



U.S. DEPARTMENT OF
ENERGY

Federal Government Energy Management and Conservation Programs Fiscal Year 2009

Report to Congress
March 2014

United States Department of Energy
Washington, DC 20585

Message from the Assistant Secretary

This letter report on Federal energy management for fiscal year (FY) 2009 provides information on energy consumption in Federal buildings, operations, and vehicles, and documents activities conducted by Federal agencies under:

- The energy management and energy consumption reduction requirements of section 543 of the National Energy Conservation Policy Act (NECPA), as amended (42 U.S.C. 8253);
- The energy savings performance contract authority of section 801 of NECPA, as amended (42 U.S.C. 8287-8287d);
- The renewable energy purchase goal under section 203 of the Energy Policy Act of 2005 (EPACT 2005) (42 U.S.C. 15852);
- The energy management training requirements of section 157 of the Energy Policy Act of 1992 (EPACT 1992) (42 U.S.C. 8262c);
- Executive Order 13423 of January 24, 2007, “Strengthening Federal Environmental, Energy, and Transportation Management,” (72 Fed. Reg. 3919 (Jan. 24, 2007)); and
- The Energy Independence and Security Act of 2007 (EISA) (Pub. L. No. 110-140).

It should be noted that Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance” (72 FR 5117 [Oct. 5, 2009]) was issued in the first quarter of FY 2010. This Executive Order included requirements expanded the scope and format of this report for FY 2010.

This report on Federal Energy Management for FY 2009 provides summary information on Federal Government progress toward meeting mandated resource efficiency and renewable energy use goals as reported by Federal agencies for the fiscal year. Subsequent to the development of this report, much of the underlying data provided by agencies has been superseded by revised fiscal year data submitted by agencies under the new methodology required under Executive Order 13514 to accommodate the new greenhouse gas goals and associated FY 2008 base year. As such, this abbreviated report reflects Federal Government performance as initially reported. A complete revised historical dataset reflecting FY 2010 performance is available at: <http://www1.eere.energy.gov/femp/docs/FY10AnnualRpt.xls>.

This report is being provided to the following Members of Congress:

- **The Honorable Joseph R. Biden, Jr.**
President of the Senate
- **The Honorable John Boehner**
Speaker of the House of Representatives

- **The Honorable Barbara Mikulski**
Chairwoman, Senate Committee on Appropriations
- **The Honorable Richard C. Shelby**
Ranking Member, Senate Committee on Appropriations
- **The Honorable Mary Landrieu**
Chairman, Senate Committee on Energy and Natural Resources
- **The Honorable Lisa Murkowski**
Ranking Member, Senate Committee on Energy and Natural Resources
- **The Honorable Harold Rogers**
Chairman, House Committee on Appropriations
- **The Honorable Nita M. Lowey**
Ranking Member, House Committee on Appropriations
- **The Honorable Fred Upton**
Chairman, House Committee on Energy and Commerce
- **The Honorable Henry A. Waxman**
Ranking Member, House Committee on Energy and Commerce
- **The Honorable Dianne Feinstein**
Chairman, Senate Subcommittee on Energy and Water Development
- **The Honorable Lamar Alexander**
Ranking Member, Senate Subcommittee on Energy and Water Development
- **The Honorable Mike Simpson**
Chairman, House Subcommittee on Energy and Water Development
- **The Honorable Marcy Kaptur**
Ranking Member, House Subcommittee on Energy and Water Development

If you need additional information concerning the report, please contact me or Brad Crowell, Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Dr. David T. Danielson
Assistant Secretary
Energy Efficiency and Renewable Energy

Overview of Consumption and Costs

Based on reports submitted to the Department of Energy (DOE) by 24 major Federal agencies, the total primary energy consumption during FY 2009 of the Government of the United States, including energy consumed to produce, process, and transport energy, was approximately 1.6 quadrillion British thermal units (Btu) or “quads.” These 1.6 quads, consumed by the Government in buildings and operations to provide essential services to its citizens, including the defense of the Nation, represent approximately 1.6 percent of the total 95.5 quads used in the United States.

