

Department of Energy Appropriations: FY 2012

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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. Also of interest is the Yucca Mountain site characterization activities and environmental remediation of the nuclear weapons complex.

Fiscal Year (FY) 2012 Department of Energy Appropriations Process

<u>Account</u>	<u>Enacted FY11</u> (\$million)	<u>President's</u> <u>FY12 Request</u> (\$million)	<u>House Action</u> (\$million)	<u>Senate Action</u> (\$million)	<u>Conference Committee</u> <u>Action</u> (\$million)
Department of Energy (total)	27,006	29,547	24,740.7	25,549	25,748
Energy Efficiency and Renewable Energy	1,795.6	3,200	1,304.6	1,795.6	1,815
--Geothermal	41	101.5	38	34	38
--Hydropower	30	38.5	50	34	59
--Hydrogen and Fuel Cell Technology	98	100.5	91.4	98	104
--Solar	265.5	457	166.1	290	290
--Wind	79	126.8	76	80	93.6
--Biomass	182.7	340.5	150	180	200
Fossil Energy	444.5	521	477	258**	347***
-- Natural Gas Technologies	2	0.0	15		15
-- Petroleum - Oil Technology	19.5	0.0	0		5
-- Coal *	393.5	291.4	338.8	291.4	368.6
--Fossil Energy Environmental Restoration	10	7.9		7.9	7.9
Office of Science	4,842.6	5,416	4,800	4,858	4,889
--ARPA-E	179.6	550	100	250	275
--Basic Energy Sciences	1,599	1,985	1,688	1,694	1,694
---Chemical Sciences, Geosciences, and Energy Biosciences	287.5	394.7			

--Biological and Environmental Research	611.8	718	547	622	611.8
---Climate Env Sci Research	278.3	341.6			
Environmental Management					
--Defense Environmental Clean-up	4,979.7	5,407	4,937.6	5,002	5,023
--Non-Defense Environmental Clean-up	245	219	213	219	235.7
---Uranium Enrichment D&D Funding	574	504	449	429	472.9
Civilian Radioactive Waste Management					
--Nuclear Waste Disposal	-2.8	0.0	25	0	0
--Defense Nuclear Waste Disposal	98.4	0.0		0	0

*Coal has been reorganized and all of the FY2012 requested funding will shift from clean coal technology development to carbon capture and sequestration development.^ House Appropriations Committee, Energy and Water bill funding levels. Not all funding levels have been finalized, so table entries are blank where numbers have not been finalized. **The Senate Appropriations bill provides \$445 million to the Office of Fossil Energy but then rescinds \$187 million in prior-year balances for a revised total appropriation of \$258 million. ***The conference report appropriates \$534 million to the Office of Fossil Energy but then rescinds \$187 million in prior-year balances for a revised FY2012 total budget of \$347 million.

President's Request

Energy Department: Highlights of President's FY 2012 Budget Request

Geosciences within Basic Energy Sciences (BES) will see some increases. Energy Department budget documents state: "Increase in funding for the research on the multiscale dynamics of flow and plume migration in carbon sequestration (+\$8 million); for new research on the formation mechanism and environmental stability of methane hydrates (+\$10 million); and to continue research on geochemical studies and computational analysis of complex subsurface fluids and solids (+\$1.3 million).

Energy Department budget documents state the goals of ARPA-E in the following manner: "The Advanced Research Projects Agency – Energy (ARPA-E) is devoted exclusively to funding specific high-risk, high payoff, game-changing research and development projects to meet the nation's long-term energy challenges."

Highlights of the total budget for the Department of Energy included the following introduction:

The Department's Fiscal Year (FY) 2012 budget request is \$29.5 billion, an 11.8 percent or \$3.1 billion increase from FY 2010 current appropriation levels. The FY 2012 request supports the President's goals to increase America's competitiveness by making strategic investments in our nation's clean energy infrastructure and to strengthen our national security by reducing the global threat of nuclear materials. The President has called for advancing research on clean energy technologies and manufacturing, doubling the share of electricity generated from clean energy supplies by 2035, and putting one million electric vehicles on the road by 2015. The Department's request prepares for a multi-year effort to address these interconnected objectives and prioritizes research and development of renewable energy technologies to expand sustainable energy options for the United States.

