

# The U.S. Department of Energy's Fiscal Year 2014 Budget Request

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B-61 nuclear warheads

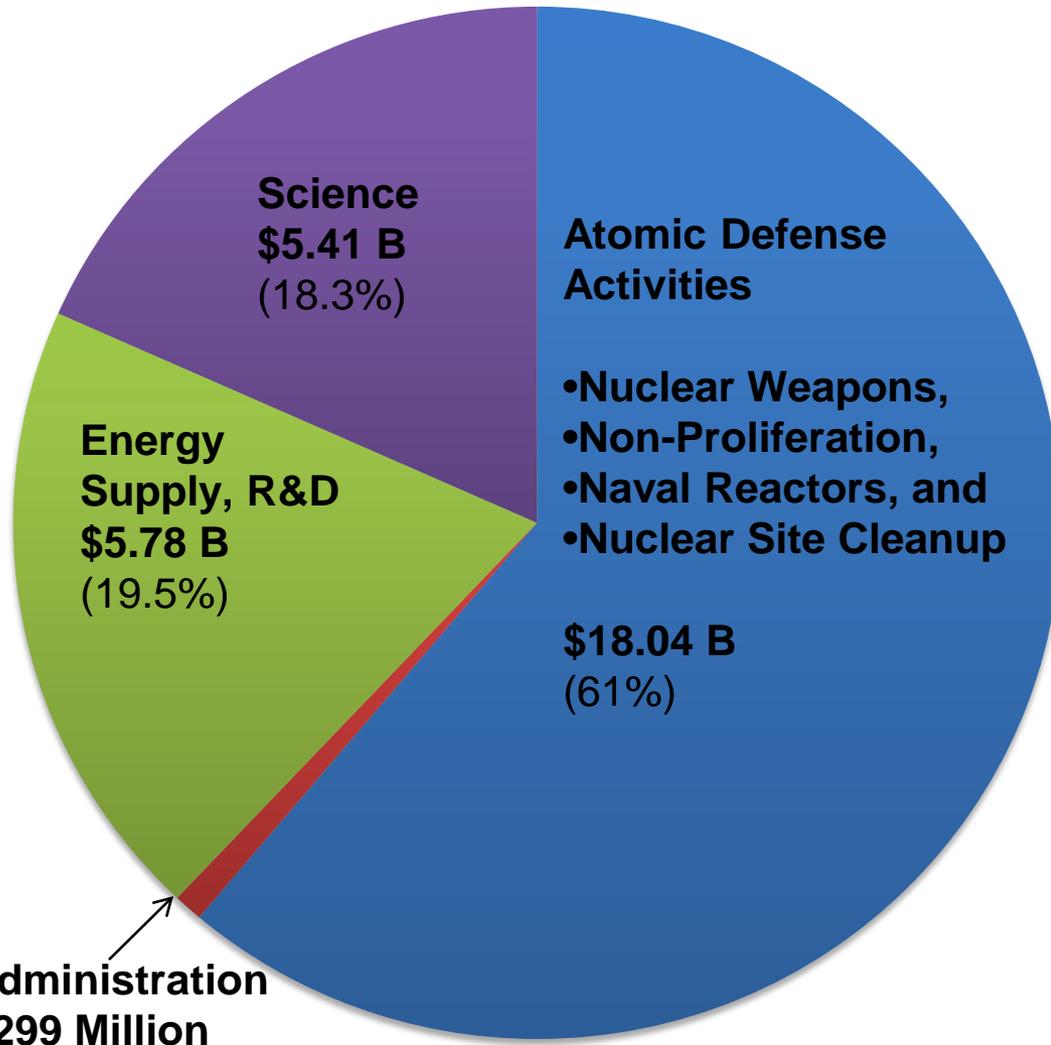


Radioactive waste container



Solar panels

# U.S. Department FY 2014 Budget Request



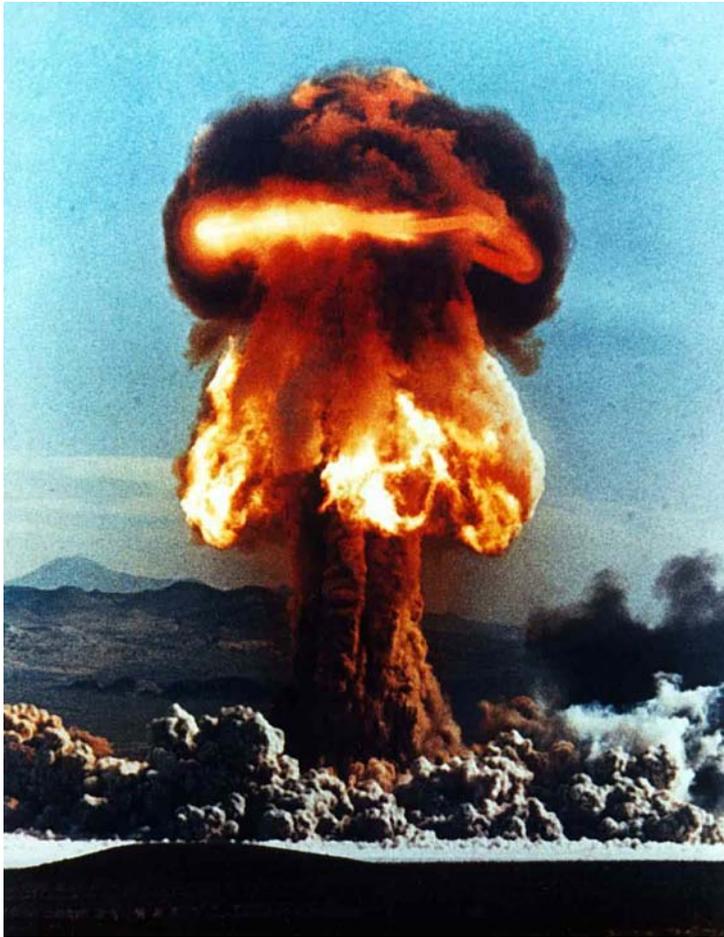
## Energy Activities Include:

- Energy Efficiency and Renewable Energy: \$3.2 Billion
- Fossil Energy: \$520 Million
- Nuclear Energy (fission): \$754 Million
- Electric Transmission: \$123 Million
- Energy Information Administration: \$123 Million
- Power Marketing Administrations: \$85 Million
- Energy Loan Guarantees (subsidy costs): \$305 Million

**DOE Total Request= \$28.41 Billion**

**DOE spends 10 times more on military nuclear activities than for energy conservation.**

# More Money for Nuclear Weapons



About 41 percent of the Energy departments' budget is for military nuclear activities.

Even though the DOE has not made a new nuclear weapon for 20 years, its weapons complex is spending at a rate comparable to that at the height of the nuclear arms race in the late 1950s.

Military nuclear spending has increased by more than \$1 billion since 2010.

