

## Department of Energy Appropriations: FY 2014

- Summary Table of Appropriations
- President's Request
- Appropriations Hearings
- Appropriations Homepage

The Department of Energy (DOE) programs of interest to the geosciences include programs for renewable energy and activities within the Office of Science, such as the Basic Energy Science program which has a geoscience division. For more background information on the Department of Energy, visit the AGI Federal Agencies policy page.

Fiscal Year (FY) 2014 Department of Energy Appropriations Process

<u>Account</u>	<u>FY12 Current</u> (\$million)	<u>President's</u> <u>FY14 Request</u> (\$million)	<u>House Action</u> <sup>^</sup> (\$million)	<u>Senate Action</u> (\$million)	<u>Conference Committee</u> <u>Action</u> (\$million)
<b>Department of Energy (total)</b>	26,320	28,416			
<b>Energy Efficiency and Renewable Energy</b>	1,780	2,776			
--Geothermal	37	60			
--Hydropower	58	55			
--Hydrogen and Fuel Cell Technology	101	100			
--Solar	285	356.5			
--Wind	92	144			
--Biomass	195	--			
--Bioenergy Technologies	--	282			
<b>Fossil Energy R&amp;D</b>	337	420.6			
-- Natural Gas Technologies	15	17			
-- Unconventional FE Technologies*	5	0			
-- Coal	359	277			
--Fossil Energy Environmental Restoration	7.9	5.9			
<b>Office of Science</b>	4,935	5,153			
--ARPA-E	275	379			
--Basic Energy Sciences	1,645	1,862			
---Chemical Sciences, Geosciences, and Energy Biosciences	325				

--Biological and Environmental Research	609.6				
---Climate Env Sci Research	298				
--Workforce Development for Teachers and Students	18.5	16.5			
<b>Environmental Management</b>					
--Defense Environmental Clean-up	5,003	5,317			
--Non-Defense Environmental Clean-up	235	213			
---Uranium Enrichment D&D Funding	472	554.8			
<b>Civilian Radioactive Waste Management</b>					
--Nuclear Waste Disposal	0				
--Defense Nuclear Waste Disposal	0				

\*Account formerly known as "Petroleum - Oil Technology"

#### President's Request

The President released his budget proposal for fiscal year (FY) 2014 on April 10, 2013.

#### Appropriations Hearings

- May 15, 2013: Senate Committee on Appropriations Subcommittee on Energy and Water Hearing on the President's Fiscal Year 2014 Funding Request and Budget Justification for the Department of Energy
- May 7, 2013: Senate Committee on Appropriations Subcommittee on Interior, Environment, and Related Agencies Hearing on the Fiscal Year 2014 Budget Request for the Department of the Interior
- April 17, 2013: House Committee on Science, Space, and Technology Hearing to Review the President's FY 2014 Budget Request for Science Agencies
- March 14, 2013: House Committee on Appropriations Subcommittee on Energy and Water Development Budget Hearing on the Department of Energy's Applied Energy Funding

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### Senate Committee on Appropriations Subcommittee on Energy and Water Hearing on the President's Fiscal Year 2014 Funding Request and Budget Justification for the Department of Energy

May 15, 2013

#### Witnesses:

#### The Honorable Daniel Poneman

Acting Secretary, United States Department of Energy

#### Committee Members Present:

Dianne Feinstein (D-CA), Chairwoman

Lamar Alexander (R-TN), Ranking Member

Tom Udall (D-NM)

On May 15, 2013, the Senate Committee on Appropriations Subcommittee on Energy and Water held a hearing to receive testimony regarding President Obama's fiscal year (FY) 2014 funding request and budget justification for the Department of Energy (DOE). The requested FY 2014 budget for DOE is \$28.415 billion which represents a five percent increase of \$1.388 billion from FY 2013 levels.