The FY 2012 budget builds on the intense planning, execution, and oversight of the \$35.2 billion from the American Recovery and Reinvestment Act of 2009. By the end of FY 2010, the Department successfully obligated \$32.7 billion of Recovery Act funds, including all funding that was set to expire. In developing the FY 2012 budget request, the Department has taken these investments into account and will oversee execution of these funds with value to the taxpayer in mind. Recovery Act investments are focused on: energy conservation and renewable energy sources (\$16.8 billion), environmental cleanup (\$6 billion), loan guarantees for renewable energy and electric power transmission projects (\$2.4 billion), grid modernization (\$4.5 billion), carbon capture and sequestration (\$3.4 billion), basic science research (\$1.6 billion), and the Advanced Research Projects Agency – Energy (\$0.4 billion). The Department's Recovery Act activities are strengthening the economy by providing much-needed investment, saving or creating tens of thousands of jobs, cutting carbon pollution, and reducing U.S. dependence on oil.

The President's FY 2012 Budget supports three strategic priorities:

1. Transformational Energy: Accelerate the transformation to a clean energy economy and secure U.S. leadership in clean energy technologies

generation's Sputnik moment,' the Department to support a coordinated strategy for research and development across all of its programs. With every initiative the Department undertakes, sound science is at the core. In FY 2012, we will increasingly emphasize cross-cutting initiatives to link science throughout the Department, specifically with energy and national security programs in order to deliver results to the American taxpayer. In the Office of Science, the Department requests \$5.4 billion, a 9.1 percent or \$452 million increase over the FY 2010 current appropriation levels, to support an elevated focus on the advancement of the United States' leadership in fundamental research. Advanced Research Projects Agency – Energy (ARPA-E) is building on established gains since its creation in FY 2009 to perform transformational research and create game-changing breakthroughs for eventual market adoption. The FY 2012 budget request includes \$550 million for ARPA-E to sustain investment in new energy technologies.

Energy Innovation Hubs play a key role in solving specific energy challenges by convening and focusing top scientific and engineering talent to focus on those problems. The Department is proposing to double its commitment to this research approach by requesting three new Hubs to focus on batteries and energy storage, critical materials, and Smart Grid technologies and systems. The Department will continue funding the three Energy Innovation Hubs introduced in FY 2010 to focus on developing fuels that can be produced directly from sunlight, improving energy efficient building systems design, and using modeling and simulation tools to create a virtual model of an operating advanced nuclear reactor. Each of these Hubs will bring together a multidisciplinary team of researchers in an effort to speed research and shorten the path from scientific discovery to technological development and commercial deployment of highly promising energy-related technologies. Complementing the Hubs, the Department plans in FY 2012 to continue coordination with the Office of Science's Energy Frontier Research Centers, which exemplify the pursuits of broad-based science challenges for energy applications.

For details on specific geoscience-related programs with the Energy Department see AGI's budget tables above.

For more details about the DOE FY2012 budget, please visit the DOE budget web site.

House Action

The House Appropriations Committee completed work on the FY 2012 Energy and Water Bill on June 15, 2011. The bill will be considered by the full House, which may offer additional amendments. Below are some highlights of direction offered by the committee in their report which accompanies the bill that may be of particular interest to the geosciences community. T

Within Energy Efficiency and Renewable Energy the committee notes:

"Within available funds for Next Generation Materials, the recommendation includes \$20,000,000 for the Energy Innovation Hub for Critical Materials, the same as the budget request. Recognizing the criticality of rare earth materials in clean energy technologies such as wind power, electric vehicles, and energy efficient lighting, the Committee urges the Hub to, in part, work towards advancing and rebuilding a rare earth materials supply chain within the United States that includes the production of rare earth minerals, oxides, metals, alloys, and permanent magnets. The Department is directed to deliver to the Committee, not later than 90 days after enactment of this Act, a report detailing: a timeline for selecting an awardee; draft organizational and research milestones for the end of fiscal years 2012 through 2016; and specific criteria the Hub must meet to be considered for extension beyond the initial five year term. The report must also identify how the Hub will work with the Advanced Research Projects Agency—Energy (ARPA-E) to ensure work on critical materials between the two programs is not redundant if ARPA-E chooses to issue awards in this area."

