



## DEPARTMENT OF ENERGY

### **The President's 2009 Budget will:**

- Support deployment and expand research into cost-effective carbon capture and storage;
- Accelerate technological breakthroughs with the Advanced Energy Initiative;
- Provide additional energy security with the Strategic Petroleum Reserve;
- Foster scientific leadership with the American Competitiveness Initiative;
- Advance environmental cleanup and nuclear waste management;
- Maintain the nuclear weapons stockpile and continue to transform the weapons complex; and
- Support work with other countries to prevent the spread of weapons of mass destruction.

### ***Supporting Deployment and Expanding Research of Cost-Effective Carbon Capture and Storage***

- *Demonstrates that America can use its own abundant energy source—coal—while still reducing carbon emissions.* \$400 million to research and \$241 million to demonstrate technologies for cost-effective carbon capture and storage for coal-fired power plants through:
  - A restructured carbon capture and storage program that maximizes the role of private sector innovation and assures a productive public-private partnership;
  - New pilot-scale research on a range of advanced technologies that could dramatically reduce the cost and energy consumption of carbon capture; and
  - Large-scale projects to demonstrate underground carbon storage.
- *Accelerates commercial deployment of technologies that are central to carbon capture and storage.* Implements \$1.65 billion in investment tax credits and makes use of loan guarantees.

### ***Accelerating Technological Breakthroughs with the Advanced Energy Initiative***

- *Promotes licensing of new nuclear plants and researches an advanced nuclear fuel cycle.* \$242 million for Nuclear Power 2010, an industry cost-shared effort to bring new nuclear plant technologies to market and demonstrate streamlined regulatory processes. \$302 million focuses the Advanced Fuel Cycle Initiative on innovative transmutation and separations research and development.
- *Invests in making solar power cost-competitive with conventional sources of electricity by 2015.* \$156 million for the Solar America Initiative to advance the availability of photovoltaics.
- *Supports a robust vehicle technology program.* Develops lithium-ion batteries, plug-in hybrids, and drive-train electrification to diversify and make the Nation's vehicle fleets more efficient and reduce petroleum dependency.

### ***Providing Additional Energy Security with the Strategic Petroleum Reserve***

- *Protects the economy against oil disruptions.* Doubles capacity of the Strategic Petroleum Reserve by expanding it to 1.5 billion barrels—first filling the reserve to its existing capacity and then expanding capacity at existing and new sites.
- *Provides clean, renewable hydropower.* \$209 million for the Power Marketing Administrations (Southeastern, Southwestern, and Western) and estimated budget obligations of \$3.5 billion for the Bonneville Power Administration to improve energy reliability and capacity while protecting fish and wildlife.

### ***Fostering Scientific Leadership with the American Competitiveness Initiative***

- *Supports basic research in the physical sciences and over 25,000 researchers.* \$4.7 billion for the Office of Science to enable scientific breakthroughs with broad impacts on future energy technologies and environmental solutions. Integrates basic research on carbon dioxide capture and storage, electrical energy storage, and high-level nuclear waste system performance with applied technology programs to reduce risk and accelerate achievement.
- *Operates world-class facilities and builds new tools for scientific discovery.* Starts construction of the National Synchrotron Light Source-II, a machine that will enable the measurement of material properties with unprecedented energy and spatial resolution, and continues a major upgrade at the Thomas Jefferson National Accelerator Facility that will allow world-leading studies of the structure of nuclear matter.

### ***Advancing Environmental Cleanup and Nuclear Waste Management***

- *Cleans up the environmental legacy of the Cold War.* \$5.5 billion to protect public health and safety by cleaning up nuclear research and weapons production sites. Finishes cleanup projects at Sandia National Laboratory and Argonne National Laboratory in 2009.
- *Continues essential engineering design and planning for the Yucca Mountain Repository.* \$495 million continues development of the nuclear waste repository and supports defense of the license application while under Nuclear Regulatory Commission review. The Administration will work with the Congress to provide a stable source of funding for the repository by establishing a budget-neutral mechanism for the Department to receive appropriations equal to annual Nuclear Waste Fund receipts from utilities.

### ***Maintaining the Nuclear Stockpile; Transforming the Weapons Complex***

- *Extends the life of existing warheads and accelerates dismantling of excess nuclear weapons.* \$6.6 billion for the National Nuclear Security Administration's Weapons Activities programs. Continues transformation of the weapons complex to a smaller, safer, more secure, and less expensive enterprise.
- *Provides nuclear propulsion plants for the U.S. Navy.* \$828 million for Naval Reactors to deliver safe and reliable nuclear propulsion plants for submarines and aircraft carriers.