Subcommittee Chairwoman Dianne Feinstein (D-CA) outlined in her opening statement the three areas within DOE's budget that receive the most funding increases in the FY 2014 budget request: the Office of Energy Efficiency and Renewable Energy (EERE), energy research, and the Advanced Research Projects Agency-Energy (ARPA-E). The "single largest increase" in funding boosts the EERE budget by 55 percent or \$995 million. Science research, which focuses on materials research, advanced

computing, and biological research, received a budget request that represents a five percent increase of \$277 million. Feinstein emphasized concerns over the cost and schedule delays on developing the Institute of Electronics and Telecommunications of Rennes (IETR), “an experimental fusion reactor being built in France.” She praised the successes of ARPA-E and the proposed 43 percent or \$114 million increase, which will fund an additional 100 projects. She also noted that the 21 percent or \$113 million reduction in the Office of Fossil Energy’s proposed budget was due, in part, to the decrease in carbon capture and storage “activities.”

In his opening statement, Subcommittee Ranking Member Lamar Alexander (R-TN) stated that “our government-sponsored research is critical to our economic well-being,” and agreed with Feinstein’s praise of ARPA-E. He expressed support for the DOE research hubs but was concerned that the electricity systems hub “is not as promising as others.” Alexander discussed the progress made on small nuclear modular reactors and the ongoing efforts with Feinstein as well as Ron Wyden (D-OR) and Lisa Murkowski (R-AK), chairman and ranking member, respectively, of the Senate Committee on Energy and Natural Resources, to address the nation’s spent nuclear fuel.

Daniel Poneman, Acting Secretary of the DOE, testified that “the United States is on a path to a cleaner and more secure energy future.” He discussed the Administration’s commitment to an “all of the above energy strategy.” With oil and gas production soaring and imports falling, carbon emissions are at the lowest levels since 1994. He noted that “renewable electricity generation from wind, solar, and geothermal sources has doubled.” In order to “[foster] scientific and technological breakthroughs,” the FY 2014 budget proposes \$5.2 billion for the Office of Science and \$379 million for ARPA-E. Another \$5.6 billion is requested for environmental remediation. Poneman also acknowledged the need for DOE to better streamline the organization.

The question and answer section focused primarily on nuclear issues. Feinstein stated that the “lack of information” regarding the “cost, schedule, and scope baseline” of IETR is “unacceptable,” and asked for this information to be made available quickly. Alexander raised concerns over proposals to sell the Tennessee Valley Authority (TVA), inquiring if DOE helped make the decision. TVA provides tritium for nuclear weapons. Ponemen stated that he is “confident that DOE would be part of [the] conversation” if closure were pursued, but that the decision would not lie with DOE.

Tom Udall (D-NM) asked about funds for the clean up of plutonium waste at Los Alamos National Lab. Poneman replied that the “first \$19 million has been approved” and is available.

-KAC

**Senate Committee on Appropriations Subcommittee on Interior, Environment, and Related Agencies Hearing on the  
Fiscal Year 2014 Budget Request for the Department of the Interior**

May 7, 2013

*Witnesses:*

**The Honorable Sally Jewell**

Secretary, Department of the Interior

**The Honorable David Hayes**

Deputy Secretary, Department of the Interior

**The Honorable Rhea Suh**

Assistant Secretary - Policy, Management and Budget, Department of the Interior

**Pam Haze**

Deputy Assistant Secretary Office of Budget, Finance, Performance and Acquisition, Department of the Interior

*Committee Members Present*

Jack Reed (D-RI), Chairman

Lisa Murkowski (R-AK), Ranking Member

Dianne Feinstein (D-CA)

Patrick Leahy (D-VT)

Jon Tester (D-MT)

Tom Udall (D-NM)

Jeff Merkley (D-OR)

Thad Cochran (R-MS)

Lamar Alexander (R-TN)

Roy Blunt (R-MO)

John Hoeven (R-ND)

Mike Johanns (R-NE)

On May 7, 2013, the Senate Committee on Appropriations Subcommittee on Interior, Environment, and Related Agencies held a hearing to receive testimony on President Obama's proposed fiscal year (FY) 2014 budget for the Department of the Interior (DOI).