"Water Power.—The Committee recommends \$50,000,000 for Water Power research and development, \$20,000,000 above fiscal year 2011 and \$11,500,000 above the budget request, to include \$25,000,000 for marine and hydrokinetic research, development, and demonstration, and \$25,000,000 for conventional hydropower research and development."

"Geothermal Technology.—Ground heat is a potentially large source of domestic energy that could be broadly tapped for power generation, heating, and cooling. The Committee recommends \$38,000,000 for geothermal technology, \$3,000 below fiscal year 2011 and \$63,535,000 below the budget request. The U.S. Geological Survey has identified more than 120,000 megawatts of untapped potential from low-temperature geothermal resources. The Committee directs the Department to continue advancing technologies that can exploit this vast resource through continued research and development in the Low Temperature and Co-Produced Resources Program. The Department has indicated that partial awards for multi-year grants in past years have committed the Geothermal Technologies program to \$62,510,000 of commitments in fiscal year 2012. Given that the program's funding level was \$44,000,000 and \$38,003,000 in fiscal years 2010 and 2011, respectively, the Committee is concerned that the Department has severely overcommitted itself with awards that assumed future funding levels well above its current level. This and all energy research and development programs at the Department would be well-served by adjusting grants and activities each year to match the evolving technology landscape—and could do so only by minimizing mortgages on future year funds. However, if the Department commits future-year funding, the program must, first and foremost, meet those past commitments. The Committee therefore directs the Department to use Geothermal Technologies fiscal year 2012 funds to only pay mortgages on past awards. The program may not announce new funding opportunities until its remaining mortgages for future

years are less than half of the overall appropriation it receives in fiscal year 2012."

Within Fossil Energy, the committee notes:

"Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund.—The recommendation does not include the legislative repeal of this fund and its programs, as proposed in the budget request."

"The Department proposed in the fiscal year 2011 budget request, and again this year, to move gas hydrates research from the Office of Fossil Energy to the Office of Science. As the proposed activities remain largely unchanged, this activity is more appropriately and effectively located within the Office of Fossil Energy. As such, no funding is included in the recommendation for Basic Energy Sciences for the proposed new gas hydrates activity."

Within Office of Science, the committee notes:

"Basic Energy Science research serves as a useful case study. Of the \$854.7 million proposed in the fiscal year 2012 request for Basic Energy Science research, more than 81 percent is neither for Hubs nor EFRCs, but for research grants of assorted sizes and types at a variety of institutions. While the Committee strongly supports the Basic Energy Sciences research areas, it is difficult to measure the performance of these activities and to understand their demands on out-year funding. As a first step towards increased accountability within that program, this report directs the Department to perform an evaluation of Basic Energy Science research activities and to terminate the lowest-performing awards. The Committee urges the Department to propose means by which it can further increase the transparency of these activities and hold them accountable for high performance."

"The Climate and Environmental Sciences program devotes the majority of its funding to areas not directly related to the core mandate of science and technology research leading to energy innovations. Further, climate research at the Department of Energy is closely related to activities carried out in other federal agencies and may be better carried out by those organizations. The Department proposes to eliminate medical research focused on human applications in order to direct limited funds to on-mission purposes, and the Department should apply the same principles to climate and atmospheric research."

"The Committee recommends \$17,849,000 for workforce development for teachers and scientists, \$4,751,000 below fiscal year 2011 and \$17,751,000 below the request."

Within Civilian Radioactive Waste Management, the committee notes:

"Put simply, the Administration's anti-Yucca Mountain stance has no scientific basis, is wasting billions of taxpayer dollars, and may be illegal. The Committee rejects the Administration's plans to shut down the Yucca Mountain license application process and includes funds in the recommendation to continue the process. Once the full merits of this site are understood, and not before, the nation should determine whether to move forward with full construction of the site."