The Federal Government is the single largest energy consumer in the Nation, although its consumption is widely dispersed geographically. The total primary energy consumption in FY 2009 was 16.3 percent less than in FY 1985, 3.9 percent less than in FY 2003, and 1.0 percent less than in FY 2008.

When measured in terms of energy delivered to the point of use or site-delivered energy consumption, the Government consumed about 1.1 quads (1,095,144.9 billion Btu) during FY 2009. The total site-delivered energy consumption in FY 2009 was 24.5 percent less than in FY 1985, 3.5 percent less than in FY 2003, and 1.2 percent less than in FY 2008.

Total cost of the 1.1 quads, \$17.5 billion in FY 2009, represented approximately 0.4 percent of the \$3.998 trillion in total Federal expenditures for all purposes in FY 2009. This equates to a 64.2 percent increase in constant 2009 dollars, from \$10.6 billion in FY 2003 to \$17.5 billion in FY 2009. During that same period, the unit cost of all fuel types used increased 70.2 percent, from \$9.38 per million Btu in FY 2003 to \$15.97 per million Btu in FY 2009.

Compared to FY 2008, the combined unit costs of all fuels decreased 25.9 percent in FY 2009. Transportation fuels, whose prices spiked in FY 2008, were a significant reason for the overall decrease in energy costs as their prices returned to pre-FY 2008 levels. The overall changes in cost per million Btu include:

- Jet fuel – 39.0 percent decrease,
- Gasoline – 30.8 percent decrease,
- Diesel – 35.8 percent decrease,
- Electricity – 2.0 percent increase,
- Fuel oil – 22.9 percent decrease, and
- Natural gas – 13.5 percent decrease.

Federal agencies report energy consumption under three end-use sectors:

- Buildings subject to the energy reduction requirements of NECPA, as amended (“goal buildings”);

- Buildings excluded from the energy reduction requirements of NECPA, as amended (“goal-excluded buildings”); and
- Vehicles and equipment.

Total Federal energy consumption and costs in FY 2009 are summarized below by end-use sector:

<u>Energy Use</u>	<u>Trillion Btu</u>	<u>Percentage</u>
Goal Buildings	349.3	31.9%
Excluded Buildings	37.0	3.4%
Vehicles & Equipment	708.9	64.7%
<i>Total</i>	<i>1,095.1</i>	<i>100.0%</i>

<u>Energy Cost</u>	<u>\$Billion</u>	<u>Percentage</u>
Goal Buildings	\$6.3	35.9%
Excluded Buildings	\$0.7	4.1%
Vehicles & Equipment	\$10.5	60.0%
<i>Total</i>	<i>\$17.5</i>	<i>100.0%</i>

