

# CRS Report for Congress

## Energy Savings Act of 2007 (S. 1321): Summary of Major Provisions

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# Energy Savings Act of 2007 (S. 1321): Summary of Major Provisions

## Summary

The Energy Savings Act (S. 1321) puts forth a broad range of proposals on biofuels, energy efficiency, and carbon storage. The Senate Committee on Energy and Natural Resources approved the bill by a vote of 20 to 3, on May 7, 2007.

On May 17, 2007, the omnibus energy policy bill S. 1419 was introduced. The three titles of S. 1321 were incorporated into S. 1419 as Title I, Title II, and Title III. S. 1419 was read twice on the floor, and ordered to be placed on the Senate legislative calendar under general orders, as item 156.

Title I, the Biofuels for Energy Security and Transportation Act, is taken primarily from S. 987, with a few other provisions added in markup by the Committee. That title would increase the renewable fuel standard, set some standards for greenhouse gas emissions reductions, and provide support for fuel infrastructure, feedstocks, and biorefineries.

Title II, the Energy Efficiency Promotion Act, is drawn primarily from S. 1115. That title would set some new standards for energy efficient equipment, establish goals for fuel savings, strengthen federal energy efficiency requirements, and authorize several new programs for vehicles and grants.

Title III, the Carbon Capture and Storage Research, Development, and Demonstration Act, is taken primarily from S. 962 and S. 731. That title would call for large-scale testing of carbon dioxide (CO<sub>2</sub>) storage in geological formations, establish competitive funding awards, direct that a national storage capacity assessment be conducted, and require that the Department of Energy (DOE) demonstrate the use of large-scale capture technologies at industrial facilities.

This report will be updated as legislation develops.

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# Energy Savings Act of 2007 (S. 1321): Summary of Major Provisions

## Introduction

This report summarizes S. 1321, the Energy Savings Act of 2007. S. 1321 has three titles: Title I, Biofuels for Energy Security and Transportation Act; Title II, Energy Efficiency Promotion Act; and Title III, Carbon Capture and Storage Research, Development, and Demonstration Act. The bill includes language from four other bills: S. 987 (biofuels), S. 1115 (energy efficiency), S. 962 (carbon storage), and S. 731 (carbon storage). S. 1321 was introduced May 7, 2007.<sup>1</sup> The Senate Committee on Energy and Natural Resources approved the bill by a vote of 20 to 3, and reported it on May 7, 2007.<sup>2</sup>

On May 17, 2007, the omnibus energy policy bill S. 1419 was introduced. The three titles of S. 1321 were incorporated into S. 1419 as Title I, Title II, and Title III. S. 1419 was read twice on the floor, and ordered to be placed on the Senate legislative calendar under general orders, as item 156.

## Title I. Biofuels for Energy Security and Transportation

This title was taken primarily from S. 987, with a few other provisions added in markup by the Committee.<sup>3</sup>

Subtitle A would extend and increase the renewable fuel standard (RFS), which establishes minimum annual levels of renewable fuel in gasoline. The modified standard would start at 8.5 billion gallons in 2008 and rise to 36 billion gallons in 2022. Starting in 2016, an increasing portion of the requirement would have to be met with advanced biofuels, including cellulosic ethanol, biobutanol, and other fuels derived from unconventional biomass feedstocks. Subtitle B would provide grants for renewable fueling infrastructure (§ 121), increase the Department of Energy (DOE) bioenergy R&D funding authorization (§ 122), establish 11 bioenergy research centers (§ 123), provide loan guarantees for renewable fuel facilities (§ 124),

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<sup>1</sup> The text of the bill is available at [[http://energy.senate.gov/public/\\_files/S1321.pdf](http://energy.senate.gov/public/_files/S1321.pdf)].

<sup>2</sup> The committee report, S.Rept. 110-65, is available at [[http://energy.senate.gov/public/\\_files/S1321Report.pdf](http://energy.senate.gov/public/_files/S1321Report.pdf)].

<sup>3</sup> S. 987 was introduced March 26, 2007. The Senate Committee on Energy and Natural Resources held a hearing on April 12, 2007.

provide research grants for states with low rates of ethanol production (§ 125), provide grants for infrastructure for transportation of biomass to local refineries (§ 126), establish a biorefinery information center (§ 127), create an alternative fuels database (§ 128), set a labeling requirement for alternative fuels (§ 129), and set a national biodiesel fuel quality standard (§ 130). Subtitle C would require that several studies be conducted, covering specialized topics on biofuels, ethanol, electric vehicles, and biodiesel.