Conference Committee Action

Appropriations for the Department of Energy (DOE) were included in the Consolidated Appropriations Act, 2012 (H.R. 2055) and signed by the President on December 23, 2011. In addition to appropriations for DOE, the omnibus included appropriations for the Department of the Interior, the Department of Education, Department of Labor, Department of Health and Human Services, Department of Defense, Department of Energy, Department of Homeland Security, Department of Veterans Affairs, Department of State, the Environmental Protection Agency, the Executive Branch, the Judiciary Branch, the Legislative Branch, and related agencies.

DOE received \$25,748 million for fiscal year (FY) 2012 (about \$1.26 billion less than FY2011 enacted and about \$3.8 billion below the President's FY2012 request). Language of interest to the geosciences community from the conference report follows:

In the introduction, the conferees note:

"Energy Innovation Hubs.—For each Energy Innovation Hub funded in this Act, the Department is directed to deliver to the House and Senate Committees on Appropriations, not later than 120 days after enactment of this Act, a report detailing milestones and performance goals for the end of each of the Hub's five fiscal years, and specific milestones and performance criteria the Hub must meet to be considered for a second five-year term. For Hubs established in prior fiscal years, the report shall include current performance against planned milestones, and a summary of progress against plans for staffing and facilities. For new Hubs, the report shall include a plan and timeline for selecting an awardee."

PCAST Recommendations.—The conferees direct the Secretary of Energy, within 6 months of enactment of this Act, to submit a report detailing how the Department has or will implement in all Energy Programs the following features that have been used successfully in ARPA-E and highlighted by the President's Council of Advisors on Science and Technology:

—a rigorous review process;

—contract or grant negotiations completed in just a few months;

—co-location within the program offices of such support functions as procurement, contracts, human resources, and information technology services; and

—an agile and innovative workforce."

Regarding Multi-Year Awards, the conferees note:

"The conferees are concerned the Department is over-committing future budgets by announcing multi-year awards subject to future appropriations for a substantial portion of activities within Energy Programs. The Department is directed to transition to a model in which it fully funds multi-year awards with appropriated funds, except in the cases of major capital projects, management and operating contracts, and large research centers which require multi-year awards subject to appropriations. As part of that transition, the conference agreement includes a provision requiring that any multi-year award must be subject to appropriations and the Department must notify the House and Senate Committees on Appropriations at least 14 calendar days prior to public announcement of the award. The Department shall deliver each notification as a cumulative list of all notifications under this subsection, to include: recipient; appropriations account, program, and activity; award date; total amount of award; amount awarded from fiscal year 2012 appropriations; amount awarded from prior appropriations; amount awarded subject to future appropriations; and an explanation of the special circumstances justifying commitment of future funds. The conferees do not include a House provision prohibiting the use of multi-year awards, but will reconsider this legislative prohibition in future years depending on the Department's performance in transitioning to fully funding its multi-year awards."

Within Energy Efficiency and Renewable Energy, the conferees note:

"Geothermal Technology.—The Geothermal Technology program may not announce new funding opportunities that result in total mortgages on future fiscal years in excess of half of the program's fiscal year 2012 appropriation. Within available funds, the conferees direct the Department to make not less than \$5,000,000 available to continue development and deployment of low-temperature geothermal systems. The Department shall continue its support of comprehensive programs that support academic and professional development initiatives. For future awards, the full spectrum of geothermal technologies as authorized by the Energy Independence and Security Act of 2007 (Public Law 110–140) shall be eligible for the funds appropriated for Geothermal Technology by this Act.

Water Power.—The conference agreement provides \$59,000,000 for Water Power, of which \$34,000,000 is for marine and hydrokinetic technology research, development and demonstration, and \$25,000,000 is for conventional hydropower research, development and demonstration. Within available funds, the Department is directed to provide not less than \$10,000,000 to build necessary infrastructure, including environmental performance monitoring, at marine and hydrokinetic industry testing sites designated by the Department as National Marine Renewable Energy Centers.

Industrial Technologies.—The conference agreement includes \$20,000,000 for the Energy Innovation Hub for Critical Materials. Within available funds, the conference agreement includes not less than \$4,205,000 for improvements in production in the steel industry, and the Department is directed to continue supporting improvements in mechanical insulation. The Department is directed to continue funding mortgages on all past multi-year awards within the Combined Heat and Power program, unless a project fails to meet milestones or other terms of the award. The conferees provide no funding for Manufacturing Energy Systems."

