

DOE FY2011 Congressional Budget Request for EERE

**Fred Sissine
Specialist in Energy Policy
Congressional Research Service
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Outline

- Overview
- Key Funding Changes
- Context / Questions
- Historical Spending Context
- References

Overview

- Overall Request is Nearly Flat
- EERE up by \$113.0 million (5.0%)
- Increase is close to inflation (3.5% est.)
- EDER Electric Program up by \$13.9 million (8.1%)
- Respects budget deficit concerns

FY2011 Emphasis

- Entire EERE effort put in context of:
 - (A) climate change issue and
 - (B) international competitiveness in clean energy equipment
- More focus on demonstration projects and commercialization

Administration's Themes

- New technologies and new jobs
- China, Germany, & Others “making serious investments”
- Need to build clean energy facilities
- Recovery Act started the process
- “Nation that leads the clean energy economy will lead the global economy”

Program Funding Changes

- Key Increases (new programs, larger \$)
- Other Notable Increases
- Notable Decreases

Key Increase: Wind

- \$49 million offshore demonstration project
- Cape Wind delayed for many years
- Demonstration may be an effort to break-up the log-jam
- First German offshore plant, late 2008
- Giant offshore plan approved, late 2009
- CRS analyst, Curry Hagerty (7-7738)

Key Increase: Solar CSP

- \$48.5 million CSP demonstration project
- Huge solar potential in desert Southwest
- “Gold rush” underway for BLM siting permits
- Important water use issue
- CRS analysts: Richard Campbell (7-7905), Nicole Carter (7-0854)

Key Increase: RE-ENERGYSE

- \$50 million for new education programs
- \$35 million for a Higher Education subprogram of grants etc.
- \$15 million for a Technical Training and K-12 Education subprogram
- Similar proposal last year, \$115 million
- Not funded in FY2010, congressional concerns cited

Key Increase: Program Support

- Analytical and implementation support to mitigate climate change with efficiency & renewables
- \$21 million for strategic analysis of technologies, to help meet goals set at Copenhagen (COP-15)
- \$15 million for international R&D cooperation with BRIC countries, APEC, etc.
- Question: How would the proposals complement those at the Department of State?
- Question: How would the proposals relate to the climate/energy bills (HR2454, S1462/S1733)?

Key Increase: Vehicle & Stationary Battery Storage

- Vehicle Battery/Energy Storage up \$17.7 million
- Focus on high energy / high power lithium batteries for electric vehicles
- Increase focused on reaching higher performance and cost goals
- Coordination underway with the Electric Program's energy storage subprogram
- Electric Program seeks \$26.0 million increase for energy storage, focused on lithium batteries for stationary power applications

Key Increase: Building Innovation Hub

- Energy Efficient Building Systems Design Hub funded at \$22.0 million in FY2010
- FY2011 request seeks additional \$24.3 million
- Dollar difference is small, but ... of the three hubs funded in FY2010, this is the only one seeking more funding in FY2011
- Both HR2454 (\$171) and S1733 (\$205) would authorize DOE to establish more hubs

Key Increase: Industrial Manufacturing Initiative

- \$10 million to establish a “Manufacturing Energy Systems” subprogram
- Goal is to enhance competitiveness through rapid innovation that reduces energy and carbon intensity
- Seeks technologies with greatest potential for commercial use
- Aims to spur sustainable job creation

Key Increase: Grant Programs

- Weatherization Program would go up \$90 million, of which \$85.8 million would go to direct assistance, covering about 13,000 additional households
- State Energy Program up \$25 million, to expand current programs

Key Increase: Program Direction

- Program would go up \$60 million
- Mostly to add personnel to process increased administrative workload/oversight required by Recovery Act
- For more on energy provisions of the Recovery Act (P.L. 111-5), see CRS report R40412

Other Notable Increases

- Geothermal would go up \$11.0 million (21%)
- Federal Energy Management Program (FEMP) would go up \$10.3 million (32%)
- Facilities would go up \$38.5 million, to complete construction of the Energy Systems Integration Facility (ESIF) at the National Renewable Energy Lab (NREL)

Key Decrease: Hydrogen Program

- Overall Hydrogen/Fuel Cell Program would be cut by \$37.0 million (-21%)
- Market Transformation subprogram would be cut by \$16.9 million (-65%)
- Under Transformation subprogram, fuel cell deployment and early market activities would be deferred

Key Decrease: Water Power

- \$9.5 million cut (-19%) proposed
- Program includes marine and hydrokinetic (wave, tidal, current and ocean thermal) technologies
- Also includes conventional hydropower technologies

Key Decrease: Industrial Programs

- \$7.4 million cut would terminate subprograms for steel, aluminum, and forest/paper industries
- \$2.4 million cut (-55%) for chemicals industry
- DOE says it is making a “shift” to greater support of cross-cutting technology efforts that are “more productive”

Context 1: Clean Energy Competitiveness

- In the early 1980s, U.S. firms were the undisputed global leaders in the wind and solar photovoltaics (PV) industries
- In the 1990s, Japan became the global leader in the PV industry
- In the 2000s, Germany took the lead in wind power and its feed-in tariff (FIT) propelled it to world leadership in large (utility-scale) PV too
- Europe’s PV demand growth spurred China’s export-driven ascent to global leader in PV manufacturing
- The renewable portfolio standard (RPS) has goals similar to the FIT. Many states have an RPS, but efforts to create a federal RPS have not succeeded