### ***Working with Other Countries to Prevent the Spread of Weapons of Mass Destruction***

- *Detects, secures, eliminates, and disposes of dangerous nuclear materials around the world.* \$1.8 billion for Defense Nuclear Nonproliferation including \$487 million funded in the Office of

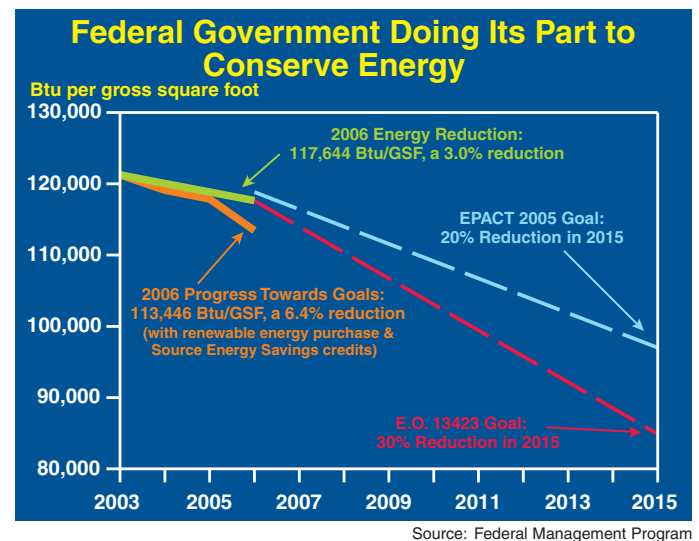
Nuclear Energy, and \$119 million funded in Weapons Activities, to deny terrorists and rogue states the weapons-usable materials and expertise needed to acquire or use nuclear weapons and radiological dispersal devices.

### ***Major Savings and Reforms***

- The Department estimates savings of \$538 million over seven years through competitive sourcing actions taken in 2003–2007.
- Increased energy efficiency of Federal buildings since 2003 has saved \$400 million each year, for a total of 19.5 trillion Btu, according to the Federal Energy Management Program. Energy investments made since 1985 saved \$1 billion in 2006, and \$6.9 billion in total.

### ***Since 2001, the Department of Energy has:***

- Fulfilled the President's \$2 billion commitment to the Coal Research Initiative three years early. Developed mercury control technologies that helped show how coal power plants could affordably meet emissions limits in the Clean Air Mercury Rule.
- Met the President's commitment to provide \$1.2 billion over five years to support the development of commercially viable hydrogen-powered fuel cells. In cooperation with auto and energy companies, tested hydrogen and fuel cell technologies in 77 vehicles and 14 fueling stations. Worked with industry to develop a fuel cell membrane durable for nearly 5,000 hours.
- Accelerated international cooperation on clean energy technologies through the International Partnership for the Hydrogen Economy; FutureGen; the Carbon Sequestration Leadership Forum; the Generation IV International Forum; the Global Nuclear Energy Partnership; the International Thermonuclear Experimental Reactor (ITER) fusion energy project; and the Asia-Pacific Partnership on Clean Development and Climate.
- Strengthened the Nation's capabilities in materials science by building five new Nanoscale Science Research Centers and a major new Spallation Neutron Source—all within budget and on schedule.
- Completed cleanup of 14 sites—including Rocky Flats, Colorado, and Fernald, Ohio—and advanced the cleanup of the 22 remaining sites for which the Department is responsible.
- Accelerated by two years the completion of upgrades at Russian sites that hold weapons-usable materials and Russian nuclear warheads.
- Expanded the Second Line of Defense program that installs nuclear detection equipment at border crossings and megaports around the world to protect against terrorism.
- Down-blended a cumulative total of more than 100 metric tons of surplus U.S. highly-enriched uranium for peaceful use as reactor fuel.
- Extended the "safe steaming" record for the Navy's nuclear propulsion plants to 138 million miles.



**Department of Energy**  
(Dollar amounts in millions)

	2007 Actual	Estimate	
		2008	2009
<b>Spending</b>			
Discretionary Budget Authority:			
National Defense:			
National Nuclear Security Administration.....	9,076	8,811	9,097
Other Defense activities.....	636	754	1,313
Energy Resources.....	3,237	4,066	3,652
Science.....	3,837	3,973	4,722
Environmental Management.....	6,186	5,695	5,528
Radioactive Waste Management.....	446	386	495
Corporate Management.....	191	194	207
Title 17 Innovative Technology Loan Guarantee Program.....	—	5	—
Total, Discretionary budget authority.....	23,609	23,884	25,012
<i>Memorandum: Budget authority from enacted supplementals</i> .....	135	—	—
Total, Discretionary outlays.....	22,989	25,193	26,005
Mandatory Outlays:			
Existing law.....	-1,881	-692	-1,310
Legislative proposal, Ultradeep Water, Oil, and Gas Research and Development.....	—	—	30
Total, Mandatory outlays.....	-1,881	-692	-1,280
Total, Outlays.....	21,108	24,501	24,725
<b>Credit activity</b>			
Guaranteed Loan Disbursements:			
Title 17 Innovative Technology Loan Guarantee Program.....	—	300	943
	<b>Number of</b>		<b>2009</b>
<b>Major Savings, Discretionary</b>	<b>Programs</b>		<b>Savings</b>
Terminations.....	3		-283