Regarding nuclear waste, the conferees note:

"The conference agreement includes \$60,000,000 for Used Nuclear Fuel Disposition. Within available funds, \$10,000,000 is for development and licensing of standardized transportation, aging, and disposition canisters and casks. Multiple geologic repositories will ultimately be required for the long-term disposition of the nation's spent fuel and nuclear waste; the Department should build upon its current knowledge base to fully understand all repository media and storage options and their comparative advantages, and the conferees direct the Department to focus, within available funds, \$3,000,000 on development of models for potential partnerships to manage spent nuclear fuel and high level waste, and \$7,000,000 on characterization of potential geologic repository media. The Department is directed to preserve all documentation relating to Yucca Mountain, including technical information, records, and other documents, as well as scientific data and physical materials.

The conference agreement includes \$10,000,000 to expand the Department's capabilities for assessing issues related to the aging and safety of storing spent nuclear fuel, to include experimentation, modeling, and simulation for dry storage casks, as well as for spent fuel pools, as necessary.

The conference agreement provides \$0 for nuclear waste disposal, as proposed by the Senate, instead of \$25,000,000 as proposed by the House."

Within the Office of Science, the conferees note:

"The conference agreement includes the House direction for a report regarding underrepresented college minorities in science, technology, engineering, and mathematics areas.

Within available funds, \$16,000,000 is provided for radiobiology to help determine health risks from exposures to low levels of ionizing radiation to properly protect radiation workers and the general public, and to conduct studies of health impacts at and around the Fukushima Daiichi nuclear plant.

Workforce Development for Teachers and Scientists.—The conference agreement provides \$18,500,000 for Science Workforce Development. Within available funds, up to \$5,000,000 is for the graduate fellowship program to fund the existing cohort established in fiscal year 2010. "

Appropriations Hearings

- May 19, 2011: Senate Committee on Appropriations Subcommittee on Energy and Water Development, and Related Agencies Hearing on the Fiscal Year 2012 Budget Request for the Department of Energy
- March 15, 2011: House Committee on Appropriations Subcommittee on Energy and Water Development, and Related Agencies Hearing on the Fiscal Year 2012 Budget Request for the Department on Energy

Senate Committee on Appropriations Subcommittee on Energy and Water Development, and Related Agencies Hearing on the Fiscal Year 2012 Budget Request for the Department on Energy

May 19, 2011

Witness

The Honorable Dr. Steven Chu

Secretary of Energy, U.S. Department of Energy

Subcommittee Members Present

Dianne Feinstein, Chair (D-CA)

Lamar Alexander (R-TN)

Frank Lautenberg (D-NJ)

Tim Johnson (D-SD)

Mary Landrieu (D-LA)

Mitch McConnell (R-KY)

Susan Collins (R-ME)

Lindsey Graham (R-SC)

Jon Tester (D-MT)

Lisa Murkowski (R-AK)

Patty Murray (D-WA)

Committee Members Present

Thad Cochran (R-MS), Ranking Member (R-MS)

The Senate Committee on Appropriations Subcommittee on Energy and Water Development held a hearing to discuss the fiscal

year (FY) 2012 budget request for the Department of Energy (DOE) on May 18, 2011.

Chairman Dianne Feinstein opened the hearing by describing the highlights of DOE's \$30 billion budget. Pointing out that the budget had been crafted before Congress passed the 2011 continuing resolution which cut government spending by \$61 billion, Feinstein said "DOE and Congress will have to make some joint painful decisions and focus the limited resources we have on the highest priorities." Feinstein cited the Office of Energy Efficiency and Renewable Energy, the Office of Science, and the Advanced Research Projects Agency for Energy (ARPA-E) as the three largest increases in the budget request. She praised the Office of Science as a leader in new science and technology innovation but said it "must do a better job explaining how basic research can lead to new clean energy technologies and how it can better leverage large scientific facilities to help American industry stay competitive. While discussing ARPA-E's \$370 million increase, Feinstein suggested that ARPA-E's program management structure including the peer review process and contract or grant negotiation procedure could be applied to other energy programs to increase productivity.

