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*Energy Policy Act of 2005: Summary and Analysis of
Enacted Provisions*

Mark Holt and Carol Glover, Resources, Science, and Industry Division

March 8, 2006

Abstract. The Energy Policy Act of 2005 (P.L. 109-58), signed by President Bush August 8, 2005, was the first omnibus energy legislation enacted in more than a decade. Major provisions include tax incentives for domestic energy production and energy efficiency, a mandate to double the nation's use of biofuels, repeal of restrictions on interstate utility holding companies, faster procedures for energy production on federal lands, and authorization of numerous federal energy research and development programs. Spurred by rising energy prices and growing dependence on foreign oil, the new energy law was shaped by competing concerns about energy security, environmental quality, and economic growth. For example, efforts to enhance energy security by allowing oil and gas production in the Arctic National Wildlife Refuge (ANWR) were blocked by environmental concerns. Conversely, efforts to address environmental quality by restricting carbon dioxide and other greenhouse gases were stymied largely because of their potential effect on the U.S. economy, as were proposals to increase automobile fuel economy standards. Soon after the Energy Policy Act was enacted, disruption from Hurricanes Katrina and Rita contributed to a surge in U.S. gasoline prices, prompting widespread criticism that the new law did not adequately address the nation's gasoline supply. As with most energy legislation since the 1970s, the new energy law has few provisions aimed at near-term problems in the energy market, being focused primarily on the mid- to long term.

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Energy Policy Act of 2005: Summary and Analysis of Enacted Provisions

March 8, 2006

Mark Holt and Carol Glover, Coordinators
Resources, Science, and Industry Division

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Energy Policy Act of 2005: Summary and Analysis of Enacted Provisions

Summary

The Energy Policy Act of 2005 (P.L. 109-58), signed by President Bush on August 8, 2005, was the first omnibus energy legislation enacted in more than a decade. Spurred by rising energy prices and growing dependence on foreign oil, the new energy law was shaped by competing concerns about energy security, environmental quality, and economic growth. Major provisions in the bill include:

Electricity. The Federal Energy Regulatory Commission (FERC) is authorized to certify a national electric reliability organization (ERO) to enforce mandatory reliability standards for the bulk-power system. Federal power of eminent domain may be used to acquire electric transmission rights-of-way in areas designated as congested by the Secretary of Energy. The act repeals a requirement under the Public Utility Regulatory Policies Act (PURPA) that utilities must purchase power from all qualifying facilities and small power producers at a rate based on the utilities' avoided cost. Also repealed is the Public Utility Holding Company Act of 1935 (PUHCA), which restricted the structure of holding companies of investor-owned utilities.

Renewable Fuels Standard. Gasoline sold in the United States must contain an increasing amount of renewable fuel, such as ethanol or biodiesel. Motor fuels must contain at least 4.0 billion gallons of renewables in 2006, a level that increases by 700 million gallons each year through 2011 before reaching a level of 7.5 billion gallons in 2012.

Tax Incentives. Tax reductions of \$14.5 billion over 11 years are provided to encourage domestic energy production and energy efficiency, including about \$1.3 billion for energy efficiency and conservation, about \$4.5 billion for renewable energy, a \$2.6 billion package of oil and gas incentives, nearly \$3.0 billion for coal, and more than \$3.0 billion in electricity incentives (which includes a new production tax credit for nuclear power).

Energy Efficiency. Improved national energy efficiency is encouraged through new statutory standards, requirements for federal action, and incentives for voluntary improvements.

Domestic Energy Production. The act encourages production on federal lands through royalty reductions for marginal oil and gas wells on public lands and the outer continental shelf. Provisions are also included to increase access to federal lands for drilling activities and other energy projects.

Several proposals that were intensely debated during consideration of the energy bill did not make it into the enacted legislation. The most prominent of these defeated provisions would have allowed oil and gas production in the Arctic National Wildlife Refuge (ANWR), increased corporate average fuel economy (CAFE) standards, and established stronger federal efforts to reduce greenhouse gases. This report will not be updated.

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Energy Policy Act of 2005: Summary and Analysis of Enacted Provisions

Introduction

The Energy Policy Act of 2005 (P.L. 109-58), signed by President Bush August 8, 2005, was the first omnibus energy legislation enacted in more than a decade. Major provisions include tax incentives for domestic energy production and energy efficiency, a mandate to double the nation's use of biofuels, repeal of restrictions on interstate utility holding companies, faster procedures for energy production on federal lands, and authorization of numerous federal energy research and development programs.

Spurred by rising energy prices and growing dependence on foreign oil, the new energy law was shaped by competing concerns about energy security, environmental quality, and economic growth. For example, efforts to enhance energy security by allowing oil and gas production in the Arctic National Wildlife Refuge (ANWR) were blocked by environmental concerns. Conversely, efforts to address environmental quality by restricting carbon dioxide and other greenhouse gases were stymied largely because of their potential effect on the U.S. economy, as were proposals to increase automobile fuel economy standards.

Soon after the Energy Policy Act was enacted, disruption from Hurricanes Katrina and Rita contributed to a surge in U.S. gasoline prices, prompting widespread criticism that the new law did not adequately address the nation's gasoline supply.¹ As with most energy legislation since the 1970s, the new energy law has few provisions aimed at near-term problems in the energy market, being focused primarily on the mid- to long term.

Major Provisions

Electricity Regulation. Title XII authorizes the Federal Energy Regulatory Commission (FERC) to certify a national electric reliability organization (ERO) to enforce mandatory reliability standards for the bulk-power system. All ERO standards must be approved by FERC. The ERO can impose penalties on a user, owner, or operator of the bulk-power system for violations of any FERC-approved reliability standard.

The Secretary of Energy is required to conduct a study of electric transmission congestion every three years and may designate a geographic area as being congested.

¹ The House subsequently passed legislation to encourage the expansion of U.S. oil refinery capacity (H.R. 3893, passed October 7, 2005).

Under certain conditions, FERC is authorized to issue construction permits in congested areas. Permit holders may petition in U.S. District Court to acquire rights-of-way through eminent domain. An applicant for federal authorization to site transmission facilities on federal lands could request that the Department of Energy be the lead agency to coordinate environmental review and other federal authorization. If a federal agency has denied an authorization required by a transmission or distribution facility, the denial could be appealed by the applicant or relevant state to the President.

Section 210 of the Public Utility Regulatory Policies Act (PURPA, P.L. 95-617) had required utilities to purchase power from all qualifying facilities and small power producers at a rate based on the utilities' avoided cost. The Energy Policy Act repeals the PURPA mandatory purchase requirement for new contracts if FERC finds that a competitive electricity market exists and a qualifying facility has adequate access to wholesale markets.

Also repealed is the Public Utility Holding Company Act of 1935 (PUHCA, 15 U.S.C. 79 et seq.), which restricted the structure of holding companies of investor-owned utilities, and provided for Securities and Exchange Commission (SEC) regulation of mergers and diversification proposals. FERC and state regulatory bodies must be given access to utility books and records.

FERC is directed to facilitate price transparency in wholesale electric markets, relying on existing price publishers and providers of trade processing services to the maximum extent possible. However, FERC may establish an electronic information system if it determines that existing price information is not adequate. FERC is given approval authority over the acquisition of securities and the merger, sale, lease, or disposition of facilities under FERC's jurisdiction with a value in excess of \$10 million.

(For additional discussion on these issues, see CRS Report RL32728, *Electric Utility Regulatory Reform: Issues for the 109th Congress*, by Amy Abel ; and CRS Report RL32133, *Federal Merger Review Authority*, by Aaron M. Flynn, Janice E. Rubin, and Michael V. Seitzinger.)

Renewable Fuel Standard and MTBE. Title XV contains several provisions addressing the gasoline additives methyl tertiary butyl ether (MTBE) and ethanol.

Under the Clean Air Act Amendments of 1990, reformulated gasoline (RFG) sold in many areas of the country with poor air quality was required to contain an oxygenate (MTBE, ethanol, or other substances containing oxygen) to improve combustion and reduce emissions of ozone-forming compounds and carbon monoxide. Title XV repeals the Clean Air Act requirement to use oxygenates in RFG, eliminating a key incentive for refiners to use MTBE. In place of the oxygen requirement, the energy law establishes a new requirement that gasoline contain an increasing amount of renewable fuel such as ethanol or biodiesel. The law requires that motor fuels contain at least 4.0 billion gallons of renewables in 2006, and requires an increase of 700 million gallons each year through 2011, before reaching a level of 7.5 billion gallons in 2012. (In 2004, about 3.4 billion gallons of ethanol

were used in motor fuels.) The law also authorizes funds to clean up MTBE contamination in groundwater.

The enacted law also contains “anti-backsliding” provisions, to preserve the reductions in emissions of toxic substances achieved by the RFG program. The baseline emissions are set as the quantity emitted in 2001 and 2002.

The most controversial of the MTBE provisions was dropped in conference: a “safe harbor” that the House version would have provided for fuels containing renewable fuel or MTBE. The safe harbor from liability would have meant that such fuels could not be deemed defective in design or manufacture by virtue of the fact that they contained MTBE or renewable fuel. The effect of this provision would have been to protect anyone in the product chain, from manufacturers to retailers, from liability for cleanup of contamination or for personal injury or property damage based on the nature of the product.

(For additional information, see CRS Report RL32865, *Renewable Fuels and MTBE: A Comparison of Selected Legislative Initiatives*, by Brent D. Yacobucci, Mary Tiemann, James E. McCarthy, and Aaron M. Flynn; CRS Report RL30369, *Fuel Ethanol: Background and Public Policy Issues*, by Brent D. Yacobucci and Jasper Womach; and CRS Report RL32787, *MTBE in Gasoline: Clean Air and Drinking Water Issues*, by James E. McCarthy and Mary Tiemann.)

Energy Taxes. Title XIII provides about \$14.5 billion in tax reductions over 11 years to encourage domestic energy production and energy efficiency. Tax incentives of about \$1.3 billion are provided for energy efficiency and conservation, including a deduction for energy-efficient commercial property, fuel cells, and micro-turbines. About \$4.5 billion is provided in renewable energy incentives, including a two-year extension of the \$45 renewable electricity tax credit, renewable energy bonds, and business credits for solar. A \$2.6 billion package of oil and gas incentives includes seven-year depreciation for natural gas gathering lines, a refinery expensing (one-year writeoff) provision, and a small refiner provision.

A nearly \$3.0 billion coal package would provide 84-month amortization for pollution control facilities and treatment of the §29 production tax credit as a general business credit. More than \$3.0 billion in electricity incentives include provisions providing 15-year depreciation for transmission property, nuclear decommissioning provisions, and a nuclear electricity production tax credit. It also provides for the five-year carry-back of net operating losses of certain electric utility companies.

(For more background, see CRS Issue Brief IB10054, *Energy Tax Policy*, by Salvatore Lazzari.)

Nuclear Energy. Strong incentives for building new commercial nuclear power plants are included in Title VI, including tax credits, loan guarantees, and regulatory delay compensation. The law also reauthorizes the Price-Anderson Act nuclear liability system for 20 years and authorizes the Department of Energy (DOE) to build an advanced reactor in Idaho.

The strongest nuclear incentive is a 1.8-cents/kilowatt-hour tax credit for electricity produced by nuclear reactors. The credit is available for up to 6,000 megawatts of new capacity — the equivalent of about five or six new reactors — for the first eight years of operation. The nuclear production tax credit also had been included in the energy bill conference report in the 108th Congress, and the Energy Information Administration concluded then that the credit would provide sufficient incentives for new commercial reactors to be built.²

The Secretary of Energy is authorized to help pay the cost of regulatory delays at up to six new commercial nuclear reactors. Up to \$500 million is authorized for each of the first two reactors that begin construction, plus up to \$250 million for each of the next four. Delays caused by the failure of a reactor owner to comply with laws or regulations would not be covered.

Reauthorization of the Price-Anderson Act was generally considered to be a prerequisite for new reactors. Under Price-Anderson, commercial reactor accident damages are paid through a combination of private-sector insurance and a nuclear industry self-insurance system. Liability is capped at the maximum coverage available under the system, currently about \$10.7 billion. Title VI provides a 20-year extension of Price-Anderson, to the end of 2025.

The law also addresses concerns about nuclear power plant security. The Nuclear Regulatory Commission (NRC) within 18 months is required to revise the “design basis threat” (DBT) that nuclear plant security forces must be able to overcome, each nuclear plant must undergo a force-on-force security evaluation at least every three years, and each NRC region must have a federal security coordinator.

(For more information, see CRS Issue Brief IB88090, *Nuclear Energy Policy*, by Mark Holt.)

Energy Efficiency and Renewable Energy. Improved national energy efficiency is encouraged through new statutory standards, requirements for federal action, and incentives for voluntary improvements. The law’s energy conservation provisions (Title I) deal almost entirely with energy consumption by buildings, industrial processes, appliances and commercial equipment, and other stationary activities. Highly controversial efficiency standards for motor vehicles are excluded from the act.

New efficiency standards for appliances and commercial equipment may have the most certain impact, with the effectiveness of many of the title’s other provisions depending largely on appropriations and implementation. The law addresses energy efficiency standards, water-use standards, and labeling rules for a variety of products. Some efficiency standards are explicitly set in the law, while others are to be determined by DOE. Measures aimed at the federal government’s own energy efficiency and water consumption range from the treatment of energy costs in the

² U.S. Department of Energy. Energy Information Administration. *Analysis of Five Selected Tax Provisions of the Conference Energy Bill of 2003*. SR/OIAF/2004-01. February 2004.

federal budget and procurement processes to specific requirements for upgrading equipment in congressional office buildings.

Renewable energy provisions in Title II are intended to increase production and use, advance technology development, and promote commercial development. Potentially the largest impact could come from a broadening of the renewable energy production incentive (REPI) payment for electricity generated by renewable energy facilities, although funding is subject to appropriations. Other provisions establish resource assessments, federal purchases of equipment and electricity, federal land leasing, and grants, all of which are also subject to appropriations.

(For additional information, see CRS Issue Brief IB10020, *Energy Efficiency: Budget, Oil Conservation and Electricity Conservation Issues*, by Fred Sissine, and CRS Issue Brief IB10041, *Renewable Energy: Tax Credit, Budget, and Electricity Production Issues*, by Fred Sissine.)

Domestic Energy Production. The Department of the Interior (DOI) has estimated that roughly a quarter of oil resources and less than one-fifth of gas resources on Indian lands have been developed. The Energy Policy Act encourages production on federal lands through royalty reductions for marginal oil and gas wells on public lands and the outer continental shelf. Provisions are also included to increase access to federal lands by energy projects — such as drilling activities, electric transmission lines, and gas pipelines. In addition, the law prevents the Environmental Protection Agency (EPA) from regulating hydraulic fracturing to protect drinking water sources.

(For additional information, see CRS Report RL32873, *Key Environmental Issues in the Energy Policy Act of 2005*, coordinated by Brent D. Yacobucci, and CRS Report RL32262, *Selected Legal and Policy Issues Related to Coalbed Methane Development*, by Aaron M. Flynn.)

Hydrogen and Fuel Cells. Title VIII establishes a hydrogen and fuel cell program with a goal of producing commercial fuel cell vehicles and developing hydrogen infrastructure by 2020. Critics of the Administration suggest that the hydrogen program is intended to forestall any attempts to significantly raise vehicle Corporate Average Fuel Economy (CAFE) standards, and that it relieves the automotive industry of assuming more initiative in pursuing technological innovations. On the other hand, some contend that it is appropriate for government to become involved in the development of technologies that could address national environmental and energy goals but are too risky to draw private-sector investment.

(For additional information, see CRS Report RS21442, *Hydrogen and Fuel Cell R&D: FreedomCAR and the President's Hydrogen Fuel Initiative*, by Brent D. Yacobucci, and CRS Report RL32196, *A Hydrogen Economy and Fuel Cells: An Overview*, by Brent D. Yacobucci and Aimee E. Curtright.)

Organization of Report

The remainder of this report provides a section-by-section summary of the provisions of the Energy Policy Act of 2005. Discussions of legislative background

and policy implications are provided for bill titles and subtitles that address unified programs or policy areas. Some of the most controversial sections are discussed in greater detail. Funding authorizations are shown in **Table 3** at the end of the report.

Title I — Energy Efficiency

Improved national energy efficiency is encouraged through new statutory standards, requirements for federal action, and incentives for voluntary improvements. This title deals almost entirely with energy used by buildings, industrial processes, appliances and commercial equipment, and other stationary activities. Highly controversial efficiency standards for motor vehicles are excluded from the act. New efficiency standards for appliances and commercial equipment in Subtitle C may have the most certain impact, with the effectiveness of many of the title's other provisions depending largely on appropriations and implementation.

Subtitle A — Federal Programs

Summary of Provisions. Measures aimed at the federal government's own energy efficiency and water consumption range from the treatment of energy costs in the federal budget and procurement processes to specific requirements for upgrading equipment in congressional office buildings.

Energy and Water Saving Measures in Congressional Buildings (Sec. 101). The Architect of the Capitol is required to plan and implement an energy and water conservation strategy for congressional buildings that is consistent with that required of other federal buildings. An annual report is required.

Energy Management Requirements (Sec. 102). The baseline for federal energy savings is updated from FY1985 to FY2003, and a new 20% reduction goal is set for FY2015. By the end of 2014, DOE is to assess progress and set a new goal for FY2016 through FY2025. Standards for exclusion are set, which empower DOE to exempt, under certain conditions, buildings that serve a national security function or for which achieving the target would be impracticable. Further, agencies are allowed to retain appropriations for energy expenses that are saved by the energy efficiency measures. A report to Congress is required.

Energy Use Measurement and Accountability (Sec. 103). Federal buildings are required to be metered or sub-metered by October 1, 2012, to help reduce energy costs and promote energy savings. Further, the Secretary of Energy is required to prepare guidelines for agency energy managers to facilitate implementation of metering. After guidelines are established, each agency is required to submit an implementation plan to DOE.

Procurement of Energy Efficient Products (Sec. 104). Federal agencies are required to purchase products certified as energy-efficient under the Energy Star program or energy-efficient products designated by the Federal Energy Management Program (FEMP), provided that the products are found to be "cost-effective" and "reasonably available."

Energy Savings Performance Contracts (Sec. 105). The authority to enter into energy savings performance contracts — in which private-sector contractors install energy conservation measures in federal buildings in exchange for a specified share of any resulting energy cost savings — is extended from 2006 to 2016. Any energy savings performance contract entered into after October 1, 2003, and before the date of enactment of this act, is considered as extended by this section.

Voluntary Commitments to Reduce Industrial Energy Intensity (Sec. 106). DOE is authorized to form voluntary agreements with industry sectors or companies to reduce energy use per unit of production by 2.5% annually from 2007 through 2016. Participants are eligible for technical assistance and grants. A report to Congress with an evaluation of energy-savings impacts is required by June 30, 2012, and by June 30, 2017.

Advanced Building Efficiency Testbed (Sec. 107). DOE is required to create a program to develop, test, and demonstrate advanced federal and private building efficiency technologies. Appropriations of \$6.0 million per year for FY2006 through FY2008 are authorized.

Increased Use of Recovered Mineral Component in Federally Funded Projects Involving Procurement of Cement or Concrete (Sec. 108). DOT and other agencies that regularly procure or provide federal funds to procure material for cement or concrete projects are directed to fully implement all procurement requirements and incentives that provide for incorporating recovered mineral components, such as blast furnace slag and coal combustion fly ash. A report to Congress on the energy savings and environmental benefits is required 30 months after enactment.

Federal Building Performance Standards (Sec. 109). DOE is directed to set revised energy efficiency standards for new federal buildings at a level 30% stricter than industry or international standards — provided the standards would be “life-cycle cost-effective.” Each agency’s annual budget request is required to list all new federal buildings and whether each one meets these standards.

Daylight Savings (Sec. 110). Starting in 2007, daylight saving time will begin three or four weeks earlier (the second Sunday in March) and end one week later (the first Sunday in November). This is expected to reduce energy used for night-time electric lighting. A report to Congress on energy savings is required nine months after implementation begins.

Enhancing Energy Efficiency in Management of Federal Lands (Sec. 111). National parks, forests, and wildlife refuges are required to employ energy efficiency measures in buildings and energy-efficient vehicles (including biodiesel and hybrid engines) “to the extent practicable.”

Background. These provisions were motivated by a desire to save energy costs and to set a good example, given the requirements imposed on the private sector. The provisions of this subtitle are intended to overcome institutional barriers. Some measures will not require large financial commitments up front, but the success of others will depend on the amount appropriated for energy-saving equipment in

future budget cycles. Some measures may have an impact outside the government, such as through the influence of federal procurement on manufacturers, and in setting an example for the private sector to reduce energy consumption.

Policy Context. The provision for extending daylight saving time and the extension of goals for energy savings in federal executive branch agencies are noteworthy provisions in this subtitle. Also, the requirement for energy efficiency measures in congressional facilities is a significant expansion of the requirements for the federal government in its effort to “lead by example.”

Subtitle B — Energy Assistance and State Programs

Summary of Provisions. Several existing programs to help state and local governments improve energy efficiency are strengthened, and additional funding is authorized. Energy savings may be modest, however.

Low Income Home Energy Assistance Program (Sec. 121). Funding at \$5.1 billion per year is authorized for the LIHEAP grant program for FY2005 through FY2007. (Department of Health and Human Services funding for LIHEAP had been authorized through FY2003.) Also, states and their designees are allowed to use renewable fuels (including biomass) to carry out the purposes of this section. DOE is required to report to Congress on the use of renewable fuels under LIHEAP.

Weatherization Assistance (Sec. 122). Funding is authorized for the DOE weatherization grant program in the amounts of \$500 million for FY2006, \$600 million for FY2007, and \$700 million for FY2008. Also, eligibility for assistance is raised from 125% to 150% of the poverty level.

State Energy Programs (Sec. 123). New requirements are set for state energy conservation goals and plans, including a 25% energy efficiency improvement in 2012 over 1990. Also, funding for the DOE state energy grant program is authorized at \$100 million for FY2006, \$100 million for FY2007, and \$125 million for FY2008.

Energy Efficient Appliance Rebate Program (Sec. 124). DOE is authorized to fund rebate programs in eligible states to support residential end-user purchases of Energy Star products. Funding of \$50 million per year is authorized for FY2006 through FY2010.

Energy Efficient Public Buildings (Sec. 125). A grant program is created for energy-efficient renovation and construction of local government buildings. Grants may be used for construction of new buildings that use 30% less energy than comparable public buildings that meet existing conservation standards and for renovations that reduce energy consumption by 30% over the pre-renovation baseline. DOE funding of \$30 million per year is authorized for FY2006 through FY2010.

Low Income Community Energy Efficiency Pilot Program (Sec. 126). A pilot energy efficiency and renewable energy grant program is created for local governments, private companies, community development corporations, and

Native American economic development entities. Funding at \$20 million per year is authorized for FY2006 through FY2008.

State Technologies Advancement Collaborative (Sec. 127). A cooperative program is created that links DOE with the states. It is focused on research, development, demonstration, and deployment of technologies in which there is a common federal and state energy efficiency, renewable energy, and fossil energy interest. Such sums as necessary are authorized for FY2006 through FY2010.

State Building Energy Efficiency Codes Incentives (Sec. 128). A grant program is created for states that DOE determines have achieved a least a 90% rate of compliance with the most recent model building energy codes. Funds may be used to implement building energy codes and practices that exceed efficiency requirements of the most recent model building codes. Funding at \$25 million per year is authorized for FY2006 through FY2010 and such sums as necessary for FY2011 and each fiscal year thereafter.

Background. The weatherization portion of LIHEAP, the DOE weatherization program, and DOE state energy programs are the major programs in this subtitle and have been in place for nearly 30 years. Modest energy savings are expected from these measures, depending largely on available funding. The other grant programs are new, relatively limited in scope, and will depend on funding to have any significant effect.

Policy Context. The weatherization grant programs (under both LIHEAP and DOE) are the primary energy conservation programs for low-income households. Funding for them has been relatively steady, and is not usually the subject of major debate. The state energy program grants are key to the operation of state energy offices, especially in smaller states.

Subtitle C — Energy Efficient Products

Summary of Provisions. This subtitle deals with energy efficiency standards, water-use standards, and labeling rules for a variety of products. Some efficiency standards in sections 135 and 136 are explicitly set in the law, while others are to be determined by DOE.

Energy Star Program (Sec. 131). DOE and EPA are given statutory authority to carry out the Energy Star program, which identifies and promotes energy efficient products and buildings. Also, DOE is directed to establish new qualifying energy efficiency levels for clothes washers and dishwashers.

HVAC Maintenance Consumer Education Program (Sec. 132). DOE is required to implement a public education program for homeowners and small businesses that explains the energy-saving benefits of improved maintenance of heating, ventilating, and air conditioning equipment. Also, the Small Business Administration is directed to assist small businesses in becoming more energy-efficient. Such sums as necessary are authorized.

Public Energy Education Program (Sec. 133). DOE is required to convene a conference with representatives from industry, education, professional societies, trade associations, and government agencies to design and establish an ongoing national public education program focused on energy efficiency and other topics. DOE is directed to provide guidance and technical assistance. Such sums as necessary are authorized.

Energy Efficiency Public Information Initiative (Sec. 134). DOE is required to conduct an advertising and public outreach program about the need to reduce energy use, the consumer benefits of reduced use, the relationship to jobs and economic growth, and cost-effective consumer measures to reduce energy use. Funding at \$90 million per year is authorized for FY2006 through FY2010.

Energy Conservation Standards for Additional Products (Sec. 135). Energy efficiency standards, test procedures, and labeling requirements are set by statute for exit signs, traffic signals, pedestrian crossing signals, compact fluorescent lamps (CFLs), torchieres (floor lamps), fluorescent lamp ballasts, mercury vapor lamp ballasts, residential ceiling fans, residential dehumidifiers, building transformers (electric utility equipment), commercial unit heaters (fan-type heaters, usually portable), and commercial pre-rinse spray valves (used in restaurants). Further, DOE is directed to issue a rule that prescribes efficiency standards and labeling requirements for external power supplies, battery chargers, and refrigerated vending machines.

Energy Conservation Standards for Commercial Equipment (Sec. 136). Energy efficiency standards, test procedures, and labeling requirements are set by statute for commercial refrigerators, freezers, and refrigerator-freezers; large commercial air conditioners and heaters; commercial (automated) ice-makers; and commercial clothes washers.

Energy Labeling (Sec. 137). The Federal Trade Commission (FTC) is required to consider improvements in the effectiveness of energy labels for consumer products. Also, DOE or FTC is directed to consider prescribing labeling requirements for many of the products listed in section 135. However, certain types of dehumidifiers are exempted from labeling requirements.

Intermittent Escalator Study (Sec. 138). The Administrator of the General Services Administration (GSA) is required to conduct a study on the advantages and disadvantages, including energy cost savings, of using intermittent (on-demand) escalators in the United States. A report to Congress is required within one year of enactment.

Energy Efficient Electric and Natural Gas Utilities Studies (Sec. 139). DOE is required to conduct a study of state and regional policies that promote cost-effective programs to reduce energy use (including energy efficiency programs) that are operated by utilities subject to state regulation and by non-regulated utilities. A report to Congress is required within one year of enactment.

Energy Efficiency Pilot Program (Sec. 140). DOE is required to establish a pilot program that provides financial assistance to at least three, but not

more than seven, states to encourage energy efficiency and energy use reductions. Funding at \$5 million per year is authorized for FY2006 through FY2010.

Report on Failure to Comply with Deadlines for New or Revised Energy Conservation Standards (Sec. 141). DOE is required to report regularly (within six months of enactment and every six months thereafter) to Congress when efficiency standard rulemakings (including those following from Sections 135 and 136) are behind schedule, including steps being taken to get back on schedule.

Background. Under previous authority, DOE established minimum energy efficiency standards for several consumer and commercial products, including household appliances such as clothes washers and refrigerators. Sections 135 and 136 of the new energy law set a variety of energy efficiency standards for consumer appliances and commercial equipment. Most of the standards are statutory, but some are at the discretion of a DOE rulemaking. The American Council for an Energy-Efficient Economy (ACEEE) estimates that these new standards will save more energy than any other efficiency provisions in the bill. Further, §141 requires that DOE report regularly to Congress when efficiency standard rulemakings are behind schedule, including steps being taken to get back on schedule. Other provisions for Energy Star, public education and outreach, and labeling are designed to help support consumer use of more efficient equipment.

Policy Context. DOE is several years behind previous target dates to implement higher energy efficiency standards for certain consumer products and equipment. In 2001, the incoming Bush Administration sought to roll back efficiency standards for central air conditioners and heat pumps (from SEER 13 to SEER 12) that DOE had issued late in the Clinton Administration. In response to litigation by several states (including California and New York) and environmental groups, the U.S. Second Circuit Court of Appeals upheld the higher standards.³ Standards set in the past for several other types of equipment, such as refrigerators, are widely considered to have been successful at increasing average efficiency.

Subtitle D — Public Housing

Summary of Provisions. Parallel to the policies set forth above for federal agencies, this subtitle aims to make similar improvements in energy efficiency for federally supported public housing. The provisions cover appliances and equipment, building codes, a financial mechanism, and a requirement to create an energy conservation strategy.

Public Housing Capital Fund (Sec. 151). The Public Housing Capital Fund at the Department of Housing and Urban Development (HUD) is modified to include coverage of certain energy- and water-use efficiency improvements.

³ U.S. Court of Appeals for the Second Circuit. *Natural Resources Defense Council et al v. U.S. Department of Energy et al.* (Docket Nos. 01-4102, 01-4103, 02-4160, 02-4189, 02-6139). Decided January 13, 2004. 66 p.

Energy-Efficient Appliances (Sec. 152). Public housing agencies are required to purchase cost-effective Energy Star and FEMP-designated appliances and products.

Energy Efficiency Standards (Sec. 153). The energy efficiency standards and codes that the federal government encourages states to use are changed from the codes set by the Council of American Building Officials (CABO) to the 2003 International Energy Conservation Code (IECC).

Energy Strategy for HUD (Sec. 154). The Secretary of Housing and Urban Development is required to implement an energy conservation strategy to reduce utility expenses through cost-effective energy efficient design and construction of public and assisted housing. A report to Congress is required within one year of enactment.

Background. The previous Energy Policy Act of 1992 (P.L. 102-486) contained mortgage-related provisions for energy efficiency in housing. This subtitle extends some similar energy efficiency measures to public housing.

Policy Context. Four additional provisions for public housing were proposed in the House version of the bill, but were dropped in conference. The provisions covered capacity building, use of Community Development Block Grants, grants for assisted housing, and Federal Housing Authority mortgage insurance.

Title II — Renewable Energy

Subtitle A — General Provisions

Summary of Provisions. The major purposes of this title are to increase production and use, advance technology development, and promote commercial development of renewable energy. Potentially significant effects could come from a broadening of the renewable energy production incentive (REPI) payment for electricity generated by renewable energy facilities, depending on the amount of future appropriations. Other provisions establish resource assessments, federal purchases of equipment and electricity, federal land leasing, and grants, all of which are also subject to appropriations.

