

Energy Innovation and Workforce Development (Document END09412)

Subtitle A – Funding

Section 11 – Authorization. This section reauthorizes Title IX (Research and Development) of The Energy Policy Act of 2005, (Public Law 109-58) through 2013. The current authorization of Title IX ends in Fiscal Year 2009. This section reauthorizes aggregate program amounts for -

1. The Office of Energy Efficiency and Renewable Energy plus the Office of Electricity and Energy Reliability (EERE/OE);
2. The Office of Nuclear Energy (NE);
3. The Office of Fossil Energy (FE); and
4. The Office of Science (OS).

The authorization has two parts, for the applied energy R&D programs (EERE/OE, NE, and FE), it proposes to bring the aggregate energy R&D account to that found in 1978 (based on calendar year 2000 dollars) or roughly a doubling over four years. Because of the recent emphasis on electricity transmission, the EERE and OE accounts are merged leaving future appropriations and budget submissions to clarify the allocation between the two programs. The Office of Science continues a trajectory set out under the America COMPETES Act (Public Law 110-69) of doubling over seven years. The authorization assumes the normal appropriation cycle and does not take into account the American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

Subtitle B – Grand Challenges Research Initiative

Section 22 – Establishment. This section directs the Secretary to establish a “Grand Challenges Research Initiative” to integrate basic and applied energy research and development to overcome critical challenges in Energy through multi-disciplinary consortia which no one single investigator could accomplish. Such grand challenges are defined in annual reports by the Office of Science and energy-related grand challenges by the National Academy of Sciences.

Subtitle C – Improvements to Existing Energy Research and Development Programs

Section 31 – Amendments to Advanced Research Agency – Energy (ARPA-E). This section amends the America COMPETES Act to give contracting authority to ARPA-E

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separate from the Department and makes technical corrections to reporting requirements, and authorizes ARPA-E through 2020.

Section 32 – Domestic Vehicle Battery Manufacturing Research. This section amends the United States Energy Storage and Competitiveness Act for a research program on battery manufacturing.

Section 33 – Lightweight Materials Research and Development. This section amends section 651 of the Energy Independence and Security Act to accelerate the development of composite and ceramic and other lightweight materials to make automobiles energy efficient by increasing the authorization from \$80,000,000 to \$100,000,000 annually.

Section 34 – Amendments to the Methane Hydrate Research and Development Act of 2000. This section amends section 2 of the Methane Hydrate Research and Development Act of 2000 to expand the existing program to include research in the areas of environmental impacts of methane hydrate degassing and exploration and authorizes further production tests in the field. The program is reauthorized through 2015.

Section 35 – Programs to Exploit Low BTU Gas and Conserve Helium Resources. This section creates a new program to focus on developing new separation technologies for the extraction of helium from stranded low BTU gas to further the goal of increased production of low BTU gas throughout the U.S. A new industrial helium program is created at the Department of Energy (DOE) to focus on recycling and reuse of helium for industrial applications.

Section 36 – Office of Arctic Energy. This section reauthorizes and expands the role of the Office to include research in the areas of alternative energy research, including wind, geothermal, fuel cells, biomass, ocean hydrokinetic energy, and solar energy.

Subtitle D - Energy Workforce Development

Section 42 – Standards for Energy Career Academies. This section amends the Department of Energy (DOE) Science and Education Enhancement Act to establish energy career academies in public secondary schools within the energy related fields defined as “Skilled Technical Personnel” as found in section 1101 of the Energy Policy Act of 2005, either through entry level positions or apprenticeships.

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Section 43 – Energy Career Academies. This section establishes a grant program to State departments of education for energy career academies at public secondary schools using primarily non-federal funding sources. Specific grant criteria include how the State department of education will partner with the DOE, industry, community colleges and other entities with workforce experience. The grants must be widely distributed on a geographic basis.

Section 44 – Electric Utilities Trades Program. This section amends the America COMPETES Act to establish an electric utility trades grant program to expand and enhance the educational capabilities of community colleges to prepare students for careers in trades relevant to the electric utility industry. Criteria include the ability for hands-on learning opportunities in the electric utility sector, partnering with high schools and industry and sustainability absent federal funding.

Section 45 – Student Awareness of Energy Career Opportunities. This section amends section 1101 the Energy Policy Act of 2005 to enhance the ability of guidance counselors at secondary schools and career development offices at community colleges and institutions of higher education for outreach on energy related workforce trends and opportunities. The outreach program shall make such information available to the Federal Trio program for students with disadvantaged backgrounds.

Section 46 – Coordination of Workforce Training. This section directs the Director of the Office of Science and Technology Policy to submit to Congress a coordinated plan outlining the various energy related training programs across the federal government with a 5-year integrated funding profile.