Ranking Member Lamar Alexander told Secretary Chu he was in "broad agreement" with DOE's Energy Innovation Hub strategy which house cross-disciplinary research projects. Alexander was critical of the recent legislative attempts to eliminate long-term subsidies for "big oil" by pointing out that eliminating long-term subsidies for "big wind" would save \$27 billion over the next ten years. He suggested that some of the funds for long-term energy subsidies could instead be used to increase federal energy research budget.

Secretary Chu echoed President Obama's call to "out-innovate, out-educate, and out-build" the rest of the world when describing the FY 2012 budget request. According to Chu, the budget calls for the U.S. to lead the energy race by investing heavily in clean energy technologies and supporting groundbreaking science through increased funding for the Office of Science and ARPA-E. To continue working on nonproliferation efforts and to clean up Cold War test sites, the budget includes adequate funding for the National Nuclear Security Administration (NNSA), Chu said.

During the question and answer session, Chu answered Feinstein's questions about hydrogen fuel cells, the Sunshot Initiative, and loan guarantees before talking with a frustrated Senator McConnell about the difficulty of selling enriched uranium tailings.

McConnell told Chu and the committee about a uranium plant in his state that is facing layoffs and could benefit from processing the plant's waste for enriched materials for nuclear power.

Senator Lautenberg was interested in the harmful effects of hydrofracturing, a technique used by the oil and gas industry to develop onshore natural gas. Chu admitted he was "very concerned about the environmental impacts" but conceded that if it is done properly, it may be an important transition fuel to a clean energy economy. The Secretary of Energy Advisory Board was meeting on the day of the hearing, Chu remarked, to discuss this very topic. Lautenberg and Chu also discussed American competitiveness in clean energy technology development.

Senator Cochran, Ranking Member of the full committee, was "pleased" to see that nuclear energy was a priority for the department as evidenced by the budget and wanted to know what the priorities of the Office of Nuclear Energy would be for the future. Chu said that developing a way to recirculate and recycle spent fuel and using high performance computing to engineer aspects of future plants are his highest priorities. While he would not discuss all the findings of the first draft report of the Blue Ribbon Commission, he did confirm that its recommendations were in line with DOE's priorities.

Senators Collins and Murkowski discussed clean energy technologies with Chu. Collins, a strong supporter of deepwater offshore wind technology, displayed a graph to show how far the United States is behind in developing this renewable resource. Murkowski told Chu she was "pleasantly surprised" to see an increase from \$43 million to \$101 million for geothermal research. Murkowski also pressed Chu on the status of the collection fees for nuclear clean up in light of the recent decision to shut down the Yucca Mountain waste depository. Chu reiterated that the department still has the responsibility to manage nuclear waste and closing the Yucca Mountain depository would not change that.

Concerned with the environmental legacy of the Hanford Nuclear Site in southern Washington, Senator Patty Murray pressed Chu to defend the Office of Environmental Management's relatively low budget in light of DOE's legal obligations to manage "the largest federal nuclear cleanup site in the country." Chu responded that all states with nuclear concerns are worried about DOE's ability to complete cleanup with limited funds. "What we need to do is make the best technological assessments of the [cleanup sites] with the highest risks," Chu said and cited population density as an example of a high risk. Murray told Chu she wanted to see a reprioritization within DOE to refocus its efforts toward legal obligations such as environmental management.

Senators Johnson and Landrieu asked state specific questions about the statuses of the Deep Underground Science and Engineering Laboratory (DUSEL) and an application for a Louisianan loan guarantee respectively. Secretary Chu told Johnson that he is expecting an internal review on DUSEL soon that answers how the department could move forward without the National Science Foundation. In the meantime, DOE has requested funds to continue to pump out water out of the 8,000 feet deep mine.