Subcommittee Chairman Jack Reed (D-RI) outlined in his opening statement the breakdown of the \$10.9 billion budget request for DOI, which represents a nearly four percent increase over FY 2013. The proposal provides \$1.1 billion or a four percent increase for the Bureau of Land Management (BLM), \$2.6 billion or a four percent increase for the National Park Service, a nine percent increase to the U.S. Geological Survey (USGS), \$169 million for the Bureau of Ocean Energy Management (BOEM), \$222 million or an increase of \$22 million for the Bureau of Safety and Environmental Enforcement (BSEE), and \$600 million for the Land and Water Conservation Fund (LWCF). Total offshore oil program funding would increase by nine percent under the FY 2014 proposed budget. BLM's funding includes \$48 million to "strengthen the onshore oil and gas inspection program." Reed noted the suggestion to switch part of the LWCF funding to mandatory rather than discretionary funds. He stated that there needed to be further discussion with Congress on the decision to switch to mandatory funding. He showed support for increases in the DOI budget and stated that it is "good to see such a strong budget request for conservation programs."

In her opening statement, Subcommittee Ranking Member Lisa Murkowski focused on DOI's role as "Alaska's landlord." More than 220 million onshore acres in Alaska are within DOI's jurisdiction and the public lands total "nearly one-third" of all BLM lands. She described the budget proposals for dealing with the "clean up of legacy wells in the National Petroleum Reserve – Alaska" and land conveyance as "insulting." She noted the difficulty that Sally Jewell as the new Secretary of the Interior faces in following and defending a budget that was "developed largely before" she took office.

Jewell began her testimony noting the difficulty she faces starting as the secretary of an agency whose budget for FY 2013 was recently cut by \$881 million due to sequestration. These cuts, she pointed out, would affect BLM's ability to issue leases and DOI's ability to produce environmental impact statements and permits for the energy industry. Cuts also place the FY 2013 budget at "roughly equivalent to...[FY] 2006, not accounting for inflation." She highlighted that the requested budget for 2014 is "a better choice." The request of \$10.9 billion is up \$513 million from FY 2012 enacted levels with 40 percent of the increase directed to wildfire programs. It proposes moving funding for the Land and Water Conservation Fund to the mandatory rather than discretionary category. Jewell noted that \$946 million was requested for basic and applied science, such as research on White Nose Syndrome in bats and improving the "use of GIS mapping."

During the question and answer section, Lamar Alexander (R-TN) and Patrick Leahy (D-VT) brought up White Nose Syndrome in bats, and particularly the impact on insect "pest suppression" and agriculture. Alexander inquired about the current status of research on White Nose Syndrome. Jewell responded that the budget request includes "increases in the USGS and Fish and Wildlife Service [FWS] budgets" for such research. She stated that USGS is "working on [a] long term fix like the vaccine" and FWS is "identifying the resource issue" and the possible agricultural effects.

Tom Udall (D-NM) "praise[d]" the administration for including the reform of the General Mining Law of 1872 in the budget that will include "a new leasing program with royalties and an abandoned mine land fee to be used for reclamation of abandoned hard rock mines." He questioned the application of sequestration to revenues that states receive under the Mineral Leasing Act of 1920. He announced that legislation is being drafted by mineral revenue producing states to protect those revenues. Jewell and DOI Deputy Assistant Secretary of the Office of Budget, Finance, Performance and Acquisition Pam Haze stated that the Budget Control Act (P.L. 112-25) indicates that mineral revenues are subject to sequestration.

Murkowski requested information on BOEM's development of arctic-specific offshore oil and gas drilling regulations. Jewell stated that in meetings with Shell and ConocoPhillips concerns focused primarily on "ensuring the technology is available to be able to respond in the event of a spill incident." She noted that Shell is already working on their oil spill response. She also noted that drilling in the Arctic requires "the ability to drill a relief well" in case of a spill. David Hayes, deputy secretary of DOI, added that DOI is "moving forward" on regulations and performance standards that should be in place "by the end of the year" and will provide flexibility for companies on how to "meet those standards."

John Hoeven (R-ND) asked about DOI's impending hydraulic fracturing rule and the need to improve the oil and gas permitting process on public lands. Jewell stated that hydraulic fracturing is "essential" and expressed her confidence that it "can be done safely and responsibly." The new rules are expected to be released in a matter of weeks. She agreed that the permitting process needs to be more "streamlined" and supported "reducing the regulatory burden."