Also, the Committee markup made four notable additions to Title I that did not appear in S. 987. First, the definition of renewable biomass fuel that covers biomass harvested from selected public lands would be modified to exclude certain parts of old growth trees (§ 102[4][A]). Second, renewable fuels produced from new biorefineries would be required to achieve at least a 20% reduction in life cycle greenhouse gas emissions relative to life cycle emissions from gasoline (§ 111[a][1][i][II]). Third, a voluntary labeling program would be established for renewable fuels, based on life cycle greenhouse gas emissions (§ 111[i]). Fourth, fuel produced from biorefineries that displaces more than 90% of the fossil fuels used in a biofuel production facility would qualify for additional credits under the RFS (§ 112).

## **Title II. Energy Efficiency Promotion**

This title was drawn primarily from S. 1115.<sup>4</sup>

Subtitle A would promote advanced lighting technology by requiring all federal lighting to be Energy Star rated by 2010 (§ 211), expanding efficiency standards for incandescent reflector lamps (§ 212), creating the “Bright Tomorrow” lighting prizes for solid state (LED) lighting developments (§ 213), and establishing a “Sense of the Senate” to pass mandatory energy efficiency performance targets for lighting products (§ 214). Also, the Committee markup added a notable provision that did not appear in S. 1115. That provision would authorize grants to support construction of solar, wind, geothermal, ocean, biomass, landfill gas, and Alaska small hydropower projects (§ 215).

Subtitle B would establish, by statute, new energy efficiency standards for residential boilers (§ 227), electric motors (§ 229), and some home appliances (§ 230).<sup>5</sup> DOE would be directed to set standards by rulemaking for furnace fans (§ 223). Also, DOE would be allowed to set standards for multiple components (§ 221) and regional standards for heating and cooling equipment (§ 222). Further, this subtitle would authorize R&D on improved efficiency for appliances and buildings in cold climates (§ 231) and provide incentives for the manufacture of high-efficiency consumer products (§ 232). Other provisions would guide expedited rulemakings (§

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<sup>4</sup> S. 1115 was introduced April 16, 2007. The Senate Committee on Energy and Natural Resources held a hearing on April 23, 2007.

<sup>5</sup> Identical provisions for boilers, motors, and home appliances appear in S. 1101 and H.R. 2083.

224), clarify limits to federal preemption of state standards (§ 225), and require Energy Guide labels for several types of consumer electronic products (§ 226). Also, the Committee markup added a provision that would direct DOE to establish a program that supports, develops, and promotes the use of new technologies to improve energy efficiency in materials manufacturing and energy-intensive industries (§ 233).

Subtitle C would promote high-efficiency vehicles, advanced batteries, and energy storage. DOE would be authorized to fund an R&D program on light-weight materials (§ 241). A loan guarantees program would be created for facilities that manufacture fuel-efficient vehicles (§ 242). Funding awards for qualified investments would be authorized to refurbish manufacturing facilities that produce advanced technology vehicles (§ 243). A 10-year R&D program would be authorized to support U.S. competitiveness in global energy storage markets, and a five-year R&D program would be authorized for electric drive technologies (§ 244). Also, the Committee markup added a provision that would direct DOE to establish a competitive grant program for state, regional, and local government entities to demonstrate electric drive vehicles. DOE would also be required to establish a program to deploy technologies that would achieve near-term oil savings in the transportation sector (§ 245).

Subtitle D would set several energy efficiency goals that include reducing gasoline use 45% by 2030 (§ 251) and improving energy productivity by 2.5% in 2012 and each year thereafter through 2030 (§ 252).<sup>6</sup> Also, DOE would be authorized to conduct a four-year national media campaign to educate consumers to save energy and reduce oil use (§ 253), and federal agencies would be authorized to carry out programs for demonstration and use of advanced electricity transmission and distribution technologies (§ 254).

Subtitle E would promote federal leadership in energy efficiency and renewable energy. Federal and state fleets would be required to reduce petroleum use 30% by 2016 (§ 261). The renewable energy share of federal energy purchases would increase to 15% by 2015 (§262). The authorization for federal agencies to use Energy-Saving Performance Contracts (ESPCs) would be extended permanently (§ 263). Federal buildings would be required to reduce energy use 30% by 2015 (§ 264). DOE would be directed to identify federal sites for installing combined heat and power (§ 265). Federal buildings would be required to reduce fossil energy use by 50%, compared with similar buildings from the past that were not subject to the standard (§ 266). The Department of Housing and Urban Development (HUD) would be required to update efficiency standards for all public and assisted housing (§ 267). DOE would be authorized to conduct R&D and deployment activities that help increase the energy-efficiency of commercial buildings (§ 268).

