations on the *Combined Statements of Budgetary Resources* increased in FY 2015 by \$2.9 billion from FY 2014.

As shown in Chart 10, the Department's Obligations Incurred decreased by \$4.1 billion from FY 2014.

Chart 10: Obligations Incurred



Chart 11: Linking Strategic Goals, Objectives, Budget and Cost

STRATEGIC GOALS	STRATEGIC OBJECTIVE	BUDGETARY EXPENDITURES INCURRED ^{a c} (\$ IN BILLIONS)		PROGRAM COST ^{b c} (GROSS IN BILLIONS)	
		FY 2015	FY 2014	FY 2015	FY 2014
Goal 1: Science and Energy	Advance the goals and objectives in the President’s Climate Action Plan by supporting prudent development, deployment, and efficient use of “all of the above” energy resources that also create new jobs and industries	\$ 11.6	\$ 12.5	\$ 7.8	\$ 8.7
	Support a more economically competitive, environmentally responsible, secure and resilient U.S. energy infrastructure	0.9	0.8	0.6	0.7
	Deliver the scientific discoveries and major scientific tools that transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation	4.8	4.8	4.8	5.2
	Subtotal Goal 1: Science and Energy	17.3	18.1	13.2	14.6
Goal 2: Nuclear Security	Maintain the safety, security and effectiveness of the nation’s nuclear deterrent without nuclear testing	4.4	3.8	3.6	3.9
	Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure	3.4	3.5	2.8	3.2
	Reduce global nuclear security threats	2.1	2.0	1.7	1.7
	Provide safe and effective integrated nuclear propulsion systems for the U.S. Navy	1.1	1.1	1.2	1.1
	Subtotal Goal 2: Nuclear Security	11.0	10.4	9.3	9.9
Goal 3: Management and Performance	Continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities	6.4	5.5	4.9	4.6
	Manage assets in a sustainable manner that supports the DOE mission	0.2	0.2	0.1	0.1
	Effectively manage projects, financial assistance agreements, contracts, and contractor performance	0.2	0.1	0.2	0.1
	Operate the DOE enterprise safely, securely, and efficiently	0.6	0.6	0.6	0.6
	Attract, manage, train, and retain the best federal workforce to meet future mission needs	-	-	-	-
	Subtotal Goal 3: Management and Performance	7.4	6.4	5.8	5.4
Total for Strategic Goals		35.7	34.9	28.3	29.9

- a. Budgetary Expenditures Incurred are amounts accrued or paid for services performed, goods and tangible property received. Budgetary Expenditures are obtained from the Budgetary Standard General Ledger and are reported/recorded based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and activities.
- b. Program Costs (Gross) are taken from the Department’s Consolidated Statements of Net Cost.
- c. Budgetary Expenditures and Program Cost include Recovery Act amounts.

Management Priorities

DOE MANAGEMENT PRIORITIES	IG CHALLENGE AREAS FY 2016	GAO HIGH RISK LIST GAO-15-290 (as of February 2015, updated every 2 years)
Contract and Project Management	Contract Management	Contract Management for the NNSA and EM Management of major (\$750M+) projects and programs
Security	Safeguards and Security	
Environmental Cleanup	Environmental Cleanup	
Spent Nuclear Fuel and High-Level Waste Disposal	Nuclear Waste Disposal	
Cybersecurity	Cybersecurity	
Infrastructure	Infrastructure Modernization	
Human Capital Management		
Safety Culture		
	Stockpile Stewardship	