Dianne Feinstein (D-CA) raised the issue of the "absence of water" in California due to the reduction in Sierra Nevada snowpack, which was 17 percent of normal as of May 2, 2013. She asked about the Bureau of Reclamation's plan in helping secure water

sources for California as the nation's "largest agricultural state." Jewell pointed to the need for increased conservation. Hayes noted that the past four months have been the driest in the last 100 years. He discussed working on water banking and rescheduling. Senator Reed also touched upon a few other issues during the hearing, including efforts to get more youth outdoors, the No Child Left Inside movement, the maturing DOI workforce, and the projected approval of the "first competitive offshore [wind] lease sale" by the end of the year in Rhode Island. Mike Johanns (R-NE) emphasized the need for increased "predictability and flexibility" with regard to budget cuts.

-KAC

**House Committee on Science, Space, and Technology Hearing to Review the President's FY 2014 Budget Request for Science Agencies**

April 17, 2013

*Witnesses:*

**The Honorable John Holdren**

Director, Office of Science and Technology Policy, Executive Office of the President

*Committee Members Present:*

Lamar Smith (R-TX), Chairman

Eddie Bernice Johnson (D-TX), Ranking Member

Dana Rohrabacher (R-CA)

Randy Neugebauer (R-TX)

Zoe Lofgren (D-CA)

Randy Hultgren (R-IL)

Daniel Lipinski (D-IL)

Bill Posey (R-FL)

Donna Edwards (D-MD)

Eric Swalwell (D-CA)

David Schweikert (R-AZ)

Elizabeth Esty (D-CT)

Randy Weber (R-TX)

Suzanne Bonamici (D-OR)

Mark Takano (D-CA)

Marc Veasey (D-TX)

Frederica Wilson (D-FL)

On April 17, 2013, the House Committee on Science, Space, and Technology held a hearing to receive testimony from the White House Office of Science and Technology Policy (OSTP) on President Obama's proposed fiscal year (FY) 2014 budget for science agencies, research and development (R&D), and science, technology, engineering, and mathematics (STEM) education. Chairman Lamar Smith (R-TX) stated in his opening statement that the committee holds jurisdiction over "\$40 billion in annual federal R&D spending," and that their "budget choices for federal R&D investments...will affect research and technology for many decades to come." He discussed questions facing the committee over how federal R&D investments should best be directed. He pressed the need for future "systems" to "launch American astronauts on American rockets," and for improved research onboard the International Space Station. He asked if the future of human spaceflight ought to lie in exploring asteroids or the Moon. Smith also noted the budget's proposed \$2.7 billion for climate science projects at 13 agencies, inquiring if further consolidation is possible and how such a budget will "affect other research priorities."

In her opening statement, Ranking Member Eddie Bernice Johnson (D-TX) said, "I am pleased that the President remains committed to prioritizing investments in [R&D] and STEM education in his [FY 2014] request." She stated that "there are few more important investments we can make than in our nation's brain power." She praised the budget's "increased support for advanced manufacturing," the U.S. Global Change Research Program, and the National Aeronautics and Space Administration (NASA) "climate research." She approved of "the President's continued commitment to... sustained upward [budget] trajectories initiated in the America COMPETES Act" for the National Science Foundation (NSF), the National Institute of Standards and

Technology (NIST), and the Department of Energy's (DOE) Office of Science. She noted that the above "agencies, among others, help to ensure our long-term economic growth through their support for cutting edge basic research and STEM education." Johnson discussed her "support" for creating "a coherent vision and strategy for federal investments in STEM" education, but expressed concern over "the release of this proposal before we have the strategic plan in hand." She requested that OSTP "prioritize getting us the full report" on the reorganization of federal STEM education programs.