# Nuclear Weapons Modernization



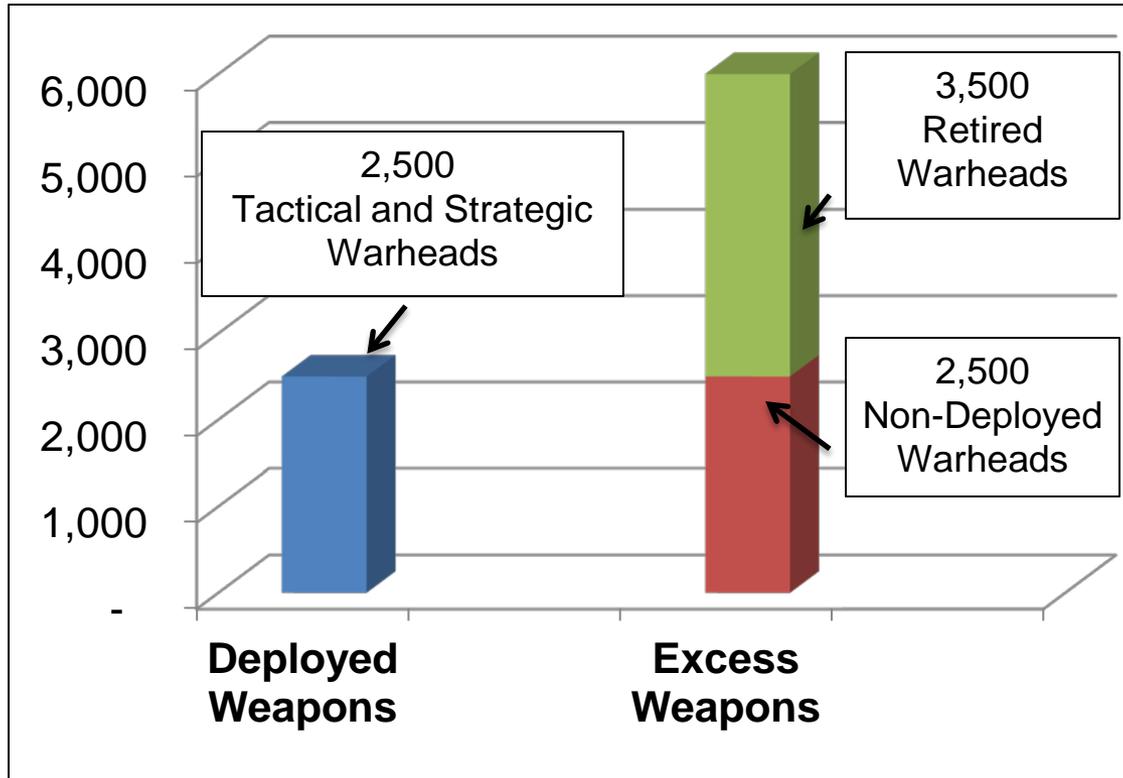
B61 warheads

Over the next 20 years, the DOE plans for the U.S. to spend about \$167 billion to maintain the U.S. nuclear weapons stockpile and refurbish the weapons research and production complex.

Although the U.S. nuclear arsenal has been cut in half since the end of the Cold War, and new weapons production stopped 20 years ago, spending on nuclear warheads has increased by more than 30 percent since the late 1980s. By 2018, NNSA spending is planned to increase by 50 percent above Cold War levels.

This does not include an additional \$100 billion projected by the Defense department for missile, bombers and submarines to deploy nuclear weapons.

# The U.S. Nuclear Arsenal in 2010



Source: Federation of American Scientists

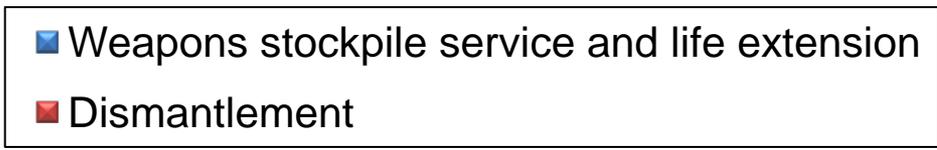
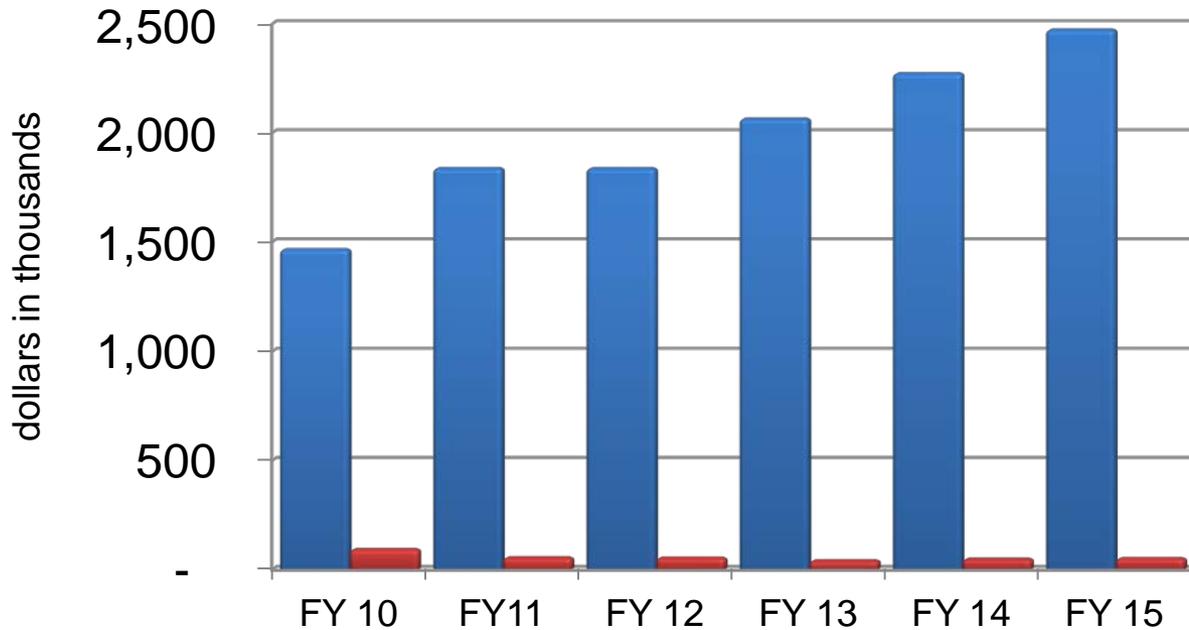
The U.S. nuclear stockpile has 400 times the destructive power of explosives used by all combatants in World War II.