Assessment of Renewable Energy Resources (Sec. 201). DOE is required to report annually on the resource development potential of solar, wind, biomass, ocean (tidal, wave, current, and thermal), geothermal, and hydroelectric energy resources. Further, DOE is required to review available assessments and undertake new assessments as necessary, accounting for changes in market conditions, available technologies, and other relevant factors. Funding at \$10 million per year is authorized for FY2006 through FY2010.

Renewable Energy Production Incentive (Sec. 202). Eligibility for the existing incentive is extended through 2026 and expanded to include electric cooperatives and tribal governments. Qualifying resources are expanded to include

landfill gas, livestock methane, and ocean (tidal, wave, current, and thermal) energy. The provision authorizes such sums as are necessary for each fiscal year from FY2006 through FY2026.

Federal Purchase Requirement (Sec. 203). Federal agencies are required, to the extent “economically feasible and technically practicable,” to purchase power produced from renewable sources. The requirement for federal renewables use, as a share of total federal electric energy use, starts at 3.0% in FY2007, rises to 5.0% in FY2010, and then reaches 7.5% in 2013 and all subsequent years. Renewable energy produced at a federal site, on federal lands, or on Indian lands is eligible for double credit toward the purchase requirement. A report to Congress is required every two years.

Use of Photovoltaic Energy in Public Buildings (Sec. 204). The General Services Administration (GSA) is authorized to encourage the use of solar photovoltaic energy systems in new and existing federal buildings. For FY2006 through FY2010, funding at \$50 million per year is authorized for commercialization and \$10 million per year is authorized for systems evaluation.

Biobased Products (Sec. 205). This provision amends the previously existing requirement that federal agencies give procurement preference to items composed of the highest percentage of biobased products practicable by adding “or such items that comply with the regulations issued under section 103 of Public Law 100-556 (42 U.S.C. 6914b — 1),” which refers to degradable plastic six-pack rings.

Renewable Energy Security (Sec. 206). For the DOE weatherization grant program, this section increases the limit on support for renewable energy equipment from \$2,500 to \$3,000 per dwelling unit. Also, it creates a consumer rebate for renewable energy equipment installed in a dwelling or small business. The maximum rebate is the lesser of 25% of equipment cost or \$3,000. Funding is authorized at \$150 million for FY2006 and FY2007, \$200 million for FY2008, and \$250 million for FY2009 and FY2010.

Installation of Photovoltaic System (Sec. 207). This provision authorizes \$20 million in FY2006 for the Administrator of GSA to proceed with the Sun Wall Design Project, the winning entry in a national design competition sponsored jointly by DOE and the National Renewable Energy Laboratory, to install a photovoltaic solar electric system on the headquarters building of DOE.

Sugar Cane Ethanol Program (Sec. 208). A program is established at the Environmental Protection Agency to study the production of ethanol from cane sugar, sugarcane, and sugarcane byproducts. The program is restricted to projects in Florida, Louisiana, Texas, and Hawaii. A total of \$36 million is authorized.

Rural and Remote Community Electrification Grants (Sec. 209). A grant program is established at DOE for “increasing energy efficiency, siting or upgrading transmission and distribution lines serving rural areas; or providing or modernizing electric generation facilities that serve rural areas.” Grant applications for development of renewable energy sources will be extended “preference.” Funding at \$20 million annually is provided for FY2006 through FY2012.

Grants to Improve the Commercial Value of Forest Biomass for Electric Energy, Useful Heat, Transportation Fuels, and Other Commercial Purposes (Sec. 210). This provision creates a grant program at the Department of Agriculture to subsidize biomass purchases for use in an energy production facility. The purpose is to encourage the removal of slash, brush, pre-commercial thinning material, and other non-merchantable forest biomass from federal lands and Indian reservations for biomass energy production. Grants are limited to \$500,000. Funding is authorized at \$50 million per year for FY2006 through FY2016. By the end of FY2010, a report to Congress is required that describes the types of biomass, transport distances, and economic impacts.

Sense of Congress Regarding Generation Capacity of Electricity From Renewable Energy Resources on Public Lands (Sec. 211). For the Secretary of the Interior, this provision sets a goal of having 10,000 megawatts of non-hydropower renewable energy generation capacity installed on public lands within 10 years from the date of enactment.

Background. Since the early 1980s, the main policies promoting commercial development of renewables have been the power purchase requirement in Section 210 of the Public Utility Regulatory Policies Act (PURPA, P.L. 98-617) and tax credits. Under certain conditions, Section 1253 of the Energy Policy Act of 2005 terminates PURPA Section 210. A generous investment tax credit expired in 1985. A few years later, a renewable energy production tax credit (PTC) was created and renewed several times. The renewable energy industry says the PTC is an appropriate credit, but its effectiveness has been limited by its short-term durations, and subsequent lapses, when it sunsets before Congress has passed extensions. In the past few years, several states (currently about 20) have enacted a Renewable Portfolio Standard (RPS) to work with the PTC in providing a strong base of encouragement for renewables.

Policy Context. The Senate version of H.R. 6 (the bill that became the Energy Policy Act of 2005) included a Renewable Energy Portfolio Standard (RPS), which would have required retail electricity suppliers to provide 10% of their electricity (attained by direct generation, power purchases, or purchases of tradable credits) from renewable sources by 2020. Proponents noted that there were a growing number of states with an RPS and that Energy Information Administration reports showed an RPS could reduce electricity bills. Opponents raised concerns about the exclusion of existing hydropower facilities and resource limits for the southeastern United States. There was no RPS provision in the House version of H.R. 6. During the conference, there were discussions about compromising by including nuclear and hydropower facilities. Nevertheless, RPS was dropped in conference.

Subtitle B — Geothermal Energy

Summary of Provisions. Much of the nation's geothermal energy potential is located on federal lands. Reducing delays in the federal geothermal leasing process and reducing royalties could increase geothermal energy production although the environmental impact of greater geothermal development is also at issue.

Short Title (Sec. 221). This subtitle may be cited as the “John Rishel Geothermal Steam Act Amendments of 2005.”

Competitive Lease Sale Requirements (Sec. 222). The amendments to the Geothermal Steam Act change the lease procedures for competitive and non-competitive lease sales. Competitive lease sales will be held every two years. If there were no competitive bids, then lands would be made available for two years under a non-competitive process.

Direct Use (Sec. 223). A fee schedule in lieu of any royalty or rental payments shall be established for lessees of geothermal resources that are not sold or used commercially.

Royalties and Near-term Production Incentives (Sec. 224). Royalties on electricity produced from geothermal resources are not less than 1% and not more than 2.5% of the gross proceeds from geothermal electricity sales in the first 10 years of production and not less than 2% and more than 5% of the gross proceeds from geothermal electricity sales each year after the 10-year period. A state shall receive 50% of the mineral revenue generated within its borders and the county will receive 25%. Other near-term production incentives are applicable to certain existing leases.

Coordination of Geothermal Leasing and Permitting on Federal Lands (Sec. 225). A memorandum of understanding (MOU) between the Secretaries of the Interior and Agriculture should include provisions that would identify known geothermal areas on public lands within the National Forest system and establish an administrative procedure that would include time frames for processing lease applications. This section also establishes a five-year program for leasing geothermal energy in the National Forest and a program for reducing the backlog of geothermal lease applications.

Assessment of Geothermal Energy Potential (Sec. 226). The U.S. Geological Survey (USGS) shall provide Congress with an assessment of current geothermal resources within three years of enactment of the Energy Policy Act of 2005.

Cooperative or Unit Plans (Sec. 227). Cooperative or unit plans for geothermal development shall be promoted.

Royalty on Byproducts (Sec. 228). Leasable minerals produced as a byproduct of a geothermal lease are subject to royalties under the Mineral Leasing Act (30 U.S.C. 181).

Authorities of Secretary to Readjust Terms, Conditions, Rentals, and Royalties (Sec. 229). Sections 8(a) and (b) of the Geothermal Steam Act are repealed, eliminating the Secretary’s authority to readjust geothermal rental and royalty rates at “not less than 20 year intervals beginning 35 years after the date geothermal steam is produced.”

Crediting of Rental Towards Royalty (Sec. 230). Annual rentals are credited towards the royalty of the same lease.

Lease Duration and Work Commitment Requirements (Sec. 231).

The primary lease term is 10 years and can be extended for two additional five-year terms if work commitments are met.

Advanced Royalties Required for Cessation of Production (Sec. 232). If production from a geothermal lease were suspended during a period in which a royalty was required, royalties would be paid in advance until production resumed.

Annual Rental (Sec. 233). The act establishes rental rates for competitive and non-competitive lease sales.

Deposit and Use of Geothermal Lease Revenues for 5 Fiscal Years (Sec. 234). For the first five years after the enactment of this act, a separate account shall be established for revenue receipts from leases under the Geothermal Steam Act of 1970, excluding money necessary for payments to states and county governments. Funds may be transferred to the Forest Service.

Acreage Limitations (Sec. 235). Section 7 of the Geothermal Steam Act on acreage limitations is repealed (30 U.S.C. 1006).

Technical Amendments (Sec. 236). About two dozen technical amendments are included.

Intermountain West Geothermal Consortium (Sec. 237). The Intermountain West Geothermal Consortium shall be established to focus on expanded use of geothermal energy. The consortium would involve the participation of the Secretary of Energy, universities in the region, and state agencies.

Background. Competitive geothermal lease sales are based on whether lands are within a known geothermal resource area (Geothermal Steam Act of 1970, 30 U.S.C. 1003). Geothermal production on federal lands is charged a royalty of 10%-15% under section 5 of the Geothermal Steam Act. The royalty is imposed on the amount or value of steam or other form of heat derived from production under a geothermal lease.

The Secretary of the Interior can withdraw public lands from leasing or other public use and modify, extend, or revoke withdrawals under provisions in the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1714). At certain intervals the Secretary may readjust terms and conditions of a geothermal lease, including rental and royalty rates. Annual rental fees of not less than \$1 per acre on geothermal leases are paid in advance. The primary lease term is 10 years and shall continue as long as geothermal steam is produced or used in commercial quantities. Rents are \$1 per acre or fraction thereof for each year of a geothermal lease.

Policy Context. Much of the nation's geothermal energy potential is located on federal lands. Reducing delays in the federal geothermal leasing process and reducing royalties could increase geothermal energy production, although the environmental impact of greater geothermal production is an issue. This section also prohibits the Secretary from making future adjustments to the initial lease.

Subtitle C — Hydroelectric

Summary of Provisions. This subtitle encourages hydroelectric production at non-federal dams. It makes it more difficult for a federal agency to establish a fisheries requirement as part of the hydropower licensing process, if it would decrease hydroelectric production. Furthermore, the subtitle establishes a process through which the State of Alaska may decline to adopt federal agencies' fish and wildlife recommendations for the dams it regulates. The subtitle also authorizes \$20 million to increase energy efficiency and expand hydroelectric production at existing non-federal dams.

Alternative Conditions and Fishways (Sec. 241). This provision gives applicants for hydroelectric licenses increased flexibility in complying with conditions imposed by federal agencies. Currently, the Federal Power Act (16 U.S.C. 791 et al.) gives certain federal agencies (conditioning agencies) the authority to attach conditions to Federal Energy Regulatory Commission (FERC) licenses. For example, federal agencies may require applicants to build passageways through which fish can travel around a dam, schedule periodic water releases for recreation, release minimum flows of water for fish migration, control water release rates to reduce erosion, or limit reservoir fluctuations to protect a reservoir's shoreline habitat. Once an agency issues such conditions, FERC must include them in its license. While these conditions often generate environmental or recreational benefits, they may also require construction expenditures and may increase power generation costs by reducing operational flexibility.

This provision allows entities to propose alternative license conditions and requires federal agencies to consider the alternatives proposed by license applicants and other parties to the license proceeding. An agency shall accept a proposed alternative, if it finds that the alternative (1) provides for the adequate protection and utilization of the federal reservation, or is no less protective of the fish resource than the fishway initially prescribed, and (2) costs significantly less to implement than the original condition, and/or will improve operation of the project for electricity production. Agencies that are issuing conditions must provide FERC with a written statement demonstrating that the relevant Secretary gave "equal consideration" to the effects of the conditions on factors such as energy supply, flood control, navigation, water supply, and air quality. It remains to be seen how this equal consideration clause will affect agencies' resources and whether it will alter their responsibilities to fish and wildlife.

Hydroelectric Production Incentives (Sec. 242). The Secretary of Energy shall make incentive payments to non-federal owners or operators of hydroelectric facilities for power that is first produced within 10 years of the date of enactment by generating equipment added to existing facilities. Payments of 1.8 cents per kilowatt-hour (kWh), up to a total of \$750,000/year, may be made for up to 10 years from the first year after the facility begins operating. Authorizes \$10 million per year from FY2006 through FY2015.

Hydroelectric Efficiency Improvement (Sec. 243). The Secretary of Energy shall make incentive payments to the owners or operators of hydroelectric facilities who make capital improvements on existing facilities that improve

efficiency by at least 3%. Payments are not to exceed 10% of the improvement cost and may not exceed \$750,000 at any single facility. Appropriations of \$10 million per year for FY2006 through FY2015 are authorized.

Alaska State Jurisdiction Over Small Hydroelectric Projects (Sec. 244). This provision amends the requirement under which the State of Alaska may regulate its small hydroelectric dams. Under this provision, the State of Alaska may decide against issuing a recommended condition on a hydroelectric project if it finds that the recommendation is inconsistent with protection of the public interest as described in a November 2000 amendment to the Federal Power Act (16 U.S.C. 823c).

Flint Creek Hydroelectric Project (Sec. 245). This provision allows the Federal Energy Regulatory Commission to extend, by three years, a preliminary licensing permit for the Flint Creek Hydroelectric Project in Montana.

Small Hydroelectric Projects (Sec. 246). This provision amends the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2708), to change the date on or before which a dam must be constructed to qualify as an existing dam, from April 20, 1977, to July 22, 2005.

Subtitle D — Insular Energy

Summary of Provisions. This subtitle seeks to improve the reliability of insular area energy systems and to update plans put forth in the 1982 Territorial Energy Assessment. Also, grants are provided to help with feasibility studies for demonstration projects. In general, the aims are to improve energy efficiency and to increase use of indigenous energy resources.

Insular Areas Energy Security (Sec. 251). This section includes congressional findings that electric power transmission and distribution lines in insular areas are not adequate to withstand hurricane and typhoon damage, and that an assessment is needed of energy production, consumption, infrastructure, reliance on imported energy, and indigenous sources of energy in insular areas. Further, it requires the Secretary of the Interior, in consultation with the Secretary of Energy and the head of government of each insular area, to update insular area energy plans within one year of enactment to reflect these findings, with the goals of reducing energy imports by 2012, increasing energy conservation and energy efficiency, and maximizing the use of indigenous resources. Funding at \$6 million per year is authorized that would, in part, be used for matching grants (federal share maximum is 75%) for projects designed to protect electric power transmission distribution lines in one or more of the territories of the United States from damage caused by hurricanes and typhoons.

Projects Enhancing Insular Energy Independence (Sec. 252). The Secretary of Energy, in consultation with the Secretary of the Interior, is required to assess and report to Congress on projects with the greatest potential for reducing dependence on fossil fuels used to generate electricity, and to promote distributed energy, in the insular areas. DOE would be authorized to provide technical and financial assistance, on a matching basis with local utilities, for feasibility studies and

for implementation of projects the Secretary of Energy determines are feasible and appropriate. Funding is authorized at \$500,000 per year for feasibility studies and \$44 million per year for project implementation. No local match is required for assistance.

Background. In general, insular areas face much higher energy costs than the continental United States, because most fuels must be imported. This is especially true for oil, which often costs twice as much as it does on the mainland. Also, such areas rely mainly on diesel generators for power production and relatively often experience brown-outs and black-outs. The 1982 Territorial Energy Assessment sought to lay out a strategy that emphasized greater energy efficiency and increased reliance on indigenous energy sources, particularly solar, wind, and biomass.

Policy Context. The insular areas provide strategic locations for U.S. military installations in the Pacific Ocean and Caribbean Sea.

Title III — Oil and Gas

Subtitle A — Petroleum Reserve and Home Heating Oil

Summary of Provisions. This subtitle permanently authorizes the Strategic Petroleum Reserve (SPR) and Northeast Heating Oil Reserve (NHOR), thereby avoiding awkward periods such as occurred in 2000 when there was a period of several months when the authorities were not in force. Storage sites are to be identified for expansion of the SPR to one billion barrels, and conditions are set out for adding oil to the SPR during periods when oil supply is tight and prices elevated, or when acquiring oil will spur or exacerbate those conditions. Other provisions are intended to provide guidelines for acquiring oil for the SPR in the future in a manner that minimizes any consequences on oil prices and markets.

Permanent Authority to Operate the Strategic Petroleum Reserve and Other Energy Programs (Sec. 301). Authority for the SPR program is made permanent, as are authorities that permit U.S. oil companies to participate, without risk of anti-trust violations, in the International Energy Agency (IEA) oil-sharing agreement.

National Oilheat Research Alliance (Sec. 302). The law extends the authorization for NORA until nine years (2010) after the date on which the Alliance was established.

Site Selection (Sec. 303). The Secretary of Energy is required, within one year of enactment, to select sites — giving preference to sites that have been previously studied — for expansion of the SPR to its fully authorized volume of one billion barrels.

Background. Congress authorized the Strategic Petroleum Reserve (SPR) in the Energy Policy and Conservation Act (EPCA, P.L. 94-163) to help prevent a repetition of the economic dislocation caused by the 1973-74 Arab oil embargo.

Physically, the SPR comprises five underground storage facilities, hollowed out from naturally occurring salt domes, located in Texas and Louisiana. In 2000, Congress also authorized establishment of a Northeast Heating Oil Reserve (NHOR) where two million barrels of home heating oil is kept in leased, above-ground storage, to be released if the price of heating oil exceeds a calculated historic average. The authorities governing the SPR and NHOR are included in the Energy Policy and Conservation Act (EPCA, P.L. 94-163) and are currently authorized through FY2008 by the Consolidated Appropriations Resolution for FY2003 (P.L. 108-7). These authorities also provide for U.S. participation in emergency activities of the International Energy Agency (IEA) without risking violation of antitrust law and regulation.

The National Oilheat Research Alliance (NORA) was established by the Energy Policy Act of 2000 (P.L. 106-460), and assesses a fee of \$.002 per gallon on home heating oil sold by retail distributors. The proceeds, among other purposes, are dedicated to research on improving the efficiency of furnaces and boilers, and providing education and training resources to professionals in the industry.

Producers of offshore leases in the Gulf of Mexico pay a royalty to the U.S. Treasury based upon production at their sites. Since 1999 and until August 2005, most new fill of the SPR was achieved by the acceptance of royalty-in-kind (RIK) oil from these producers in lieu of cash paid to the Treasury. Some have objected to RIK deliveries, arguing that diverting any oil from the markets was contributing to rising crude prices. The Administration argued that the volumes involved, never more than 200,000 b/d and often less, was not large enough to have the effect on prices that some alleged.

Policy Context. There have been occasions in the past when the authorities expired for the SPR program and antitrust protection for U.S. participation in the international oil-sharing agreement of the International Energy Agency (IEA). The Energy Policy Act of 2005 eliminates the possibility of this occurring in the future. The provisions in the energy act will probably preclude any new acquisitions for the SPR until petroleum product stocks recover from the effects of Hurricanes Rita and Katrina, and oil and energy markets calm considerably.

Subtitle B — Natural Gas

Summary of Provisions. Streamlined permitting processes and NEPA reviews⁴ are provided for the siting of liquefied natural gas (LNG) facilities and conventional natural gas storage facilities. Expedited judicial review is also provided by designating exclusive jurisdiction for civil action to the U.S. Court of Appeals for the circuit in which the facility would be located. Other provisions relate to improvements in the performance of natural gas markets, prohibiting of market manipulation, and ensuring that prices are determined in a clear-cut way with full disclosure of all relevant information.

⁴ Environmental impact reviews required by the National Environmental Policy Act (NEPA, P.L. 91-190).

Exportation or Importation of Natural Gas (Sec. 311). The Natural Gas Act (NGA, 15 U.S.C. 717) is amended to unequivocally establish exclusive FERC jurisdiction over siting LNG terminals for exportation and importation of natural gas. The language specifies that the rights of states are not changed under the Coastal Zone Management Act (CZMA, 16 U.S.C. 1451 et seq.), the Clean Air Act (42 U.S.C. 7401 et seq.), and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.). Before January 1, 2015, FERC shall not deny approval solely for the reason that the applicant would use the gas himself, wholly or in part. Approval shall not be conditioned on a requirement to offer service to others, a directive to file rates or tariffs with FERC, or any other regulation of rates and service. These provisions shall cease to exist after January 1, 2030.

FERC shall obtain the concurrence of the Secretary of Defense before authorizing an LNG facility impacting a military installation. The governor of a state with a proposed LNG site will designate the appropriate state agency to consult with FERC on safety issues, including the nature of the facility, population characteristics, and physical characteristics. The state agency shall issue an advisory report to FERC on safety issues. Any authorization of an LNG facility shall require the operator, in consultation with the designated state agency and the U.S. Coast Guard, to develop an Emergency Preparedness Plan to be approved by FERC.

New Natural Gas Storage Facilities (Sec. 312). Section 4 of the NGA is amended to allow FERC to permit new natural gas storage facilities to charge market based prices, if it determines that they are in the public interest and reasonable consumer protections exist. FERC shall review these rates periodically.

Process Coordination; Hearings; Rules of Procedure (Sec. 313). This section defines a “federal authorization” as the complete package of permits and regulatory rulings needed to obtain an authorization or a certificate of convenience and necessity. FERC is designated the lead agency in the federal authorization process, setting the schedule for other state and federal agencies to ensure expeditious completion of necessary proceedings and comply with applicable schedules established by federal law. FERC is tasked with keeping the consolidated record of all decisions made and actions taken by all parties, which shall also be the record for CZMA and judicial review.

Judicial review of an order from any federal (other than FERC) or state agency shall be in the U.S. Court of Appeals for the circuit in which the project would be constructed. The U.S. Court of Appeals for the District of Columbia is to hear cases involving failure to act by an agency or denial of permit under federal law. These cases shall be heard on an expedited schedule.

Penalties (Sec. 314). This section raises the penalties for violating FERC orders. It raises the maximum prison term from two to five years and the maximum fine from \$500 per violation to \$50,000 for each day the violation took place. Violations of emergency orders are subject to fines of up to \$1 million per day. Civil penalties are also raised to a maximum of \$1 million per day.

Market Manipulation (Sec. 315). This section prohibits anyone from using any manipulative or deceptive contrivance (as defined by the Securities and

Exchange Commission) in connection with the purchase or sale of natural gas or related transport services, in contravention of FERC rules. Essentially, it bars false reporting of terms and condition of natural gas trades.

Natural Gas Market Transparency Rules (Sec. 316). This creates a new section in the NGA (Sec. 23), calling on FERC to prescribe such rules as necessary to provide for the timely dissemination of information about price and supply of gas sold at wholesale. FERC may obtain this information from any market participant, or rely on private parties to make this information available. FERC shall seek to assure that consumers are protected from the adverse effects of anti-competitive behavior on the part of market participants. Within 180 days of enactment, FERC shall conclude a memorandum of understanding with the Commodity Futures Trading Commission regarding data sharing, ensuring that duplicative information requests are minimized. Market participants having *de minimus* transactions are exempted from any reporting requirements that might originate under this act.

Federal-State Liquefied Natural Gas Forums (Sec. 317). Within one year of enactment, the Secretary of Energy is directed to convene at least three forums on LNG in areas where facilities are under consideration. These are to be undertaken with the participation of the Secretaries of Transportation, Homeland Security, and coastal state governors. Their goal would be to create dialogue among stakeholders regarding such issues as safety and environmental risks, and siting and permitting, and general education. Their purpose would be to identify and develop best practices for dealing with LNG issues. Funds are authorized to be appropriated as needed.

Prohibition of Trading and Serving By Certain Individuals (Sec. 318). This amends §20 of NGA to allow a court to prohibit a person convicted of violating FERC rules from acting as an officer of a natural gas company or from trading natural gas or transportation services.

Subtitle C — Production

Summary of Provisions. This subtitle facilitates the storage of imported liquefied natural gas at offshore terminals and excludes injection of hydraulic fracturing fluids, except diesel fuel, from regulation under the Safe Drinking Water Act (42 U.S.C. 300f et seq.). The legislation also gives a permanent exemption from Clean Water Act stormwater runoff rules for the construction of exploration and production facilities by oil and gas companies and the roads that service those sites.

Outer Continental Shelf Provisions (Sec. 321). This section allows subsurface storage on the outer continental shelf of oil and natural gas (including natural gas liquids, liquefied petroleum gas, and natural gas condensate) from any source. A key effect of this provision would be to facilitate the storage and processing of imported liquefied natural gas at offshore terminals.

Hydraulic Fracturing (Sec. 322). This section amends the Safe Drinking Water Act (SDWA), Section 1421(d), to specify that the definition of “underground injection” excludes the injection of fluids or propping agents (other than diesel fuel) used in hydraulic fracturing operations related to oil, gas, or geothermal production

activities. This provision removes EPA's current authority to regulate the underground injection of fluids (other than diesel fuel) used in hydraulic fracturing, as needed to protect drinking water.

Before 1997, EPA had not considered regulating hydraulic fracturing for oil and gas development, because it did not view this well-production process as an activity subject to regulation under SDWA's underground injection control (UIC) program. In 1997, the 11th Circuit Court of Appeals ruled that the injection of fluids for the purpose of hydraulic fracturing constituted underground injection, that all underground injection must be regulated, and that hydraulic fracturing of coalbed methane (CBM) wells in Alabama must be regulated under the state's UIC program (*LEAF v. EPA*, 118 F. 3d 1467).

Hydraulic fracturing involves the high-pressure injection of fluids into coal beds to enhance the recovery of oil and natural gas from underground formations. Water-based fluids are typically used as fracturing fluids; however, diesel fuel often is used instead of water, and various chemicals are added to fracturing fluids.⁵ While hydraulic fracturing has been used in the recovery of conventional oil and gas since the 1950s, this practice has been used for CBM recovery mainly since the 1990s.

A growing concern is that, in many CBM-producing regions, the target coal beds occur within underground sources of drinking water, and the fracturing process injects fluids directly into the drinking water sources; EPA has determined that the use of diesel fuel as a fracturing fluid introduces benzene and other toxic substances directly into underground sources of drinking water.⁶ Also, because the process fractures rock, fracturing can create new pathways for natural gas (primarily methane) to enter drinking water aquifers. As the number of coalbed methane (CBM) wells and the use of hydraulic fracturing have increased rapidly in recent years, so has concern over the potential impact on water resources, particularly in the water-scarce West. Very few studies have been done to evaluate these impacts.

A study by the National Academy of Sciences is required under §1811 on the effect of coalbed natural gas production on surface and ground water resources, including drinking water, in Montana, Wyoming, Colorado, New Mexico, North Dakota, and Utah.

Oil and Gas Exploration and Production Defined (Sec. 323). The definitions provision of the Clean Water Act (CWA, §502) is amended to give a permanent exemption from CWA stormwater runoff rules for the construction of

⁵ Environmental Protection Agency, *Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs*, Washington, D.C., June 2004, pp. 4-3 - 4-4.

⁶ *Ibid.*, pp. 1-6. According to EPA, hydraulic fracturing of oil and gas found in conventional geologic traps is well established; however, hydraulic fracturing of coal beds is relatively new. Conventional sites are usually very deep and involve saline groundwater that is unsuitable for drinking water. In contrast, formations that contain coal bed methane can be near the surface where groundwater may be used as a source of drinking water supplies. pp. 4-9 - 4-10.

exploration and production facilities by oil and gas companies and the roads that service those sites.

Background. Previously under the CWA (33 U.S.C. 1251 et seq.), the operation of facilities involved in oil and gas exploration, production, processing, transmission, or treatment generally was exempt from stormwater runoff regulations (so long as the runoff was uncontaminated by pollutants), but the *construction* of these facilities and associated roads was not. Section 323 modifies CWA to specifically include construction activities in the types of oil and gas facilities that are covered by the act's statutory exemption from stormwater rules.

The issue arises from CWA stormwater permitting rules for small construction sites and municipal separate storm sewer systems that were issued by the Environmental Protection Agency (EPA) in 1999 and became effective March 10, 2003. Those rules, known as Phase II of the CWA stormwater program, require most small construction sites disturbing one to five acres and municipal separate storm sewer systems serving populations of up to 100,000 people to have a CWA discharge permit. The permits require pollution-prevention plans describing practices for curbing sediment and other pollutants from being washed by stormwater runoff into local water bodies. Phase I of the stormwater program required construction sites larger than five acres (including oil and gas facilities) and larger municipal separate storm sewer systems to obtain discharge permits beginning in 1991.

EPA had initially assumed that most oil and gas facilities would be smaller than one acre in size and thus excluded from the Phase II rules, but newer data indicate that up to 30,000 new sites per year would be of sizes subject to the rule. As the March 2003 compliance deadline approached, EPA authorized a two-year extension of the Phase II rules for small oil and gas construction sites to allow the agency to assess the economic impact of the rule on that industry. In March 2005, EPA extended the exemption until June 2006 and said it would propose a specific rule for small oil and gas construction sites by September 12, 2005, and issue a final rule in June 2006.

Policy Context. Section 323 makes EPA's regulatory delay permanent and makes it applicable to construction activities at *all* oil and gas development and production sites, regardless of size, including those previously covered by Phase I rules. Industry had argued that the stormwater rule creates time-consuming permitting requirements, even though the short construction period for drilling sites carries little potential for stormwater runoff pollution. Supporters said the amendment was intended to clarify existing CWA language. Opponents argued that there is no evidence that construction at oil and gas sites causes less pollution than other construction activities, which are regulated under EPA's stormwater program. As a result of the amendment, which is intended to exempt from the CWA all uncontaminated stormwater discharges that occur while setting up drilling operations, EPA proposed in December 2005 a new rule for discharges of stormwater from oil and gas operations, making construction activities at all oil and gas sites eligible for the exemption. EPA still intends to issue a final rule by June 2006.

Subtitle D — Naval Petroleum Reserves

Summary of Provisions. This subtitle continues a process of divesting or transferring responsibility for management of Naval Petroleum Reserve oil fields outside of the Department of Energy.

Transfer of Administrative Jurisdiction and Environmental Remediation (Sec. 331-334). Administration of public domain lands within the Naval Petroleum Reserve No. 2 (NPR-2), located in Kern County, CA, will be transferred to the Secretary of the Interior. The Secretary is instructed to manage oil production from these tracts in a manner consistent with maximizing production over the lifetime of the field. Surface rights, title and interest in a roughly 220 acre parcel of Naval Petroleum Reserve No. 2 is transferred to the city of Taft, CA. The federal government will retain rights to all fossil fuel and mineral resources for itself or its lessees, but yields all surface rights and responsibilities for care of the surface. The Executive Order of December 13, 1912, establishing NPR-2 is revoked.