John Holdren, director of OSTP for the Executive Office of the President, testified that President Obama supports "three overarching priorities" for science funding: "making America a magnet for new jobs and manufacturing; unlocking the promise of American energy; and educating our citizens with the skills and training to fill the jobs of the future." He stated that the FY 2014 budget proposes \$142.8 billion for federal R&D (1.3 percent higher than FY 2012 enacted levels): \$69.6 billion for non-defense R&D (9.2 percent increase), \$71.5 billion for development (\$3.8 billion decrease), \$17.7 billion for NASA, \$379 million for the Advanced Research Projects Agency –Energy (ARPA-E), \$3.1 billion for federal STEM education (6.7 percent increase), and \$13.5 billion for NSF, DOE's Office of Science, and NIST laboratories combined (8 percent increase). The NASA funding will, among other items, support "the continued development of the space launch system and the Orion Multi-Purpose Crew Vehicle to enable human explorations to new destinations" such as an asteroid. He discussed Obama's proposal to establish an Energy Security Trust to work on transitioning cars away from oil, and support for "several high level interagency science R&D initiatives including the Networking and Information Technology R&D program...and the U.S. Global Change program."

During the question and answer session, questions from Smith, Randy Weber (R-TX), and Bill Posey (R-FL) focused on potentially questionable studies NSF chose to fund in the social, behavioral, and economic (SBE) sciences. The representatives questioned how certain studies are justified, the priorities of the NSF in awarding funds, and if it would be beneficial to add phrasing to NSF's decision guidelines to require all approved studies enhance the nation's national security and economy. Posey stated that SBE studies cost NSF more than \$250 million, with only \$10 million going toward political science research. Additionally, the FY 2014 budget proposes a seven percent increase in SBE funding. Holdren noted examples of "valuable" and "good and important research" funded by NSF in SBE fields. Regarding titles given as examples of "questionable" studies, he stated "it is a perilous business, sometimes, to try to determine from the title of a grant or even from a description of it what value it might have as fundamental research." However, he acknowledged that "as rigorous as NSF's review processes are, there is always room for improvement." He cautioned that intervention may "undermine the basic research dimension" of NSF. Posey voiced support for Senator Tom Coburn's (R-OK) amendment to the Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) to require that "each and every social science study meets the criteria of promoting national security or economic interest" of the U.S. Holdren disagreed with the amendment claiming such language is "too narrowly drawn." He stated, "It's a dangerous thing for the Congress or anybody else to be trying to specify in detail what kinds of fundamental research the NSF should support" and "the private sector is not going to support basic research to the extent that society's interests require." He noted that it "is a responsibility of the government to fund basic research and...if you say that [a study] has to have a specific application, you're pulling the rug out from under the capacity of the NSF to fund basic research."

Questions from Johnson, Donna Edwards (D-MD), Frederica Wilson (D-FL), and Marc Veasey (D-TX) focused on the proposed reorganization of federal STEM education programs. Johnson noted that the proposal seeks to "better concentrate" 127 programs, but fails to provide a detailed plan. Holdren responded that the final plan would be available in May 2013. He noted that program consolidation would leave the Department of Education responsible for K-12 education, NSF for undergraduate and graduate programs, and the Smithsonian for "engagement and outreach outside of schools." He stated that "over 100 programs spread across the mission agencies" would remain "intact," and that "a very serious effort" has gone into protecting "programs that most leverage the unique assets of the mission agencies" and "reach women and other underrepresented groups in STEM."

Additionally, NSF and the Smithsonian are "building up capacity" and the Department of Education is "expanding the staff that is dedicated to STEM education" to accommodate the reorganization.

Edwards noted problems in "informal" education programs where people at times "don't know what makes a good program" and need more "guidance and coherence." She asked if Holdren saw "a role for scientists on the ground to participate" in the new NSF and Department of Education programs. Holdren responded, "Absolutely yes," and he highlighted some such programs. He noted that the reorganization affects "about half of the dispersed programs" and that the organizations that will take over – Smithsonian, NSF, and Department of Education – "are determined to continue to tap the expertise in the dispersed mission agencies for these purposes."

Wilson voiced similar concerns, stating that "a lot of these hands on afterschool activities are what get very young children excited about science." She asked Holdren to "elaborate on the new role of the Smithsonian in coordinating informal STEM education." He outlined the goals that the Smithsonian plans to pursue: "co-creation" of program content with STEM agencies, development

and maintenance of the infrastructure to deliver that content, establishment of “teachers and student agency partnerships,” and “evaluation of these efforts.” He argued that the Smithsonian is making a “well thought out effort” that “will build on and expand their existing efforts in these areas.”