About 70 percent of the U.S. nuclear arsenal is not deployed.

About 40 percent has been discarded by the U.S. military.

The primary targets are mostly those selected during the Cold War, which ended 20 years ago.

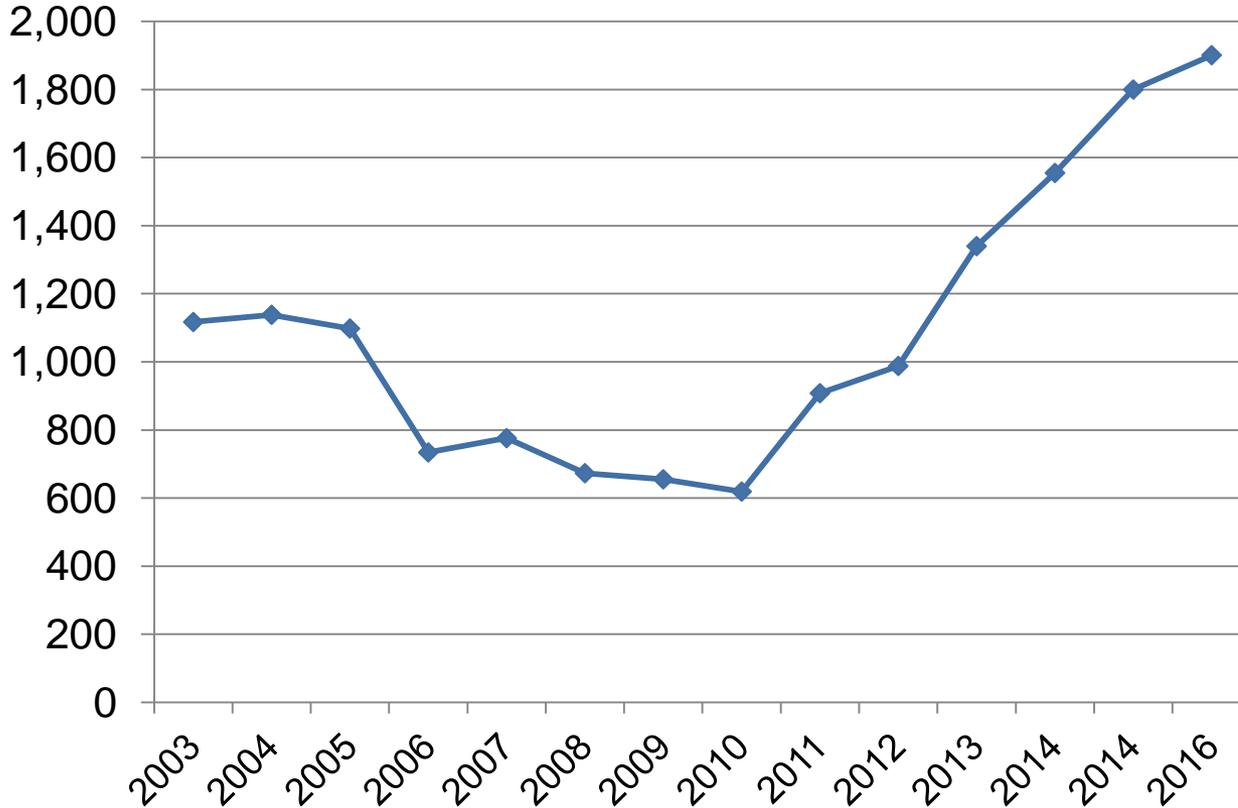
# Elimination of Nuclear Weapons has a Low Priority



There is a 20 year backlog of some 3,500 retired nuclear warheads awaiting dismantlement.