Government Energy Management Performance in FY2009

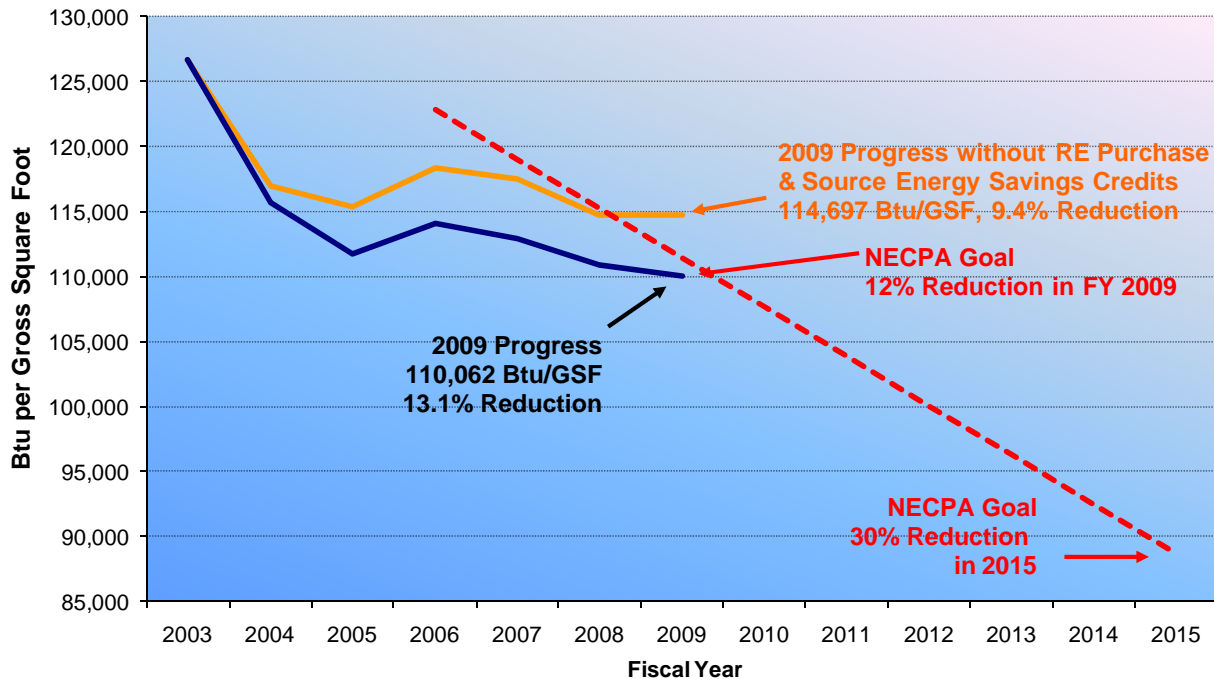
Energy Performance Requirement for Federal Buildings

NECPA and Executive Order 13423 established a goal of three percent reductions in energy consumption per gross square foot (i.e., energy intensity) per year starting in FY 2006, with the FY 2009 goal of a 12 percent reduction from a FY 2003 baseline.

Taking into account credits for purchases of renewable energy and for projects that save primary energy, but increase site-delivered energy, the Federal Government decreased energy use per gross square foot by 13.1 percent in FY 2009 relative to FY 2003 for buildings subject to the NECPA energy reduction requirement. Based strictly on total site energy use per gross square foot (excluding renewable energy purchases and primary energy savings from improved generating efficiency), the Government cut its energy intensity by 9.4 percent.

Only with the addition of project primary energy savings and renewable energy does the Government surpass the Executive Order 13423 and NECPA goal of a 12 percent reduction in building energy intensity by FY 2009.

Overall Government Progress toward Facility Energy Efficiency Goals, FY 2003 through FY 2009



Use of Renewable Energy

FY 2009 was the third year of renewable energy reporting under section 203 EPACT 2005 and Executive Order 13423.