Edwards also asked about continuing funding for basic research at “historically black colleges and universities and minority-serving institutions.” Holdren stated that OSTP “took care not to impact any programs connected with historically black colleges and universities or other programs that were explicitly focused on women or minorities in STEM,” and are reviewing any possible “indirect connections.”

Veasey raised the issue of employment in advance manufacturing and its connection to STEM education. He noted that in 2012 600,000 “highly advanced” and high paying manufacturing jobs “went unfilled largely because” many high school graduates lack specific skills and a sufficient background in STEM education to fill the positions. Holdren outlined a plan for addressing this workforce gap: change the “high school experience” to ensure that graduates are “better prepared for...high-skilled jobs” and “develop community college curricula” in concert with local industry partners “that prepares students for precisely the jobs that exist in the companies in their particular regions.”

Smith noted that there are 13 agencies working on climate science initiatives and asked, “Why not let NASA focus on its missions with regard to space?” Holdren responded that “NASA has long had a mission to planet Earth, a mission looking down as well as a mission looking out.” He stated that “NASA has unique capabilities” and “has long been a multi-mission agency.” Dana Rohrabacher (R-CA) noted that federal funding for the U.S. Global Change Research Program from 1990 to the end of 2013 amounts to \$42 billion. He asked what research fields this program funds in addition to climate change. Holdren listed research in water, soils, desertification, deforestation, and oceans, but pointed out that “climate change has become such a pervasive phenomenon that it is linked in various ways with these other issues.” He noted that the “13 different agencies involved here” have “a wide variety of missions.”

Elizabeth Esty (D-CT) discussed the proposed Energy Security Trust which would apply “revenue from federal oil and gas development” to research into shifting away from the use of oil and toward “more secure alternatives.” She asked for more details on the Trust and if funds would be allocated to existing programs such as the DOE’s Office of Energy Efficiency and Renewable Energy and ARPA-E, or to new programs. Holdren stated that OSTP “envision[s] a variety of approaches including strengthening the support for some existing programs but providing support for some new opportunities.” He emphasized that the program is at an “early stage of formulation and we would expect to do it in consultation with the Congress.”

Esty also inquired about the reason behind the “substantial increase in the ARPA-E budget” proposed for FY 2014, and the projects it would fund. Holdren replied that ARPA-E “has developed a strong reputation for thinking outside the box and for developing new ideas that can contribute substantially” to society. He noted advances in energy storage, advanced biofuels, and grid efficiency. He concluded that “money invested in ARPA-E has had a lot of leverage and so we’re proposing to expand it.” Smith asked about the choice to invest in “capturing” an asteroid and drawing it closer to Earth to allow human exploration as opposed to pursuing more manned missions to the Moon. He pointed to the 2012 National Academy of Sciences report titled NASA’s Strategic Direction and the Need for a National Consensus which showed more support among scientists for a lunar mission than one to an asteroid. Holdren responded that while there was initially a “lack of enthusiasm among some,” the creation of “an extraordinarily ingenious and cost effective approach to that mission” is generating “a lot of enthusiasm.” The new plan employs the Space Launch System and Orion Multi-Purpose Launch Vehicle as well as transporting the asteroid to a location that NASA had already planned to visit.

-KAC

**House Committee on Appropriations Subcommittee on Energy and Water Development Budget Hearing on the  
Department of Energy’s Applied Energy Funding**

March 14, 2013

*Witnesses:*

**David Danielson**

Assistant Secretary for Energy Efficiency and Renewable Energy, Department of Energy

**Pete Lyons**

Assistant Secretary for Nuclear Energy, Department of Energy

**Christopher Smith**

Acting Assistant Secretary for Fossil Energy, Department of Energy

*Committee Members Present:*

Rodney Frelinghuysen (R-NJ), Chairman  
Marcy Kaptur (D-OH), Ranking Member  
Mike Simpson (R-ID)  
Pete Visclosky (D-IN)  
Rodney Alexander (R-LA)  
Alan Nunnelee (R-MS)  
Chuck Fleischmann (R-TN)

On March 14, 2013, the House Committee on Appropriations Subcommittee on Energy and Water Development held a hearing to receive testimony regarding the work and investment of the Department of Energy (DOE) in fossil fuel, energy efficiency and renewable energy (EERE), and nuclear energy research and development (R&D).