Yet, funding for dismantlement will drop by nearly 50 percent over the next five years.

# Costs for Nuclear Warhead Life Extension (thousands of dollars)



Between FY 2003 and 2016, about \$15 billion will be spent on nuclear warheads life extension

The per unit life extension cost for the B-61 and W76 warheads are between \$11 and \$12 million.

Sources: DOE Congressional Budget Requests, Natural Resources Defense Council and Federation of American Scientists-U.S. Nuclear Arsenal 2009

# Lifetimes of Nuclear Warheads Could be Extended for Decades



Because of the 20-year voluntary moratorium on nuclear weapons testing by the United States, the design labs have claimed that long-term stockpile reliability cannot be guaranteed without new-design nuclear weapons.

This claim has been repudiated by the Jason group, a highly regarded group of special experts with a long history of credible advice to the U.S. nuclear weapons program. The Jason Group concluded:

- Lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss in confidence, by using approaches similar to those employed in life extension programs (LEPs) to date.
- This was no evidence that accumulation of changes incurred from aging and LEPs have increased risk to certification of today's deployed nuclear warheads.

# High Risk Projects

The U.S. Government Accountability Office (GAO) identified the DOE nuclear weapons program to be one of the government's top "high-risk" programs vulnerable to waste, fraud, and abuse. For instance:

- The Chemical and Metallurgy Research and Replacement (CMMR) facility at the Los Alamos National Laboratory in New Mexico. The main purpose of the CMMR is ramp up manufacturing capability of plutonium pits to as many as 80 per year by 2022. Its estimated costs increased from \$600 million in 2004 to \$5.8 billion in 2010. In December 2012, Lawrence Livermore Laboratory reported that plutonium weapons components could hold up for 150 years, further undercutting the need for the CMMR.
- The Hanford Waste Treatment Plant has an estimated life-cycle cost of more than \$110 billion. It continues to be plagued by costly and time-consuming safety-related design and construction problems.
- The Uranium Processing Facility (UPF) at the Y-12 weapons plant in Oak Ridge, TN. This facility is expected to replace an aged plant built in the 1950's. The estimated cost for this project has increased from \$600 million to \$6.5 billion.
- The NNSA's Life Extension Program costs for nuclear warhead types have increased by 400 percent.

# Nuclear Proliferation



Uranium enrichment

“20 or 30 States...have the capacity to develop nuclear weapons in a very short span of time.”

Director General Dr. Mohamed El Baradei,  
International Atomic Energy Agency, October 16,  
2006



Reprocessing

# Less for Non-proliferation

(Dollars in Thousands)

	FY 2012 Current <sup>a b</sup>	FY 2013 Annualized CR <sup>c</sup>	FY 2014 Request
<b>Defense Nuclear Nonproliferation</b>			
<b>Defense Nuclear Nonproliferation Programs</b>			
Global Threat Reduction Initiative	503,453	501,048	424,487
Defense Nuclear Nonproliferation R&D <sup>d</sup>	347,905	456,317	388,838
Nonproliferation and International Security	153,594	154,534	141,675
International Material Protection and Cooperation <sup>e</sup>	575,789	573,415	369,625
Fissile Materials Disposition	685,386	721,784	502,557
Legacy Contractor Pensions	55,823	56,165	93,703
<b>Subtotal, Defense Nuclear Nonproliferation Programs</b>	<b>2,321,950</b>	<b>2,463,263</b>	<b>1,920,885</b>
<b>Nuclear Counterterrorism Incident Response Program (Homeland Security) <sup>f</sup></b>	<b>0</b>	<b>0</b>	<b>181,293</b>
<b>Counterterrorism and Counterproliferation Programs <sup>f</sup></b>	<b>0</b>	<b>0</b>	<b>74,666</b>
Use of Prior Year Balances <sup>g</sup>	0	-32,204	-36,702
Rescission of Prior Year Balances <sup>g</sup>	-21,000	-21,129	0
<b>Total, Defense Nuclear Nonproliferation</b>	<b>2,300,950</b>	<b>2,409,930</b>	<b>2,140,142</b>