Background. The National Defense Authorization Act for FY1996 (P.L. 104-106) authorized sale of the federal interest in the oil field at Elk Hills, CA (Naval Petroleum Reserve-1 (NPR-1)). Transfers of other NPR sites have followed in subsequent years. This has left in the Naval Petroleum Reserves program two small oil fields in California and Wyoming, which will generate estimated revenue to the government of roughly \$7.2 million during FY2005. The Kern County site (NPR-2) comprises a “checkerboard” pattern of governmentally and privately owned tracts adjacent to the Elk Hills field. Of the 50 tracts owned by the government, nearly 90% are leased by private oil companies with royalty payments deposited in the U.S. Treasury.

Subtitle E — Production Incentives

Summary of Provisions. Royalty relief provisions are provided to encourage further offshore oil and gas development. An inventory of offshore resources is included. The royalty in-kind program is codified, along with a program for royalty relief for marginal oil and gas properties and a program to remediate orphaned and abandoned wells.

Definition of Secretary (Sec. 341). In this subtitle, “Secretary” means Secretary of the Interior.

Program on Oil and Gas Royalties In-Kind (Sec. 342). The federal government is authorized to continue to receive physical quantities of oil and gas as royalty-in-kind payments if it can receive market value for the product and revenues greater than or equal to the revenues it would have received under a comparable cash-payment royalty. The royalty product would have to be placed in marketable condition (as defined in the law) at no cost to the United States. Small refineries would receive preferential treatment if supplies on the market were insufficient. A report to Congress in each year from FY2006-FY2015 must explain, among other things, how the Secretary determined whether the amount received was at least the

amount that would have been taken in cash and how a lease was evaluated as to whether royalty in kind were taken.

Marginal property production incentives (Sec. 343). The Secretary of the Interior has the authority to reduce or terminate royalties for independent producers under certain conditions. The Secretary is authorized to prescribe different standards for marginal properties in lieu of those in this section.

Incentives for Natural Gas Production from Deep Wells in the Shallow Waters of the Gulf of Mexico (Sec. 344). Royalty reductions are provided for shallow water production at certain depths not later than 180 days after enactment. An “ultra-deep” well and “sidetrack” well are defined in this section.

Royalty Relief for Deep Water Production (Sec. 345). Royalty reductions are provided for deepwater areas at fixed production levels at certain depths.

Alaska Offshore Royalty Suspension (Sec. 346). Planning areas in offshore Alaska are included under section 8(a)(3)(B) of the Outer Continental Shelf Lands Act (OCSLA, 43 U.S.C. 1337(a)(3)(B)). At the Secretary’s discretion, leases in this area are eligible for royalty relief in an effort to promote development and encourage production.

Oil and Gas Leasing in the National Petroleum Reserve in Alaska (Sec. 347). These provisions direct the Department of the Interior (DOI) to begin “an expeditious program” for competitive leasing in the National Petroleum Reserve-Alaska (NPR-A). Leases will be initially for 10 years; leases will be lost if, after 30 years, there has been no oil or gas production on the lease site.

North Slope Science Initiative (Sec. 348). The Secretary of the Interior shall establish a long-term initiative to coordinate collection of ecosystem data on Alaska’s North Slope. A technical advisory panel shall be established, and the Secretary shall publish annual reports on the initiative beginning three years after enactment.

Orphaned, Abandoned, or Idled Wells on Federal Land (Sec. 349). Within a year after enactment, the Secretary shall establish a technical assistance program to help states remediate and close abandoned or idled wells. Technical and financial assistance will be made available over a 10-year period to quantify and mitigate environmental dangers. A program will be established for reimbursing the private sector with credits against federal royalties for reclaiming, remediating, and closing orphaned wells.

Combined Hydrocarbon Leasing (Sec. 350). The Mineral Leasing Act (30 U.S.C. 181 et seq.) is amended to allow separate leases for tar sands and for oil and gas in the same area. Tar sands will be leased under the same system as for oil and gas and require a minimum acceptable bid of \$2 per acre.

Preservation of Geological and Geophysical Data (Sec. 351). The Secretary of the Interior shall establish a program to preserve and archive geologic,

geophysical, and engineering data, including maps, well logs, and samples. Financial assistance is authorized for up to 50% of the costs incurred by state agencies that provide archiving facilities and conduct studies under this program.

Oil and Gas Lease Acreage Limitations (Sec. 352). Lease acreage limits are altered so that additional federal lands would not fall under the Mineral Leasing Act's single-state ownership limitations.

Gas Hydrate Production Incentive (Sec. 353). Royalties are suspended for the first 30 billion cubic feet of natural gas produced from gas hydrate resources per lease, in addition to any other applicable royalty relief.

Enhanced Oil and Natural Gas Production Through Carbon Dioxide Injection (Sec. 354). Royalty relief will be available for the purposes of enhancing oil and natural gas recovery from specified leases. DOE shall establish a carbon dioxide sequestration demonstration program that injects carbon dioxide to enhance recovery of oil and gas.

Assessment of Dependence of State of Hawaii on Oil (Sec. 355). The Secretary of Energy shall study the economic implications of Hawaii's dependence on oil and submit a report to Congress within 300 days of enactment. The study must evaluate the vulnerability of Hawaii to oil disruptions, and assess, island-by-island, the technical and economic feasibility of displacing oil consumption with other sources of energy, including renewables, liquefied natural gas, and hydrogen.

Denali Commission (Sec. 356). Funding is authorized for the Denali Commission to carry out energy programs in Alaska, including development of alternative energy, construction of electricity transmission infrastructure, replacement and cleanup of fuel tanks, and coal gasification.

Comprehensive Inventory of OCS Oil and Natural Gas Resources (Sec. 357). The Secretary shall conduct an inventory and analysis including 3-D seismic technology but not drilling of oil and natural gas beneath all water of the United States outer continental shelf (OCS). Also, the Secretary must issue a report to Congress within six months of enactment that includes a discussion of restrictions, impediments, and recommendations.

Background. OCSLA currently provides a mechanism for the Secretary of the Interior to reduce or eliminate royalty or net profit share established in leases for oil and gas production in Gulf of Mexico planning areas. According to the Minerals Management Service (MMS), the Deep Water Royalty Relief Act of 1995 has led to a significant increase of leases in the deepwater Gulf of Mexico.

Policy Context. There is strong interest among the major oil firms in this region because of the resource potential and the improvement of deepwater technology. U.S. offshore oil and gas production has become a larger component of U.S. domestic supply as production from onshore federal leases has declined 19% over the past 10 years. Opponents of continued royalty relief contend that deepwater technology has advanced enough to ensure the economic viability of deepwater

reserves, thus there is no need for further royalty relief. Continued royalty relief has also faced criticism during a period of record high oil prices and oil industry profits.

The comprehensive inventory of the OCS is designed to provide an updated and accurate assessment of oil and gas resources, with particular interest in highlighting resources in areas now off-limits to exploration and development. Some opponents have argued that the inventory is a first step in a larger effort to open more of the OCS for exploration and development.

Subtitle F — Access to Federal Lands

Summary of Provisions. These provisions address concerns over delays in the permitting process for oil and gas development on federal lands after leases are granted. Some lease stipulations are considered by the Administration to be impediments to domestic oil and gas development. However, concerns have also been raised that faster permitting could bypass important environmental protections.

Federal Onshore Oil and Gas Leasing and Permitting Practices (Sec. 361). The Department of the Interior along with the Forest Service shall review current onshore oil and gas leasing and permitting practices and report on actions taken to improve the program.

Management of Federal Oil and Gas Leasing Programs (Sec. 362). The Secretaries of Agriculture and of the Interior are required to ensure expeditious compliance with applicable environmental and cultural resource laws. “Best management practices” to ensure timely action on oil and gas leases and drilling permits must be implemented. Funds would be authorized for FY2006-FY2010.

Consultation Regarding Oil and Gas Leasing on Public Land (Sec. 363). The Secretary of the Interior and the Secretary of Agriculture will enter into a memorandum of understanding to ensure timely processing of oil and gas lease applications, elimination of duplication of effort, and establishment of joint data retrieval and mapping systems.

Estimates of Oil and Gas Resources Underlying Onshore Federal Land (Sec. 364). The U.S. Geological Survey is required to estimate onshore oil and gas resources and identify impediments and restrictions that might delay permits. The Department of Energy is required to make regular assessments of economic reserves.

Pilot Project to Improve Federal Permit Coordination (Sec. 365). A federal permit streamlining pilot project will be established to demonstrate energy development on federal land in accordance with the multiple-use mandate; Wyoming, Montana, Colorado, Utah, and New Mexico may be asked to participate. A Bureau of Land Management Permit Processing Improvement Fund is established. Half of rental revenue will be deposited into the Fund and made available to the pilot project for FY2006-FY2015 without further appropriation.

Deadline for Consideration for Applications for Permits (Sec. 366). The Secretary of the Interior will have 10 days after receiving an application for a

permit to drill (APD) to notify the applicant whether the APD was complete. The Secretary will have 30 days after a complete APD was submitted to issue or defer a permit with correcting measures. If deferred, the applicant would have a two-year window to complete the application, as specified by the Secretary. If the applicant met the requirements within that period, then the Secretary must issue a permit within 10 days. The Secretary shall deny the permit if the criteria were not met within the two-year period.

Fair Market Value Determinations for Linear Rights-of-way Across Public Lands and National Forests (Sec. 367). The Secretaries of the Interior and Agriculture will annually revise and update rental fees for land encumbered by linear rights-of-way to reflect fair market value.

Energy Right-of-Way Corridors on Federal Land (Sec. 368). Not later than two years after enactment, the Secretaries of the Interior and Agriculture, in consultation with the Secretaries of Defense, Commerce, and Energy and FERC, will submit to Congress a report addressing the location of existing rights-of-way on federal land for oil and gas pipelines and electric transmission and distribution facilities.

Oil Shale, Tar Sands, and Other Strategic Unconventional Fuels (Sec. 369). The Secretary of the Interior will develop an oil shale and tar sands leasing program as soon as practicable and publish a final regulation to implement the program by December 31, 2006. A task force is set up to coordinate and accelerate commercial development of strategic unconventional fuels. An Office of Petroleum Reserves will be established to coordinate federal development of strategic fuels. The Secretary shall carry out an assessment of U.S. oil shale and oil sands. The Department of Defense is authorized to procure unconventional fuels to meet its fuel needs. The leasing program will be for conducting research and development activities related to the production of oil shale and oil sands. A programmatic environmental impact statement will be prepared.

Finger Lakes Withdrawal (Sec. 370). All federal land within the boundary of Finger Lakes National Forest, New York, is withdrawn from potential energy development under the public land laws.

Reinstatement of Leases (Sec. 371). This section establishes conditions for reinstating an oil and gas lease if it was terminated for nonpayment of rental fees between September 1, 2001, and June 30, 2004.

Consultation Regarding Energy Rights-of-Way on Public Land (Sec. 372). Within six months after enactment, the Secretaries of the Interior and of Agriculture will be required to enter into an MOU to coordinate environmental compliance and processing of rights-of-way applications.

Sense of Congress Regarding Development of Minerals Under Padre Island National Seashore (Sec. 373). In recognition of the split estate on Padre Island National Seashore, it is the sense of Congress that the federal government owns the surface rights while the mineral rights are held privately and also by the state of Texas.

Livingston Parish Mineral Rights Transfer (Sec. 374). Section 102 of P.L. 102-562 is amended by striking the “Conveyance of Lands” provision, which maintains the reservation of mineral rights held by the United States in specific areas of Livingston Parish, Louisiana.

Background. The federal oil and gas leasing program is governed by the Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et. Seq.). Bureau of Land Management (BLM) procedures for an application for a permit to drill (APD) are contained in 43 CFR 3162.3-1. The Bush Administration has taken some action to reduce the time needed to consider APDs, including processing and conducting environmental analyses on multiple permit applications with similar characteristics, implementing geographic area development planning for oil and gas fields or areas within a field, and allowing for block surveys of cultural resources.

Subtitle G — Miscellaneous

Deadline for Decision on Appeals of Consistency Determination Under the Coastal Zone Management Act of 1972 (Sec. 381). These provisions establish three deadlines for the appeals process by amending section 319 of the Coastal Zone Management Act (CZMA). They will limit the overall length of this appeals process to a total of 270 days from the date when an appeal is filed (with options that can extend the process for up to an additional 75 days). The first deadline is for the Secretary of Commerce to publish an initial notice of an appeal in the *Federal Register* within 30 days of when it is filed. The second deadline is that the administrative record is closed after 160 days from the date of that publication. During that time period, the Secretary can receive filings related to the appeal. The Secretary has the discretion to extend this period for up to 60 days under certain circumstances. The final deadline gives the Secretary up to 60 days to issue a decision after the administrative record had been closed, and gives the Secretary the option of extending that time span for up to 15 additional days. There are no grandfather provisions for determinations that are currently in the appeals process.

Background. The consistency provisions in Section 307 of the CZMA allow a state to object to any proposed federal activity that it determines to be incompatible with its federally approved and state-administered coastal zone management plan. Since the first state plan was approved in the mid-1970s, there has been considerable friction between states and federal agencies over the reach of the consistency provisions. States have sought broader application to have a stronger role in decisions about the largest possible array of proposed federal activities, while the federal government has sought narrower interpretations, especially relating to offshore energy development. Determining an exact boundary separating actions on which the state is to have a primary role from actions on which the state does not have such powers has been a subject of federal litigation, including decisions by the U.S. Supreme Court (notably *Secretary of the Interior v. California*, 464 U.S. 312 (1984)), in which the court determined that the sale of oil and gas leases on the outer continental shelf (OCS) was not an act affecting the coastal zone.

When a state and a federal agency cannot reach an agreement on a consistency determination, the law and regulations lay out an elaborate process for resolving that disagreement. Most disagreements are resolved through this process, but if no

agreement can be reached, the final step is an appeal to the Secretary of Commerce to make a decision. Appeals to the Secretary have not been common. According to citations of appeals posted on the website of the Office of Ocean and Coastal Resource Management in the National Oceanic and Atmospheric Administration (NOAA) (viewed May 12, 2005), 38 consistency determinations were appealed to the Secretary between 1984 and 1999, and 19 of them involved proposed activities by oil companies. The appeals process, like all other aspects of consistency, is currently covered under a final rule issued by NOAA in the December 8, 2000, *Federal Register*. While a proposal to modify the appeals time line with deadlines very similar to this legislation was included in a proposed rule on federal consistency published in the June 11, 2003, *Federal Register*, no final rule was issued.

Section 319 in previous law had less detail than the newly amended version. It stated that the Secretary would either issue a final decision on the appeal or publish a notice in the *Federal Register* stating why a decision could not be reached within 90 days after the record had closed. If the Secretary published a notice that a decision had not been made, that decision had to be issued within 45 days of the date of publication of that notice.

Policy Context. Consistency appeals have been contentious and, in some instances, the appeals process has dragged on for long time periods. The 1996 amendments in Section 319 were meant to address those delays by establishing some time limits. This proved unsatisfactory to some, who sought additional statutory language to remove decisions about deadlines from the unpredictable rulemaking process by defining the length of component steps in law, and therefore the overall process, after an appeal to the Secretary has been filed.

The consistency provision creates an unusual relationship where states have been granted the authority to halt most federal actions that are incompatible with state interests. When enacted, the consistency requirement was viewed as a main incentive for states to develop and implement coastal plans since the other incentive to participate, federal financial grants, always has been modest. This view appears to have some validity, as 34 of the 35 eligible states and territories are now administering federally approved coastal management programs.

Appeals Relating to Offshore Mineral Development (Sec. 382).

Appeals of decisions under section 319 of the Coastal Zone Management Act (16 U.S.C. 1465) on natural gas pipelines and offshore energy projects will be based exclusively on the record compiled by FERC or the relevant permitting agency.

Royalty Payments under Leases under the Outer Continental Shelf Lands Act (Sec. 383). The lessee of a “covered lease tract” off the coast of Louisiana will be allowed to withhold royalties due to the United States if it pays the state of Louisiana 44 cents for every dollar of the federal royalty withheld. This royalty relief will end when certain drainage claims are satisfied.

Coastal Impact Assistance Program (Sec. 384). This section amends Section 31 of the OCSLA (43 U.S.C. 1356a). The Secretary shall disburse to producing states and political subdivisions \$250 million annually during FY2007-

FY2010. Allocations for each producing state and political subdivision as well as authorized uses will be established.

Background. This is the most recent of repeated efforts to allocate a portion of federal offshore oil and gas revenues to coastal states to assist them in addressing the impacts of these activities. Recent Congresses, starting with the 105th, considered numerous similar legislative proposals. These proposals came to be known as CARA, or the Conservation and Reinvestment Act. In the 106th Congress, the House passed a version of CARA on May 11, 2000 (H.R. 701). Some of these proposals were also reflected in the Clinton Administration's Lands Legacy Initiative proposal in 2000, and also in a one-time \$150 million appropriation provided in the FY2001 Commerce appropriations legislation (P.L. 106-553) for coastal impact assistance.

Support for the CARA proposals, which would also have funded many related federal natural resource protection programs, grew as the deficit of the early and mid-1990s was replaced by forecasts of a surplus, as protecting natural resources came to be viewed as part of the effort to address sprawl, and as efforts and support to secure federal funding for coastal resource protection and restoration efforts grew. With the replacement of the surplus forecast with deficit forecasts and changing national priorities since the 9/11 terrorist attacks, broad support for wide-ranging legislation like CARA has declined, but interest has remained in returning a portion of the money currently paid to the federal government by private companies leasing offshore areas to those locations most affected by the offshore activity.

Policy Context. Proponents of these proposals look to the rates at which funds are given to jurisdictions where energy development occurs within those jurisdictions on federal lands, and seek revenues that will help coastal states respond to adverse onshore effects of offshore energy development. Coastal destruction has received particular attention in Louisiana, where many square miles of wetlands are being lost to the ocean each year.

Study of Availability of Skilled Workers (Sec. 385). The National Academy of Sciences (NAS) shall study the availability of skilled workers to meet U.S. energy and mineral security requirements.

Great Lakes Oil and Gas Drilling Ban (Sec. 386). No federal or state permit or lease shall be issued for new oil and gas slant, directional, or offshore drilling in or under one or more of the Great Lakes.

Federal Coalbed Methane Regulation (Sec. 387). States on the list of "affected states" under section 1339(b) of the Energy Policy Act of 1992 (42 U.S.C. 13368(b)) will be removed if they took specified actions within three years after enactment of the Energy Policy Act of 2005 or had previously taken such action. The "affected states" are West Virginia, Pennsylvania, Kentucky, Ohio, Tennessee, Indiana, and Illinois. These states are on the list as a result of coalbed methane (CBM) ownership disputes, impediments to development, lack of a regulatory framework to encourage CBM development in the state, and lack of extensive development of CBM. A state may be removed from the list through a petitioning process initiated by the governor of that state.

Alternate Energy-Related Uses of the Outer Continental Shelf (Sec. 388). The Secretary of the Interior is authorized to grant rights-of-way or easements on the OCS for energy-related activity on a competitive or noncompetitive basis and to charge fees for such access. A surety bond or other financial guarantee is required. Further, this provision amends the Outer Continental Shelf Lands Act to provide authority to the Secretary of the Interior to grant leases, easements, or rights-of-way for energy and related purposes on the OCS. This provision does not allow the grant of easements or rights-of-way for activities that support the exploration, development, or production of oil and natural gas in areas where oil and gas preleasing, leasing, and related activities are prohibited by a congressional moratorium or a withdrawal pursuant to section 12 of the Outer Continental Shelf Lands Act. The authority does not apply to any area within the exterior boundaries of any unit of the National Park System, National Wildlife Refuge System, National Marine Sanctuary System, or any National Monument. The provision requires the Secretary to undertake a coordinated OCS mapping initiative to assist in decisionmaking relating to the siting of facilities under this provision.

Oil Spill Recovery Institute (Sec. 389). The authorization for the Oil Spill Recovery Institute is extended from 2012 to one year after oil exploration and production ceases in Alaska.

NEPA Review (Sec. 390). Drilling on a previously used well site and certain other activities are not subject to National Environmental Policy Act (NEPA) review if the activities are conducted for oil and gas exploration or development under the Mineral Leasing Act.

Subtitle H — Refinery Revitalization

Summary of Provisions. Congress finds that U.S. capacity to refine gasoline and other fuels falls short of the nation's demand for petroleum products, and that the shortfall of refining capability is growing, leading to greater dependence on supplies from foreign refineries. As a remedy to potential obstacles to expanding refinery capacity, federal-state regulatory coordination is required, and EPA is to provide states with technical and financial assistance on issuing permits under the Clean Air Act.

Findings and Definitions (Sec. 391). It is found that, in addition to a current shortfall in the capacity of domestic refineries to meet the demand for fuels and petrochemical feedstocks, new demands will be placed on these facilities to produce cleaner fuels. The current need for expanded capacity at existing refineries, as well as future needs for more capacity and additional, new facilities, would be facilitated by better coordination of state and federal environmental reviews.

Federal-State Regulatory Coordination and Assistance (Sec. 392). At the request of the governor of any state, EPA may enter into a cooperative refinery permitting agreement, identifying the steps needed for expeditiously obtaining required federal and state environmental permits. In doing so, EPA is authorized to accept consolidated applications for all EPA permits. EPA is further authorized to enter into a memorandum of agreement with other federal and state agencies to

coordinate the application process, such that the various components are considered concurrently.

In addition, EPA is authorized to provide financial assistance to state governments for the hiring of technical staff having the expertise needed to deal with processing the permits. EPA is authorized to use its own staff to provide technical assistance in dealing with refinery permit applications.

Title IV — Coal

Subtitle A — Clean Coal Power Initiative

Summary of Provisions. The Clean Coal Power Initiative (CCPI) is in its fourth year of funding under a 10-year, \$2 billion program outlined by the Bush Administration. The program supports cost-shared projects with the private sector to demonstrate new technologies that could boost the efficiency and reduce emissions from coal-fired power plants.

Authorizations of Appropriations (Sec. 401). Funding for CCPI is authorized for \$200 million for each year from FY2006-FY2014.

Project Criteria (Sec. 402). Technical criteria are established for coal-based gasification and other projects. 70% of all funding shall be for coal-based gasification technologies. The federal share of financing for each clean coal project will not exceed 50%.

Report (Sec. 403). A report on the projects' status and technical milestones will be submitted after the first year and every two years, through 2014, by the Secretary of Energy to various congressional committees.

Clean Coal Centers of Excellence (Sec. 404). The program includes grants to universities to establish Centers of Excellence for energy systems of the future.

Background. CCPI does not currently have a specific authorization, although it has been funded through the annual Interior and Related Agencies Appropriations bill and, since FY2006, the Energy and Water Development Appropriations bill. The program supersedes the Clean Coal Technology Program, which has completed most of its projects and has been subject to rescissions and deferrals since the mid-1990s.

Policy Context. A key ingredient of President Bush's May 2001 National Energy Policy is to bolster U.S. energy supply. One of its goals is to use coal more efficiently, as coal is an abundant national resource. The Administration contends that new technologies could cost-effectively reduce emissions from coal-fired power plants and overcome barriers to expanded coal use.

Subtitle B — Clean Power Projects

Integrated Coal/Renewable Energy System (Sec. 411). The Secretary of Energy shall provide loan guarantees for an integrated gasification combined cycle (IGCC) facility located in the Upper Great Plains, of at least 200 MW, that would be combined with renewable energy sources, sequester carbon dioxide emissions, and be a source of hydrogen for near-site fuel cell demonstrations. The federal share will not exceed 50%.

Loan to Place Alaska Clean Coal Technology Facility in Service (Sec. 412). The Secretary of Energy is authorized to provide a loan not greater than \$80 million to an experimental clean coal power plant in Healy, Alaska.

Western Integrated Coal Gasification Demonstration Project (Sec. 413). The Secretary of Energy shall demonstrate the use of western coal to fuel an IGCC plant located in a western state at an altitude of more than 4,000 feet above sea level.

Coal Gasification (Sec. 414). Loan guarantees are authorized for an IGCC power plant of at least 400MW in a deregulated market and receiving no ratepayer subsidy.

Petroleum Coke Gasification (Sec. 415). Loan guarantees will be available for at least five petro-coke gasification polygeneration projects, involving co-production of electricity and fuels.

Electron Scrubbing Demonstration (Sec. 416). The Secretary of Energy is directed to use \$5 million of appropriated funds to begin a project managed by the DOE Chicago Operations Office to demonstrate high-energy electron scrubbing technology for high-sulfur coal emissions.

Department of Energy Transportation Fuels from Illinois Basin Coal (Sec. 417). A program shall be established to evaluate the commercial and technical viability of producing Fischer-Tropsch transportation fuels from Illinois basin coal. A gasification test center shall be constructed, and \$85 million is authorized for years FY2006-FY2010.

Subtitle C — Coal and Related Programs

Amendment of the Energy Policy Act of 1992 (Sec. 421). The Secretary of Energy shall carry out a Clean Air Coal Program to provide financial assistance to coal-based power plants that would be less polluting or more efficient than existing plants.

Subtitle D — Federal Coal Leases

Summary of Provisions. This subtitle modifies federal coal leasing procedures to encourage greater coal production on federal lands. Issues raised by

these provisions include their impact on regional competition and returns to the U.S. Treasury.

Short Title (Sec. 431). This subtitle may be cited as the “Coal Leasing Amendments Act of 2005.”

Repeal of the 160 Acre Limitation for Coal Leases (Sec. 432). This section repeals the 160 acre limitation on coal lease modifications. The total area added to an existing coal lease through a modification shall not exceed 960 acres or add acreage larger than the original lease.

Approval of Logical Mining Units (Sec. 433). Criteria are established for extending the mine-out period of a coal lease beyond 40 years.

Payment of Advanced Royalties under Coal Leases (Sec. 434). The Secretary of the Interior may, upon payment of an advance royalty, suspend a coal lessee’s requirement for continuous operation. Advance royalties will be based on the average price of coal sold on the spot market from the same region, and the aggregate number of years advance royalties can be accepted in lieu of production will not exceed 20.

Elimination of Deadline for Submission of Coal Lease Operation and Reclamation Plan (Sec. 435). The previous three-year deadline for submission of a coal lease operation and reclamation plan is eliminated.

Amendment Relating to Financial Assurances with Respect to Bonus Bids (Sec. 436). Financial surety bonds or other financial guarantees for bonus bids will no longer be required.

Inventory Requirement (Sec. 437). The Secretary of the Interior, in consultation with the Secretaries of Agriculture and Energy, will be required to assess coal on public lands, including low-sulfur coal and various impediments to developing such resources.

Application of Amendments (Sec. 438). Amendments made under this provision will apply to any coal lease issued before, on, or after the date of enactment.

Policy Context. Companies could stop producing coal for 20 years instead of 10 under the previous law, possibly reducing revenues for the federal treasury. According to some who opposed this provision, it could lead to greater speculation among firms that can hold properties for longer periods of time without development. The National Mining Association and the industry contended that coal production on federal lands is structured in an inefficient way and the section will allow production to become more efficient. This may occur by allowing coal producers to put together more contiguous tracts.

Title V — Indian Energy

Short Title (Sec. 501). “Indian Tribal Energy Development and Self-Determination Act of 2005.”

Office of Indian Energy Policy and Programs (Sec. 502). This amends Title II of the Department of Energy Organization Act (42 U.S.C. 7131 et seq.) to create the Office of Indian Energy Policy and Programs at the Department of Energy.

Indian Energy (Sec. 503). Title 26 the Energy Policy Act of 1992 (25 U.S.C. 3501) is replaced by the following new sections, which outline procedures whereby Indian tribes would be able to develop and manage the energy resources located on, and rights-of-way through, tribal land.

Sec. 2602. Assistance for tribal energy resource development is to be provided through the Department of the Interior by grants and low-interest loans (such sums as necessary authorized for FY2006-FY2016), and through DOE by grants (\$20 million authorized for each of FY2006-FY2016) and loan guarantees. Federal agencies may give preference to Indian energy when purchasing energy products and byproducts at fair market prices.

Sec. 2603. DOI grants may be provided to tribes for the regulation, development, and management of energy resources on Indian land. Funds may be used for the following purposes: for the inventory and development of energy resources, development and enforcement of tribal laws and regulations, development of a technical infrastructure to protect the environment, and employee training for the previous activities. No funding amount is specified for this section.

Sec. 2604. Under their own tribal energy resource agreements as approved by DOI, Indian tribes may, without prior approval of the Secretary of the Interior, enter into leases or business agreements for energy development and grant rights-of-way over tribal land for pipelines or electric lines. Such sums as are necessary are authorized for FY2006-FY2016.

Sec. 2605. The Bonneville Power Administration and Western Area Power Administration may provide technical assistance to tribes seeking to use the high-voltage transmission system for delivery of electric power. A lump sum of \$750,000 is authorized for this section.

Sec. 2606. DOE, DOI, and the Army Corps of Engineers shall conduct a study of the cost and feasibility of developing a demonstration project that uses wind energy generated on tribal land and hydropower generated by the Corps on the Missouri river to supply firming power to the Western Area Power Administration. A lump sum of \$1 million is authorized for this section.

Consultation with Indian Tribes (Sec. 504). The Secretaries of Energy and of the Interior must involve and consult with Indian tribes in carrying out this title.

Four Corners Transmission Line Project and Electrification (Sec. 505). The Dine Power Authority, an enterprise of the Navajo nation, shall be eligible to receive grants and other assistance to develop a transmission line from the Four Corners Area to southern Nevada, including related generation facilities.

Energy Efficiency in Federally Assisted Housing (Sec. 506). This provision amends the Native American Housing and Self-Determination Act of 1996 (25 U.S.C. 4132) to include “greater energy efficiency” as a goal.

Title VI — Nuclear Matters

Subtitle A — Price-Anderson Act Amendments

Summary of Provisions. The Price-Anderson Act, which addresses liability for damages to the general public from nuclear incidents, is extended through 2025 for new nuclear power plants and new DOE nuclear contracts.⁷ The extension makes relatively few changes in the longstanding Price-Anderson system, except that the maximum annual accident assessment on each reactor is raised from \$10 million to \$15 million and subjected for the first time to an inflation adjustment. Special treatment is also provided for modular reactors. Renewal of Price-Anderson is widely considered to be a prerequisite for building the new nuclear power plants that are encouraged elsewhere in the act.

Short Title (Sec. 601). This subtitle may be cited as the “Price-Anderson Amendments Act of 2005.”

Extension of Indemnification Authority (Sec. 602). Price-Anderson liability coverage for new commercial reactors, DOE nuclear contracts, and non-profit educational institutions is extended through December 31, 2025.

Maximum Assessment (Sec. 603). The total retrospective premium for each reactor is set at the current level of \$95.8 million, and the limit on per-reactor annual payments is raised from \$10 million to \$15 million. The total and annual limits are to be adjusted for inflation every five-year period after August 20, 2003.

Department of Energy Liability Limit (Sec. 604). The liability limit for DOE contractors is set at \$10 billion per incident, to be adjusted for inflation every five years under §607. The DOE contractor liability limit previously was linked to the total liability limit for commercial reactor accidents.