Section 47 – Direct Hire Authority . This section gives the DOE direct hire authority for a period of two years, such hiring must be consistent with merit principals and public notice. Such authority originally rested with the Atomic Energy Commission and was transferred to the Nuclear Regulatory Commission (NRC) but not the DOE. The NRC has recently used this authority to rapidly hire 400 engineers for the surge in nuclear plant license applications.

Section 48 – Critical Pay Authority. This section gives the DOE critical pay authority to hire up to 40 highly skilled individuals for key or critical mission positions at the Department for a period of no more than 4 years up to the salary of the Vice-President of the United States. This will enable DOE to attract highly qualified individuals from industry and academia for positions within the Department typical of science and engineering intensive missions.

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Section 49 – Rehire Authority. This section gives the DOE the authority to rehire retired DOE employees for mission critical positions without impacting their retirement annuity. Many Department employees served in excess of 20 or 30 years in programmatic positions managing large, technically complicated energy related efforts. This authority will enable continuity of knowledge transfer as newer employees are hired.

Subtitle E - Strengthening Education and Training in the Subsurface Geosciences and Engineering for Energy Development

Section 63 – Policy. This section focuses on programs at institutions of higher education dedicated to subsurface engineering and geoscience disciplines necessary to responsibly develop the nation's natural resources. Chronic underinvestment in federal R&D in these subsurface disciplines has eroded the nation's capacity to educate and train the next generation workforce necessary for industry, academia, and government. As a result, the U.S. faces the prospect of ceding its historic leadership role in these disciplines, and thereby undermining its resource security.

Section 64 - Research Personnel and Programs. The financial assistance provided to institutions of higher education under this program will be directed to education and research with the objective of increasing undergraduate and graduate enrollments in the subsurface geosciences, engineering and supporting disciplines. The emphasis of this program will be on applied research, supported by basic research necessary to achieve scientific and engineering breakthroughs.

Section 65 - Scholarships & Fellowships. The section makes available funding to institutions of higher education for merit-based undergraduate and graduate scholarships and fellowships in subsurface geosciences and engineering programs. Acceptance of these awards requires a commitment by the recipient to continue in the program and maintain good academic standing.

Section 66 - Career Technical & Community College Education. This section provides support for community college subsurface geoscience and engineering programs. At present 9% of Masters students and 4% of Doctoral students in the geosciences also possess an Associates degree conferred by a community college.

Section 67 - Use of Funds by Institutions. In order to provide students with relevant educational and research experiences, funding will be available for the maintenance and upgrading of mines and oil and gas rigs owned by institutions of higher education

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and programs eligible for funding. Institutions receiving funds will not be required to provide cost share funds for basic research, but will for applied research. Funds may not be used for building projects, but may be used to upgrade existing laboratories and laboratory equipment with express approval.

Section 68 - Advisory Committee. In order to accomplish the educational and research objectives of this title, the Secretary of Interior will form an Advisory Committee chaired by the Assistant Secretary of the Interior for land and minerals management. The committee includes diverse stakeholders from academia, industry, state governments and compacts, and the public.

Section 71 – Study of Availability of Skilled Workers. This section amends section 1830 of the Energy Policy Act for a study on the short and long-term availability of skilled energy workers.

Subtitle F – Miscellaneous

Section 81 – Other Transactions Authority. This section reauthorizes existing authority established under section 1007 of the Energy Policy Act of 2005 to permit the Secretary to enter into transactions with innovative non-traditional contractors or entities who would not normally work with the government. Such transactions shall be competitive and merit based. This authority is updated to be organic to the DOE. The Secretary is authorized to protect information from these transactions for a period of up to 5 years. Standard Departmental cost sharing applies with the requirement that awards shall be delegated by the Secretary to officers of the Department who are appointed by the President with the advice and consent of the Senate.

Section 62 – Technical Correction. This section updates section 2 of the Energy Policy Act of 2005 for the name change of the Stanford Linear Accelerator Center to “SLAC National Accelerator Laboratory”.

Section 63 – Protection of Results. In order to work effectively with industry and promote effective technology transfer and national competitiveness, the 1989 National Competitiveness and Technology Transfer Act amended the 1980 Stevenson – Wydler Act so that the government may give protection from public release of results from Cooperative Research and Development Agreements for a period of 5 years. The 1992 Energy Policy Act contained various provisions to protect results from industry partnerships with the Department of Energy, including extending the protection clause

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of the Technology Transfer Act to programs within the 1992 Act. The 1992 data protection provision was carried forward implicitly in 2005 Energy Policy Act. This section gives the Secretary of Energy explicit authority to protect proprietary data in order to promote commercialization of new technology arising from the public –private partnerships in such areas as energy storage, smart grid and advanced nuclear technologies.