Subtitle F would improve energy efficiency assistance to state and local governments by increasing the authorization for the DOE Weatherization program

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<sup>6</sup> The description of Section 252 on page 14 of the Committee's report (S.Rept. 110-65) says that "national energy productivity" would be measured as "gross domestic product (GDP) per unit of energy input."

(§ 271), reauthorizing the State Energy program (§ 272), requiring state utility regulatory commissions to consider federal standards to promote energy efficiency (§ 273), authorizing the National Renewable Energy Laboratory (NREL) to provide technical assistance (§ 274), authorizing grants to local governments (§ 275), authorizing grants to universities for demonstration projects (§ 276), authorizing workforce training programs (§ 277), and authorizing funds for education programs to reduce school bus idling (§ 278).

### **Title III. Carbon Capture and Storage Research, Development, and Demonstration**

This title was taken primarily from S. 962<sup>7</sup> and S. 731.<sup>8</sup>

Section 963 of the Energy Policy Act of 2005 (EPACT, P.L. 109-58) would be amended to enhance and expand R&D at DOE for carbon capture and sequestration (§ 302, § 303). EPACT Section 963 established the Carbon Capture Research and Development Program, which currently authorizes DOE to conduct a 10-year R&D program that develops carbon dioxide (CO<sub>2</sub>) capture technologies for combustion-based systems at new and existing coal-based power plant facilities. The four main objectives of the program are: (1) develop CO<sub>2</sub> capture technologies;<sup>9</sup> (2) develop technologies that produce concentrated streams of CO<sub>2</sub> more amenable to sequestration; (3) increase the efficiency of the overall system to reduce the amount of CO<sub>2</sub> emissions per megawatt-hour (mwh) generated; and (4) promote regional carbon sequestration partnerships that link DOE and the private sector.

A fifth objective would be added “to expedite and carry out large-scale testing of carbon sequestration systems in a range of geological formations that will provide information on the cost and feasibility of sequestration technologies” (§ 302). To implement this objective, a subsection entitled *Programmatic Activities* would direct DOE to conduct four key activities: (1) Energy Research and Development Underlying Carbon Capture and Storage Technologies; (2) Carbon Capture Demonstration Program; (3) Field Validation Testing Activities; and (4) Large Scale Testing and Deployment.

The *Programmatic Activities* subsection would also establish competitive funding awards. The awards would be subject to EPACT Section 989, which requires a “Merit Review of Proposals,” and would give preference to proposals from partnerships among industrial, academic, and government entities. R&D activities under the subsection would also be subjected to EPACT’s cost-sharing requirements under Section 988(b). Further, appropriations would be authorized in the amounts

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<sup>7</sup> S. 962 was introduced March 22, 2007. The Senate Committee on Energy and Natural Resources held a hearing on April 16, 2007. H.R. 1933 is the House companion bill.

<sup>8</sup> S. 731 was introduced March 1, 2007. The Senate Committee on Energy and Natural Resources held a hearing on April 16, 2007. H.R. 1267 is the House companion bill.

<sup>9</sup> These include adsorption and absorption techniques and chemical processes to remove CO<sub>2</sub> from gas streams.

of \$150 million for FY2008, \$200 million for FY2009, \$200 million for FY2010, \$180 million for FY2011, and \$165 million for FY2012 (§ 302).

The Director of the U.S. Geological Survey at the Department of the Interior (DOI) would be tasked to make a national assessment of the capacity for CO<sub>2</sub> sequestration in a “storage formation” (§ 303). The prospective storage candidates include deep saline formations, unmineable coal seams, and oil and gas reservoirs capable of accommodating a large volume of CO<sub>2</sub>. The Interior Secretary would be directed to develop and publish a methodology for conducting the assessment within one year of enactment. DOI would be required to complete the assessment within two years of that publication. After completion of the assessment, the Secretary would have 180 days to report the findings to Congress. A funding authorization of \$30 million per year for FY2008 through FY2012 would be provided to carry out the assessment.

DOE would be required to demonstrate technologies for the large-scale capture of CO<sub>2</sub> from “industrial” facilities (§ 304). These facilities may include electric power plants, petroleum refineries, and manufacturing facilities for iron, steel, cement, cement clinker, commodity chemicals (including those from coal gasification), or for manufacturing of transportation fuels from coal. A funding authorization of \$100 million per year would be provided from FY2009 through FY2013.