**Funds to track and control weapons-usable material are being cut, while nearly 30% this program's budget is being used to pay for contractor pensions and the costly MOX program.**

# The Mixed Oxide Program (MOX)

\$650 million (25%) of DOE's non-proliferation spending for FY 2012 is going to build facilities to mix plutonium from weapons with uranium for use in nuclear power plants (MOX) at DOE's Savannah River Site in South Carolina.



Source: MOX Project.com

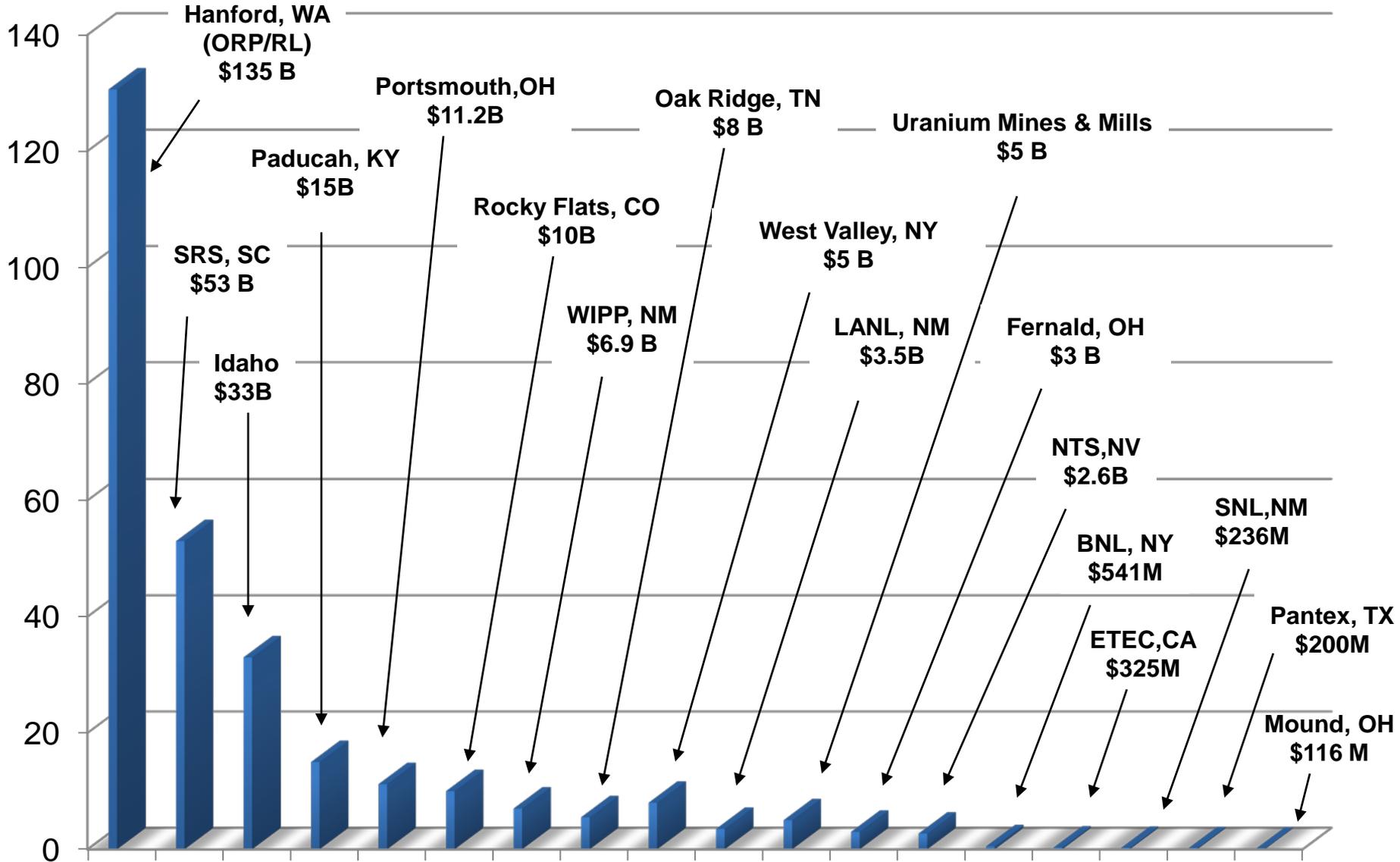
The MOX project was originally the centerpiece of a 2000 agreement with Russia for each nation to mutually rid 34 metric tons of weapons plutonium.