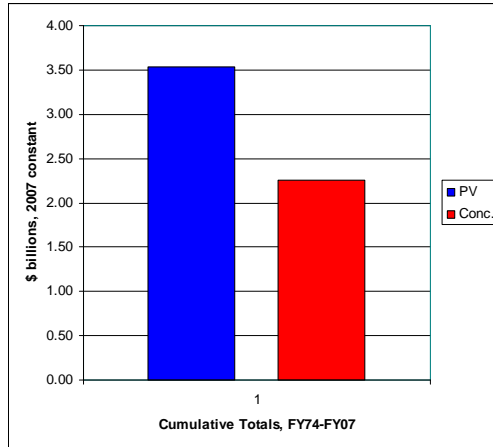
Context 2: Spending for Demonstration Projects

- Long-standing policy debate over the federal role in filling the gap between R&D and market commercialization
- Demonstration projects tend to be very expensive
- ARPA-E was created to spur development of “breakthrough” technologies
- Recovery Act funded a fast-track loan guarantee program for commercial technologies
- Budget deficit concerns tend to limit spending

Context 3: Funding Technology to Mitigate Climate Change

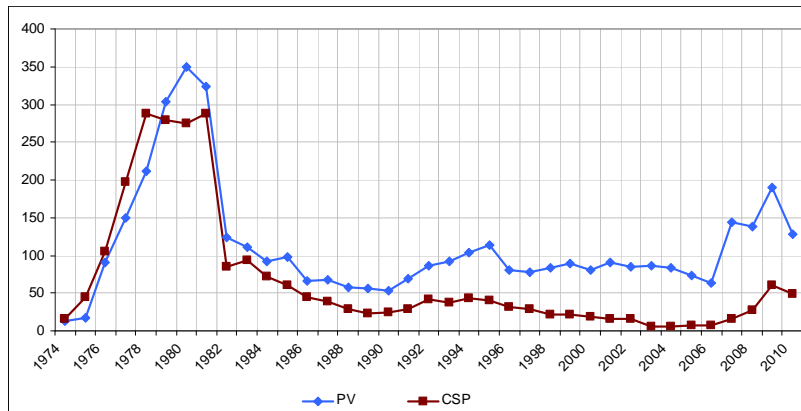
- Debate over optimal energy measures to mitigate greenhouse gas emissions
- Recovery Act provided record funding for clean energy technologies
- European Union has begun a cap-and-trade program
- U.S. proposals (HR2454, and S1462/S1733) for cap-and-trade are in full debate now, and would provide major funding for clean energy
- CRS Analysts: Larry Parker (7-7238), Brent Yacobucci (7-9662), Jonathan Ramseur (7-7919)

DOE PV & Concentrating Solar R&D Spending, FY1974-FY2007



Source: DOE budget history tables; DOE budget requests; and Federal Budget FY2009, Hist. Tables, Table 10.1.

DOE Solar Spending History

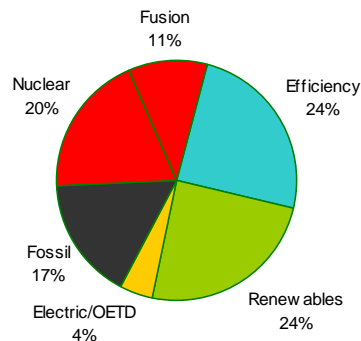


Source: DOE budget history tables; DOE Congressional budget requests; and Federal Budget FY2011.

FY2010: Compare Efficiency, Renewables, Nuclear, and Fossil

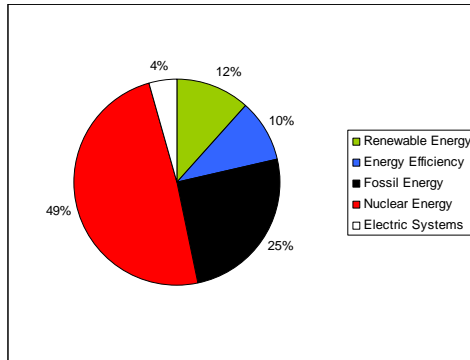
- FY2010 funding for nuclear R&D (\$787 million) and fusion R&D (\$426 million) is highest (\$1,213)
- Efficiency R&D (\$997 million) is second
- Renewables R&D (\$976 million) is third
- Fossil R&D (\$672 million) is fourth
- Historically, much less spent for efficiency and renewables than for nuclear and fossil

Energy R&D Funding, FY2010



Source: DOE FY2011 Cong. Budget Request. Fusion is funded under Office of Science, all others under Energy Resources Supply and Conservation

DOE Energy R&D Funding Shares, FY1948-FY2010



Note: Nuclear includes fission and fusion

Source: DOE, An Analysis of Federal Incentives Used to Stimulate Energy Production, 1980; & DOE Budget Authority History Table.

Context & Challenges for Congressional Staff

- Energy prices
- Energy security
- Budget deficit
- Trade deficit
- Greenhouse gas emissions

Further information available to
Congressional Staff:

- CRS R40669, DOE FY2010 appropriations
- CRS R34417, DOE FY2009 appropriations
- CRS RS22858, on R&D Funding History
- All are on the CRS web site at
<http://www.crs.gov/>
- Fred is at 7-7039, fsissine@crs.loc.gov