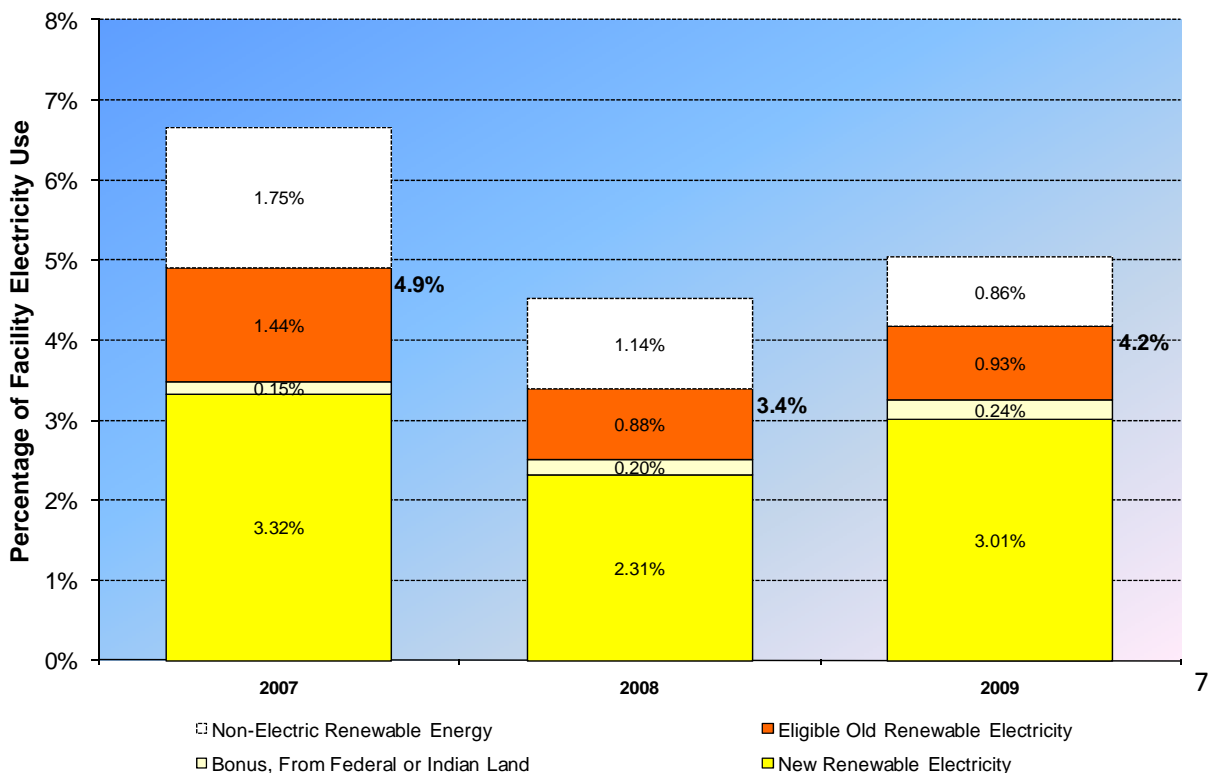
Section 203 of EPACT 2005 requires the Secretary to seek to ensure that at least three percent of the total amount of electric energy consumed by the Federal Government in FY 2007 through FY 2009 shall be renewable energy. In calculating the amount of renewable energy used by a Federal agency for the purpose of the goal, an amount of renewable energy is doubled if it is produced on-site and used at a Federal facility, produced on Federal lands and used at a Federal facility, or produced on Indian land and used at a Federal facility.

Executive Order 13423 requires that Federal agencies ensure that:

- at least half of the statutorily required renewable energy purchased or consumed by the agency in a fiscal year comes from new renewable sources (put in service since 1999), and
- to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.

Federal agencies reported purchasing or producing 2,330.6 gigawatt hours of renewable electric energy in FY 2009, equivalent to 4.2 percent of the Federal Government’s electricity use of 55,814.6 gigawatt hours.

**Overall Government Progress toward Renewable Energy Goals,
FY 2007 through FY 2009**



Investments in Energy and Water Efficiency

During FY 2009, Federal agencies had three primary options for financing energy efficiency, water conservation, and renewable energy projects in buildings:

- Direct appropriated funding,
- Energy savings performance contracts (ESPCs), and
- Utility energy service contracts (UESCs).