Chairman Rodney Frelinghuysen (R-NJ) explained in his opening statement that in accepting testimony regarding three energy programs at once, the committee aimed to gain “a better sense of the Department’s planning across all potential energy sources for this country.” He stated that examining each energy sector separately “obscures the fact that the applied energy programs should be seen as a portfolio of investments.” He noted that the fossil, renewable, and nuclear energy accounts receive a total of over \$3 billion annually and over 50 percent is devoted to EERE. He also raised the point that “while this is an impressive investment, it is dwarfed by the more than \$20 billion...received in the stimulus act of 2009” (American Recovery and Reinvestment Act, P.L. 111-5) which increased EERE budget eight-fold. He emphasized the need for the U.S. to remain competitive in the energy market. In her opening statement, Ranking Member Marcy Kaptur (D-OH) focused on the “significant financial strain” that current energy prices place on American families and businesses. She advocated for driving down the cost and the importance of energy independence. She discussed the “myriad of challenges” facing the energy sector including issues relating to the economy, national security, and environmental responsibility. She voiced concerns that the U.S. is “losing its edge on new technology” and that sequestration would negatively impact energy development.

David Danielson, assistant secretary for EERE at the DOE, stated in his testimony that given the “wide array” of energy technology, renewables could be cost competitive within five to ten years. He emphasized the need for “stable targeted investments” as the U.S. energy industry is “systematically underinvesting” in R&D. He cited figures from an American Energy Innovation Council report which found the energy industry invests 0.3 percent of its sales value back into R&D versus 12 percent in aerospace/defense and 20 percent in pharmaceuticals. With \$268 billion in clean energy investments globally, “a 500 [percent] increase since 2004,” Danielson warns that China has surpassed U.S. investments and “the United States faces a stark choice: the clean energy technologies of today and tomorrow can be invented and manufactured in America, or we can surrender global leadership and import these technologies from other countries.” He listed some of the benefits of EERE efforts: “reducing our reliance on foreign oil, saving families and businesses money, creating jobs, and reducing pollution.”

By striving to “invest only in the highest-impact activities in order to achieve our clean energy goals,” the DOE “generated approximately \$40.4 billion in total benefits from energy efficiency R&D, based on \$2.1 billion invested from 1978 to 2000.” He cited some of the technologies and programs created through EERE investments: hybrid vehicle battery technology, heavy duty truck fuel efficiency technology, the Clean Cities Program, improved fuel cell design, and creation of integrated biorefineries. Danielson also outlined advances in renewable energy production including accelerating the technological progress of the solar industry by an estimated 12 years and wind by an estimated six years. His testimony discussed advancements in geothermal, tidal, and hydropower energy systems. He closed mentioning the potential negative impacts of sequestration and the fact that American Recovery and Reinvestment Act (ARRA) funds “have been expended.”

In his testimony, Pete Lyons, assistant secretary for nuclear energy at the DOE, noted that nearly 20 percent of U.S. electricity over the past 20 years comes from nuclear energy making it the “single largest contributor (more than 60 percent) of non-greenhouse-gas-emitting electric power generation.” He stated that there are currently “five commercial nuclear reactors under construction, including four AP1000 reactors, which represent a new generation of passively safe nuclear plants.” He indicated that the DOE hopes to begin deployment of small modular reactors (SMR) by 2022.