**House Committee on Appropriations Subcommittee on Energy and Water Development, and Related Agencies Hearing on
the Fiscal Year 2012 Budget Request for the Department on Energy**

March 15, 2011

Witness

The Honorable Dr. Steven Chu

Secretary of Energy, U.S. Department of Energy

Subcommittee Members Present

Rodney Frelinghuysen, Chair (D-NJ)

Ed Pastor (D-AZ)

Jerry Lewis (R-CA)

Chaka Fattah (D-PA)

Mike Simpson (R-ID)

Rodney Alexander (R-LA)

Steve Womack (R-AR)

Patrick Nunnelee (R-MS)

Committee Members Present

Hal Rogers, Chair (R-KY)

Norm Dicks, Ranking Member (D-WA)

The House Committee on Appropriations Subcommittee on Energy and Water Development, and Related Agencies held a hearing to discuss the fiscal year (FY) 2012 budget request for the Department of Energy (DOE) on March 15, 2011.

On March 11, 2011, a 9.0 magnitude earthquake occurred off the coast of Japan, causing tsunamis across the Pacific Ocean. Effects of the earthquake and the tsunami have led to damage at the Fukushima Daiichi nuclear power plant, causing concern about radioactive steam leaking from the facilities.

Chairman Rodney Frelinghuysen opened with condolences to the Japanese people in their time of emergency. He called for Secretary Chu to ensure that DOE helps to develop a “sound science-based energy policy” for the U.S. that includes multiple energy sources. He commended the Obama Administration for its support of nuclear power. Frelinghuysen asserted that Yucca Mountain should be reopened as a repository for high level nuclear waste even though the President has requested a termination of the Yucca Mountain geologic repository for nuclear waste. The chairman expressed opposition to the proposed budget cuts to the Office of Fossil Energy, saying that would lead to decreased domestic fossil fuel production and supply. He told Secretary Chu that it is “highly unlikely” that the subcommittee will receive any increases in congressional funding allotments for appropriations for DOE.

Representative Ed Pastor (D-AZ) echoed the chairman’s call to develop a comprehensive national energy policy. He said that investing in innovation, technology and research and development would allow the country to “invent and invest our way out of our energy problems.”

Secretary Chu began by telling the subcommittee about DOE’s efforts in aiding Japan during its crisis. The department has sent two experts, an emergency response representative and a nuclear engineer with Japanese language skills, to Japan. In total, Chu explained, DOE has 34 people, some stationed in the country, working with the Japanese to assist with surveying, assessing and monitoring affected areas. DOE has offered technical equipment to detect radiation, and national labs across the U.S. are performing atmospheric modeling to prepare for any radioactive plumes that may be released. He assured the subcommittee that the U.S. has “rigorous” safety regulations in place regarding its own nuclear facilities to ensure safe nuclear power generation. The Secretary echoed President Obama’s call to “out-innovate, out-educate, and out-build” the rest of the world when describing the FY 2012 budget request. According to Chu, the budget calls for the U.S. to lead the energy race by investing heavily in clean energy technologies and supporting groundbreaking science through increased funding for the Office of Science and the Advanced Research Projects Agency – Energy (ARPA-E). To continue working on nonproliferation efforts and to clean up Cold War test sites, the budget includes adequate funding for the National Nuclear Security Administration (NNSA), Chu said.

A few members asked Chu about disaster preparation at nuclear power facilities in the U.S.. Secretary Chu explained that for nuclear plants that are in areas of seismic activity, DOE turns to geologists and geophysicists to get an estimate of the maximum magnitude earthquake that could occur. Facilities then plan for a larger earthquake than the maximum estimate, he said.

Representative Jerry Lewis (R-CA) asked specifically about the San Onofre and Diablo Canyon nuclear plants in California, which are both near the coast and active faults. Chu said that the U.S. plans for earthquake and tsunami possibilities in

combination when sites are near a fault and an ocean. Both plants have 25-30 foot tsunami walls, he said, and are designed to withstand earthquakes greater than what geoscientists estimate could occur. Full committee Ranking Member Norm Dicks (D-WA) added his concern for earthquake preparation, saying that Washington has the possibility of enduring a 9.0 magnitude earthquake. Dicks said that he works with the USGS frequently on monitoring efforts.