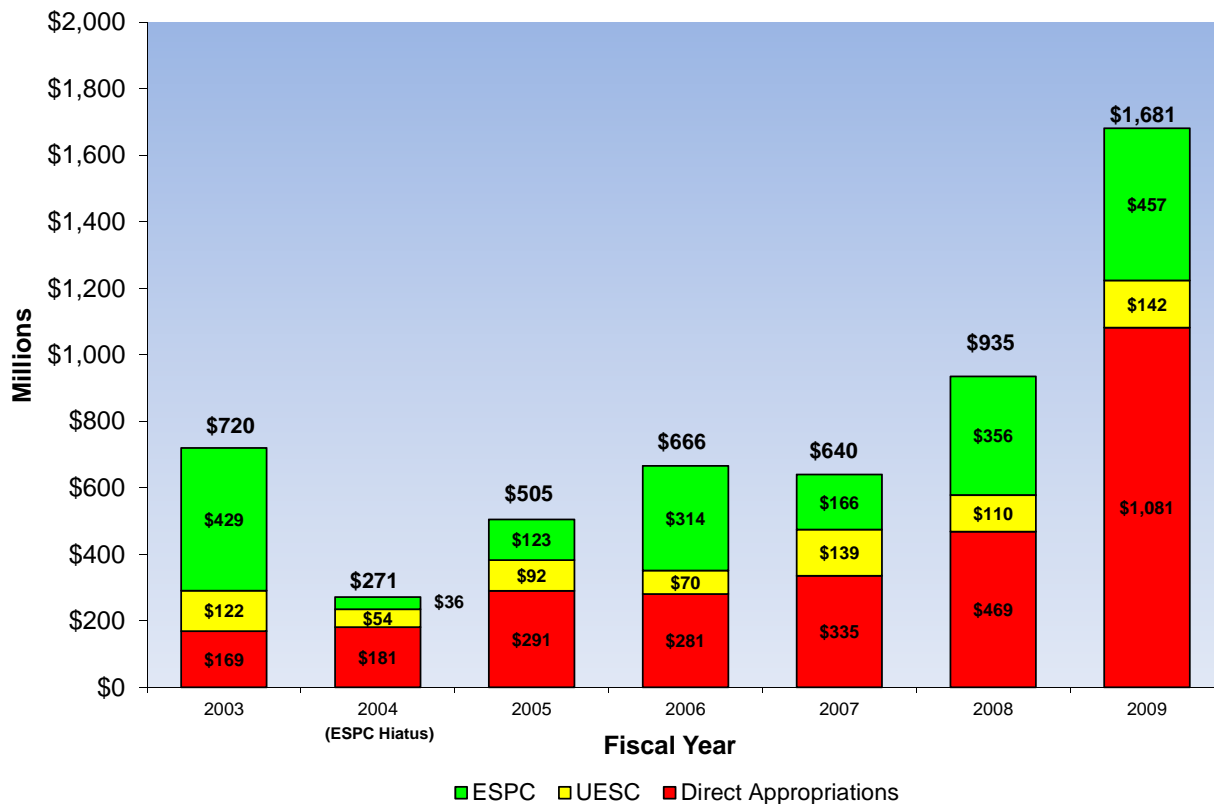
Known funding from the three sources totaled approximately \$1,680.7 million in FY 2009.

- Direct appropriations accounted for approximately \$1,081.5 million.
- ESPC contract awards by agencies resulted in approximately \$457.1 million in estimated project investment in FY 2009 (\$400 million from DOE Super ESPC delivery orders and \$57.2 million from other agency ESPCs), and
- Approximately \$142.2 million in project investment came from UESCs.

The \$1,680.7 million in total funding for FY 2009 bettered FY 2008's high water mark for investment---\$934.7 million.

Since 2003, the Government has invested approximately \$5.4 billion in energy efficiency, \$2.8 billion of which was direct agency expenditures, \$1.9 billion was from ESPCs and \$730 million was from UESCs.

**Investment in Energy Efficiency and Renewable Energy, FY 2003 to FY 2009
(Millions of As-Spent Dollars)**



Water Use and Conservation

In response to the requirements of Section 2(c) of Executive Order 13423, Federal agencies established a baseline for water efficiency in FY 2007, and reported progress against this baseline in FY 2009. In FY 2009, the Federal Government as a whole used 160.4 billion gallons of water at a cost of \$476.3 million, for an average price of \$2.97 per 1,000 gallons.

The Federal Government's FY 2009 water intensity in FY 2009 was 51.1 gallons per gross square foot, a reduction of 4.6 percent from the 53.6 gallons per gross square foot reported for the base year of FY 2007.

The Department of Defense represents the largest Federal water consumer using 111.6 billion gallons of water in FY 2009, representing 69.6 percent of the Federal Government's water consumption for the fiscal year.