Incidents Outside the United States (Sec. 605). The liability limit and maximum indemnification for DOE contractors for nuclear incidents outside the United States is raised from \$100 million to \$500 million.

⁷ The Price-Anderson Act refers primarily to §170 of the Atomic Energy Act of 1954 (42 U.S.C. 2210).

Reports (Sec. 606). The Nuclear Regulatory Commission (NRC) and DOE must report to Congress by the end of 2021 on the need for further Price-Anderson extensions and modifications.

Inflation Adjustment (Sec. 607). The liability limit for DOE nuclear contractors must be adjusted for inflation every five years after July 1, 2003.

Treatment of Modular Reactors (Sec. 608). For the purpose of applying the limits on retrospective premiums after a nuclear incident, a nuclear plant consisting of multiple small reactors (100-300 megawatts per reactor, up to a total of 1,300 megawatts at the plant site) shall be considered a single reactor. Thus, a modular plant consisting of four 300-megawatt reactors would have a total liability limit of \$95.8 million per accident rather than four times that amount (\$382.3 million).

Applicability (Sec. 609). None of the increased liability limits apply to nuclear incidents taking place before the amendments were enacted.

Civil Penalties (Sec. 610). For DOE nuclear contracts signed after enactment, this section eliminates the civil penalty exemption for nuclear safety violations by the seven non-profit contractors listed in previous law. DOE's authority to automatically remit penalties imposed on all non-profit educational institutions serving as contractors is also repealed. However, this section limits the civil penalties against a non-profit contractor to the amount of management fees received under that contract within a one-year period as determined by the Secretary of Energy.

Background. Under Price-Anderson, the owners of commercial reactors must assume all liability for nuclear damages awarded to the public by the court system, and they must waive most of their legal defenses following a severe radioactive release ("extraordinary nuclear occurrence"). To pay any such damages, each licensed reactor must carry financial protection in the amount of the maximum liability insurance available, which was increased by the insurance industry from \$200 million to \$300 million on January 1, 2003. Any damages exceeding that amount are to be assessed equally against all covered commercial reactors, up to \$95.8 million per reactor (most recently adjusted for inflation on August 20, 2003). Those assessments — called "retrospective premiums" — would now be paid at an annual rate of no more than \$15 million per reactor (to be adjusted for inflation every five years), to limit the potential financial burden on reactor owners following a major accident. According to the Nuclear Regulatory Commission (NRC), 103 commercial reactors are currently covered by the Price-Anderson retrospective premium requirement.

Funding for public compensation following a major nuclear incident, therefore, would include the \$300 million in insurance coverage carried by the reactor that suffered the incident, plus the \$95.8 million in retrospective premiums from each of the 103 currently covered reactors, totaling \$10.2 billion. On top of those payments, a 5% surcharge may also be imposed, raising the total per-reactor retrospective premium to \$100.6 million and the total potential compensation for each incident to about \$10.7 billion. Under Price-Anderson, the nuclear industry's liability for an

incident is capped at that amount, which varies depending on the number of covered reactors, the amount of available insurance, and an inflation adjustment that is made every five years. Payment of any damages above that liability limit would require congressional approval under special procedures in the act.

The Price-Anderson Act also covers contractors who operate hazardous DOE nuclear facilities. The liability limit for DOE contractors is set by the new law at \$10 billion. Price-Anderson authorizes DOE to indemnify its contractors for the entire amount, so any damage payments for nuclear incidents at DOE facilities would ultimately come from the U.S. Treasury. However, the law also allows DOE to fine its contractors for safety violations, and contractor employees and directors can face criminal penalties for “knowingly and willfully” violating nuclear safety rules. Previously, Section 234A of the Atomic Energy Act specifically exempted seven non-profit DOE contractors and their subcontractors and allowed DOE to automatically remit any civil penalties imposed on non-profit educational institutions serving as DOE contractors. The new law repeals those provisions but imposes limits on penalties imposed on non-profit entities.

Policy Context. The Price-Anderson Act’s limits on liability were crucial in establishing the commercial nuclear power industry in the 1950s. Supporters of the Price-Anderson system contend that it has worked well since that time in ensuring that nuclear accident victims would have a secure source of compensation, at little cost to the taxpayer. However, opponents contend that Price-Anderson subsidizes the nuclear power industry by protecting it from some or most of the financial consequences of the worst conceivable accidents.

Although Price-Anderson coverage for new reactors lapsed at the end of 2003, there was no immediate effect on the industry, because previously licensed reactors continued to be covered and no new U.S. reactors are currently planned. However, the Energy Policy Act of 2005 contains numerous incentives for construction of new commercial nuclear power plants, and it is unlikely that any such projects would move forward without Price-Anderson coverage. A lapse in Price-Anderson also would have affected all subsequently signed DOE nuclear facility contracts, which would have had to fall back on alternate indemnification authority.

Subtitle B — General Nuclear Matters

Summary of Provisions. To encourage construction of new nuclear power plants, this subtitle authorizes payments for reactor licensing delays, clarifies when the 40-year period for reactor operating licenses takes effect, and eliminates antitrust reviews of reactor license applications. Exports of weapons-usable highly enriched uranium for medical isotope production are exempted from restrictions designed to speed conversion to low-enriched uranium. Ensuring adequate staffing at NRC is addressed with incentives for both students and retirees to work at the agency, and user fees that fund 90% of NRC’s costs are extended permanently.

Licenses (Sec. 621). The initial 40-year period for a commercial nuclear reactor license would begin when NRC authorized the reactor to commence operation after construction had been completed, rather than when the license was issued before construction started.

Nuclear Regulatory Commission Scholarship and Fellowship Program (Sec. 622). NRC may offer scholarships and fellowships to develop critical nuclear safety regulatory skills. To receive the assistance, a student must agree to work at NRC after graduation for a period of between one and three times as long as the time that the scholarship or fellowship was provided.

Cost Recovery From Government Agencies (Sec. 623). NRC is authorized to charge cost-based fees for all services rendered to other federal agencies.

Elimination of Pension Offset for Certain Rehired Federal Retirees (Sec. 624). When NRC has a critical need for the skills of a retired employee, NRC may hire the retiree as a contractor and exempt him or her from the annuity reductions that would otherwise apply.

Antitrust Review (Sec. 625). NRC no longer must submit nuclear reactor license applications to the Attorney General for antitrust review, as previously required by Atomic Energy Act Section 105 c.

Decommissioning (Sec. 626). NRC is explicitly authorized to issue regulations ensuring that funds collected to decommission nuclear power plants cannot be used for other purposes.

Limitation on Legal Fee Reimbursement (Sec. 627). Except as required by pre-existing contracts, DOE may not reimburse its contractors for legal expenses incurred in defending against “whistleblower” complaints that are ultimately upheld.

Decommissioning Pilot Program (Sec. 628). DOE must establish a program to decommission and decontaminate the site of the Southwest Experimental Fast Oxide Reactor (SEFOR) in Arkansas. Funding of \$16 million is authorized.

Whistleblower Protection (Sec. 629). Previously existing whistleblower protections for employees of nuclear power plants and other NRC licensees and employees of DOE contractors are extended to NRC employees, employees of NRC contractors and subcontractors, and DOE employees. An employee whose whistleblower retaliation complaint does not receive a final decision by the Secretary of Labor within one year can take the case to federal court.

Medical Isotope Production (Sec. 630). Highly enriched uranium (HEU) can be exported to Canada, Belgium, France, Germany, and the Netherlands for production of medical isotopes in nuclear reactors. Those countries are exempt from requirements (under Section 134 of the Atomic Energy Act) that they agree to switch to low-enriched uranium (LEU) as soon as possible and that LEU fuel for their reactors be under active development. Instead, those countries must agree to convert to suitable LEU fuel when it becomes available. NRC must review existing security requirements for HEU used for medical isotope production and impose additional requirements if necessary. The National Academy of Sciences (NAS) is to study the potential availability and cost of medical isotopes produced without HEU. If the Secretary of Energy certifies that U.S. medical isotope demand can be reliably and

economically met with production facilities that do not use HEU, NRC may no longer grant the export exemptions.

Safe Disposal of Greater-Than-Class C Radioactive Waste (Sec. 631). DOE must designate an office with responsibility for providing a facility for permanent disposal of all low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste. Within 180 days after enactment, DOE must give Congress a plan for continued recovery and storage of Greater-Than-Class C radioactive sealed sources that pose a security threat.

Prohibition on Nuclear Exports to Countries That Sponsor Terrorism (Sec. 632). Exports of nuclear materials, equipment, and sensitive technology are prohibited to any country identified by the Secretary of State as a sponsor of terrorism. The prohibition does not apply to radiation monitoring technologies and related surveillance equipment. The President can waive the export restriction under certain conditions. The prohibition applies to exports already approved if they have not yet taken place by the date of enactment.

Employee Benefits (Sec. 633). Subject to the availability of funds, workers at DOE's uranium enrichment plants at Portsmouth, Ohio, and Paducah, Kentucky, who were eligible for certain pension and health care benefits on April 1, 2005, shall continue such eligibility.

Demonstration Hydrogen Production at Existing Nuclear Power Plants (Sec. 634). \$100 million is authorized for two projects to demonstrate hydrogen production at existing nuclear power plants. Before making awards for the projects, the Secretary of Energy must determine whether such hydrogen production would be cost-effective.

Prohibition of Assumption by United States Government of Liability for Certain Foreign Incidents (Sec. 635). The U.S. Government may not provide indemnification for contracts related to nuclear facilities or activities in countries found to sponsor terrorism. The prohibition would not apply to missions necessary for nuclear safety or nonproliferation.

Authorization of Appropriations (Sec. 636). Such sums as necessary to carry out this subtitle are authorized to be appropriated.

Nuclear Regulatory Commission User Fees and Annual Charges (Sec. 637). A statutory requirement that NRC recover 90% of its costs through licensee fees — which was to expire September 20, 2005 — is made permanent. NRC's costs of licensing a national nuclear waste repository and activities reimbursed by direct service fees continue to be excluded from the 90% fee recovery requirement. This section also excludes NRC's costs of regulating residual defense radioactive waste (as required by 50 U.S.C. 2601 note) and most homeland security costs.

Standby Support for Certain Nuclear Power Plant Delays (Sec. 638). The Secretary of Energy is authorized to help pay the cost of regulatory delays at up

to six new commercial nuclear reactors, subject to funding availability. For the first two reactors that begin construction, the DOE payments could cover all the eligible delay-related costs, such as additional interest, up to \$500 million each. For the next four reactors, half of the eligible costs could be paid by DOE, with a payment cap of \$250 million per reactor. Delays caused by the failure of a reactor owner to comply with laws or regulations would not be covered.

Conflicts of Interest Relating to Contracts and Other Arrangements (Sec. 639). NRC may enter into contracts with DOE or operators of DOE facilities despite any conflict of interest, as long as NRC determines that the conflict cannot be mitigated and that there is adequate justification to proceed without mitigation.

Background and Policy Context. One of the Energy Policy Act's potentially most significant incentives for building new nuclear power plants is the "regulatory risk insurance" in Section 638. The Administration had proposed such risk insurance for the first four new reactors as a substitute for loan guarantees and tax credits, contending that the risk insurance and various regulatory measures would provide sufficient encouragement for new reactors. The enacted law includes regulatory risk compensation for up to six new reactors, plus loan guarantees and a production tax credit.

Concern about regulatory risk stems from the experience of some earlier nuclear plants whose operation was held up by licensing problems after they were built. All of today's operating reactors were approved under a two-step licensing system in which they were first issued a construction permit and then, after construction was completed, an operating license was sought. Some reactors — notably the Shoreham plant in New York and Seabrook in New Hampshire — experienced years of litigation over their operating licenses while billions of dollars in interest costs piled up.

The Energy Policy Act of 1992 (P.L. 102-486) created a "one step" reactor licensing process, in which a combined construction permit and operating license (COL) could be issued by NRC. With a COL in hand, a utility or other electric generating company could build a reactor and then operate the completed plant without further licensing proceedings. However, NRC would still have to ensure that the plant was built to its specifications. The process for making that final determination remains uncertain, since it has never been used. Nuclear power critics want to make sure they can raise construction issues with NRC before a plant begins operation, but the nuclear industry wants to prevent NRC's final approval of a completed reactor from becoming as litigious as the old, two-step licensing system.

Uncertainty about how long it would take for a completed reactor with a COL to be approved for operation has been seen as a potential obstacle to obtaining financing for new nuclear plants. By "insuring" the first six reactors against regulatory delays, the provision in the new energy act is intended to provide more confidence to potential investors. However, the stipulation that the federal payments will not cover the failure of a reactor owner "to take any action required by law or regulation" could undermine that confidence, since many reactor delays in the past resulted from disagreements over whether laws and regulations had been properly adhered to during construction.

Section 621 addresses another area of uncertainty about the one-step licensing process. Under the process as established in 1992 (Atomic Energy Act Section 185 b.), a reactor's 40-year initial license period may begin when a COL is issued before construction starts — several years before the reactor is to begin operating. Before Section 185 was added, reactor operating licenses had been issued only after construction was complete, at which point the 40-year license period would begin. Section 621 of the new energy act specifies that the 40-year period begins after NRC authorizes a reactor to operate, rather than when the COL is issued.

Substantial controversy was generated by the partial exemption in Section 630 for exports of highly enriched uranium for medical isotope production. The HEU restrictions are intended to spur foreign cooperation with U.S. efforts to convert all HEU reactors to LEU, but supporters of the exemption contended that the restrictions could disrupt U.S. supplies of medical isotopes produced in foreign HEU reactors.

Nuclear nonproliferation efforts are intended to be strengthened by the export restrictions in Section 632. This provision is intended to block implementation of a 1994 agreement under which North Korea was to receive a U.S.-designed nuclear power plant in return for abandoning its nuclear weapons program. The agreement has been suspended in light of North Korea's continuing weapons activities.

Subtitle C — Next Generation Nuclear Plant Project

Summary of Provisions. DOE is authorized to build and operate a prototype "Next Generation Nuclear Power Plant" (NGNP) at Idaho National Laboratory. The prototype — which must produce electricity, hydrogen, or both — is to use one of the advanced reactor concepts being developed by DOE's ongoing Generation IV Nuclear Energy Systems Initiative. DOE had been undecided on proceeding with the NGNP project, but this Subtitle establishes a timetable leading to operation of the new reactor by the end of FY2021.

Project Establishment (Sec. 641). The Secretary of Energy is required to carry out research, development, design, construction, and operation of NGNP, based on the Generation IV program authorized in section 942(d). NGNP must produce electricity, hydrogen, or both.

Project Management (Sec. 642). NGNP shall be managed by DOE's Office of Nuclear Energy, Science, and Technology, and may be combined with the Generation IV program. The reactor must be located at Idaho National Laboratory (INL), which is to be the lead laboratory for the project. INL must organize an industrial consortium to share the project's costs in accordance with section 988.

Project Organization (Sec. 643). The project must include research, development, and other activities and program elements leading to NGNP construction and operation, and may draw on a wide range of U.S. and international expertise. DOE's Nuclear Energy Research Advisory Committee (NERAC) is to regularly review all NGNP program plans, and all NERAC reports must be submitted to Congress.

Nuclear Regulatory Commission (Sec. 644). NGNP will be subject to NRC licensing and regulation, under a “licensing strategy” developed jointly by NRC and DOE.

Project Timelines and Authorization of Appropriations (Sec. 645). By the end of FY2011, the Secretary of Energy must select a technology for high-temperature hydrogen production and establish the NGNP’s design parameters. DOE is to fund a reactor design competition among as many as four teams for not more than two years. Operation of the facility is to begin by the end of FY2021. The Secretary can establish alternative deadlines. Appropriations of \$1.25 billion are authorized from FY2006-FY2015, and such sums as necessary from FY2016-FY2021.

Background. NGNP is currently funded under DOE’s Generation IV Nuclear Energy Systems Initiative, which is closely related to the Nuclear Hydrogen Initiative and the Advanced Fuel Cycle Initiative. “Generation IV” refers to advanced nuclear energy concepts, such as high-temperature reactors cooled by gas or liquid metal, that could eventually replace today’s “Generation III” commercially available advanced water-cooled reactors. Generation IV reactors could potentially operate more safely and economically, and their high heat output could be harnessed to economically separate hydrogen from water, according to proponents.

DOE had planned to award one or more contracts for a pre-conceptual design of the NGNP prototype in FY2004, but instead has moved much more slowly on the project, according to the Department’s FY2006 budget justification. For FY2006, DOE proposes to conduct “further investigation of technical and economic challenges and risks” that would “help inform a decision on whether to proceed with a demonstration of the Next Generation Nuclear Plant.”⁸

The Senate Appropriations Committee has criticized the pace of the NGNP program, contending that it “lacks sufficient focus and doesn’t support a specific schedule to facilitate the construction of a next generation reactor at the Idaho National Lab” (S.Rept. 109-84). The authorization language in Subtitle C is evidently intended to address those concerns.

Policy Context. Construction of a prototype “next generation” reactor would be a major step for DOE’s nuclear R&D program, which has been limited primarily to conceptual and laboratory-scale research since the end of the breeder reactor program in 1983. Even that work was mostly eliminated by the late 1990s under the Clinton Administration. Under the George W. Bush Administration, however, the budget and scope of the DOE nuclear energy program has expanded sharply, and the newly consolidated and renamed Idaho National Laboratory has become the lead laboratory for the DOE Office of Nuclear Energy, Science, and Technology.

DOE has not built a prototype reactor since the Fast Flux Test Facility in 1980, which cost \$640 million to construct and nearly \$90 million per year to operate when

⁸ *Department of Energy FY 2006 Congressional Budget Request*. DOE/ME-0048, Volume 3, Energy Supply. p. 336.

it was shut down in 1992.⁹ The cost of the NGNP project could be expected to be in that magnitude, adjusted for inflation. As described above, this subtitle authorizes \$1.25 billion for research and construction through FY2015 and such sums as necessary from then until FY2012, subject to the non-federal matching requirements in section 988.

Supporters of Generation IV nuclear technology contend that a government-supported prototype — the NGNP project — will be crucial for future commercialization. After 2010, according to NERAC, “given sufficient private and public funding commitment, a prototype plant would be ready to be constructed to prepare the Generation IV plant design for broad market application.”¹⁰

Opponents of the Generation IV program contend that it is focusing on economically non-viable technologies that involve separation of weapons-usable plutonium. “This research effort will likely expand the availability of weapon-usable materials in other countries in the near-term, result in the training and employment of new cadres of scientist and engineers with expertise in actinide (including plutonium) chemistry and metallurgy, but not result in the deployment of new commercially viable nuclear power technologies,” said a dissenting member of NERAC.¹¹

Subtitle D — Nuclear Security

Summary of Provisions. This subtitle includes a variety of provisions intended to improve the security of nuclear plants and nuclear materials. The Nuclear Regulatory Commission (NRC) is required within 18 months of enactment to revise the “design basis threat” (DBT) that nuclear plant security forces must be able to overcome, each nuclear plant must undergo force-on-force security evaluations at least every three years, and there must be a federal security coordinator for each NRC region. Other provisions require tracking of radiation sources, authorize use of firearms by nuclear plant security forces, and require NRC consultation with the Department of Homeland Security on the locations of proposed nuclear facilities. NRC strongly opposed the DBT revision as redundant with actions the agency had already carried out, but it had long sought some of the other provisions, such as the firearms authority.

Security Evaluations; Design Basis Threat Rulemaking (Sec. 651(a)). NRC must conduct security evaluations that include force-on-force exercises at each nuclear plant at least once every three years. The exercises must simulate attacks in accordance with the design basis threat (DBT), and NRC must

⁹ Not adjusted for inflation. U.S. Department of Energy. *Project Book*. DOE/CR-0100. January 1980. p. 45. U.S. General Accounting Office. *Nuclear Science: Fast Flux Test Facility on Standby, Awaiting DOE Decision on Future Missions*. GAO/RCED-92-121FS. April 1992. p. 1.

¹⁰ Nuclear Energy Research Advisory Committee, Subcommittee on Long-Term Planning for Nuclear Energy Research. *Long-Term Nuclear Technology Research and Development Plan Summary*. June 2000

¹¹ Cochran, Thomas B. Memorandum to the Chairman of NERAC. October 16, 2002.

mitigate any potential conflicts of interest among exercise participants, such as the simulated adversary force. NRC within 18 months must complete a rulemaking to revise the DBT that takes into account a wide variety of potential modes of attack (physical, chemical, biological, etc.), the potential for large attacks by multiple teams, potential assistance by several employees inside a facility, the effects of large explosives and other modern weaponry, and other specific factors. NRC must assign a federal security coordinator to each NRC region.

Backup Power for Certain Emergency Notification Systems (Sec. 651(b)). For nuclear power plants where 15 million people live within a 50-mile radius, NRC must require backup power systems for sirens and other emergency warning systems.

Higher Education and Other Provisions (Sec. 651(c)). NRC is authorized to provide grants to institutions of higher education and enter into partnerships to support activities related to NRC's regulatory mission. NRC may purchase inexpensive promotional materials for recruiting potential employees and may pay expenses of college students who work as NRC staff assistants.

Radiation Source Protection (Sec. 651(d)). NRC must issue regulations prohibiting the export or import of radiation sources (generally sealed radioactive material for industrial or other uses), unless the sources will be handled securely. Within one year after enactment, NRC must issue regulations establishing a mandatory tracking system for radiation sources in the United States. NRC must arrange for a National Academy of Sciences study of potential alternatives to radiation sources, and a multi-agency task force is established to recommend additional controls on radiation sources.

Treatment of Accelerator-Produced Material (Sec. 651(e)). The definition of "byproduct material" under Section 11 e. of the Atomic Energy Act is expanded to include material made radioactive by particle accelerators (in addition to nuclear reactors), and to include discrete sources of radium 226 and similar sources using naturally occurring radioactive material. Disposal of byproduct material must take place in facilities licensed by NRC or states with NRC agreements, or in other facilities permitted by environmental laws. Byproduct material is not included in the management and disposal system for low-level radioactive waste.

Fingerprinting and Criminal History Record Checks (Sec. 652). The previous requirement that individuals be fingerprinted for criminal background checks before receiving unescorted access to nuclear power plants (Atomic Energy Act, Section 149) would be extended to individuals with unescorted access to any radioactive material or property that could pose a health or security threat. Other biometric methods could be used instead of fingerprinting.

Use of Firearms by Security Personnel (Sec. 653). NRC may authorize the use of firearms by security personnel at nuclear power plants and other facilities it licenses or regulates. Federal law previously authorized NRC employees and contractors to use firearms, but not employees or contractors of nuclear licensees

(Atomic Energy Act, Section 161 k.). This provision counters some state laws that preclude private guard forces from utilizing some weapons.

Unauthorized Introduction of Dangerous Weapons (Sec. 654).

Controls on the entry of dangerous weapons or materials into NRC facilities under previous law (Atomic Energy Act, Section 229a) are extended to commercial nuclear power plants and other NRC-regulated facilities.

Sabotage of Nuclear Facilities, Fuel, or Designated Material (Sec. 655).

Previous penalties for sabotage of licensed nuclear facilities or materials (Atomic Energy Act, Section 236 a.) would be extended to cover facilities under construction, as well as those that are “certified” by NRC (rather than “licensed”), emergency warning centers, and other radioactive materials and property designated by NRC.

Secure Transfer of Nuclear Materials (Sec. 656).

Radioactive materials transferred or received in the United States pursuant to an import or export license must be accompanied by a shipping manifest, and each person receiving such materials must undergo a security background check.

Department of Homeland Security Consultation (Sec. 657).

Before licensing a nuclear reactor, NRC must consult with the Department of Homeland Security about the vulnerability of the reactor’s proposed location to terrorist attack.

Background and Policy Context.

Most of the provisions in this subtitle have been the subject of considerable discussion since the terrorist attacks of September 11, 2001. Particularly contentious has been the debate over the design basis threat, which prescribes the severity of attacks that nuclear security forces must be prepared to defeat. After a “top-to-bottom” review of its security requirements following 9/11, NRC issued a regulatory order in April 2003 strengthening the DBT to “represent the largest reasonable threat against which a regulated private guard force should be expected to defend under existing law,” according to NRC’s announcement. The details of the revised DBT, which took effect October 29, 2004, were not released to the public.

Critics contend that the revised DBT remains inadequate in light of the separate, coordinated terrorist attacks that were demonstrated on 9/11. Criticism of the DBT is reflected in the factors that Section 651 requires NRC to consider in making further revisions — such as potential attacks by multiple teams and suicide attacks.

Since late 2004, NRC has required each nuclear power plant to conduct monitored force-on-force exercises once every three years. NRC required the nuclear industry to develop and train a “composite adversary force,” comprising security officers from many plants, to simulate terrorist attacks in the force-on-force exercises. However, in September 2004 testimony, the Government Accountability Office (GAO) criticized the industry’s selection of a security company that guards about half of U.S. nuclear plants, Wackenhut, to also provide the adversary force. In addition to raising “questions about the force’s independence,” GAO noted that

Wackenhut had been accused of cheating on previous force-on-force exercises by the Department of Energy.¹²

Section 651 imposes a statutory requirement that each nuclear plant undergo force-on-force exercises at least once every three years (as NRC previously required), that the exercises simulate the threats in the DBT, and — reflecting the Wackenhut issue — that NRC “mitigate any potential conflict of interest that could influence the results of a force-on-force exercise, as the Commission determines to be necessary and appropriate.”

NRC strongly opposed the act’s requirements for DBT revisions and force-on-force exercises on the grounds that NRC’s security reviews following 9/11 had already produced the necessary improvements. Shortly before the act was passed, NRC contended that the legislation “could raise the question whether studies and evaluations that the NRC has already completed will have to be repeated, wasting scarce resources that would be used better elsewhere,” and that the statutory provisions “do not promise greater security than the NRC is already achieving through its activities.”¹³ NRC also called unnecessary the new requirements for transferring nuclear materials (Section 656) and the requirement for consultation with the Department of Homeland Security about nuclear plant siting (Section 657).

However, NRC supported a number of the act’s provisions. Adding accelerator-produced radioactive material and radium 225 sources to the definition of “byproduct material” (Section 651(e)) brings them under NRC regulation, eliminating situations in which an isotope would be regulated by NRC if it was produced in a reactor but not if it was produced in a particle accelerator. NRC has long requested the provisions on use of firearms (Section 652) and sabotage (Section 655), among others. “These provisions will make an industry that is already well protected even safer from the threats of terrorism and radiological sabotage,” said NRC Chairman Nils J. Diaz after the bill was signed.¹⁴

The act’s requirements for protecting radioactive sources (Section 651(d)) address concerns about the potential for such sources to be used in “dirty bombs,” which would disperse radioactivity with conventional explosives. The tracking system required by Section 651(d) appears similar to a tracking proposal announced by NRC July 20, 2005.¹⁵

¹² Government Accountability Office. *Nuclear Regulatory Commission: Preliminary Observations on Efforts to Improve Security at Nuclear Power Plants*. Statement of Jim Wells, Director, Natural Resources and Environment, Government Accountability Office, to the Subcommittee on National Security, Emerging Threats, and International Relations, House Committee on Government Reform. September 14, 2004. p. 14.

¹³ *NRC Comments on H.R. 6 as Passed by the Senate and the House of Representatives*. Enclosure to letter from NRC Chairman Nils J. Diaz to multiple congressional committees. July 13, 2005

¹⁴ “Energy Bill Provides for Enhanced Security at Commercial Nuclear Facilities.” NRC News Release No. 05-109. August 8, 2005.

¹⁵ “NRC Proposes National Tracking System for Certain Radioactive Materials.” NRC News (continued...)

Title VII — Vehicles and Fuels

Subtitle A — Existing Programs

Summary of Provisions. The sections of this subtitle refer to alternative fuel and vehicle purchase requirements under the Energy Policy and Conservation Act (EPCA) (P.L. 94-163) and the Energy Policy Act of 1992 (EPAct, P.L. 102-486). Various requirements apply to federal vehicle fleets, as well as state fleets and fleets operated by alternative fuel providers.

Use of Alternative Fuels by Dual Fueled Vehicles (Sec. 701). Section 400AA of EPCA is amended to require that all federal agencies operate dual-fueled vehicles on alternative fuels or petition the Secretary of Energy for a waiver from the requirement. Under previous law, agencies were not required to file a petition to be exempted from the requirement.

Incremental Cost Allocation (Sec. 702). Previously, section 303(c) of EPAct allowed federal agencies to allocate the incremental cost of required alternative fuel vehicles across the whole vehicle fleet. The new law requires agencies to do so.

Alternative Compliance and Flexibility (Sec. 703). This section requires the Secretary of Energy to allocate vehicle purchase credits for: the acquisition of hybrid vehicles; the installation of alternative fuel refueling infrastructure; or other actions that will reduce petroleum consumption.

Review of Energy Policy Act of 1992 Programs (Sec. 704). The Secretary of Energy is required to conduct a study on the effectiveness of the alternative fuel vehicle programs under EPAct. Specifically, the Secretary is required to assess the effects on vehicle technology, availability, and cost.

Report Concerning Compliance with Alternative Fuel Vehicle Purchasing Requirements (Sec. 705). Under previous law, each federal agency was required to report annually (through 2012) to Congress on its compliance with EPAct vehicle purchase requirements. The new law extends the requirement through 2020.

Joint Flexible Fuel/Hybrid Vehicle Commercialization Initiative (Sec. 706). The Secretary of Energy is required to establish a grant program for applied research on flexible fuel hybrid vehicles. A total of \$40 million is authorized between FY2006 and FY2009.

Emergency Exemption (Sec. 707). Section 301 of EPAct is amended to add vehicles used for the emergency repair of electricity infrastructure to the

¹⁵ (...continued)

definition of “emergency vehicles.” Emergency vehicles are exempted from EPA’s alternative fuel vehicle purchase requirements.

Subtitle B — Hybrid Vehicles, Advanced Vehicles, and Fuel Cell Buses

Summary of Provisions. Various programs are established to promote the development of hybrid and advanced technology vehicles, including transit buses.

Hybrid Vehicles (Sec. 711). The Secretary of Energy is required to accelerate research on technologies for hybrid vehicles. No new funds are authorized.

Efficient Hybrid and Advanced Diesel Vehicles (Sec. 712). The EPA Administrator is required to establish a program to encourage the domestic production and sales of efficient hybrid and advanced diesel vehicles. The program must include grants to domestic vehicle manufacturers to encourage production and provide consumer purchase incentives. Such sums as necessary are authorized between FY2006 and FY2015.

Advanced Vehicles (Secs. 721-723). The Secretary of Energy is required to provide grants to state governments, local governments, and metropolitan transit authorities for the purchase of alternative fuel, hybrid, and fuel cell vehicles, and the infrastructure to support them. The program will be administered through the Clean Cities Program. Grants are capped at \$15 million per applicant (**Sec. 721**). The Secretary is required to submit reports to Congress identifying grant recipients and evaluating the program’s effectiveness (**Sec. 722**). \$200 million total is authorized for the grant program (**Sec. 723**).

