

109TH CONGRESS }  
*1st Session* }

HOUSE OF REPRESENTATIVES

{ REPORT  
{ 109-190

# ENERGY POLICY ACT OF 2005

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## CONFERENCE REPORT

[TO ACCOMPANY H.R. 6]



JULY 27, 2005.—Ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

22-638

WASHINGTON : 2005

(b) *GOALS.*—The Secretary shall publish measurable cost and performance-based goals, comparable over time, with each annual budget submission in at least the following areas:

(1) *Energy efficiency for buildings, energy-consuming industries, and vehicles.*

(2) *Electric energy generation (including distributed generation), transmission, and storage.*

(3) *Renewable energy technologies, including wind power, photovoltaics, solar thermal systems, geothermal energy, hydrogen-fueled systems, biomass-based systems, biofuels, and hydro-power.*

(4) *Fossil energy, including power generation, onshore and offshore oil and gas resource recovery, and transportation fuels.*

(5) *Nuclear energy, including programs for existing and advanced reactors, and education of future specialists.*

(c) *PUBLIC COMMENT.*—The Secretary shall provide mechanisms for input on the annually published goals from industry, institutions of higher education, and other public sources.

(d) *EFFECT OF GOALS.*—Nothing in subsection (a) or the annually published goals creates any new authority for any Federal agency, or may be used by any Federal agency, to support the establishment of regulatory standards or regulatory requirements.

**SEC. 903. DEFINITIONS.**

*In this title:*

(1) *DEPARTMENTAL MISSION.*—The term “departmental mission” means any of the functions vested in the Secretary by the Department of Energy Organization Act (42 U.S.C. 7101 et seq.) or other law.

(2) *HISPANIC-SERVING INSTITUTION.*—The term “Hispanic-serving institution” has the meaning given the term in section 502(a) of the Higher Education Act of 1965 (20 U.S.C. 1101a(a)).

(3) *NONMILITARY ENERGY LABORATORY.*—The term “non-military energy laboratory” means a National Laboratory other than a National Laboratory listed in subparagraph (G), (H), or (N) of section 2(3).

(4) *PART B INSTITUTION.*—The term “part B institution” has the meaning given the term in section 322 of the Higher Education Act of 1965 (20 U.S.C. 1061).

(5) *SINGLE-PURPOSE RESEARCH FACILITY.*—The term “single-purpose research facility” means—

(A) any of the primarily single-purpose entities owned by the Department; or

(B) any other organization of the Department designated by the Secretary.

(6) *UNIVERSITY.*—The term “university” has the meaning given the term “institution of higher education” in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

## **Subtitle A—Energy Efficiency**

**SEC. 911. ENERGY EFFICIENCY.**

(a) *IN GENERAL.*—

(1) *OBJECTIVES.*—The Secretary shall conduct programs of energy efficiency research, development, demonstration, and commercial application, including activities described in this subtitle. Such programs shall take into consideration the following objectives:

(A) Increasing the energy efficiency of vehicles, buildings, and industrial processes.

(B) Reducing the demand of the United States for energy, especially energy from foreign sources.

(C) Reducing the cost of energy and making the economy more efficient and competitive.

(D) Improving the energy security of the United States.

(E) Reducing the environmental impact of energy-related activities.

(2) *PROGRAMS.*—Programs under this subtitle shall include research, development, demonstration, and commercial application of—

(A) advanced, cost-effective technologies to improve the energy efficiency and environmental performance of vehicles, including—

(i) hybrid and electric propulsion systems;

(ii) plug-in hybrid systems;

(iii) advanced combustion engines;

(iv) weight and drag reduction technologies;

(v) whole-vehicle design optimization; and

(vi) advanced drive trains;

(B) cost-effective technologies, for new construction and retrofit, to improve the energy efficiency and environmental performance of buildings, using a whole-buildings approach, including onsite renewable energy generation;

(C) advanced technologies to improve the energy efficiency, environmental performance, and process efficiency of energy-intensive and waste-intensive industries; and

(D) advanced control devices to improve the energy efficiency of electric motors, including those used in industrial processes, heating, ventilation, and cooling.