However, the agreement has fallen apart because Russia will not pay for its MOX program.

This \$4.8 billion project is 10 years behind schedule and U.S. nuclear utilities are balking at using MOX fuel.

“Taxpayers are pouring hundreds of millions of dollars a year into a facility that may never be used,” says Edwin Lyman, a nuclear expert at the Union of Concerned Scientists.

# DOE Site Cleanup Costs\*



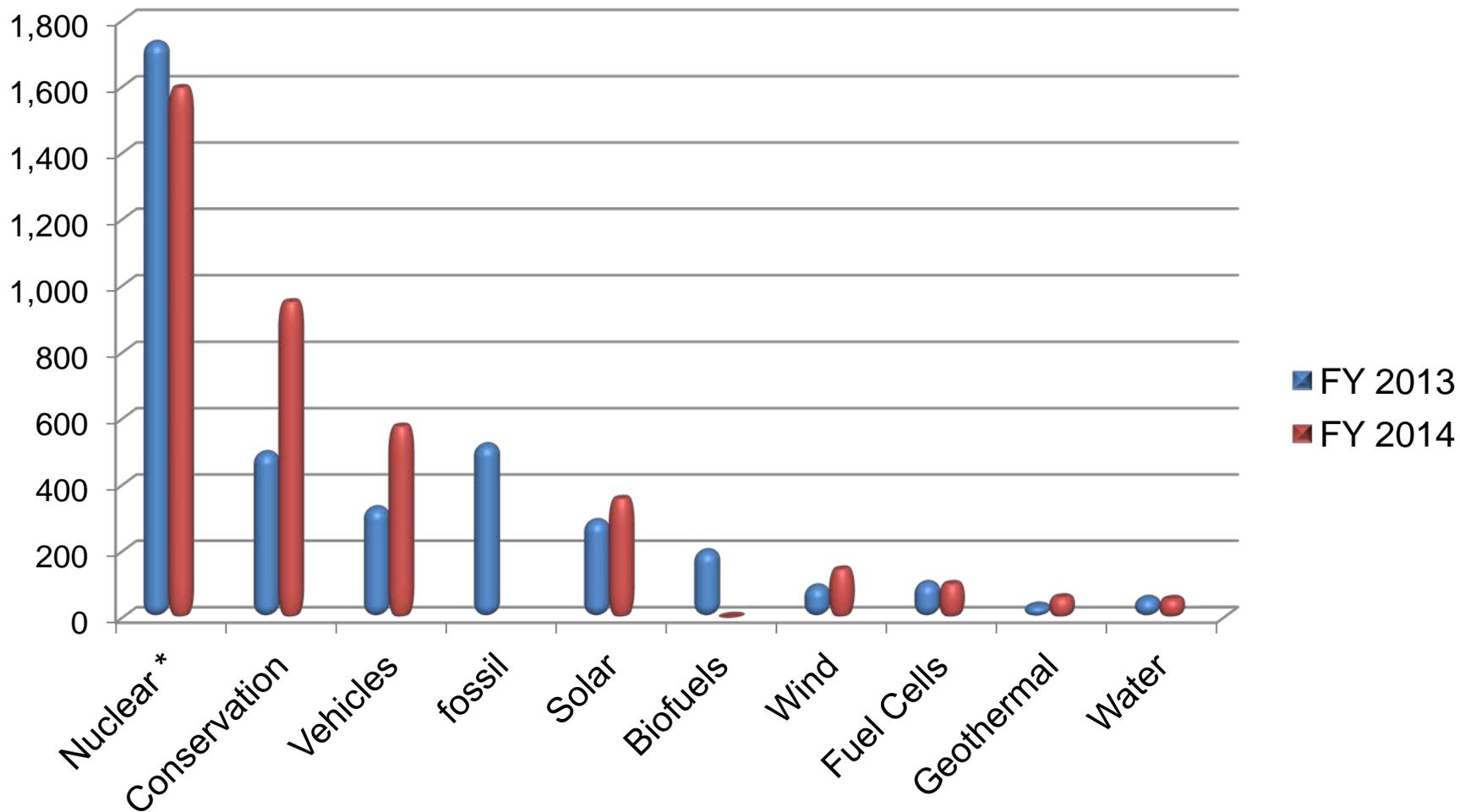
Sources: DOE 2008, GAO 2005, EIA 2006

**Total Cost = \$283 Billion**

\*Does not include NNSA projects

# Energy R&D Spending for FY 2013 and 2014

(thousands of dollars)



\*Includes fission and fusion R&D

# Loans and Loan Guarantees



**\$78.5 billion in loan guarantees for renewable and electric transmission**

**\$25 billion for auto Industry loans**

**\$56.5 billion in loan guarantees for nuclear projects**

**\$8 billion in loan guarantees for coal projects**

DOE is proposing to provide \$166 B in federal loans and loan guarantees to aid the ailing auto industry, and help finance nuclear, coal, renewable energy projects and to restructure and modernize the nation's electric grid system.

Nuclear loans totaling \$56.5 B are likely to come from the U.S. Treasury. With a greater than 50-50 chance of default, Wall Street will not finance nuclear projects.

# DOE's Office of Science

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR*	FY 2014 Request
Advanced Scientific Computing Research	428,304	443,566	465,593
Basic Energy Sciences	1,644,767	1,698,424	1,862,411
Biological and Environmental Research	592,433	613,287	625,347
Fusion Energy Sciences	392,957	403,450	458,324
High Energy Physics	770,533	795,701	776,521
Nuclear Physics	534,642	550,737	569,938
Workforce Development for Teachers and Scientists	18,500	18,613	16,500