Fuel Cell Transit Bus Demonstration (Sec. 731). The Secretary of Energy is required to establish a program to demonstrate up to 25 fuel cell transit buses in various localities. \$10 million annually is authorized for FY2006 through FY2010.

Subtitle C — Clean School Buses

Summary of Provisions. New programs are established to provide grants for the deployment of alternative fuel and advanced diesel engines for school buses and commercial vehicles, as well as retrofit technologies for existing vehicles.

Clean School Bus Program (Sec. 741). A pilot program administered by the Environmental Protection Agency is established to provide grants to local governments and contractors that provide school bus service for public school systems. Grants are provided to aid in the purchase of alternative fuel and advanced diesel buses, diesel engine retrofits, and the infrastructure necessary to support them. \$55 million is authorized in each of FY2006 and FY2007, and such sums as are necessary in FY2008 through FY2010.

Diesel Truck Retrofit and Fleet Modernization Program (Sec. 742).

The EPA Administrator is required to establish a program to provide grants (administered by state or local governments) to modernize cargo truck operations. Grants will be used to retrofit pre-1999 vehicles with advanced emissions control devices. A total of \$100 million is authorized between FY2006 and FY2008, and such sums as are necessary in FY2009 and FY2010.

Fuel Cell School Buses (Sec. 743).

A pilot program is to be established to provide grants for the development and demonstration of fuel cell school buses. A total of \$25 million is authorized for FY2006 through FY2009.

Subtitle D — Miscellaneous***Railroad Efficiency (Sec. 751).***

A public-private research partnership is established for the development and demonstration of locomotive engines that increase fuel economy, reduce emissions, and lower costs. A total of \$65 million is authorized for FY2006 through FY2008.

Mobile Emission Reductions Trading and Crediting (Sec. 752).

The EPA Administrator must submit a report to Congress within 180 days of enactment about the use of emissions reduction credits received from mobile sources to provide the necessary emissions offsets for new stationary sources. The study would cover the volumes, sources, cost, and legal basis for such emissions credit trading.

Aviation Fuel Conservation and Emissions (Sec. 753).

The Federal Aviation Administration and EPA within 60 days of enactment must initiate a joint study of the impact of aircraft emissions on air quality in Clean Air Act nonattainment areas, ways to promote fuel conservation measures and reduce emissions, and opportunities to reduce air traffic inefficiencies that increase fuel burn and emissions, and report the results to Congress within one year of initiating the study.

Diesel Fueled Vehicles (Sec. 754).

The Secretary of Energy is required to accelerate research on emissions control technologies for diesel motor vehicles. The objective of the research is to enable diesel technology to meet Tier 2 emission standards not later than 2010. (These standards will apply to cars and light trucks after the 2003 model year.) No new funding is authorized.

Conserve by Bicycling Program (Sec. 755).

The Department of Transportation (DOT) is directed to conduct up to 10 pilot bicycling projects to conserve energy. A minimum of 20% of each project's costs would have to be provided by non-federal sources. Also, DOT must engage the National Academy of Sciences to conduct a research study on the feasibility of converting motor vehicle trips to bicycle trips.

Reduction of Engine Idling (Sec. 756).

EPA is required to study whether existing models of air emissions accurately reflect emissions from idling vehicles. Further, EPA is required to establish a program to support the deployment of idle-reduction technologies. A total of \$95 million is authorized for FY2006 through FY2008 for the deployment of heavy truck technologies. A total of \$35 million is

authorized for FY2006 through FY2008 for the deployment of locomotive technologies.

Biodiesel Engine Testing Program (Sec. 757). The Secretary of Energy is required to study the effects of biodiesel and biodiesel blends on current and future emissions control technologies. \$5 million is authorized annually for FY2006 through FY2010.

Ultra-Efficient Engine Technology for Aircraft (Sec. 758). The Secretary of Energy, in cooperation with the National Aeronautics and Space Administration, is required to develop new engine technology for aircraft with a goal of a 10% increase in fuel efficiency and a 70% decrease in nitrogen oxide emissions during takeoff and landing. \$50 million is authorized annually for FY2006 through FY2010.

Fuel Economy Incentive Requirements (Sec. 759). To receive federal fuel economy incentives, dual-fueled vehicles must have a label on the fuel compartment stating that the vehicle can be operated on both conventional and alternative fuels. This requirement is effective for vehicles manufactured on or after September 1, 2006.

Subtitle E — Automobile Efficiency

Summary of Provisions. This subtitle authorizes appropriations to the National Highway Traffic Safety Administration (NHTSA) to conduct fuel economy analysis and rulemaking through FY2010. It also retains the corporate average fuel economy (CAFÉ) credit for dual-fueled vehicles, requires study of the feasibility and consequences of achieving a significant reduction in vehicle fuel consumption, and requires a revision to the adjustment applied against tested fuel economy ratings so that in-use fuel economy estimates posted to new cars will more closely approximate purchasers' experience.

Authorization of Appropriations for Implementation and Enforcement of Fuel Economy Standards (Sec. 771). The bill authorizes \$3.5 million annually during FY2006-FY2010 for the National Highway Traffic Safety Administration (NHTSA) to carry out fuel economy rulemakings.

Extension of Maximum Fuel Economy Increase for Alternative Fueled Vehicles (Sec. 772). The legislation extends corporate average fuel economy (CAFE) credits that accrue to manufacturers of dual-fueled vehicles. The cap to the credit of 1.2 miles per gallon (mpg) earned by any individual manufacturer is extended to model year (MY) 2010. It was otherwise scheduled to drop to a cap of 0.9 mpg beginning in MY2005. The bill postpones institution of the 0.9 cap until MY2011 and authorizes it through MY2014.

Study of Feasibility and Effects of Reducing Use of Fuel for Automobiles (Sec. 773). NHTSA must study the feasibility and effects of reducing automobile fuel consumption "a significant percentage" by MY2014.

Update Testing Procedures (Sec. 774). The legislation requires a revision to the adjustment made to as-tested fuel economy levels so that the in-use fuel economy estimates posted to new vehicles will be more in conformance with the fuel economy that purchasers of new vehicles experience in actual use. Differences between the test cycle from characteristic use of automobiles with respect to use of air conditioning, currently higher speed limits, and faster acceleration rates are directed to be elements in developing a more substantial adjustment factor.

Background. The corporate average fuel economy standards (CAFE) were established in the Energy policy and Conservation Act (P.L. 94-163).

Policy Context. Language in the FY1996-FY2000 Department of Transportation (DOT) Appropriations Acts prohibited expenditures for rulemaking that would have made any adjustment to the CAFE standards. However, sustained higher prices for oil and gasoline since 2002 have again focused attention on gasoline consumption by cars and light trucks. While there have been legislative proposals to boost CAFE, the energy law essentially encourages and leaves NHTSA free to conduct rulemakings as provided in statute. A notice of proposed rulemaking issued in August 2005 that would establish CAFE standards for light duty trucks based upon vehicle size is under review.

Subtitle F — Federal and State Procurement

Summary of Provisions. Federal agencies are required to purchase fuel cell vehicles, hydrogen energy systems, and other fuel cell systems. The Secretary of Energy is required to defray the additional costs of such systems. The Secretary of Energy is also permitted to promote the procurement of such systems by state agencies.

Definitions (Sec. 781). Various terms are defined, including “fuel cell,” “stationary,” and “portable.”

Federal and State Procurement of Fuel Cell Vehicles and Hydrogen Energy Systems (Sec. 782). In order to meet fuel savings goals established in various executive orders, all federal agencies that use light- or heavy-duty vehicles are required to lease or purchase fuel cell vehicles and hydrogen energy systems. The Secretary of Energy is required to pay federal agencies the incremental cost of the new systems. The Secretary of Energy is permitted to establish a cooperative program with state agencies to encourage the purchase of fuel cell vehicles. A total of \$105 million is authorized between FY2006 and FY2008.

Federal Procurement of Stationary, Portable, and Micro Fuel Cells (Sec. 783). All federal agencies that use electrical power from stationary, portable, or microportable devices are required to lease or purchase stationary, portable, or micro fuel cells. The Secretary of Energy is required to pay federal agencies the incremental cost of the new systems. A total of \$345 million is authorized between FY2006 and FY2010.

Subtitle G — Diesel Emissions Reduction

Summary of Provisions. A program is established within the Environmental Protection Agency (EPA) to provide grants and loans to retrofit vehicles with diesel engines with new emission reduction technology. Eligible vehicles include heavy-duty trucks, locomotives, and boats.

Definitions (Sec. 791). This defines various terms, including “certified engine configuration,” “emerging technology,” and “verified technology.”

National Grant and Loan Programs (Sec. 792). EPA is to provide grants and loans for retrofits of various types of engines, including buses, heavy-duty trucks, locomotives, and marine engines.

State Grant and Loan Programs (Sec. 793). EPA must support grant and loan programs administered by the states.

Evaluation and Report (Sec. 794). The EPA Administrator must report to Congress evaluating the implementation of the programs.

Outreach and Incentives (Sec. 795). The EPA Administrator is required to conduct public outreach on the benefits of eligible technologies, and develop nonfinancial incentives for the deployment of eligible technologies.

Effect of Subtitle (Sec. 796). Nothing in the subtitle affects authorities under the Clean Air Act.

Authorization of Appropriations (Sec. 797). \$200 million is authorized annually for FY2007 through FY2011.

Title VIII — Hydrogen

Summary of Provisions. Title VIII promotes research and development of hydrogen and fuel cells for transportation, stationary, and micro applications. The title authorizes \$3.3 billion for FY2006-2010 for hydrogen and fuel cell R&D.

Hydrogen and Fuel Cell Program (Sec. 801). This title may be cited as the “Spark M. Matsunaga Hydrogen Act of 2005.” The Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 (42 U.S.C. 12401 et seq.) authorized hydrogen and fuel cell research at the Department of Energy. Funding levels under the earlier act were authorized through FY2001, although research is ongoing.

Purposes (Sec. 802). Purposes for Title VIII include enabling and promoting “comprehensive development, demonstration, and commercialization of hydrogen and fuel cell technology in partnership with industry.”

Definitions (Sec. 803). Various definitions include “fuel cell,” “infrastructure,” “stationary,” and “portable.”

Plan (Sec. 804). Within six months of enactment, the Secretary of Energy must transmit to Congress a plan for R&D on hydrogen fuel and fuel cells. The plan must include a five-year research agenda, five-year program milestones, and the most significant technical and non-technical barriers to achieving goals set in §805.

Programs (Sec. 805). The Secretary of Energy, in consultation with other federal agencies, is directed to conduct a program of competitive R&D grants for research on hydrogen and fuel cells for transportation, utility, industrial, commercial, and residential applications. Program goals include the development of hydrogen-fueled vehicles acceptable to consumers by 2020; the development of hydrogen infrastructure by 2020; and the development of safe, economical, and environmentally sound fuel cells. A total of \$1,060 million is authorized for FY2006 through FY2010 for R&D on hydrogen supply. A total of \$860 million is authorized for fuel cell technology over the same time frame.

Hydrogen and Fuel Cell Technical Task Force (Sec. 806). This section establishes an Interagency Task Force to (among other duties) assess various energy technologies, to foster information exchange among interested parties, and promote the introduction of hydrogen infrastructure.

Technical Advisory Committee (Sec. 807). A Hydrogen Technical and Fuel Cell Advisory Committee is established to advise the Secretary and review the plan developed in §804.

Demonstration (Sec. 808). The Secretary of Energy is required to fund demonstration projects on hydrogen and fuel cell technologies for transportation and for portable and stationary applications. A total of \$1.3 billion is authorized for FY2006 through FY2010 to carry out the demonstrations.

Codes and Standards (Sec. 809). The Secretary of Energy, in cooperation with the Task Force, is required to provide grants or enter into contracts for the development of safety codes and standards for hydrogen and fuel cells. A total of \$38 million is authorized for FY2006 through FY2010.

Disclosure (Sec. 810). The Secretary of Energy shall protect against the dissemination of proprietary information related to R&D under Title VIII.

Reports (Sec. 811). The Secretary of Energy is required to report to Congress. Required elements of the report include Department of Energy activities related to Title VIII; changes in strategy resulting from demonstration projects; progress toward deploying 100,000 hydrogen-fueled vehicles by 2010 and 2.5 million hydrogen-fueled vehicles by 2020; and problems associated with Title VIII programs. \$1.5 million annually is authorized for FY2006 through FY2020.

Solar and Wind Technologies (Sec. 812). A program of five pilot projects is created to demonstrate the use of solar energy to produce hydrogen. Further, a program of five pilot projects is created to demonstrate the use of wind

energy to produce hydrogen. Also, DOE is directed to support research programs at universities that study the use of solar and wind energy technologies to produce hydrogen. Such sums as necessary are authorized for FY2006 through FY2020.

Technology Transfer (Sec. 813). The Secretary of Energy is required to carry out programs to transfer hydrogen and fuel cell technologies to the private sector, accelerate application of those technologies, promote the exchange of nonproprietary information, and assess the viability of hydrogen and fuel cell systems.

Miscellaneous Provisions (Sec. 814). The Secretary of Energy is authorized to represent U.S. interests on hydrogen and fuel cells before governments and nongovernmental organizations.

Cost Sharing (Sec. 815). Projects under Title VIII are subject to the cost-sharing provisions in §988.

Savings Clause (Sec. 816). Specified authorities of the Secretary of Transportation would not be affected.

Background. Hydrogen fuel and fuel cell vehicles have been the focus of increased attention, especially with the announcement of the Hydrogen Fuel Initiative during the January 2003 State of the Union Address. Over five years, the Administration is seeking a total funding increase of \$720 million. This initiative would fund research on hydrogen fuel and fuel cells for transportation and stationary applications, and would complement the existing FreedomCAR initiative, which focuses research on the development of advanced technologies for passenger vehicles. The authorizations in the energy act, if appropriated, would represent a significant funding increase above the Administration's request.

Title IX — Research and Development

Short Title, Goals, and Definitions (Secs. 901-903). This title may be cited as the "Energy Research, Development, Demonstration, and Commercial Application Act of 2005." Goals for the RDD&C program include increasing energy efficiency and diversifying energy supply.

Subtitle A — Energy Efficiency

Summary of Provisions. Authorizations are provided for DOE research and development programs to improve energy efficiency. Existing R&D programs for vehicles, buildings, and industry are authorized, as well as new programs for advanced lighting, building standards, electric vehicle batteries, and technology transfer centers. For these programs, the law authorizes \$2.8 billion.

Energy Efficiency (Sec. 911). This provision directs DOE to conduct an RDD&C program to increase the energy efficiency of vehicles, buildings, and industrial processes. The goals are to reduce energy imports and cut costs while

enhancing the economy, energy security, and the environment. Funding is authorized at \$783 million for FY2007, \$865 million for FY2008, and \$952 million for FY2009. To carry out the requirements of Section 912, an additional authorization of \$50 million per year is established for FY2010 through 2013.

Next Generation Lighting Initiative (Sec. 912). A DOE program is created that aims to develop advanced white light-emitting diodes (LEDs) for high efficiency lighting. These LEDs are expected to be more efficient than incandescent and fluorescent lights. Also, DOE is directed to arrange for the National Academy of Sciences to conduct periodic reviews of the initiative.

National Building Performance Initiative (Sec. 913). The Department of Commerce, in coordination with DOE, is directed to establish an interagency task group that would create a plan to integrate work among federal, state, and voluntary organizations to improve the energy efficiency performance of buildings. Within one year of enactment, a report to Congress is required on the findings of the plan.

Building Standards (Sec. 914). DOE is directed to work with the National Institute of Building Sciences to prepare a report that assesses the effectiveness of voluntary building energy performance standards. After receiving the report, DOE is required to establish a program of technical assistance and grants to support revisions of existing standards. Further, the technical assistance and grants program is required to comply with the National Technology Transfer and Advancement Act of 1995 and amendments thereto (15 U.S.C. 272 note).

Secondary Electric Vehicle Battery Use Program (Sec. 915). A program is established at DOE for RDD&C on applications for worn out electric vehicle batteries for utility and commercial power storage and power quality. A 50% cost share by the project proposer (e.g. state or local government, manufacturer) is required. Further, project proposers would be required to satisfy a 20% cost share set by Section 988, which also allows the Secretary of Energy to waive the requirement under certain conditions.

Energy Efficiency Science Initiative (Sec. 916). DOE is directed to establish an energy efficiency research program, with grants to be competitively awarded and subject to peer review. A report to Congress is required, which is to be submitted along with the President's annual budget request, that describes the process used to award funds.

Advanced Energy Efficiency Technology Transfer Centers (Sec. 917). DOE is directed to create a grant program to support state and local governments, universities, and nonprofit organizations to create a network of Advanced Energy Technology Transfer Centers. A periodic report to Congress is required. Grant recipients would be required to satisfy a 20% cost share set by Section 988. The provision authorizes such sums as are necessary.

Background. In the past, appropriations for the DOE Energy Efficiency R&D program have often been the subject of debate, especially about the relative emphasis on long-term basic R&D versus applied R&D that is focused on demonstration and commercialization.

Policy Context. This section broadens the Energy Efficiency R&D program by creating a focus on new lighting technology and vehicle battery recycling, a new administrative mechanism for improving building energy performance, and a grant program for technology transfer. However, the impact will depend greatly on the level of appropriations for this program, which has had a growing share of its funding earmarked for congressionally designated projects.

Subtitle B — Distributed Energy and Electric Energy Systems

Summary of Provisions. Authorizations are provided for DOE research and development programs for distributed energy and electric energy systems. Existing R&D programs are authorized as well as special programs for high power density industries and micro-cogeneration technology. For these programs, the law authorizes \$768 million.

Distributed Energy and Electric Energy Systems (Sec. 921). DOE is authorized to conduct an RDD&C program for a variety of technologies that include the integration of advanced energy technologies with grid connectivity. Funding is authorized in the amounts of \$240 million in FY2007, \$255 million in FY2008, and \$273 million in FY2009.

High Power Density Industry Program (Sec. 922). This provision directs DOE to establish an RDD&C program to improve the energy efficiency of data centers, computer server farms, and telecommunications facilities.

Micro-Cogeneration Energy Technology (Sec. 923). DOE is directed to establish competitive, merit-based grants to consortia to develop micro-cogeneration technology, including systems that could be used for residential heating. Micro-cogeneration is not defined but is generally considered to be production of electrical and useful thermal energy in a facility that is less than one megawatt in capacity. From amounts authorized in Section 921, \$20 million per year is authorized for FY2007 and FY2008.

Distributed Energy Technology Demonstration Program (Sec. 924). DOE is required to provide financial assistance to consortia for demonstrations to accelerate the use of distributed energy technologies (such as fuel cells and microturbines).

Electric Transmission and Distribution Programs (Sec. 925). DOE is authorized to conduct an RDD&C program addressing energy efficiency, reliability, and security of the nation's electric transmission and distribution system. A technology development program will focus on delivery and storage, grid reliability, load reduction, high temperature superconductivity, and other aspects. DOE is directed to award a grant to a university research program to work with the Tennessee Valley Authority in improving power flow through high voltage transmission lines. Further, DOE must devise a five-year plan and consider using a consortium with industry, university, and national laboratory members to implement the program. A report to Congress is required that describes progress and identifies needs for additional resources. Also, the provision establishes a Power Delivery Research Initiative focused on superconductivity and a Transmission and Distribution

Grid Planning Initiative focused on software tools to expand transmission and distribution in a competitive market setting.

Background. The electric transmission and distribution programs are managed by the Office of Electricity Delivery and Energy Reliability (EDER). For more than two decades, the programs under this office were managed by DOE's Office of Energy Efficiency and Renewable Energy (EERE). After the electric power blackout in the summer of 2003, these programs were given heightened attention and the management structure was reestablished in 2005 as EDER, independent of EERE.

Policy Context. After the terrorist attacks in 2001, there was heightened concern about the vulnerability of electric powerplants, electricity grid networks, oil pipelines, and natural gas pipelines. The possible disruption of these energy system components has increased interest in distributed energy resources (DER) that can be installed in smaller, more efficient units closer to energy demands and often can use renewable energy or alternative fuels.

Subtitle C — Renewable Energy

Summary of Provisions. Authorizations are provided for DOE research and development programs for renewable energy. Existing R&D programs for solar, wind, geothermal, hydropower, ocean, and bioenergy are authorized, as well as new programs for integrated systems, low-cost renewable hydrogen, kinetic hydro turbines, and renewable energy in public buildings. For these programs, the law authorizes \$2.23 billion: \$632 million for FY2007, \$743 million for FY2008, and \$852 million for FY2009.

Renewable Energy (Sec. 931). DOE is directed to conduct a renewable energy RDD&C program with goals that include improving energy security, reducing costs, decreasing environmental impacts, and increasing equipment exports. Further, DOE must analyze the economic potential of renewable energy technologies and the performance of the RDD&C program.

Bioenergy Program (Sec. 932). DOE is directed to conduct programs on cellulosic biomass, biofuels, bio-based products, and integrated biorefineries, as well as biodiesel fuel for electric power generation at institutions of higher education. Also, grants are established to support these programs at historically black colleges and universities, tribal colleges, and Hispanic-serving institutions.

Low-Cost Renewable Hydrogen and Infrastructure for Vehicle Propulsion (Sec. 933). This provision directs the Secretary of Energy to establish an RDD&C program to determine the feasibility of using hydrogen propulsion in light-weight vehicles. Further, within two years of enactment, a vehicle is to be tested that operates solely on hydrogen produced from solar energy.

Concentrating Solar Power Research Program (Sec. 934). DOE is authorized to conduct a research program on "concentrating solar power" to establish the technology and economics of both electricity and hydrogen production. A report to Congress is required, recommending future research.

Renewable Energy in Public Buildings (Sec. 935). This provision directs DOE to conduct an RDD&C program to improve the energy efficiency and environmental performance of commercial, industrial, institutional, and residential buildings. This program is to include advanced controls, building envelope, building components (e.g. lighting, appliances), and on-site renewable energy use. Also, a pilot grant program would be created to help businesses and organizations demonstrate energy efficiency technologies for buildings. It would provide up to 50% of design and energy modeling costs, with a maximum grant of \$50,000.

Background. In the past, appropriations for the DOE Renewable Energy R&D program have often been the subject of debate, especially about the relative emphasis on long-term basic R&D versus applied R&D that is focused on demonstration and commercialization.

Policy Context. This subtitle broadens the Renewable Energy R&D program slightly, by creating a focus on renewable hydrogen and establishing a pilot grant program for demonstrating new technologies for buildings. However, as with the energy efficiency program, the impact of the programs under this subtitle will depend greatly on the level of appropriations and the amount earmarked for congressionally designated projects.

Subtitle D — Agricultural Biomass Research and Development Programs

Summary of Provisions. This subtitle encompasses programs focused on R&D and the acquisition, deployment, and commercialization of biofuels and biobased products. In addition to updating programs under the Biomass R&D Act of 2000, this subtitle repeals the sunset provision in the Biomass R&D Act, directs DOE to create a production incentive for cellulosic biofuels, adds the Capitol Complex to the list of federal entities required to purchase biofuels, and establishes several grant programs at USDA.

Amendments to the Biomass Research and Development Act of 2000 (Sec. 941). This provision amends the Biomass Research and Development Act (P.L. 106-224) by broadening its scope to include fuels in addition to other biobased products. For the purposes of energy security, economic development, and environmental improvement, the objectives of the Biomass R&D Initiative are defined as developing technologies and processes needed for commercial production of biobased fuels at prices that will enable them to serve as substitutes for petroleum-based feedstocks and products. The Department of Agriculture (USDA), DOE, and EPA are directed to focus R&D on feedstock production through advanced and dedicated crops and to assess the potential of federal lands as feedstock resources. For demonstration projects, a minimum match of 20% is required from project sponsors. For commercial applications, a minimum match of 50% is required. Further, USDA and DOE are directed to update the “Vision and Roadmap documents” for biomass R&D. The sunset provision of P.L. 106-224 is repealed. Funding of \$200 million per year is authorized for FY2006 through FY2015.

Production Incentives for Cellulosic Biofuels (Sec. 942). This provision sets goals to accelerate deployment and commercialization of biofuels, produce the first one billion gallons of cellulosic biofuels by 2015, and ensure that biofuels become cost competitive by 2015. The primary strategy is for DOE to conduct a “reverse auction,” wherein bidders submit a desired level of incentive and estimated annual production and then DOE makes awards to the entities submitting the lowest level of production incentive. No single project can receive more than 25% of the funds committed to each auction.

Procurement of Biobased Products (Sec. 943). The Farm Security Act of 2002 (P.L. 107-171) is amended to add the Capitol Complex to the list of federal entities required to purchase biobased products.

Small Business Bioproduct Marketing and Certification Grants (Sec. 944). The Secretary of Agriculture is directed to provide competitive grants to support certification and marketing of biobased products by small firms. Each grant requires a 50% match and cannot exceed \$100,000.

Regional Bioeconomy Development Grants (Sec. 945). The Secretary of Agriculture is required to provide competitive grants to a regional bioeconomy development association, agricultural or energy trade association, or Land Grant institution to support coordination, education, and/or outreach to promote development of a regional bioeconomy for biobased products. The grants require a 50% match and cannot exceed \$500,000.

Preprocessing and Harvesting Demonstration Grants (Sec. 946). This provision directs the Secretary of Agriculture to create a competitive grant program to support agricultural producers in demonstrating cellulosic biomass innovations that produce ethanol, heat, electricity or other useful forms of energy. The grants require a 20% match, and the number of demonstration projects is limited to five per year.

Education and Outreach (Sec. 947). The Secretary of Agriculture is directed to establish a program of education and outreach on biobased fuels and biobased products that includes training and technical assistance for feedstock producers and public education and outreach for consumers.

Reports (Sec. 948). The Secretary of Agriculture is directed to report to Congress on the economic potential for widespread production of biobased products through 2025. Further, an analysis of economic indicators of the biobased economy is required.

Background. Concern about oil import dependence and vulnerability stimulated long-term interest in renewable energy sources to produce liquid biofuels. The concern has prompted action by Congress, including provisions for biofuels development in the Energy Policy Act of 1992 (P.L. 102-486), the Biomass Research and Development Act of 2000 (Biomass R&D Act, P.L. 106-224), and the Farm Security Act (P.L. 107-171). Also, in 1999, Executive Order 13134 established some biofuels programs for federal agencies. Biofuels programs have been operating at

DOE, USDA, and EPA. The authorization for programs created in the Biomass R&D Act was set to expire on December 31, 2005.

Policy Context. Concern about oil import dependence and vulnerability has been a major driver for biofuels programs. There have been some significant debates in Congress over the level of funding for biofuels programs at DOE and USDA.

Subtitle E — Nuclear Energy

Summary of Provisions. Appropriations are authorized for existing DOE nuclear energy research and development programs for FY2007-FY2009. Major programs include “Nuclear Power 2010,” which assists with the licensing and design of new nuclear power plants, the “Generation IV Nuclear Systems Initiative,” which focuses on advanced reactor concepts, and the “Advanced Fuel Cycle Initiative,” which is developing improved spent fuel reprocessing and treatment technologies. Authorizations for the three-year period total \$1.6 billion.

Nuclear Energy (Sec. 951). The Secretary of Energy shall conduct civilian nuclear research, demonstration, and commercialization programs that enhance nuclear power’s commercial viability, reduce the likelihood of nuclear weapons proliferation, maintain a supply of nuclear scientists and engineers, support nuclear research facilities, and reduce the environmental impact of nuclear activities. Appropriations of \$1.6 billion are authorized for FY2007-FY2009.

Nuclear Energy Research Programs (Sec. 952). The Secretary of Energy shall conduct the following nuclear energy research programs: (a) Nuclear Energy Research Initiative for general research and development, (b) Nuclear Energy Systems Support Program for research to improve existing nuclear power plants, (c) Nuclear Power 2010 Program, to assist licensing and design of new reactors, (d) Generation IV Nuclear Energy Systems Initiative, to develop advanced reactor concepts, and (e) research on large-scale production of hydrogen from high-temperature reactors.

Advanced Fuel Cycle Initiative (Sec. 953). DOE shall conduct a program on advanced technologies for the reprocessing of spent nuclear fuel. The technologies should be resistant to nuclear weapons proliferation and support alternative spent fuel disposal strategies and advanced reactor concepts.

University Nuclear Science and Engineering Support (Sec. 954). DOE must conduct a program to support human resources and infrastructure in nuclear science and engineering and related fields. The program must include fellowship and faculty assistance programs and support for fundamental and collaborative research. The program is also authorized to help convert research reactors to low-enriched fuels, support training in reactor relicensing and upgrading, and provide funding for research reactor improvements. DOE funding for research projects could be used for some of the operating costs of research reactors used in those projects.

DOE Civilian Nuclear Infrastructure and Facilities (Sec. 955). DOE must operate and maintain infrastructure and facilities for nuclear energy programs,

and develop an inventory of nuclear energy infrastructure and a priority list of needed improvements. A comprehensive plan must be prepared for the facilities at Idaho National Laboratory, which DOE has designated as its lead laboratory for nuclear energy programs.

Security of Nuclear Facilities (Sec. 956). DOE shall conduct a research and development program on cost-effective technologies to improve the safety and security of nuclear facilities.

Alternatives to Industrial Radioactive Sources (Sec. 957). DOE is required to study industrial applications of large radioactive sources and disposal options and to establish a research program to develop alternatives. Such alternatives must reduce the safety, environmental, and nuclear proliferation risks of industrial radioactive sources.

Background. The nuclear energy R&D programs authorized by this subtitle are conducted by DOE's Office of Nuclear Energy, Science, and Technology, which has received renewed emphasis under the Bush Administration.

The Nuclear Power 2010 Program is focused on the near-term revival of U.S. nuclear power plant construction. The program will pay up to half the cost of gaining regulatory approval for new reactor sites, applying for new reactor licenses, and preparing detailed plant designs. This assistance is intended for advanced versions of existing commercial nuclear plants that could be ordered within the next few years.

Three nuclear plant site approvals — in Illinois, Mississippi, and Virginia — are currently receiving DOE assistance under the Nuclear Power 2010 Program. In addition, three industry consortia in 2004 applied for a total of \$650 million over the next several years to design and license new nuclear power plants and conduct a feasibility study. DOE awarded an initial \$13 million to the consortia in 2004.

The nuclear license applications under the Nuclear Power 2010 program would test the “one step” licensing process established by the Energy Policy Act of 1992 (P.L. 102-486). Even if the licenses are granted by the Nuclear Regulatory Commission (NRC), the industry consortia funded by DOE have not committed to building new reactors.

Advanced commercial reactor technologies that are not yet close to deployment are the focus of the Generation IV Nuclear Energy Systems Initiative. “Generation IV” refers to advanced nuclear energy concepts, such as high-temperature reactors cooled by gas or liquid metal, that could eventually replace today’s “Generation III” commercially available advanced water-cooled reactors. Generation IV reactors could potentially operate more safely and economically, and their high heat output could be harnessed to economically separate hydrogen from water, according to proponents. The Generation IV program is focusing on six advanced designs that could be commercially available around 2020-2030. Some of these reactors would use plutonium recovered through reprocessing of spent nuclear fuel.

