

## FY 2010 Appropriations for Science programs within the Department of Energy

### DOE Office of Science FY 2010 Request

(numbers are in millions)

DOE	FY 2009 Estimate	President's FY 2010 Request	% Change FY09 vs. FY10 Request	House	% Change House vs. FY09	Senate	% Change Senate vs. FY09	Final	% Change FY09 vs. FY10
<b>Office of Science:</b>									
<b>Biological &amp; Environmental Research</b>	<b>601.6</b>	<b>604.2</b>	<b>0.4%</b>	<b>597.2</b>	<b>-0.73%</b>	<b>604.2</b>	<b>0.4%</b>	<b>604.2</b>	<b>0.4%</b>
Climate & Environmental Sciences	278.7	285.7	2.5%						2.5%
Atmospheric System Research	25.3	26.4	4.3%						4.3%
Environmental System Science	79.6	82.5	4.1%						4.1%
Terrestrial Ecosystem Science	25.9	27.9	7.7%						7.7%
Terrestrial Carbon Sequestration Research	5.2	4.7	-9.6%						-9.6%
Subsurface Biogeochemical Research	48.5	49.9	2.9%						2.9%
Climate & Earth System Modeling	72.0	69.7	-3.2%						-3.2%
Regional & Global Climate Modeling	36.8	27.8	-24.5%						-24.5%
Earth System Modeling	25.6	30.6	19.5%						19.5%
Integrated Assessment	9.6	11.3	17.7%						17.7%
Climate & Environmental Facilities & Infrastructure	94.4	99.5	5.4%						5.4%
ARM Climate Research Facility	40.3	41.8	3.7%						3.7%
<b>Advanced Sci. Computing Research</b>	<b>368.8</b>	<b>409.0</b>	<b>11.0%</b>	<b>409.0</b>	<b>11.0%</b>	<b>399.0</b>	<b>8.2%</b>	<b>394.0</b>	<b>6.8%</b>
<b>Total, Office of Science</b>	<b>4,772.6</b>	<b>4,941.7</b>	<b>3.5%</b>	<b>4,944.0</b>	<b>3.6%</b>	<b>4,898.8</b>	<b>2.6%</b>	<b>4,903.7</b>	<b>2.7%</b>

### **Final FY10 DOE Bill (10-28-09)**

Within Biological and Environmental Research, the conferees direct \$17.5 million be directed to nuclear medicine application research.

### **Language from the Senate Committee Report (7-9-09):**

#### BIOLOGICAL AND ENVIRONMENTAL RESEARCH

The Committee recommends \$604,182,000 for Biological and Environmental Research. The Committee recognizes the international communities' reliance on the NNSA laboratories expertise in climate change modeling and continues to believe the NNSA laboratories are well equipped to develop and deploy a national system for science-based stewardship that combines advanced modeling, multi-scale monitoring, and impact analysis tools. These laboratories, with their experience in nuclear weapons nonproliferation and their unique capabilities across a wide range of technical resources are able to make a significant contribution in the development and implementation of a comprehensive climate research strategy. The Committee directs the Office of Science to continue to work closely with the NNSA laboratories on climate change modeling.

### **More Detail on President's FY 2010 Request (May 11, 2009):**

President Obama requests \$26.4 billion overall for the Department of Energy (DOE) for FY 2010, which is essentially level funding compared to the FY 2009 level enacted in the Omnibus Appropriations Act. DOE also received approximately \$39 billion in the American Recovery and Reinvestment Act (ARRA) to develop a clean energy economy for the nation. Secretary of Energy Steven Chu characterizes the FY 2010 budget request for the Department as complementing the funding in ARRA, which will be available through FY 2010. Reflecting his opposition to Congressionally-earmarked funding, President Obama eliminates funding for such projects from his budget request. (Please note that this write-up focuses only on the civilian energy research programs of DOE. All comparisons to the FY 2009 enacted funding level exclude the funding provided in ARRA.)

The President proposes two major new initiatives in his budget request to tap universities to be part of his goal to create the clean energy economy. The President's budget would provide \$280 million to establish eight Energy Innovation Hubs within the various offices at DOE, and \$115 million for RE-ENERGYSE (REgaining our ENERGY Science and Engineering Edge).