(b) *AUTHORIZATION OF APPROPRIATIONS.*—There are authorized to be appropriated to the Secretary to carry out energy efficiency and conservation research, development, demonstration, and commercial application activities, including activities authorized under this subtitle—

(1) \$783,000,000 for fiscal year 2007;

(2) \$865,000,000 for fiscal year 2008; and

(3) \$952,000,000 for fiscal year 2009.

(c) *ALLOCATIONS.*—From amounts authorized under subsection (b), the following sums are authorized:

(1) For activities under section 912, \$50,000,000 for each of fiscal years 2007 through 2009.

(2) For activities under section 915, \$7,000,000 for each of fiscal years 2007 through 2009.

(3) For activities under subsection (a)(2)(A)—

(A) \$200,000,000 for fiscal year 2007;

(B) \$270,000,000 for fiscal year 2008; and

(C) \$310,000,000 for fiscal year 2009.

(4) For activities under subsection (a)(2)(D), \$2,000,000 for each of fiscal years 2007 and 2008.

(d) *EXTENDED AUTHORIZATION.*—There are authorized to be appropriated to the Secretary to carry out section 912 \$50,000,000 for each of fiscal years 2010 through 2013.

(e) *LIMITATIONS.*—None of the funds authorized to be appropriated under this section may be used for—

(1) the issuance or implementation of energy efficiency regulations;

(2) the weatherization program established under part A of title IV of the Energy Conservation and Production Act (42 U.S.C. 6861 et seq.);

(3) a State energy conservation plan established under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.); or

(4) a Federal energy management measure carried out under part 3 of title V of the National Energy Conservation Policy Act (42 U.S.C. 8251 et seq.).

**SEC. 912. NEXT GENERATION LIGHTING INITIATIVE.**

(a) *DEFINITIONS.*—In this section:

(1) *ADVANCED SOLID-STATE LIGHTING.*—The term “advanced solid-state lighting” means a semiconducting device package and delivery system that produces white light using externally applied voltage.

(2) *INDUSTRY ALLIANCE.*—The term “Industry Alliance” means an entity selected by the Secretary under subsection (d).

(3) *INITIATIVE.*—The term “Initiative” means the Next Generation Lighting Initiative carried out under this section.

(4) *RESEARCH.*—The term “research” includes research on the technologies, materials, and manufacturing processes required for white light emitting diodes.

(5) *WHITE LIGHT EMITTING DIODE.*—The term “white light emitting diode” means a semiconducting package, using either organic or inorganic materials, that produces white light using externally applied voltage.

(b) *INITIATIVE.*—The Secretary shall carry out a Next Generation Lighting Initiative in accordance with this section to support research, development, demonstration, and commercial application activities related to advanced solid-state lighting technologies based on white light emitting diodes.

(c) *OBJECTIVES.*—The objectives of the Initiative shall be to develop advanced solid-state organic and inorganic lighting technologies based on white light emitting diodes that, compared to incandescent and fluorescent lighting technologies, are longer lasting, are more energy-efficient and cost-competitive, and have less environmental impact.

(d) *INDUSTRY ALLIANCE.*—Not later than 90 days after the date of enactment of this Act, the Secretary shall competitively select an Industry Alliance to represent participants who are private, for-profit firms, open to large and small businesses, that, as a group, are broadly representative of United States solid state lighting research, development, infrastructure, and manufacturing expertise as a whole.