The development of plutonium-fueled reactors in the Generation IV program is closely related to the Advanced Fuel Cycle Initiative, which is intended to develop and demonstrate nuclear fuel cycles that could reduce the long-term hazard of spent nuclear fuel and recover additional energy. Such technologies would involve separation of plutonium, uranium, and other long-lived radioactive materials from spent fuel for re-use in a nuclear reactor or for transmutation in a particle accelerator. The program includes longstanding DOE work on electrometallurgical treatment of spent fuel from the Experimental Breeder Reactor II (EBR-II) at INL.

The technologies to be developed under the Generation IV, Advanced Fuel Cycle, and Nuclear Hydrogen programs authorized by this subtitle would be demonstrated by the Next Generation Nuclear Plant authorized by Subtitle C of Title VI (Secs. 641-645).

Policy Context. The Nuclear Power 2010 program is an important element — along with production tax credits, loan guarantees, and extension of the Price-Anderson nuclear liability system — in the energy bill’s package of incentives for increased U.S. nuclear power production. No commercial reactor has been ordered in the United States since 1978, and all orders since 1973 have been cancelled. However, the incentives in the Energy Policy Act of 2005 have combined with higher prices for natural gas — the primary competitor for new electrical generation — to prompt several large power companies to announce interest in building new nuclear power plants.

Nuclear power opponents contend that the nuclear industry is mature enough to grow without federal subsidies if it is truly economically viable, and that nuclear power poses unacceptable risks from accidents, terrorist attacks, and radioactive waste disposal. Supporters of the act’s provisions counter that nuclear power is an important domestic energy source, and that only the first few new reactors would have to be subsidized before construction costs dropped sufficiently to attract further orders.

DOE’s other major nuclear R&D programs are intended to overcome long-term constraints to the growth of nuclear power, such as uranium supply limitations and waste disposal. If new, high-temperature reactors could economically produce hydrogen, the Administration contends, then a major new domestic source of transportation fuel could also become available.

Opponents contend that DOE’s programs are focusing on economically non-viable technologies that involve separation of weapons-usable plutonium. For instance, according to a dissenting member of DOE’s Nuclear Energy Research Advisory Committee, “This research effort will likely expand the availability of weapon-usable materials in other countries in the near-term, result in the training and employment of new cadres of scientist and engineers with expertise in actinide (including plutonium) chemistry and metallurgy, but not result in the deployment of new commercially viable nuclear power technologies.”¹⁶

¹⁶ Cochran, Thomas B. Memorandum to the Chairman of NERAC. October 16, 2002.

Subtitle F — Fossil Energy

Summary of Provisions. This subtitle authorizes DOE's fossil energy research, development, demonstration, and commercial application programs, including coal, carbon capture, oil and gas production, and methane hydrates.

Fossil Energy (Sec. 961). Fossil energy RDD&C programs are authorized for FY2007-FY2009. At least 20% of each year's appropriation shall be used to carry out research at institutions of higher education.

Coal and Related Technologies Program (Sec. 962). In addition to the programs authorized under title IV, DOE will be required to conduct a program of technology research, development, and demonstration and commercial application for coal and power systems. A program for mercury removal from coal produced in the Powder River Basin is established. Fuel cell R&D is included.

Carbon Capture Research and Development Program (Sec. 963). The Secretary of Energy shall support a 10-year R&D program aimed at developing carbon dioxide capture technologies for pulverized coal combustion units. The program will focus on developing add-on carbon dioxide capture technologies, combustion technologies, and increasing the efficiency of the overall combustion system. In addition, the Secretary will support a carbon sequestration program with the private sector through regional partnerships. Appropriations are authorized for FY2006- FY2008.

Research and Development for Coal Mining Technologies (Sec. 964). A program on coal mining technologies will be established. Projects will be based on priorities set by the Mining Industry of the Future program.

Oil and Gas Research Programs (Sec. 965). Research programs will be focused on assisting independent domestic producers of oil and gas, the extraction of methane hydrates, reservoir life and extension, and unconventional fuels. Also, a national center of excellence in clean energy and power generation is to be established.

Low-Volume Oil and Gas Reservoir Research Program (Sec. 966). A program will be established by the Secretary to maximize the productive capacity of marginal wells and reservoirs.

Complex Well Technology Testing Facility (Sec. 967). A Complex Well Technology Testing Facility will be established at the Rocky Mountain Oilfield Testing Center to increase the range of extended drilling technologies.

Methane Hydrate Research (Sec. 968). A methane hydrate research and development program will be established. A methane hydrate advisory panel will be set up and a study will be conducted by the National Research Council that will assess the R&D program. Funds are authorized for FY2006-FY2010.

Background. DOE R&D programs for natural gas and petroleum technologies are funded in the annual Energy and Water Development appropriations

bill. The Administration recommended cutting funds for methane hydrates but Congress funded the program at \$12 million for FY2006.

Subtitle G — Science

Science (Sec. 971). DOE shall conduct the existing programs of the Office of Science. Appropriations for the office are authorized for FY2007 through FY2009, with allocations specified for some programs. Additional appropriations are authorized for programs on integrated bioenergy R&D.

Fusion Energy Sciences Program (Sec. 972). Research, development, demonstration, and commercial application directed at competitiveness in fusion energy are declared to be U.S. policy. DOE is directed to submit a plan to implement that policy. Authority is given for the United States to participate in the international fusion energy experiment known as the International Thermonuclear Experimental Reactor (ITER). DOE is directed to develop a plan for ITER participation and to ask the National Academy of Sciences to review the plan. Federal funds may not be expended for ITER construction until the plan and two other reports are provided to Congress. If construction and operation of ITER appear unlikely, DOE is directed to submit a plan for a domestic burning plasma experiment.

Catalysis Research Program (Sec. 973). DOE shall support a program of R&D in catalysis science. Within three years of enactment, DOE shall arrange for the National Academy of Sciences to review the catalysis program.

Hydrogen (Sec. 974). The Secretary of Energy is directed to conduct fundamental R&D in support of the hydrogen and fuel cell programs under Title VIII, including the production of hydrogen from sources other than natural gas.

Solid State Lighting (Sec. 975). DOE shall conduct a program of fundamental research on solid-state lighting in support of the Next Generation Lighting Initiative (§ 912).

Advanced Scientific Computing for Energy Missions (Sec. 976). DOE shall conduct a program of R&D in advanced scientific computing, including applied mathematics and the activities authorized by the Department of Energy High-End Computing Revitalization Act of 2004 (15 U.S.C. 5541 *et seq.*). In addition, § 203 of the High-Performance Computing Act of 1991 (15 U.S.C. 5523) is amended as follows: DOE's general responsibilities as part of the interagency National High-Performance Computing Program are modified; DOE is no longer required, as part of that program, to establish consortia, engage in technology transfer, or submit an annual report (but these activities are not prohibited); and the authorization of appropriations for the program for fiscal years already completed is replaced by a general authorization of "such sums as are necessary."

Systems Biology Program (Sec. 977). DOE shall establish a program of research, development, and demonstration in microbial and plant systems biology, protein science, and computational biology. DOE shall submit a research plan for this program to Congress within one year after enactment and contract with the National Academy of Sciences to review the plan within an additional 18 months.

Biomedical research and research related to humans are not permitted as part of the program.

Fission and Fusion Energy Materials Research Program (Sec. 978). DOE shall establish a program of R&D on materials science for advanced fission reactors and DOE's fusion energy program.

Energy and Water Supplies (Sec. 979). DOE, in consultation with other agencies, shall carry out a program to study energy-related issues associated with water supply and water-related issues related to energy supply, including arsenic treatment and desalination.

Spallation Neutron Source (Sec. 980). DOE shall submit to Congress an annual progress report on construction of the Spallation Neutron Source and develop an operational plan for the facility that meets specified requirements. Appropriations are authorized for the lifetime of the project overall and for certain related items in FY2007 through FY2009.

Rare Isotope Accelerator (Sec. 981). Appropriations are authorized for construction and operation of the Rare Isotope Accelerator, and DOE is directed to commence construction no later than September 30, 2008. No more than \$1.1 billion in federal funds may be spent on associated activities prior to operation of the accelerator.

Office of Scientific and Technical Information (Sec. 982). DOE shall maintain the Office of Scientific and Technical Information, which makes the results of DOE-supported R&D available to the public.

Science and Engineering Education Pilot Program (Sec. 983). DOE shall award a grant to a consortium of universities to establish a regional pilot program to enhance scientific, technological, engineering, and mathematical literacy, creativity, and decisionmaking. The program shall involve research universities, universities that train elementary and secondary school teachers, and DOE national laboratories. Within two years, DOE shall report to Congress on lessons learned from the pilot program, including (if appropriate) a plan for expanding the program nationwide.

Energy Research Fellowships (Sec. 984). DOE shall establish energy R&D fellowship programs for postdoctoral young scientists and engineers and for senior researchers and their research groups.

Science and Technology Scholarship Program (Sec. 984A). DOE is authorized to establish a scholarship program to help recruit and prepare students for careers in DOE and its national laboratories. In return for receiving the scholarship, students may be required to work for DOE or a national laboratory for a fixed period.

Subtitle H — International Cooperation

Western Hemisphere Energy Cooperation (Sec. 985). The Secretary of Energy must carry out a program to promote cooperation on energy issues among

Western Hemisphere countries, including, to the extent practicable, universities. A total of \$39 million is authorized over the period of FY2007-FY2009.

United States-Israel Cooperation (Sec. 986). This provision requires the Secretary of Energy to submit a report within 90 days of enactment to the relevant House and Senate Committees on past, current, and future activities and projects that are attributable to the previously existing U.S.-Israel energy cooperation agreement.

Background. The United States and Israel have an agreement “to establish a framework for collaboration” between the two nations for collaboration on energy research and development activities. The agreement, which went into effect in February 2000, was automatically extended (pursuant to terms of the original agreement) in February 2005 for an additional five years.

International Energy Training (Sec. 986A). This section authorizes \$6.5 million during FY2007-FY2010 to provide training in several aspects of international commercial energy markets to countries with developing and restructuring economies.

Subtitle I — Research Administration and Operations

Availability of Funds (Sec. 987). Appropriations authorized by this act shall remain available until expended.

Cost Sharing (Sec. 988). Cost sharing is required for newly initiated DOE research, development, demonstration, and commercial application programs. The minimum non-federal share is 20% for R&D programs and 50% for demonstration and commercial application programs, but DOE can lower or waive these requirements in certain circumstances. The requirement does not apply to cooperative research and development agreements (CRADAs) or awards under the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

Merit Review of Proposals (Sec. 989). Awards of funds authorized under this act shall be made only after an impartial review of scientific and technical merit. It is the sense of Congress that awards for R&D, demonstration, and commercial application should be made using competitive procedures wherever practicable.

External Technical Review of Departmental Programs (Sec. 990). DOE shall establish advisory boards (or designate existing boards) to review its programs in energy efficiency, renewable energy, nuclear energy, and fossil energy. It shall continue to use the existing advisory committees for the programs of the Office of Science. DOE shall arrange with the National Academy of Sciences to conduct periodic reviews and assessments of its programs and shall report to Congress on the results of these reviews and assessments.

National Laboratory Designation (Sec. 991). DOE shall not designate additional facilities as National Laboratories beyond those listed in § 2(3) of this act.

Report on Equal Employment Opportunity Practices (Sec. 992).

Within one year of enactment and every two years thereafter, DOE shall report to Congress on equal employment opportunity practices at the National Laboratories.

Strategy and Plan for Science and Energy Facilities and Infrastructure (Sec. 993).

DOE shall develop and implement a strategy for maintaining existing science and energy facilities and infrastructure, closing unnecessary facilities, modifying facilities, and building new facilities. A report describing the strategy shall be included with the FY2008 budget request.

Strategic Research Portfolio Analysis and Coordination Plan (Sec. 994).

DOE shall periodically conduct a strategic review of its science and technology activities. As part of the review, it shall develop a plan to improve coordination and collaboration in research, development, demonstration, and commercial application activities across DOE organizational boundaries. DOE shall transmit the review results and coordination plan to Congress within 12 months of enactment and every four years thereafter.

Competitive Award of Management Contracts (Sec. 995).

Management and operating contracts for DOE National Laboratories (except Livermore, Los Alamos, Sandia, and Savannah River) must be awarded competitively unless the Secretary of Energy grants a waiver on a case-by-case basis. The Secretary may not delegate his waiver authority and must notify Congress at least 60 days before awarding a non-competitive contract.

Western Michigan Demonstration Project (Sec. 996).

The EPA, in consultation with the State of Michigan and affected local officials, shall conduct a demonstration project to assess the effect of transported ozone and ozone precursors in southwestern Michigan. During the course of the demonstration project, EPA shall not impose any requirements or sanctions that might otherwise apply under the Clean Air Act.

Arctic Engineering Research Center (Sec. 997).

DOE, in consultation with the Secretary of Transportation and the U.S. Arctic Commission, shall provide annual grants to establish and operate the Arctic Engineering Research Center in Fairbanks, Alaska. The Center's purpose shall be R&D on improving transportation and building infrastructure in the Arctic region. Annual appropriations are authorized for FY2006 through FY2011.

Barrow Geophysical Research Facility (Sec. 998).

The Secretary of Commerce, in consultation with the Secretaries of Energy and the Interior, the Director of the National Science Foundation, and the Administrator of the EPA, shall establish the Barrow Geophysical Research Facility in Barrow, Alaska. Appropriations of \$61 million are authorized.

Subtitle J — Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources

Program Authority (Sec. 999A). R&D will be directed toward the demonstration and commercial application of technology for ultra-deepwater oil and gas production, including unconventional onshore oil and gas resources. The R&D program will be designed to benefit “small producers” and address environmental concerns. Complementary research will be carried out through DOE’s National Energy Technology Laboratory.

Ultra-Deepwater and Unconventional Onshore Natural Gas and Other Petroleum Research and Development Program (Sec. 999B). The Secretary of Energy shall contract with a consortium to administer an ultra-deepwater and onshore oil and gas research program and manage funding awarded under this program. The program shall focus on advanced technologies for recovering ultra-deepwater resources, coalbed methane, and other unconventional resources to reduce costs and increase exploration and production efficiency to maximize the value of natural gas and petroleum resources.

Additional Requirements for Awards (Sec. 999C). The Secretary can reduce or eliminate the non-federal cost-share requirement for awards under this program; 2.5% of each award will be designated for technology transfer; and various additional award requirements are stipulated.

Advisory Committees (Sec. 999D). An Ultra-Deepwater Advisory Committee and an Unconventional Resources Technology Advisory Committee will be established.

Limits on Participation (Sec. 999E). Awards are limited to companies organized in the United States or subsidiaries of foreign-based companies whose home countries provide reciprocal access to U.S. companies.

Sunset (Sec. 999F). The authority in this part terminates at the end of FY2014.

Definitions (Sec. 999G). The terms deepwater, ultra-deepwater, unconventional oil and gas, independent producers of oil and gas, and others are defined.

Funding (Sec. 999H). The Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund is established. Revenues derived from federal oil and gas leases, after all previously mandated distributions of those revenues have been made, will be deposited in the fund, up to \$50 million annually during FY2007-FY2017. In addition, there is an authorization for appropriations of \$100 million for each fiscal year FY2007-FY2016. The Secretary of Energy can obligate money from the fund for programs in this part without an overall annual limit, although annual percentage allocations among the programs are spelled out.

Background. DOE R&D programs for natural gas and petroleum technologies are funded in the annual Energy and Water Development appropriations bill. Advances in seismic surveying, improved drilling methods, and other new technology have allowed oil and gas drilling at greater depths on the outer continental shelf and greater production of unconventional on-shore resources.

Policy Context. While the OCS is a major source of domestic oil and gas supply, offshore drilling proposals often generate substantial environmental controversy. This controversy intensified when the ultra-deepwater provision was not in the energy bill approved by the conferees but then was included in the final version of the Energy Policy Act of 2005 approved by both the House and Senate. Opponents of this provision argue that the technology for drilling and developing the deepwater has been proved to be effective and the federal government's role should be minimized. The industry contends that the federal support is still needed as the risks with ultra-deepwater are huge and the payoff to the government in increased future royalties can be great.

Title X — Department of Energy Management

Improved Technology Transfer of Energy Technologies (Sec. 1001).

DOE shall appoint a Technology Transfer Coordinator to be the Secretary's principal advisor on technology transfer and commercialization; establish a Technology Transfer Working Group consisting of representatives of the National Laboratories and single-purpose research facilities; and establish an Energy Technology Commercialization Fund, using 0.9% of the amount made available to DOE in each fiscal year for applied energy R&D, demonstration, and commercial application, to provide matching funds with private partners. DOE shall submit a technology transfer execution plan to Congress within 180 days of enactment and each year thereafter.

Technology Infrastructure Program (Sec. 1002). DOE shall establish a Technology Infrastructure Program to improve the ability of National Laboratories and single-purpose research facilities to stimulate the development of technology clusters; benefit from commercial research, technology, products, processes, and services; and exchange scientific and technological expertise with nonfederal entities. A report on the program is due to Congress by July 1, 2008.

Small Business Advocacy and Assistance (Sec. 1003). Each National Laboratory (and each single-purpose research facility, if required by the Secretary of Energy) shall appoint a small business advocate and a small business advocacy program.

Outreach (Sec. 1004). DOE shall ensure that programs authorized by this act include an outreach component to provide information to manufacturers, consumers, engineers, and other specified groups.

Relationship to Other Laws (Sec. 1005). Except where specifically provided otherwise, activities authorized by this act shall continue to be governed by

the Atomic Energy Act of 1954, the Federal Nonnuclear Energy R&D Act of 1974 (42 U.S.C. 5901 *et seq.*), the Energy Policy Act of 1992, the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 *et seq.*), the Bayh-Dole Act (chapter 18 of U.S.C. title 35), and other applicable acts.

Improved Coordination and Management of Civilian Science and Technology Programs (Sec. 1006). The position of Under Secretary for Science is established, replacing the position of Director of the Office of Science. An additional assistant secretary position is established, and the sense of Congress is that leadership for DOE nuclear energy activities should be at the assistant secretary level.

Other Transactions Authority (Sec. 1007). DOE is granted authority to enter into “other transactions” (in addition to contracts, cooperative agreements, and grants) to fund research, development, and demonstration projects. The terms and conditions are the same as those for the Department of Defense (10 U.S.C. 2371). DOE shall issue guidelines for the use of other transactions within 90 days of enactment; shall publish the guidelines for comment in the *Federal Register*; and may not carry out such transactions until the guidelines are final. The Comptroller General shall report to Congress on DOE’s use of this authority within one year of the issuance of final guidelines. The authority terminates on September 30, 2010.

Prizes for Achievement in Grand Challenges of Science and Technology (Sec. 1008). DOE may award cash prizes for breakthrough achievements in research, development, demonstration, and commercial application potentially applicable to the mission of the Department. In cooperation with the Freedom Prize Foundation, DOE shall support a prize program specifically directed toward reducing U.S. dependence on imported oil.

Technical Corrections (Sec. 1009). The Coal Research and Development Act of 1960 (30 U.S.C. 661 *et seq.*) is amended to reflect the 1974 transfer of coal R&D from the Department of the Interior to DOE’s predecessor, the Energy Research and Development Administration. The Nonnuclear Energy Research and Development Act of 1974 is amended to reflect the creation of the Department of Energy in 1977, correct the citation of other acts, conform with subsequent acts and agency name changes, and delete provisions relating to loan guarantees for alternative fuel demonstration facilities and financial support for municipal waste reprocessing demonstration facilities. The Stevenson-Wydler Technology Innovation Act of 1980 is amended to include DOE in a personnel exchange program jointly established by the Department of Commerce and the National Science Foundation.

University Collaboration (Sec. 1010). Within two years of enactment, DOE shall report to Congress on the feasibility of using DOE grants, contracts, and cooperative agreements to promote collaborations between major universities and other colleges and universities. DOE shall also consider providing incentives in its grants, contracts, and cooperative agreements to increase the inclusion of small and minority-serving institutions of higher learning.

Sense of Congress (Sec. 1011). It is the sense of Congress that DOE should develop and implement more stringent procurement and inventory controls,

including controls on the purchase card program, and that the DOE Inspector General should continue to closely review procurement and inventory practices.

Title XI — Personnel and Training

Workforce Trends and Traineeship Grants (Sec. 1101). Subsection (b) directs DOE to monitor workforce trends for skilled personnel in energy technology, electric power, and transmission industries and report recommendations to meet future labor requirements for these industries. Subsection (c) allows DOE to create programs that provide grants to enhance training (including distance learning) for any workforce category in which a shortage is identified or predicted. Funding of \$20 million per year is authorized for FY2006 through FY2008.

Educational Programs in Science and Mathematics (Sec. 1102). Subsection (a) directs DOE to use at least 0.3% of its research, development, demonstration, and commercialization (RDD&C) funding to conduct certain educational and reporting functions that are described in the following subsections. Subsection (b) calls on DOE to support competitive student events, teacher development programs, summer internships, and training activities at research and development (R&D) facilities. Subsection (c) requires that DOE provide funds to educational institutions to hire personnel to facilitate interactions between schools, R&D facilities, corporations, and governmental entities. Subsection (d) directs DOE to fund the National Academy of Public Administration to study educational programs at DOE R&D facilities, and calls for the study to recommend steps to improve coordination of educational programs, workforce development, and other training activities. The results of the study are to be reported to Congress within two years of enactment.

Training Guidelines for Electric Energy Industry Personnel (Sec. 1103). The Secretary of Energy, in consultation with the Secretary of Labor, along with electric industry representatives and employee representatives, would be required to develop model personnel training guidelines to support the reliability and safety of the electric system.

National Center for Energy Management and Building Technologies (Sec. 1104). DOE is directed to support ongoing activities of the National Center for Energy Management and Building Technologies in research, education, and training focused on energy efficiency for buildings.

Improved Access to Energy-Related Scientific and Technical Careers (Sec. 1105). For DOE's energy science education programs, subsection (a) directs DOE to give priority to activities that aim to encourage students from under-represented groups to pursue scientific and technical careers. Subsection (b) directs DOE to require that each national laboratory increase the participation of historically black colleges, Hispanic-serving institutions, and tribal colleges in any activity that could increase the capacity of these institutions and colleges to train personnel in science or engineering. Further, a report to Congress that describes these activities is required within two years of enactment.

National Power Plant Operations Technology and Educational Center (Sec. 1106). The Secretary of Labor is directed to support establishing a National Power Plant Operations Technology and Education Center to train and educate certified electric utility operators and technicians. In addition to training and education activities at the center, Internet-based training will also be made available.

Title XII — Electricity

Short Title (Sec. 1201). This title may be cited as the “Electric Reliability Act of 2005.”

Subtitle A — Reliability Standards

Summary of Provisions. This subtitle is intended to provide federal jurisdiction over activities that are required to support reliability of the U.S. bulk power system. Clarifying Federal Energy Regulatory Commission (FERC) authority to establish and regulate an electric reliability organization (ERO) is intended to improve reliability as restructuring of the U.S. bulk power system proceeds.

Electric Reliability Standards (Sec. 1211). This section requires FERC to promulgate rules within 180 days of enactment to create a FERC-certified ERO. The North American Electric Reliability Council (NERC) currently has responsibility for reliability of the bulk power system. NERC has established reliability guidelines but has no enforcement authority. Before enactment, the Federal Power Act gave FERC jurisdiction over unbundled transmission and authority to regulate wholesale rates; however, no authority was provided to regulate reliability. Under this section, the ERO will develop and enforce reliability standards for the bulk-power system, including cybersecurity protection. All ERO standards will be approved by FERC. Under this title, the ERO can impose penalties on a user, owner, or operator of the bulk-power system that violates any FERC-approved reliability standard. In addition, FERC can order compliance with a reliability standard and can impose a penalty if FERC finds that a user, owner, or operator of the bulk-power system has engaged in or is about to engage in a violation of a reliability standard. This provision does not give an ERO or FERC authorization to order construction of additional generation or transmission capacity.

This provision also requires that FERC establish a regional advisory body if requested by at least two-thirds of the states within a region that have more than half of their electric load served within that region. The advisory body will be composed of one member from each participating state in the region, appointed by the governor of each state, and who is able to provide advice to the ERO or FERC on reliability standards, proposed regional entities, proposed fees, and any other responsibilities requested by FERC. The entire reliability provision does not apply to Alaska or Hawaii. The state of New York is authorized to develop rules that would result in greater reliability for New York, as long as those rules do not result in lower reliability for neighboring states.

If the penalties employed by the ERO are not successful, then FERC has the authority to enforce penalties for entities that do not comply with reliability standards. Establishing this new relationship between FERC and the ERO could have the potential to improve coordination between market functions and reliability functions.

Subtitle B — Transmission Infrastructure Modernization

Siting of Interstate Electric Transmission Facilities (Sec. 1221). The Secretary of Energy is required to conduct a study of electric transmission congestion every three years. Based on the findings, the Secretary of Energy may designate a geographic area as being congested. Under certain conditions, FERC is authorized to issue construction permits. Under the new Federal Power Act (FPA) Section 216(d), affected states, federal agencies, Indian tribes, property owners, and other interested parties will have an opportunity to present their views and recommendations with respect to the need for, and impact of, a proposed construction permit. However, there is no requirement for a specific comment period. New FPA Section 216(e) will allow permit holders to petition in U.S. District Court to acquire rights-of-way through the exercise of the right of eminent domain. Any exercise of eminent domain authority would be considered to be takings of private property for which just compensation is due. New FPA Section 216(g) does not state whether property owners would be required to reimburse compensation if the rights-of-way were transferred back to the owner.

An applicant for federal authorization to site transmission facilities on federal lands could request that the Department of Energy be the lead agency to coordinate environmental review and other federal authorization. Once a completed application is submitted, all related environmental reviews are required to be completed within one year unless another federal law makes that impossible. FPA Section 216(h) gives the Department of Energy (DOE) new authority to prepare environmental documents and appears to give DOE additional decision-making authority for rights-of-way and siting on federal lands. This would appear to give DOE input into the decision process for creating rights-of-way. Review under Section 503 of the Federal Land Policy and Management Act could be streamlined by relying on prior analyses. If a federal agency has denied an authorization required by a transmission or distributions facility, the denial could be appealed by the applicant or relevant state to the President. The President is required to issue a decision within 90 days of the appeal's filing. With congressional approval, states may enter into interstate compacts for the purposes of siting transmission facilities and the Secretary of Energy could provide technical assistance. This section does not apply to the Electric Reliability Council of Texas (ERCOT).

Third-Party Finance (Sec. 1222). The Western Area Power Administration (WAPA) and the Southwestern Power Administration (SWPA) are able to either continue to design, develop, construct, operate, maintain, or own transmission facilities within their regions or participate with other entities for the same purposes if: the Secretary of Energy designates the area as a National Interest Electric Transmission Corridor and the facility will reduce congestion or is needed to accommodate projected increases in demand for transmission capacity. The project is required to be consistent with the needs identified by the appropriate Regional

Transmission Organization or Independent System Operator. Under certain circumstances, the Secretary of Energy, acting through WAPA and/or SWPA, may design, develop, construct, operate, maintain, or own an electric power transmission facility in the WAPA and SWPA region. No more than \$100 million from third-party financing may be used during fiscal years 2006 through 2015. Before enactment, the enabling statutes for power marketing administrations could have restricted third-party financing, construction, operation, and maintenance of transmission facilities.¹⁷

Advanced Transmission Technologies (Sec. 1223). FERC is directed to encourage deployment of advanced transmission technologies.

Advanced Power System Technology Incentive Program (Sec. 1224). A program is established to provide incentive payments to owners or operators of advanced power generation systems. Subject to the availability of funds, 1.8 cents per kilowatt-hour will be paid to the owner or operator of a qualifying advanced power system technology facility. For facilities that the Secretary of Homeland Security and Secretary of Energy determine are “qualifying security and assured power facilities,” an additional 0.7 cents per kilowatt-hour will be paid to the owner or operator of such a facility. Under the incentive program, the first 10,000,000 kilowatt-hours produced in any facility in a fiscal year are eligible for the incentives. Eligible systems include advanced fuel cells, turbines, or hybrid power systems. For FY2006 through FY2012 an annual appropriation of \$10 million is authorized.

Subtitle C — Transmission Operation Improvements

Open Nondiscriminatory Access (Sec. 1231). FERC is authorized to require, by rule or order, unregulated transmitting utilities (power marketing administrations, state entities, and rural electric cooperatives) to charge rates comparable to what they charge themselves and require that the terms and conditions of the sales be comparable to those required of other utilities. Before enactment, under the Federal Power Act (Section 201(f)), federal power marketing administrations, state entities, and rural electric cooperatives were not subject to FERC’s ratemaking. Under this provision, exemptions are established for utilities selling less than 4 million megawatt-hours of electricity per year, for distribution utilities, and for utilities that own or operate transmission facilities that are not necessary to facilitate a nationwide interconnected transmission system. This exemption could be revoked to maintain transmission system reliability. FERC is not authorized to order states or municipalities to take action under this section if such action would constitute a private use under Section 141 of the Internal Revenue Code of 1986. FERC may remand transmission rates to an unregulated transmitting utility if the rates do not comply with this section. FERC is not authorized to order an unregulated transmitting utility to join a Regional Transmission Organization or other FERC-approved independent transmission organization. (This section is often referred to as “FERC-lite.”)

¹⁷ 16 U.S.C. 460 (SWPA) and 43 U.S.C. 485 (WAPA).

Federal Utility Participation in Regional Transmission Organizations (Sec. 1232). Federal utilities (power marketing administrations or the Tennessee Valley Authority) are authorized to participate in regional transmission organizations. A law allowing federal utilities to study formation and operation of a regional transmission organization is repealed (16 U.S.C. 824n).

Native Load Service Obligation (Sec. 1233). This section amends the Federal Power Act to clarify that a load-serving entity is entitled to use its transmission facilities or firm transmission rights to serve its existing customers before it is obligated to make its transmission capacity available for other uses. FERC is not able to change any approved allocation of transmission rights by a regional transmission organization (RTO) or independent system operator (ISO) approved prior to January 1, 2005. A government entity that owns transmission facilities used predominantly to support its own water pumping facilities is provided protections for transmission service to such facilities comparable to protections provided to load-serving entities. This section does not apply to ERCOT and does not apply to load-serving entities located within the service area of the Tennessee Valley Authority. Within one year of enactment, FERC is required to issue a rule or order on long-term transmission rights and organized markets.

Section 201 of the Federal Power Act gives FERC jurisdiction over “the transmission of electric energy in interstate commerce and the sale of such energy at wholesale in interstate commerce.” Section 205 of the Federal Power Act prohibits utilities from granting “undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage” (16 U.S.C. 824). The new language of this section is intended to clarify that reserving transmission for existing customers (native load) is not considered unduly discriminatory.

Study on the Benefits of Economic Dispatch (Sec. 1234). The Secretary of Energy, in consultation with the states, is required to issue an annual report to Congress and the states on the current status of economic dispatch. Economic dispatch is defined as “the operation of generation facilities to produce energy at the lowest cost to reliably serve consumers, recognizing any operational limits of generation and transmission facilities.”