The Energy Innovation Hubs will address the basic science, technology, and economic and policy issues that could prevent the nation from becoming energy secure and economically strong while reducing Greenhouse Gas (GHG) emissions that contribute to climate change. Energy Innovation Hubs will be established to address solar electricity; fuels from sunlight; batteries and energy storage; carbon capture and storage; grid materials, devices, and systems; energy efficient building systems design; extreme materials; and modeling and simulation. The budget would support each

Hub at \$35 million in FY 2010 with anticipated annual funding at \$25 million in future years. The goal of this program is to connect the research laboratory to the industrial world.

The RE-ENERGYSE initiative is a comprehensive K-20+ science and engineering initiative to educate thousands of students at all levels in the fields contributing to the fundamental understanding of energy science and engineering systems. This initiative will provide graduate research fellowships in fields that advance the energy mission; provide training grants to universities that establish multidisciplinary research and education programs related to clean energy; support universities that dramatically expand energy-related research opportunities for undergraduates; and build partnerships with community colleges and clean energy industries. The National Science Foundation (NSF) would also participate in this clean energy education initiative by providing support through existing programs, such as the Graduate Research Fellowship Program, the Research Experiences for Undergraduates Program, and the Advanced Technological Education Program.

The President sustains support for basic research through DOE's Office of Science by requesting \$4.9 billion, an increase of \$184 million or 3.9 percent overall. While the request falls short of a year-to-year increase to double funding for the Office of Science, Congress provided a nearly 19 percent increase (\$755 million) for FY 2009 which became the base funding upon which future increases will be calculated. The Office of Science also received an additional \$1.6 billion in ARRA. In the budget briefing, Secretary Chu indicated that these additional funds were taken into account when crafting the overall DOE budget request for FY 2010.

Reflecting the President's commitment to develop a clean energy economy, the Energy Efficiency and Renewable Energy (EERE) programs receive a total of \$2.3 billion, a 6.4 percent overall increase to accelerate the development of renewable energy sources such as wind, solar, biomass, geothermal, and water energy and activities that support energy conservation and efficiency. This builds on the \$16.8 billion in ARRA to address the nation's energy challenges.

To implement the \$4.5 billion in ARRA funding to develop the smart electricity grid, the President proposes \$208 million for Electricity Delivery and Energy Reliability, an increase of \$71 million or 52 percent above the FY 2009 enacted level.

### **Biological and Environmental Research**

The FY 2010 budget would provide \$604.2 million for Biological and Environmental Research (BER), a \$2.6 million increase above the FY 2009 enacted level excluding ARRA funding. The BER program funds research in global climate change, environmental remediation, and the biological effects of radiation and other mission-oriented research. The budget continues support for DOE Bioenergy Research Centers and climate change research.

### **Advanced Scientific Computing Research**

The budget request would provide \$409 million for Advanced Scientific Computing Research (ASCR), an increase of \$40.2 million or 11 percent above the FY 2009 enacted level excluding ARRA funding. ASCR will continue to support research, integrated with other science programs, on the application of computer simulation and modeling to science problems. The budget would support the transfer of cyber security research from the networking activity and fund a new

fellowship program. Increased support is also provided for a new effort in advanced computer architecture design.

**Detail on President's FY 2010 Request (March 2, 2009):**

Last week, President Obama released an overview of the Fiscal Year (FY) 2010 budget request. The annual budget request is submitted to Congress as a starting point for the appropriations process which will take place over the next six months or more. Overall, the top line funding details for research and education are promising and build upon the increases provided by the American Recovery and Reinvestment Act (stimulus legislation) and the pending FY 2009 Omnibus Appropriations bill.

No top line number is available for DOE's Office of Science, however, the budget preview states that the request includes "significant increases in funding for basic research and world-leading scientific user facilities to support transformational discoveries and accelerate solutions to our Nation's most pressing problems – including the development of clean energy."

Additional details about the FY 2010 budget are expected to be unveiled in April