He discussed the provisions in the Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste which “endorses key principles” of the Blue Ribbon Commission on America's Nuclear Future report and “lays out plans to implement a long-term program that begins operation of a pilot interim storage facility by 2021, advances toward the siting and licensing of a larger interim storage facility by 2025, and makes demonstrable progress on the siting and characterization of

geologic repository sites.” He emphasized the need for supporting R&D including work on Advanced Reactor Concepts, Next Generation Nuclear Plants, passively safe technology, and inherently safe designs. He noted that the safeguards and security program at the Idaho National Laboratory is a defense account and sequestration will apply the higher defense reduction rate resulting in a reduction of “about \$6.7 million below the FY 2012 appropriation and \$8.3 million below our FY 2013 budget request” leading to furloughs and layoffs of over 80 personnel.

The DOE’s Acting Assistant Secretary for Fossil Energy Christopher Smith testified that fossil fuels are a “key component of the president’s all-of-the-above” strategy and are “essential to the Nation’s security and economic prosperity.” He stated that the purpose of the fossil fuel program is to advance “technologies related to the reliable, efficient, affordable, and environmentally sound use of fossil fuels,” and to manage the Strategic Petroleum Reserve which has a capacity of 727 million barrels.

On carbon capture and storage (CCS), Smith stated that in the past year DOE investigated applying CCS to “both new and existing fossil-fueled facilities,” implementing advanced energy systems, and working on “cross-cutting research...as a bridge between basic and applied research.” Regarding natural gas, he discussed the creation of a “multiagency research effort” or a “single steering team” involving the DOE, Department of the Interior (DOI), and Environmental Protection Agency (EPA) to “provide timely science and tools that support sound policy, allow for informed unconventional resource development decisions at many levels ...and to advance technologies that will maximize benefits to the Nation.” Focus is also placed on “improving our understanding of methane hydrates.” He laid out developments in the DOE’s management of various federal petroleum reserves aimed to preserve the nation’s “energy security against disruption in domestic supplies” and respond to petroleum needs generated by Hurricane Sandy.

Ranking Member Kaptur inquired as to where the U.S. stands in comparison to other countries in the wind energy market. Danielson stated that the U.S. has made “tremendous progress” by reducing the cost of wind energy by 90 percent and adding increased wind capacity to the grid. Domestic manufacturing of wind materials has increased from 35 percent to over 70 percent. He estimated that onshore wind energy would be “cost competitive by the end of the decade.” Offshore is still an immature field, he noted, and the cost needs to be halved. He also mentioned the concept of floating offshore wind farms and funding invested for “pioneering demos.”

Chairman Frelinghuysen requested that Lyons provide an outline of the global “landscape” of nuclear energy. Lyons stated that 67 reactors are currently under construction with five in the U.S. and 29 in China. In terms of SMRs, Russia, Korea, and Argentina are also discussing development and Russia is beginning deployment of the first SMR. In response to a question from Alan Nunnelee (R-MS) about manufacturing in the U.S., Lyons stated that “SMRs can be completely made in the U.S.A.” but the nation lacks the “capability” to manufacture some of the parts required for larger reactors.

Mike Simpson (R-ID) asked if nuclear energy is considered renewable and Danielson and Lyons agreed that, under the president’s definition, nuclear energy is a renewable resource. Simpson also asked about the impact of sequestration on the nuclear energy program. Lyons noted that continuing the protective guard presence at Idaho National Lab would be “difficult.” However, he indicated that the practice of forward funding projects would limit the impact on R&D.

Frelinghuysen asked Smith what role the DOE is taking in the development of natural gas. Smith responded that DOE has an “active and interactive relationship” with DOI and EPA in a steering committee that he chairs to ensure natural gas development occurs safely. However, he noted that DOE focuses support on areas in which private industry is not already accelerating as opposed to oil and gas companies that are already making great achievements. Frelinghuysen encouraged Smith to give greater focus to natural gas investments.

Rodney Alexander (R-LA) inquired as to why only one non-free trade natural gas export application has been approved. Smith noted that while all free-trade applications are approved, the DOE must “consider each non-free trade” application individually. He stated that the review examines whether approving the export is in the public interest. The process, he mentioned, is carried out in a “very transparent and rigorous” way.

-KAC

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*Sources: Department of Energy; U.S. House of Representatives; United States Senate; Hearing testimony and Thomas.*

Please send any comments or requests for information to the AGI Geoscience Policy at [govt@agiweb.org](mailto:govt@agiweb.org).

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