(e) *RESEARCH.*—

(1) GRANTS.—*The Secretary shall carry out the research activities of the Initiative through competitively awarded grants to—*

(A) *researchers, including Industry Alliance participants;*

(B) *small businesses;*

(C) *National Laboratories; and*

(D) *institutions of higher education.*

(2) INDUSTRY ALLIANCE.—*The Secretary shall annually solicit from the Industry Alliance—*

(A) *comments to identify solid-state lighting technology needs;*

(B) *an assessment of the progress of the research activities of the Initiative; and*

(C) *assistance in annually updating solid-state lighting technology roadmaps.*

(3) AVAILABILITY TO PUBLIC.—*The information and roadmaps under paragraph (2) shall be available to the public.*

(f) DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION.—

(1) IN GENERAL.—*The Secretary shall carry out a development, demonstration, and commercial application program for the Initiative through competitively selected awards.*

(2) PREFERENCE.—*In making the awards, the Secretary may give preference to participants in the Industry Alliance.*

(g) COST SHARING.—*In carrying out this section, the Secretary shall require cost sharing in accordance with section 988.*

(h) INTELLECTUAL PROPERTY.—*The Secretary may require (in accordance with section 202(a)(ii) of title 35, United States Code, section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182), and section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908)) that for any new invention developed under subsection (e)—*

(1) *that the Industry Alliance participants who are active participants in research, development, and demonstration activities related to the advanced solid-state lighting technologies that are covered by this section shall be granted the first option to negotiate with the invention owner, at least in the field of solid-state lighting, nonexclusive licenses and royalties on terms that are reasonable under the circumstances;*

(2)(A) *that, for 1 year after a United States patent is issued for the invention, the patent holder shall not negotiate any license or royalty with any entity that is not a participant in the Industry Alliance described in paragraph (1); and*

(B) *that, during the year described in subparagraph (A), the patent holder shall negotiate nonexclusive licenses and royalties in good faith with any interested participant in the Industry Alliance described in paragraph (1); and*

(3) *such other terms as the Secretary determines are required to promote accelerated commercialization of inventions made under the Initiative.*

(i) NATIONAL ACADEMY REVIEW.—*The Secretary shall enter into an arrangement with the National Academy of Sciences to conduct periodic reviews of the Initiative.*

**SEC. 973. CATALYSIS RESEARCH PROGRAM.**

(a) *ESTABLISHMENT.*—The Secretary, acting through the Office of Science, shall support a program of research and development in catalysis science consistent with the statutory authorities of the Department related to research and development.

(b) *COMPONENTS.*—The program shall include efforts to—

(1) enable catalyst design using combinations of experimental and mechanistic methodologies coupled with computational modeling of catalytic reactions at the molecular level;

(2) develop techniques for high throughput synthesis, assay, and characterization at nanometer and subnanometer scales *in situ* under actual operating conditions;

(3) synthesize catalysts with specific site architectures;

(4) conduct research on the use of precious metals for catalysis; and

(5) translate molecular understanding to the design of catalytic compounds.

(c) *DUTIES OF THE OFFICE OF SCIENCE.*—In carrying out the program, the Director of the Office of Science shall—

(1) support both individual investigators and multidisciplinary teams of investigators to pioneer new approaches in catalytic design;

(2) develop, plan, construct, acquire, share, or operate special equipment or facilities for the use of investigators in collaboration with national user facilities, such as nanoscience and engineering centers;

(3) support technology transfer activities to benefit industry and other users of catalysis science and engineering; and

(4) coordinate research and development activities with industry and other Federal agencies.

(d) *ASSESSMENT.*—Not later than 3 years after the date of enactment of this Act, the Secretary shall enter into an arrangement with the National Academy of Sciences to—

(1) review the catalysis program to measure—

(A) gains made in the fundamental science of catalysis; and

(B) progress towards developing new fuels for energy production and material fabrication processes; and

(2) submit to Congress a report describing the results of the review.

**SEC. 974. HYDROGEN.**

(a) *IN GENERAL.*—The Secretary shall conduct a program of fundamental research and development in support of programs authorized under title VIII.

(b) *METHODS.*—The program shall include support for methods of generating hydrogen without the use of natural gas.

**SEC. 975. SOLID STATE LIGHTING.**

The Secretary shall conduct a program of fundamental research on solid state lighting in support of the Next Generation Lighting Initiative carried out under section 912.

**SEC. 976. ADVANCED SCIENTIFIC COMPUTING FOR ENERGY MISSIONS.**

(a) *PROGRAM.*—

(1) *IN GENERAL.*—The Secretary shall conduct an advanced scientific computing research and development program that in-