Science Laboratories Infrastructure	111,800	112,485	97,818
Safeguards and Security	80,573	81,066	87,000
Program Direction	185,000	186,132	193,300
Small Business Innovation Research/Technology Transfer (SBIR/STTR) (SC funding)	114,125	0	0
Subtotal, Office of Science	4,873,634	4,903,461	5,152,752
SBIR/STTR (Other DOE funding)	61,346	0	0
Total, Science appropriation/Office of Science <sup>a</sup>	4,934,980	4,903,461	5,152,752

About 45 percent of Energy's Science budget reflects its historical emphasis on nuclear-related and physics research.

# Summary



Created in 1977 in response to oil disruptions, the U.S. Department of Energy has done little since to stem the country's burgeoning energy problems.

With about 5.5 percent of the world's population, the United States consumes more oil than any other nation, three-fourths of which comes from foreign sources.



As U.S. energy dependence on fossil fuels has increased, its greenhouse gas emissions have grown worse as well:

- Accelerating potentially disastrous climate disruptions

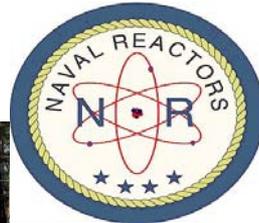
# Summary (cont)



Kansas City Plant

NEVADA TEST SITE

Pantex Plant



Department of Energy  
HANFORD SITE

The main reason for the DOE's ineffectiveness is that it's not structured to usher in the country's energy future.

For most of its existence, about two-thirds of the DOE's annual spending has gone to maintaining the U.S. nuclear weapons complex and cleaning up its environmental legacy.

Now, a large funding increase is being sought as a down payment for nuclear weapons research and production modernization – estimated to cost about \$167 billion over the next 20 years.

Actual energy functions continue to take a back seat with less than 20 percent of DOE's FY 2012 budget request.