Protection of Transmission Contracts in the Pacific Northwest (Sec. 1235). FERC does not have the authority to require electric utilities in the Pacific Northwest to convert firm transmission rights to tradable or financial rights. The area of the Pacific Northwest is the region defined in Section 3 of the Pacific Northwest Electric Power Planning and Conservation Act (16 U.S.C.839a) or a portion of a state included in the geographic area proposed for a Regional Transmission Organization in FERC Docket No. RT01-35.

Sense of Congress Regarding Locational Installed Capacity Mechanism (Sec. 1236). It is the sense of Congress that FERC should carefully consider the objections of the states to a proposed locational installed capacity mechanism in New England. The objections include that a locational installed capacity mechanism would not provide adequate assurance that necessary electric generation capacity or reliability will be provided and it would impose a high cost on consumers.

Subtitle D — Transmission Rate Reform

Transmission Infrastructure Investment (Sec. 1241). Within one year of enactment, FERC is required to establish a rule to create incentive-based, including performance-based, transmission rates. The rule is to promote reliable and economically efficient electric transmission and generation, provide for a return on equity that attracts new investment in transmission, encourage use of technologies that increase the transfer capacity of existing transmission facilities, and allow for the recovery of all prudently incurred costs that are necessary to comply with mandatory reliability standards and those that would result from transmission siting and construction on a National Interest Electric Transmission Corridor. FERC is directed to implement incentive rate-making for utilities that join a Regional Transmission Organization.

Funding New Interconnection and Transmission Upgrades (Sec. 1242). FERC may approve a participant funding plan for new transmission or for new generator interconnection if the plan results in rates that are just and reasonable, not unduly discriminatory or preferential, and otherwise consistent with sections 205 and 206 of the Federal Power Act.

Subtitle E — Amendments to PURPA

Net Metering and Additional Standards (Sec. 1251). For states that have not considered implementation and adoption of net metering standards, within two years of enactment, state regulatory authorities are required to begin considering whether to implement net metering. This process must be completed within three years of enactment. Net metering service is defined as service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility (e.g., solar or small generator) and delivered to local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period. During the same time frame, states must consider whether to implement a standard to require electric utilities to develop a plan to minimize dependence on one fuel source. In addition, states must consider whether to implement a requirement that electric utilities develop and implement a 10-year plan to increase the efficiency of fossil fuel generation.

Smart Metering (Sec. 1252). For states that have not considered implementation and adoption of a smart metering standard, state regulatory authorities are required issue a decision within 18 months of enactment on whether to implement a standard for time-based rate schedules for electric utility customers. Customers using time — based rate schedules must be provided with a time-based meter capable of allowing utility customer to receive the time-based rate. This section amends the Public Utility Regulatory Policies Act of 1978¹⁸ (PURPA) and requires the Secretary of Energy to provide consumer education on advanced metering and communications technologies, to identify and address barriers to adoption of demand response programs, and issue a report to Congress not later than

¹⁸ P.L. 95-617.

180 days after enactment that identifies and quantifies the benefits of demand response. The Secretary of Energy must provide technical assistance to regional organizations to identify demand response potential and to develop demand response programs to respond to peak demand or emergency needs. FERC is directed to issue an annual report, by region, to assess demand response resources.

Cogeneration and Small Power Production Purchase and Sale Requirements (Sec. 1253). Section 210 of PURPA required utilities to purchase power from qualifying facilities and small power producers at a rate based on the utilities' avoided cost.¹⁹ This section repeals the mandatory purchase requirement under §210 of PURPA for new contracts if FERC finds that a competitive electricity market exists and a qualifying facility has access to independently administered, auction-based, day-ahead, and real-time wholesale markets and long-term wholesale markets. Qualifying facilities also need to have access to transmission and interconnection services provided by a FERC-approved regional transmission entity that provides non-discriminatory treatment for all customers. Ownership limitations under PURPA are repealed.

Background and Analysis. The oil embargoes of the 1970s created concerns about the security of the nation's electricity supply and led to enactment of the Public Utility Regulatory Policies Act of 1978. For the first time, utilities were required to purchase power from outside sources, or "qualifying facilities." The purchase price was set at the utilities' "avoided cost," the cost they would have incurred to generate the additional power themselves, as determined by utility regulators. PURPA was established in part to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers.

In addition to PURPA, the Fuel Use Act of 1978 (FUA) helped qualifying facilities (QFs) become established.²⁰ Under FUA, utilities were not permitted to use natural gas to fuel new generating facilities. QFs, which are by definition not utilities, were able to take advantage of then-abundant natural gas as well as new generating technology, such as combined-cycle plants that use hot gases from combustion turbines to generate additional power. These technologies lowered the financial threshold for entrance into the electricity generation business as well as shortened the lead time for constructing new plants. FUA was repealed in 1987, but by that time QFs and small power producers had gained a portion of the total electricity supply.

This influx of QF power challenged the cost-based rates that previously guided wholesale transactions. Before implementation of PURPA, FERC approved wholesale interstate electricity transactions based on the seller's costs to generate and transmit the power. Since nonutility generators typically do not have enough market power to influence the rates they charge, FERC began approving certain wholesale transactions whose rates were a result of a competitive bidding process. These rates are called market-based rates.

¹⁹ 16 U.S.C. 824a-3.

²⁰ P.L. 95-620.

This first incremental change to traditional electricity regulation started a movement toward a market-oriented approach to electricity supply. Following the enactment of PURPA, two basic issues stimulated calls for further change: whether to encourage nonutility generation and whether to permit utilities to diversify into non-regulated activities.

The Energy Policy Act of 1992 (EPACT) removed several regulatory barriers for entry into electricity generation to increase competition of electricity supply.²¹ However, EPACT does not permit FERC to mandate that utilities transmit exempt wholesale generator (EWG) power to retail consumers (commonly called “retail wheeling” or “retail competition”), an activity that remains under the jurisdiction of state public utility commissions. PURPA began to shift more regulatory responsibilities to the federal government, and EPACT continued that shift away from the states by creating new options for utilities and regulators to meet electricity demand.

Proponents of PURPA repeal — primarily investor-owned utilities (IOUs) located in the Northeast and in California — argued that their state regulators’ “misguided” implementation of PURPA in the early 1980s has forced them to pay contractually high prices for power they do not need. They argued that, given the current environment for cost-conscious competition, PURPA was outdated. Investor-owned utility interests strongly supported repeal of §210 of PURPA, contending that PURPA’s mandatory purchase obligation was anti-competitive and anti-consumer.

Opponents of mandatory purchase requirement repeal (independent power producers, industrial power customers, most segments of the natural gas industry, the renewable energy industry, and environmental groups) had many reasons to support PURPA as it stood. Mainly, their argument was that PURPA introduced competition in the electric generating sector and, at the same time, helped promote wider use of cleaner, alternative fuels to generate electricity. Since the electric generating sector is not yet fully competitive, they argued, repeal of PURPA would decrease competition and impede the development of the renewable energy industry. Additionally, opponents of PURPA repeal argued that it would result in less competition and greater utility monopoly control over the electric industry. Some state regulators had expressed concern that §210 repeal would prevent them from deciding matters currently under their jurisdiction.

Interconnection (Sec. 1254). Each state regulatory authority, if it has not already done so, and each nonregulated utility must consider establishing an interconnection standard for on-site generating facilities that request to be connected to the local distribution facilities. Interconnection services will be offered according to the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547 for Interconnecting Distributed Resources with Electric Power Systems. Consideration of the standard is to commence not later than one year after enactment and be completed not later than two years after the date of enactment.

²¹ P.L. 102-486.

Subtitle F — Repeal of PUHCA

Short Title (Sec. 1261). This subtitle is to be cited as the “Public Utility Holding Company Act of 2005.”

Definitions (Sec. 1262). This section establishes definitions for: affiliate, associate company, commission, company, electric utility company, exempt wholesale generator and foreign utility company, gas utility company, holding company, holding company system, jurisdictional rates, natural gas company, person, public utility, public-utility company, state commission, subsidiary company, and voting security.

Repeal of the Public Utility Holding Company Act of 1935 (Sec. 1263). The Public Utility Holding Company Act of 1935 (PUHCA) is repealed.

Background and Analysis. In general, PUHCA set forth the structure of holding companies by prohibiting all holding companies that were more than twice removed from the operating subsidiaries. It also federally regulated holding companies of investor-owned utilities, and provided for Securities and Exchange Commission (SEC) regulation of mergers and diversification proposals. Registered holding companies of subsidiaries were required to have SEC approval prior to issuing securities; all loans in intercompany financial transactions were regulated by the SEC. A holding company could have been exempt from PUHCA if its business operations and those of its subsidiaries occurred within one state or with a contiguous state.

Historically, electricity service was defined as a natural monopoly, meaning that the industry has (1) an inherent tendency toward declining long-term costs, (2) high threshold investment, and (3) technological conditions that limit the number of potential entrants. In addition, many regulators have considered unified control of generation, transmission, and distribution as the most efficient means of providing service. As a result, most people (about 75%) are currently served by a vertically integrated, investor-owned utility.

As the electric utility industry has evolved, however, there has been a growing belief that the historic classification of electric utilities as natural monopolies has been overtaken by events and that market forces can and should replace some of the traditional economic regulatory structure. For example, the existence of utilities that do not own all of their generating facilities, primarily cooperatives and publicly owned utilities, has provided evidence that vertical integration has not been necessary for providing efficient electric service. Moreover, recent changes in electric utility regulation and improved technologies have allowed additional generating capacity to be provided by independent firms rather than utilities.

The Public Utility Holding Company Act and the Federal Power Act (FPA) of 1935 (Title I and Title II of the Public Utility Act) established a regime of regulating electric utilities that gave specific and separate powers to the states and the federal government. A regulatory bargain was made between the government and utilities. In exchange for an exclusive franchise service territory, utilities must provide electricity to all users at reasonable, regulated rates.

State regulatory commissions address intrastate utility activities, including wholesale and retail rate-making. State authority currently tends to be as broad and as varied as the states are diverse. At the least, a state public utility commission will have authority over retail rates, and often over investment and debt. At the other end of the spectrum, the state regulatory body will oversee many facets of utility operation. Despite this diversity, the essential mission of the state regulator in states that have not restructured is the establishment of retail electric prices. This is accomplished through an adversarial hearing process. The central issues in such cases are the total amount of money the utility will be permitted to collect and how the burden of the revenue requirement will be distributed among the various customer classes (residential, commercial, and industrial).

Under the FPA, federal economic regulation addresses wholesale transactions and rates for electric power flowing in interstate commerce. Federal regulation followed state regulation and is premised on the need to fill the regulatory vacuum resulting from the constitutional inability of states to regulate interstate commerce. In this bifurcation of regulatory jurisdiction, federal regulation is limited and conceived to supplement state regulation. FERC has the principal functions at the federal level for the economic regulation of the electric utility industry, including financial transactions, wholesale rate regulation, transactions involving transmission of unbundled retail electricity, interconnection and wheeling of wholesale electricity, and ensuring adequate and reliable service. Before Public Law 109-58, to prevent a recurrence of the abusive practices of the 1920s (e.g., cross-subsidization, self-dealing, pyramiding, etc.), SEC regulated utilities' corporate structure and business ventures under PUHCA.

The electric utility industry has been in the process of transformation. During the past two decades, there has been a major change in direction concerning generation. First, improved technologies have reduced the cost of generating electricity as well as the size of generating facilities. Prior preference for large-scale — often nuclear or coal-fired — powerplants has been supplanted by a preference for small-scale production facilities that can be brought on line more quickly and cheaply, with fewer regulatory impediments. Second, this has lowered the entry barrier to electricity generation and permitted non-utility entities to build profitable facilities.

One argument for additional PUHCA change was made by electric utilities that wanted to further diversify their assets. Under PUHCA, a holding company could acquire securities or utility assets only if the SEC found that such a purchase would improve the economic efficiency and service of an integrated public utility system. It was argued that reform to allow diversification would improve the risk profile of electric utilities in much the same way as in other businesses: The risk of any one investment is diluted by the risk associated with all investments. Utilities also argued that diversification would lead to better use of under-utilized resources (due to the seasonal nature of electric demand). Utility holding companies that were exempt from SEC regulation argued that PUHCA discouraged diversification because the SEC could have repealed exempt status if exemption would be “detrimental to the public interest.”

State regulators expressed concerns that increased diversification could lead to abuses, including cross-subsidization: a regulated company subsidizing an unregulated affiliate. Cross-subsidization was a major argument against the creation of exempt wholesale generators (EWGs) and reemerged as an argument against further PUHCA change. In the case of electric and gas companies, non-utility ventures that are undertaken as a result of diversification may benefit from the regulated utilities' allowed rate of return. Moneymaking non-utility enterprises would contribute to the overall financial health of a holding company. However, unsuccessful ventures could harm the entire holding company, including utility subsidiaries. In this situation, opponents feared that utilities would not be penalized for failure in terms of reduced access to new capital, because they could increase retail rates.

Several consumer and environmental public interest groups, as well as state legislators, expressed concerns about PUHCA repeal. PUHCA repeal, such groups argued, could only exacerbate market power abuses in what they see as a monopolistic industry where true competition does not yet exist.

Federal Access to Books and Records (Sec. 1264). Holding companies and their affiliates are required to make available to FERC books and records of affiliate transactions which FERC determines are relevant to costs incurred by a public utility or natural gas company within the holding company system to protect ratepayers with respect to FERC jurisdictional rates. Federal officials are required to maintain confidentiality of such books and records. Before enactment, registered holding companies and subsidiary companies were required to preserve accounts, cost-accounting procedures, correspondence, memoranda, papers, and books that the SEC deemed necessary or appropriate in the public interest or for the protection of investors and consumers.

State Access to Books and Records (Sec. 1265). A jurisdictional state commission may make a reasonably detailed written request to a holding company or any associate company for access to specific books and records. The states must safeguard against unwarranted disclosure to the public of any trade secrets or sensitive commercial information. Response to such a request is mandatory. Compliance with this section is enforceable in U.S. District Court. This section does not apply to an entity that is considered to be a holding company solely by reason of ownership of one or more qualifying facilities.

Before enactment, the Federal Power Act allowed state commissions to examine the books, accounts, memoranda, contracts, and records of a jurisdictional electric utility company, an exempt wholesale generator that sells to such electric utility, and an electric utility company or holding company that is an associate company or affiliate of an exempt wholesale generator. In issuing such an order, a state commission was not required to specify which books, accounts, memoranda, contracts, and records it was requesting.

Exemption Authority (Sec. 1266). FERC is directed to promulgate rules within 90 days from the effective date of this section to exempt qualifying facilities, exempt wholesale generators, and foreign utilities from the federal access to books and records provision (Section 1264). FERC is also required to exempt books,

accounts, memoranda, and other records that are not relevant to the jurisdictional rates of a public utility or natural gas company. Any class of transactions that is not relevant to the jurisdictional rates of a public utility or natural gas company is also exempt.

Affiliate Transactions (Sec. 1267). FERC retains the authority to prevent cross-subsidization and to assure that jurisdictional rates are just and reasonable. FERC and state commissions retain jurisdiction to determine whether associate company activities could be recovered in rates. Before enactment of the new energy law, the Federal Power Act required that jurisdictional rates were just and reasonable and prohibited cross-subsidization.²²

Applicability (Sec. 1268). Except as specifically noted, this subtitle does not apply to the U.S. government, a state or any political subdivision of the state, or foreign governmental authority operating outside the United States.

Effect on Other Regulations (Sec. 1269). FERC or state commissions are not precluded from exercising their jurisdiction under otherwise applicable laws to protect utility customers.

Enforcement (Sec. 1270). FERC is given the authority to enforce these provisions under sections 306-317 of the Federal Power Act. Before enactment, the Securities and Exchange Commission had the authority to investigate and enforce provisions of the Public Utility Holding Company Act of 1935.

Savings Provisions (Sec. 1271). Persons are able to continue to engage in legal activities in which they have been engaged, or are authorized to engage in, on the effective date of this act. This subtitle would not limit the authority of FERC under the Federal Power Act or the Natural Gas Act. Tax treatment for exchanges of stock or securities under section 1081 of the Internal Revenue Service Code, *Nonrecognition of Gain or Loss on Exchanges or Distributions in Obedience to Orders of the SEC*, is not affected due to the repeal of PUHCA.

Implementation (Sec. 1272). Not later than four months after enactment, FERC is required to promulgate regulations necessary to implement this subtitle (excluding section 1265 which relates to state access to books and records) and submit to Congress recommendations for technical or conforming amendments to federal law necessary to carry out this subtitle.

Transfer of Resources (Sec. 1273). The Securities and Exchange Commission is required to transfer all applicable books and records to FERC.

Effective Date (Sec. 1274). Six months after enactment, this subtitle will take effect. This effective date does not apply to §1282 (implementation). If any FERC rulemaking that modifies the standards of conduct governing entities that own, operate, or control facilities for transmission of electricity in interstate commerce or

²² 16 U.S.C. 791a et seq.

transportation of natural gas in interstate commerce takes effect prior to the effective date of this section, any action taken by a public-utility company or utility holding company to comply with the FERC requirements will not subject these companies to any regulatory requirement under PUHCA.

Service Allocation (Sec. 1275). FERC is required to review and authorize cost allocations for non-power goods or administrative or management services provided by an associate company that was organized specifically for the purpose of providing such goods or services. This section does not preclude FERC or state commissions from exercising their jurisdiction under other applicable laws with respect to review or authorization of any costs. FERC is required to issue rules within four months of enactment to exempt from the section any company and holding company system if operations are confined substantially to a single state.

Authorization of Appropriations (Sec. 1276). Necessary funds to carry out this subtitle are authorized to be appropriated.

Conforming Amendments to the Federal Power Act (Sec. 1277). The Federal Power Act is amended to reflect the changes to the Public Utility Holding Company Act of 1935.

Subtitle G — Market Transparency, Enforcement, and Consumer Protection

Electricity Market Transparency (Sec. 1281). FERC is directed to facilitate price transparency in wholesale electric markets. FERC may prescribe rules to provide on a timely basis information about the availability and prices of wholesale electric energy and transmission service to FERC, state commissions, buyers and sellers of wholesale electric energy, users of transmission services, and the public. FERC is directed to rely on existing price publishers and providers of trade processing services the maximum extent possible. However, FERC may establish an electronic information system if it determines that existing price information is not adequate. Any rules promulgated by FERC will exempt from disclosure any information that would be detrimental to the operation of an effective market or jeopardize system security. Within 180 days of enactment, FERC must enter into a memo of understanding (MOU) with the Commodity Futures Trading Commission to ensure coordination of information requests to markets.

Entities with a *de minimis* market presence are not required to comply with the reporting requirements of the section. No one will be subject to civil penalties for any violation of the reporting requirements that occur more than three years before the date on which the person has provided notice of the proposed penalty. This would not apply to entities that have engaged in fraudulent market manipulation activities. The section does not apply to the area of the Electric Reliability Council Texas.

False Statements (Sec. 1282). The Federal Power Act is amended to expressly prohibit any entity from willingly and knowingly reporting false

information to a federal agency relating to the price of electricity sold at wholesale or the availability of transmission capacity.

Background. Existing mail fraud laws in part apply to use of the mail for the purpose of executing, or attempting to execute, a scheme or artifice to defraud or for obtaining money or property by false or fraudulent pretenses, representations, or promises. Wire fraud statutes cover use of wire, radio, or television communication in interstate or foreign commerce to transmit or to cause to be transmitted any writings, science, signals, pictures, or sounds for the purpose of executing a scheme or artifice to defraud or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises.

Market Manipulation (Sec. 1283). Amends the Federal Power Act to expressly prohibit any entity, in connection with the purchase or sale of FERC jurisdictional electric energy or transmission services, from directly or indirectly using any manipulative or deceptive device or contrivance.

Enforcement (Sec. 1284). The Federal Power Act is amended to allow electric utilities to file complaints with FERC and to allow complaints to be filed against transmitting utilities. Criminal and civil penalties under the Federal Power Act are increased. Criminal penalties may not exceed \$1 million and/or five years' imprisonment. In addition, a fine of \$25,000 may be imposed. A civil penalty not exceeding \$1 million per day per violation may be assessed for violations of sections 211, 212, 213, or 214 of the Federal Power Act. Before enactment of the new energy law, criminal penalties could not have exceeded \$5,000 and/or two years' imprisonment. An additional fine of \$500 could have been imposed. A civil penalty not exceeding \$10,000 per day per violation could have been assessed for violations of sections 211, 212, 213, or 214 of the Federal Power Act.

Refund Effective Date (Sec. 1285). Section 206(b) of the Federal Power Act is amended to allow the effective date for refunds to begin at the time of the filing of a complaint with FERC but not later than five months after such a filing. If FERC does not make its decision within the time-frame provided, FERC would be required to state its reasons for not acting in the provided time-frame for the decision.

Refund Authority (Sec. 1286). Any entity that is not a public utility (including an entity referred to under §201(f) of the Federal Power Act) and enters into a short-term sale of electricity is subject to the FERC refund authority. A short-term sale includes any agreement to the sale of electric energy at wholesale that is for a period of 31 days or less. This section does not apply to electric cooperatives, or any entity that sells less than 8 million megawatt hours of electricity per year. FERC is given refund authority over voluntary short-term sales of electricity by Bonneville Power Administration if the rates charged are unjust and unreasonable. FERC is given authority over all power marketing administrations and the Tennessee Valley Authority to order refunds to achieve just and reasonable rates. Before enactment, Section 201(f) of the Federal Power Act exempted government entities from FERC rate regulation.

Consumer Privacy and Unfair Trade Practices (Sec. 1287). The Federal Trade Commission is authorized to issue rules to prohibit slamming and cramming. Slamming occurs when an electric utility switches a customer's electric provider without the consumer's knowledge. Cramming occurs when an electric utility adds additional services and charges to a customer's account without permission of the customer. If the Federal Trade Commission determines that a state's regulations provide equivalent or greater protection, then the state regulations would apply in lieu of regulations issued by the Federal Trade Commission.

Authority of Court to Prohibit Individuals from Serving As Officers, Directors, and Energy Traders (Sec. 1288). The court is allowed to prohibit any person who is found to have violated Section 221 of the Federal Power Act (Prohibition on Filing False Information) from acting as an officer or director of an electric utility or engaging in the business of purchasing or selling FERC jurisdictional electric energy or transmission services.

Merger Review Reform (Sec. 1289). The Federal Power Act would be amended to give FERC approval authority over the acquisition of securities and the merger, sale, lease, or disposition of facilities under FERC's jurisdiction with a value in excess of \$10 million. FERC is required to give state public utility commissions and governors reasonable notice in writing. FERC must approve the proposed change of control, acquisition, disposition, or consolidation if it finds that the proposed transaction is consistent with the public interest and will not result in cross-subsidization of a nonutility associate company or the pledge or encumbrance of utility assets for the benefit of an associate company, unless it is consistent with the public interest. If FERC does not act within 180 days of an application, the application will be deemed granted unless FERC finds that further consideration is required. This section takes effect six months after enactment. Before enactment, under section 203(a) of the Federal Power Act, FERC review of asset transfers applied to transactions valued at \$50,000 or more.

Relief for Extraordinary Violations (Sec. 1290). This section applies to contracts for wholesale electricity within the Western Interconnection prior to June 20, 2001, for which FERC has found that the wholesale power sellers manipulated that electricity market, resulting in unjust and unreasonable rates, and for which FERC has revoked the seller's authority to sell at market-based rates. For these contracts, FERC may determine whether termination payments for power not delivered by the seller are unlawful on the grounds that the contract is unjust and unreasonable or contrary to the public interest. This applies only to cases still pending before FERC and not previously settled.

Subtitle H — Definitions

Definitions (Sec. 1291). The definitions for "electric utility" and "transmitting utility" under the Federal Power Act would be amended. Definitions for the following terms would be added to the Federal Power Act: electric cooperative, regional transmission organization, independent system operator, and transmission organization.

Section 201(f) of the Federal Power Act is amended to add that in addition to a political subdivision of a state, an electric cooperative that receives financing under the Rural Electrification Act of 1936 or an electric cooperative that sells less than 4,000,000 MW-hours of electricity per year is not subject to FERC rate regulation.

Subtitle I — Technical and Conforming Amendments

Conforming Amendments (Sec. 1295). The Federal Power Act is amended to conform with this section.

Subtitle J — Economic Dispatch

Economic Dispatch (Sec. 1298). FERC is directed to convene regional boards to study “security constrained economic dispatch.” A member of FERC will chair each regional joint board that is to be composed of a representative from each state. Within one year of enactment, FERC is required to submit a report to Congress on the recommendations of the joint regional boards. This section does not define “security constrained economic dispatch,” but it generally means a dispatch system that ensures that all normal and contingency limits of the system are simultaneously met under a base case with one contingency (i.e., the loss of a critical network element, N-1 security analysis).

Title XIII — Energy Policy Tax Incentives

Short Title (Sec. 1300). This title may be cited as the “Energy Tax Incentives Act of 2005.”

Subtitle A — Electricity Infrastructure

Summary of Provisions. This section generally liberalizes existing tax provisions to reduce taxes for the electric utility industry — businesses that supply electricity for residential, commercial, industrial and government use. It also, however, introduces two new energy tax subsidies for electricity: a tax credit for investors in clean renewable energy bonds, and a tax credit for electricity produced from nuclear energy.

The title “electricity infrastructure” implies the targeting of the industry’s capital in all segments of electricity supply — generation, transmission, and distribution. Included also are electricity production (generation) incentives such as an extension of the Internal Revenue Code (IRC) §45 tax credit, and the new nuclear credit. Some of the provisions are intended to facilitate the ongoing restructuring of the electric utility industry. For example, the deferral of gain on the sale of transmission assets is intended to foster a more competitive industry by facilitating the unbundling of transmission assets held by vertically integrated utilities.

Extension and Modification of Renewable Electricity Production Credit (Sec. 1301). This extends the availability of the §45 credit (the placed-in-

service deadline) for two years for electricity produced from renewable resources, except for solar energy facilities described in §45(d)(4) and refined coal production facilities described in §45(d)(8). For these two categories, the December 31, 2005, deadline remains unchanged. In addition, P.L. 109-58 extends the credit period to 10 years for all qualifying facilities placed in service after the date of enactment, eliminating the five-year credit period to which some facilities are currently subject. Also, the definition of qualified energy resources that qualify for the credit is expanded to include qualified hydropower production, although a qualified hydroelectric facility is entitled to only 50% of the usual credit. P.L. 109-58 also adds Indian coal production facilities to the list of those facilities eligible for the credit. The credit is available for sales of Indian coal to an unrelated party from a qualified facility beginning January 1, 2006, and ending December 31, 2012. The credit is \$1.50 per ton during 2006-2009 and increases to \$2.00 per ton in 2110-2012; the credit amount for Indian coal is also to be adjusted for inflation in calendar years after 2006. This is effective as of the date of enactment (August 8, 2005).

Application of Section 45 Credit to Agricultural Cooperatives (Sec. 1302). This section allows cooperatives eligible for the §45 credit to elect to pass through any portion of the credit to their patrons. To be eligible for this election, the cooperative must be more than 50%-owned by agricultural producers or entities owned by agricultural producers. The election must be made on an annual basis and is irrevocable once made. This is effective for taxable years of cooperatives ending after the date of enactment.

Clean Renewable Energy Bonds (Sec. 1303). This section adds a new section to the IRC, §54, providing a credit for holders of clean renewable energy bonds. To qualify for the credit, the bonds must be issued pursuant to an allocation by the Secretary of the Treasury, and at least 95% of the proceeds must be used for capital expenditures on a qualified facility (determined under §45(d) without regard to the date placed in service). The amount of the credit is the face amount of the bond, multiplied by a credit rate to be determined by Treasury. The credit rate is to permit the issuance of the bonds without discount or any interest cost to the issuer. There is a national limit of \$800 million for such bonds, and no more than \$500 million of the bonds may be allocated to finance projects for governmental borrowers. This is effective for bonds issued after December 31, 2005.

Treatment of Income of Certain Electrical Cooperatives (Sec. 1304). This section repeals the sunset provisions of §501(c)(12)(C) and (H), which allow a mutual or cooperative electric company to treat income from the sale of electric transmission services, the sale of distribution services, nuclear decommissioning transactions, asset exchange or conversion transactions, and load loss transactions as member income. The provision is effective as of the date of enactment.

Dispositions of Transmission Property to Implement FERC Restructuring Policy (Sec. 1305). The special capital gains tax treatment under IRC §451(i) of gains on the sale or disposition of certain property used in providing electric transmission services is extended to December 31, 2007. This is effective for transactions occurring after the date of enactment.

Credit for Production from Advanced Nuclear Power Facilities (Sec. 1306). This section adds IRC §45J, providing a §38 business credit for electricity produced in the first eight years of operation of an advanced nuclear power facility. The credit is equal to 1.8¢ times the kilowatt hours of electricity produced and sold to an unrelated person, but is subject to a limitation based on the amount of the national megawatt capacity limitation allocated to the facility. The total national limitation is 6,000 megawatts, which is to be allocated as prescribed by the Secretary of Energy. The credit is further limited to \$125 million annually per thousand megawatts of capacity allocated to the facility. To qualify for the credit, a facility must be of a design first approved by the Nuclear Regulatory Commission after 1993, and must be placed in service after the date of enactment and before 2021. This is effective for production in taxable years beginning after date of enactment.

Credit for Investment in Clean Coal Facilities (Sec. 1307). Two new §46 investment credits are established for advanced coal projects and qualified coal gasification projects, as new IRC §§48A and 48B, respectively. The credits would be 20% for coal gasification projects using integrated gasification combined cycle (IGCC) technology, and 15% for other advanced coal-based projects. The total credits available under §48A for qualifying advanced coal projects would be limited to \$1.3 billion, with \$800 million allocated to IGCC projects and the remaining \$500 million to projects using other advanced coal-based generation technologies. The §48B credit for qualifying gasification projects would be limited to \$350 million. Both credits would be allocated based on the amount invested. These credits are effective for periods after the date of enactment, using rules similar to those of former IRC §48(m) before its 1990 repeal.

Electric Transmission Property Treated as 15-Year Property (Sec. 1308). Depreciable property used in the transmission of 69 or more kilovolts of electricity for sale is classified as 15-year property under the Modified Accelerated Cost Recovery System (MACRS) and assigned a 30-year class life for purposes of the alternative depreciation system. Prior to this amendment such transmission property generally had been assigned a 20-year recovery period. The new recovery period is effective for property placed in service after April 11, 2005, except for property that is the subject of a binding contract or is under construction (for self-constructed property) on or before April 11, 2005.

Expansion of Amortization for Certain Atmospheric Pollution Control Facilities in Connection with Plants First Placed in Service After 1975 (Sec. 1309). Atmospheric pollution control facilities placed in service after April 11, 2005, and used in connection with an electric generation plant or other property which is primarily coal-fired, are eligible for an amortization period of 60 months (rather than 84 months). P.L. 109-58 eliminates the rule that to be a certified pollution control facility (and eligible for the faster depreciation), such facility needed to be in operation before January 1, 1976.