Several members wanted to know whether the events in Japan would have an effect on recent efforts in the U.S. to grow the nuclear power industry. The secretary said that while it is premature to make predictions of the events' effects, DOE knows the U.S. needs a diverse supply of energy, which will include nuclear power. He acknowledged that after a disaster there is an opportunity to learn and improve safety precautions, and he said the U.S. could further improve its nuclear safety following a better understanding of what went wrong in Fukushima. Chu described "passively-safe reactors" being developed in the U.S. that pose no risk of a meltdown even if operators lose control of the reactor.

Much of the hearing focused on DOE efforts on the stalled Yucca Mountain project. Representative Dicks pressed Secretary Chu for information on the licensing process. He told Chu that the state of Washington is one of many plaintiffs in a case against DOE for not providing a nuclear waste facility in return for payments from utility companies. In March 2010, DOE filed a motion with the Nuclear Regulatory Commission (NRC) to withdraw its license application for a repository at Yucca Mountain. A panel of judges at NRC ruled in June 2010 that DOE did not have the authority to do this, but the full commission is reviewing the decision. Secretary Chu said his general legal counsel has informed him that DOE indeed has the authority to withdraw its application. He told Representative Dicks that the department would abide by the courts and the NRC decisions.

Chairman Frelinghuysen hinted that there is support in the House to put forward a bill that would force NRC Chairman Gregory Jaczko to make a decision on the DOE Yucca Mountain application. "There are some of us who feel the Administration overstepped its authority" in closing down Yucca Mountain, he said.

Lewis asked Chu what DOE would plan to do if the Yucca Mountain site were eliminated completely as an option. The procedures for choosing a site would begin again, said Chu, with dialogues with state and local authorities and stakeholders, investigation of potential geologic sites, and comparisons with international efforts and other waste sites.

Pastor asked for Chu's recommendations on how to convey the importance of lessening the nation's carbon input to industry and the public in the face of climate change. Chu suggested stating that efforts to reduce carbon input in turn makes the country more economically competitive. The renewable energy industry is growing, he explained, and other countries, especially China, are investing in it as an economic opportunity. Despite one's views on climate change and its risks, said Chu, the clean energy sector will make the U.S. more competitive. In addition, he noted, energy efficiency essentially leads to savings. The federal government has a chance to embrace a leadership role and show the private industry how to save money, Chu mentioned to Representative Patrick Nunnelee (R-MS), by committing to sustainable building practices and technologies for federal buildings.

A few members had issues with the types of energy investments proposed in the budget request. Full committee Chairman Hal Rogers (R-KY) said that with electricity and gas prices rising and the economy still "floundering," DOE should be focusing on encouraging domestic fossil fuel production. Secretary Chu recognized that fossil fuels will continue to be a part of America's energy supply for some time but that DOE must focus on long term investments. He said DOE plans to work to diversify transportation fuels by electrifying cars and creating better battery technologies.

Noting that the budget request proposes to eliminate fossil fuel subsidies, Representative Steve Womack (R-AR) asked what the criteria is for deciding when to end subsidies and when subsidies for renewable energy technologies would end. Chu explained that the subsidies for renewables are intended to help the technologies reach a level where they are competitive with fossil fuels without government subsidies. The fossil fuel industries are mature and can stand on their own, Chu said, and the goal would be for renewables to reach that point as well.

Chairman Frelinghuysen expressed concern that the U.S. has not been securing claims for energy exploration in the Arctic as other countries are. Chu assured him that DOE is looking at Arctic regions for potential exploration and leasing.

Some talk focused on possible impacts of the House-passed Full Year Continuing Appropriations Act of 2011 (H.R. 1) if it were enacted. Directors at National Labs across the country are developing budget plans in accordance with the act that would require lay-offs, Chu argued. Representative Chaka Fattah (D-PA) mentioned that the act includes cuts to the National Oceanic and Atmospheric Administration (NOAA), the agency responsible for early tsunami warning systems.

Representative Mike Simpson (R-ID) mentioned that in an attempt to reduce government spending, the House decided to cut the budgets of nearly all federal agencies in H.R. 1. (It exempted the Department of Defense, the Social Security Administration, the Department of Homeland Security, and the Department of Veterans Affairs, he said.) Subsequently, Simpson reminded the subcommittee to keep in mind that about 40 percent of the DOE budget is defense-related.

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 Government Affairs Program at govt@agiweb.org.

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