Modification to Special Rules for Nuclear Decommissioning Costs (Sec. 1310). This section repeals the cost of service requirement for deductible contributions to a nuclear decommissioning fund. Thus, all taxpayers, including unregulated taxpayers, would be allowed a deduction for amounts contributed to a

qualified fund. The section also permits tax-deductible contributions to a qualified fund for pre-1984 decommissioning costs.

Section 1310 also repeals the limitation that a qualified fund accumulate only an amount sufficient to pay for a nuclear power plant's decommissioning costs incurred during the period that the qualified fund is in existence (generally post-1984 decommissioning costs). Thus, any taxpayer is permitted to accumulate an amount sufficient to cover the present value of 100% of a nuclear power plant's estimated decommissioning costs in a qualified fund.

The act does not change the requirement that contributions to a qualified fund not be deducted more rapidly than level funding. The act permits a taxpayer to make contributions to a qualified fund in excess of the "ruling amount" (determined by the Secretary) in one circumstance: specifically, a taxpayer is permitted to contribute up to the present value of total nuclear decommissioning costs with respect to a nuclear power plant previously excluded under §468A(d)(2)(A). It is anticipated that an amount permitted to be contributed under this special rule shall be determined using the estimate of total decommissioning costs used for purposes of determining the taxpayer's most recent ruling amount. Any amount transferred to the qualified fund under this special rule will be allowed as a deduction over the remaining useful life of the nuclear power plant. If a qualified fund that has received amounts under this rule is transferred to another person, the transferor is permitted a deduction for any remaining deductible amounts at the time of transfer. The act requires that a taxpayer apply for a new ruling amount with respect to a nuclear power plant in any tax year in which the power plant is granted a license renewal, extending its useful life. This is effective for taxable years beginning after December 31, 2005.

Five-Year NOL Carryback for Certain Electric Utility Companies (Sec.1311). Certain electric utility companies are allowed to extend the Net Operating Loss (NOL) carryback period to five years for a portion of NOLs arising in 2003, 2004, and 2005. The election is to be made during any taxable year ending after 2005 and before 2009 and must specify the loss to which it applies. The election applies to 20% of the taxpayer's qualifying investment during the prior taxable year. Rules similar to those for specified liability losses apply, and any unused portion of the loss year NOL remains subject to previous carryover rules. A taxpayer is limited to one election per taxable year for no more than one taxable year beginning in the same calendar year. For calculating interest on overpayments, any overpayment resulting from a five-year NOL carryback election is deemed not to have been made before the filing date for the taxable year in which the taxpayer made the election. The statute of limitations for refund claims and assessment of deficiencies is extended. The Treasury is to prescribe the manner to make the election, with filing a refund claim as sufficient for making the election, provided the taxpayer attaches a statement specifying the election year, the loss year, and the amount of qualifying investment in electric transmission property and pollution control facilities in the preceding taxable year.

An investment qualifies for the extended carryback if it is a capital expenditure: (1) attributable to electric transmission property used by the taxpayer in the transmission at 69 or more kilovolts of electricity for sale; or (2) made by an electric

utility company (as defined in the Public Utility Holding Company Act) and attributable to a certified pollution control facility, as defined in §169(d)(1) but without the requirement that the facility either be new or be used with a plant or other property in operation before January 1, 1976. There is no requirement that the qualifying investment property be placed in service in the year that the taxpayer incurs the capital expenditures, so long as the taxpayer is committed to the expenditures and to placing the property in service in the taxpayer's trade or business. The extended carryback does not cover expenditures that, at the taxpayer's choice, are refundable or subject to material modification that would not meet the requirements of this provision. This is effective for elections made in taxable years ending after December 31, 2005, and before January 1, 2009, with respect to NOLs arising in taxable years ending in 2003, 2004, and 2005.

Background and Policy Context. Historically, the electric utility industry has not been provided special federal tax preferences, although it has benefitted significantly from 1) capital tax incentives (such as accelerated depreciation and investment tax credits) due to its capital-intensive production process, and 2) from special tax preferences for renewable electricity. While many of the new electricity industry tax incentives in this subtitle originated with electricity industry restructuring proposals, others were in response to specific electricity market conditions and negative trends in those markets, particularly spiking electricity prices, supply shortfalls, and bottlenecks.

Some energy market analysts believe that electricity supply problems are due to insufficient distribution/transportation infrastructure — insufficient transmission lines — to deliver the supplies to meet the demands of the market. Investment in transmission lines (the grid) and other distribution capital has not been commensurate with increases in the generation and bulk transfer of power. Growing spot markets that ship power supplies over ever greater distances have crammed more electrons onto wires built to serve utilities' local customers. But most of the grid was built in the 1950s and needs upgrading. The Electric Power Research Institute, a Palo Alto, California-based industry group, has pegged building costs at \$100 billion over the decade. The electricity tax subsidies increase the incentives to invest in electricity generation and transmission — capital incentives for utilities to construct new transmission facilities and new additional power lines. The goal is to reduce congestion in the nation's transmission grid, which has been blamed for power brownouts and blackouts and for electricity price spikes.

The new production tax credit for nuclear power appears to be consistent with the Bush Administration's support for new nuclear power plants, although the Administration had not proposed such a subsidy. Nuclear reactors generate about 20% of U.S. electricity, but the most recent U.S. reactor order (that was not subsequently canceled) was in 1973. Supporters of the nuclear tax credit contend that it would provide balance with the previously established renewable electricity production tax credit.

Subtitle B — Domestic Fossil Fuel Security

Summary of Provisions. Subtitle B includes tax incentives for the production, transportation, and distribution of oil and gas, as well as capital incentives for refinery production of liquid fuels. Not included are coal supply incentives, which are subsumed in the electricity infrastructure subtitle described above. Many of the incentives are production tax credits and other such “upstream” production incentives, but some are also capital incentives for natural gas infrastructure (accelerated depreciation of natural gas lines).

These tax incentives mostly involve liberalization of existing tax code provisions. The incentives are both production incentives (i.e., tax benefits based on quantities of oil and gas) and capital incentives (i.e., tax benefits based on the magnitude of capital investment such as pipelines). Both unconventional, as well as conventional, oil and gas are targeted for tax cuts.

Extension of Credit for Producing Fuel from a Nonconventional Source for Facilities Producing Coke or Coke Gas (Sec.1321). The IRC §29 production credit is made available for qualified facilities that produce coke or coke gas that were placed in service before January 1, 1993, or after June 30, 1998, and before January 1, 2010. Coke and coke gas produced and sold during the period beginning on the latter of January 1, 2006, or the date the facility is placed in service, and ending four years after such period begins, is eligible for the production credit. A facility that claims a credit under §29(g) is not eligible to claim the new credit for producing coke or coke gas. The provision also requires that the amount of credit-eligible coke produced cannot exceed an average barrel-of-oil equivalent of 4,000 barrels per day. The \$3.00 credit for coke and coke gas would be indexed for inflation with a 2004 base year. This section also states that the IRS should consider issuing rulings and guidance on an expedited basis to taxpayers who had pending ruling requests at the time that the IRS implemented a moratorium.

Modification of Credit for Producing Fuel from a Nonconventional Source (Sec.1322). The §29 credit for producing fuel from a nonconventional source is made part of the general business credit, moving the credit from §29 to new §45K. This modification makes the general business limitations applicable to the §29 tax credit. Any unused credits could be carried back one year and forward 20 years, except that the credit could not be carried back to a taxable year ending before January 1, 2006. This is effective for fuel produced and sold after December 31, 2005, in taxable years ending after such date. The redesignation of the provision is effective for credits determined under the 1986 Code for taxable years ending after December 31, 2005.

Temporary Expensing for Equipment Used in Refining of Liquid Fuels (Sec.1323). Refineries are allowed to irrevocably elect to expense 50% of the cost of qualified refinery property, with no limitation on the amount of the deduction. The deduction will be allowed in the taxable year in which the refinery is placed in service. The remaining 50% of the cost remains eligible for regular cost recovery provisions. To qualify for the deduction: (1) original use of the property must commence with the taxpayer; (2) (i) construction must be pursuant to a binding

construction contract entered into after June 14, 2005, and before January 1, 2008, (ii) in the case of self-constructed property, construction began after June 14, 2005, and before January 1, 2008, or (iii) the refinery is placed in service before January 1, 2008; (3) the property must be placed in service before January 1, 2012; (4) the property must meet certain production capacity requirements if it is an addition to an existing refinery; and (5) the property must meet all applicable environmental laws when placed in service. Certain types of refineries, including asphalt plants, are not eligible for the deduction, and there is a special rule for sale-leasebacks of qualifying refineries. If the owner of the refinery is a cooperative, it may elect to allocate all or a part of the deduction to the cooperative owners, allocated on the basis of ownership interests. This is effective for qualifying refineries placed in service after date of enactment.

Pass Through to Owners of Deduction for Capital Costs Incurred by Small Refiner Cooperatives in Complying with Environmental Protection Agency Sulfur Regulations (Sec. 1324). The section provides that cooperative refineries that qualify for §179B expensing (writing off in one year) of capital costs incurred in complying with EPA sulfur regulations can elect to allocate all or part of the deduction to their owners, determined on the basis of their ownership interests. The election can be made on an annual basis and is irrevocable once made. This provision is effective as if included in §338(a) of the American Jobs Creation Act of 2004 (P.L. 108-357).

Natural Gas Distribution Lines Treated as 15-Year Property (Sec. 1325). This section establishes a 15-year recovery period for MACRS and a 35-year class life for alternative depreciation system for natural gas distribution lines. Prior to this amendment, natural gas distribution lines were assigned a 20-year recovery period. This provision is effective for property, the original use of which began with the taxpayer after April 11, 2005, which is placed in service after April 11, 2005, and before January 1, 2011, and does not apply to property subject to a binding contract on or before April 11, 2005.

Natural Gas Gathering Lines Treated as Seven-Year Property (Sec. 1326).

Under prior law IRC§168(e)(3) and IRS regulations, the recovery period for natural gas gathering lines could be either 7 or 15 years, depending upon whether they were classified as production or transportation equipment. Recent court cases reflect the ambiguous tax treatment. Natural gas pipelines have a recovery period of 15 years, while natural gas distribution lines had a recovery period of 20 years (which, as noted above, has been reduced to 15 years). P.L. 109-58 assigns natural gas gathering lines a 7-year recovery period for MACRS and a class life of 14 years for the alternative depreciation system for natural gas gathering lines. The law also provides that no adjustment is made to the allowable amount of depreciation for alternative minimum taxable income purposes.

Section 1326 defines a natural gas gathering line as the pipe, equipment, and appurtenances determined to be a gathering line by FERC or used to deliver natural gas from the wellhead or commonpoint to the point at which the gas first reaches: (1) a gas processing plant; (2) an interconnection with an interstate transmission line; (3)

an interconnection with an intrastate transmission pipeline; or (4) a direct connection with a local distribution company, a gas storage facility, or an industrial consumer. Also, the section requires that the original use of the property begin with the taxpayer. This provision is effective for property placed in service after April 11, 2005, excluding property with respect to which the taxpayer or related party had a binding acquisition contract on or before April 11, 2005.

Arbitrage Rules Not to Apply to Prepayments for Natural Gas (Sec. 1327). This section creates a safe harbor exception to the general rule that tax-exempt bond-financed prepayments violate arbitrage restrictions. The term “investment type property” would not include a prepayment under a qualified natural gas supply contract. The section also provides that such prepayments are not treated as private loans for purposes of the private business tests. Thus, a prepayment financed with tax-exempt bond proceeds for the purpose of obtaining a supply of natural gas for service area customers of a governmental utility would not be treated as the acquisition of investment-type property. The safe harbor provisions do not apply if the utility engages in intentional acts to render: (1) the volume of natural gas covered by the prepayment to be in excess of that needed for retail natural gas consumption; and (2) the amount of natural gas that is needed to fuel transportation of the natural gas to the governmental utility. This is effective for obligations issued after date of enactment.

Determination of Small Refiner Exception to Oil Depletion Deduction (Sec. 1328). The percentage depletion allowance for oil and gas is 15% of revenues (gross income) and is available only to independent producers (not vertically integrated producers) and royalty owners. Independent producers (which may be large firms) can claim a higher depletion rate (up to 25%, rather than the normal 15%) for up to 15 barrels per day (bpd) of oil (or the equivalent amount of gas) from marginal wells (“stripper” oil/gas and heavy oil). For purposes of percentage depletion, an independent oil producer had been defined as one that does not refine more than 50,000 barrels of oil on any given day and does not have a retail operation grossing more than \$5 million/year (IRC§613A(d)). Under P.L. 109-58, the 50,000 barrel daily limit is raised to 75,000. In addition, the section changes the refinery limitation on claiming independent producer status from a limit based on actual daily production to a limit based on average daily production for the taxable year. Accordingly, the average daily refinery runs for the taxable year may not exceed 75,000 barrels. For this purpose, the taxpayer would calculate average daily refinery runs by dividing total refinery runs for the taxable year by the total number of days in the taxable year. This is effective for taxable years ending after the date of enactment.

Amortization of Geological and Geophysical Expenditures (Sec. 1329). Geological and geophysical expenses paid or incurred in connection with the domestic exploration for, or development of, oil or gas can be amortized ratably (evenly) over two years using the half-year convention (considered to be incurred at the mid-point of the taxable year). If property to which such an expenditure relates is retired or abandoned during the 24-month period, no deduction would be allowed on account of the retirement or abandonment; however, the amortization deduction

under this provision would continue. This is effective for amounts paid or incurred in taxable years beginning after the date of enactment.

Background and Policy Context. The harbinger of the fossil fuel tax incentives in the Energy Policy Act of 2005 was the 106th Congress's effort in 1999 to help the ailing domestic oil and gas producing industry deal with depressed oil prices. The Energy Policy Act of 2005 includes a plethora of spending, tax, and deregulatory incentives to stimulate the production of conventional and unconventional oil and gas.

While it can be argued that the above tax subsidies are not justified based on economic theory — especially given the high oil and gas prices over much of the policy period — they are not large when measured relative to the industry's gross product. The industry did benefit historically from significant tax subsidies, but most of these have been either eliminated or pared back since the 1970s.

Subtitle C — Conservation and Energy Efficiency Provisions

Summary of Provisions. Over the years, energy tax bills have taken a three-pronged approach to energy policy by providing incentives for 1) efforts to increase conventional energy supplies 2) conservation of conventional energy (fossil fuels) by enhancing energy efficiency, and 3) energy conservation through a substitution of alternative (including renewable fuels) for conventional fossil fuels. This subtitle includes the second type of measures.

Energy Efficient Commercial Buildings Deduction (Sec. 1331). A new formula-based tax deduction is provided for energy-efficient commercial building property expenditures made by the taxpayer. The property must reduce the energy and power consumption of a commercial building by 50%. Qualifying property includes property installed as part of interior lighting systems, heating, cooling, ventilation and hot water systems, or the building envelope, to the extent certified as energy efficient. The provision limits the deduction to \$1.80 per square foot and would reduce the property basis by the amount of the deduction. The provision would allow a partial deduction for a building that does not meet the overall building requirement of a 50% energy savings. This is effective for property placed in service after December 31, 2005, and prior to January 1, 2008.

Credit for Construction of New Energy Efficient Homes (Sec. 1332). A \$2,000 general business tax credit is provided to contractors for the construction of a qualified new energy-efficient home if the home achieves energy savings of 50% over a comparable unit built to the 2003 International Energy Conservation Code. For manufactured homes, a \$1,000 credit is provided for energy savings of 30%. This is effective for homes whose construction is substantially completed after December 31, 2005, and which are purchased after December 31, 2005, and prior to January 1, 2008.

Credit for Certain Nonbusiness Energy Property (Sec. 1333). A 10% tax credit is provided for amounts paid or incurred for the installation of qualified energy efficiency improvements (building envelope components) to existing homes,

plus specified credits for expenditures on residential energy property (such as furnaces and boilers). The maximum credit for a taxpayer with respect to the same dwelling is limited to \$500 for all taxable years; no more than \$200 of the credit may be attributable to expenditures on windows. Thus, the maximum expenditure eligible for the credit is \$5,000; no more than \$2,000 can be spent on qualifying windows. The provision defines qualified energy efficiency improvements as any energy efficient building envelope component that meets the prescriptive criteria established by the 2000 International Energy Conservation Code and is installed in or on a U.S. dwelling unit (including certain manufactured homes) owned and used as the taxpayer's principal residence, first used by the taxpayer, and reasonably expected to remain in use for five or more years. The provision defines a building envelope components as (1) any insulation material or system specifically and primarily designed to reduce the heat loss or gain to a dwelling unit when installed; (2) exterior windows (including skylights); (3) exterior doors; and (4) any metal roof that has appropriate pigmented coatings.

The tax credits for residential energy property expenditures (as opposed to the 10% building envelope credit) are limited to the following amounts: a \$50 credit for each advanced main air circulating fan, \$150 for each qualified natural gas, propane, or oil furnace or hot water boiler, and \$300 for each item of energy efficient building property (including qualifying electric heat pump water heaters, electric heat pumps, geothermal heat pumps, central air conditioners, and natural gas, propane or oil water heaters).

The section includes certain expenditures for labor costs as eligible expenditures; it does not require certification of expenditures. The basis of the property would be required to be reduced by the amount of the credit. Special proration rules are applied for jointly owned property, condominiums, and cooperative housing corporations, and where less than 80% of the property is used for nonbusiness purposes. This is effective for property placed in service after December 31, 2005, and before January 1, 2008.

Credit for Energy Efficient Appliances (Sec. 1334). A new IRC section is created that provides a credit for the eligible production (manufacture) of certain energy-efficient dishwashers, clothes washers, and refrigerators. The credit amount for dishwashers is \$3 multiplied by the percentage by which the efficiency of the 2007 standards (not yet known) exceeds that of the 2005 standards, up to \$100 per dishwasher. The credit for clothes washers is \$100 for each unit manufactured in 2006 and 2007 that meet the requirements of the Energy Star program in effect for clothes washers in 2007. The credit for dishwashers also applies to units produced in 2006 and 2007 that meet the Energy Star standards for 2007.

The credit for refrigerators is based on energy savings and the year of manufacture. A refrigerator must be an automatic defrost refrigerator-freezer with an internal volume of at least 16.5 cubic feet to qualify for the credit. The energy savings are determined relative to the energy conservation standards promulgated by the Department of Energy that took effect on July 1, 2001. Refrigerators that achieve a 15% to 20% energy saving and that are manufactured in 2006 receive a \$75 credit. Refrigerators that achieve a 20% to 25% energy saving receive a \$125 credit if

manufactured in 2006 or 2007. Refrigerators that achieve at least a 25% energy saving receive a \$175 credit if manufactured in 2006 or 2007. Appliances eligible for the credit include only those that exceed the average amount of production from the three prior calendar years for each category of appliance. However, eligible production of refrigerators is defined as production that exceeds 110% of the average amount of production from the three prior calendar years.

The manufacturer may not claim credits in excess of \$75 million for all taxable years, and may not claim credits in excess of \$20 million with respect to refrigerators eligible for the \$75 credit. The credit allowed in a taxable year for all appliances may not exceed 2% of the average annual gross receipts of the taxpayer for the three taxable years preceding the taxable year in which the credit is determined. The credit is part of the general business credit and is effective for appliances produced after December 31, 2005, and prior to January 1, 2008.

Credit for Residential Energy Efficient Property (Sec. 1335). A 30% nonrefundable personal tax credit, not to exceed \$2,000, is provided for individuals for the purchase of qualified photovoltaic property and qualified solar water heating property used exclusively for residential purposes other than heating swimming pools and hot tubs. At least half of the energy used by the solar water heating property must be derived from the sun. A 30% tax credit is also provided for the purchase of qualified fuel cell electric generators, not to exceed \$1,000 for each kilowatt of capacity. The generator must have an electricity-only generation efficiency of greater than 30% and generate at least 0.5 kilowatts of electricity. The generator must also be installed on or in connection with a dwelling unit located in the United States and that is used by the taxpayer as a principal residence. The depreciable basis of the property must be reduced by the amount of the credit. Expenditures for labor costs are included in eligible expenditures. Certain equipment safety requirements must be met to qualify for the credit, and special proration rules apply for jointly owned property, condominiums, and cooperative housing corporations, and where less than 80% of the property is used for nonbusiness purposes. This is effective for property placed in service after December 31, 2005, and before January 1, 2008.

Credit for Business Installation of Qualified Fuel Cells and Stationary Microturbine Power Plants (Sec. 1336). A 30% business energy tax credit is provided for the purchase of qualified fuel cell power plants for businesses, not to exceed \$1,000 for each kilowatt of capacity. The power plant must have an electricity-only generation efficiency of greater than 30% and generate at least 0.5 kilowatts of electricity. In addition, a 10% credit is provided for the purchase of qualifying stationary microturbine power plants, including secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution. The system must have an electricity-only generation efficiency of not less than 26% at International Standard Organization conditions and a capacity of less than 2,000 kilowatts. The credit would be limited to the lesser of 10% of the basis of the property or \$200 for each kilowatt of capacity. The energy credits would be part of the general business credit, and the taxpayer's basis in the property would be reduced by the amount of the credit claimed. This is effective for periods after December 31, 2005, and before January

1, 2008, for property placed in service in taxable years ending after December 31, 2005.

Business Solar Investment Tax Credit (Sec. 1337). Section 1337 of P.L. 109-58 provides that the energy credit percentage will be 30% for equipment that uses solar energy to generate electricity to heat or cool a structure, to illuminate the inside of a structure using fiber-optic distributed sunlight, or to provide solar process heat, and qualified fuel cell property. In the case of any other energy property the percentage is 10%. Property used to generate energy to heating a swimming pool is not eligible in any period after December 31, 2005. The increase in the credit rate — it is currently 10% — and the provision related to fiber-optic distributed sunlight are effective for periods after December 31, 2005, and before January 1, 2008, for property placed in service in taxable years ending after December 31, 2005.

Background. During the energy policy shift of the 1970s away from fossil fuels, several energy efficiency tax incentives were enacted as part of President Carter's National Energy Plan of 1978 — the residential and business energy tax credits — but these generally expired at the end on 1985. The credit for nonbusiness property under Sec. 1333 is structured similarly to the residential energy credit that was in effect from 1978-1985.

Policy Context. Despite its supply focus, P.L. 109-58 includes numerous tax incentives for energy conservation and energy efficiency. Most are relatively small, however, and several, such as the appliance credits, expire in two years, perhaps too brief a time period to have a significant impact on energy demand.

Aside from energy taxes or subsidies to correct for energy production and consumption externalities, and aside from possible user charges, economists generally argue there is no economic justification for additional tax subsidies to encourage greater energy conservation, or energy efficiency. This is because there is generally no market failure in energy use or in investment in energy-using technologies — at either the household or business level — that requires such tax subsidies. There are some market failures in energy use, however, that may be an economic justification for government intervention. (For more detail on these issues, see CRS Report RL30406, *Energy Tax Policy: An Economic Analysis*, by Salvatore Lazzari.

Subtitle D — Alternative Motor Vehicles and Fuel Incentives

Summary of Provisions. Transportation is the largest U.S. energy consuming sector, accounting for about two-thirds of the nation's petroleum consumption. This subtitle provides tax incentives for substituting vehicles that use alternative fuels for vehicles that would otherwise use conventional petroleum-based fuels (gasoline and diesel). In addition, existing subsidies for the supply of fuel ethanol and fuel biodiesel are expanded.

Alternative Motor Vehicle Credit (Sec. 1341). This section adds a new nonrefundable personal credit equal to the sum of a new qualified fuel cell motor vehicle credit, a new advanced lean-burn technology motor vehicle credit, a new

qualified hybrid motor vehicle credit, and a new qualified alternative fuel motor vehicle credit.

The amount of the new qualified fuel cell motor vehicle credit would depend on the weight of the vehicle and range from \$8,000 (\$4,000 if placed in service after 2009) to \$40,000. If the new qualified fuel cell motor vehicle is a passenger automobile or light truck, the amount of the credit is increased if certain fuel efficiencies are met based on the 2002 model year city fuel economy for specified weight classes. A new qualified fuel cell motor vehicle would be defined as a motor vehicle: (1) which is propelled by power derived from one or more cells which convert chemical energy into electricity by combining oxygen and hydrogen fuel which is stored on board the vehicle in any form; (2) which, in the case of a passenger automobile or light truck, receives an EPA certification; (3) the original use of which commences with the taxpayer; (4) which is acquired for use or lease by the taxpayer and not for resale; and (5) which is made by a manufacturer.

The new advanced lean burn technology motor vehicle credit would be the sum of two components: a fuel economy credit amount that varies with the rated fuel economy of the vehicle compared to a 2002 model year standard, ranging from \$400 to \$2,400, and a conservation credit based on the estimated lifetime fuel savings of a qualifying vehicle compared to a comparable 2002 model year vehicle, ranging from \$250 to \$1,000. A qualifying advanced lean burn technology motor vehicle must incorporate direct injection, achieve at least 125% of the 2002 model year city fuel economy, and, for 2004 and later models, meet or exceed certain EPA emissions standards. A qualifying advanced lean burn technology motor vehicle must be placed in service before January 1, 2011.

The new qualified hybrid motor vehicle credit is based on weight. Lighter vehicles (8,500 pounds or less) are eligible for a credit containing two components: a fuel economy credit amount and a conservation amount. The fuel economy credit amount ranges from \$400 to \$2,400, depending on the extent to which the fuel efficiency exceeds 2002 standards. The conservation amount is based on the estimated lifetime fuel savings of a qualifying vehicle compared to a comparable 2002 model year vehicle and ranges from \$250 to \$1,000. Heavy-duty hybrid vehicles get a credit amount based on a certain percentage of the incremental cost of the hybrid over similar gas-powered vehicles within a dollar limitation of such incremental cost. A qualifying hybrid vehicle is a motor vehicle that draws propulsion energy from onboard sources of stored energy that include both an internal combustion engine or heat engine using combustible fuel and a rechargeable energy storage system (e.g., batteries). A qualifying hybrid automobile or light truck must have a maximum available power from the rechargeable energy storage system of at least 4%. In addition, the vehicle must meet or exceed certain EPA emissions standards.

The new qualified alternative fuel motor vehicle credit is equal to an applicable percentage multiplied by the incremental cost of any new qualified alternative fuel motor vehicle. A new qualified alternative fuel motor vehicle is defined as a motor vehicle: (1) which is only capable of operating on an alternative fuel; (2) the original use of which commences with the taxpayer; (3) which is acquired by the taxpayer for

use or lease, but not for resale; and (4) which is made by a manufacturer. An alternative fuel would be compressed natural gas, liquefied natural gas, liquefied petroleum gas, hydrogen, and any liquid at least 85% of the volume of which consists of methanol. A different calculation, which produces a lower credit amount, applies to mixed-fuel vehicles.

A limit is imposed on the number of qualified hybrid motor vehicles and advanced lean-burn technology motor vehicles sold by each manufacturer of such vehicles that are eligible for the credit. No credit is allowed for any vehicle used outside of the United States. A taxpayer may elect not to take the credit.

The new qualified fuel cell motor vehicle credit does not apply to such vehicles purchased after December 31, 2014, the new advanced lean-burn technology credit does not apply to such vehicles purchased after December 31, 2010, the new qualified hybrid motor vehicle credit does not apply to such vehicles purchased after December 31, 2010 (or December 31, 2009, for qualified hybrid motor vehicles weighing more than 8,500 pounds), and the new qualified alternative fuel vehicle credit does not apply to such vehicles purchased after December 31, 2010. The portion of the credit attributable to vehicles of a character subject to an allowance for depreciation is treated as a portion of the general business credit; the remainder of the credit is allowable to the extent of the excess of the regular tax (reduced by certain other credits) over the alternative minimum tax for the taxable year. This is effective for property placed in service after the December 31, 2005, in taxable years ending after such date.

Credit for Installation of Alternative Fueling Stations (Sec.1342). A tax credit is provided equal to 30% of the cost of any qualified alternative fuel vehicle refueling property installed to be used in a trade or business or at the taxpayer's principal residence. The credit is limited to \$30,000 for retail clean-fuel vehicle refueling property, and \$1,000 for residential clean-fuel vehicle refueling property. Clean fuels are those defined under §179A(d), limited to any fuel at least 85% of the volume of which consists of ethanol, natural gas, compressed natural gas, liquefied natural gas, liquefied petroleum gas, and hydrogen, or any mixture of biodiesel and diesel fuel, determined without regard to any use of kerosene and containing at least 20% biodiesel. If the property is installed at the taxpayer's principal residence, §179A(d)(1) (requiring the property to be subject to an allowance for depreciation) does not apply. The taxpayer's basis in the property is reduced by the amount of the credit and disallows deductions under §179A for that property, and for property installed for or used by a tax-exempt entity, the taxpayer that installs the property may claim the credit. No credit is available for property used outside the United States. A taxpayer may elect not to take the credit.

Only the portion of the credit attributable to property subject to an allowance for depreciation would be treated as a portion of the general business credit; the remainder of the credit would be allowable to the extent of the excess of the regular tax (reduced by certain other credits) over the alternative minimum tax for the year. This is effective for property placed in service after December 31, 2005, and before January 1, 2010, except for property relating to hydrogen, which must be placed in service before January 1, 2015.

Reduced Motor Fuel Excise Tax on Certain Mixtures of Diesel Fuel (Sec. 1343). Motor fuel excise tax on certain mixtures of diesel-water fuel emulsion which contain at least 14% water are reduced from \$0.243 per gallon to \$0.197 per gallon if the emulsion additive has been registered by a U.S. manufacturer with EPA. The section also provides for a refund based on the incentive rate for which the producer could file quarterly if the producer can claim at least \$750. If the producer cannot claim at least \$750, the amount may be carried over to the next quarter or may be claimed as a credit on the income tax return if the producer cannot claim at least \$750 by the end of the taxable year. A tax credit for certain diesel fuel used to produce such an emulsion is also provided. Further, the language provides that any person who later separated taxable fuel from the diesel-water fuel emulsion would be treated as a refiner of taxable fuel. This is effective January 1, 2006.

Extension of Excise Tax Provisions and Income Tax Credit for Biodiesel (Sec. 1344). This provision extends the existing income tax credit, excise tax credit, and payment provisions for biodiesel (which were enacted in 2004 under the “Jobs Bill,” P.L. 108-357) through December 31, 2008. It is effective on the date of enactment.

Small Agri-Biodiesel Producer Credit (Sec. 1345). This provision adds the “small agri-biodiesel producer credit” to the list of credits that make up the biodiesel fuels credit. The small agri-biodiesel producer credit is 10 cents for each gallon of “qualified agri-biodiesel production.” An eligible “small agri-biodiesel producer” is defined as any person who, at all times during the taxable year, has a productive capacity for agri-biodiesel not in excess of 60 million gallons. “Qualified agri-biodiesel production” is any agri-biodiesel, not to exceed 15 million gallons, that (1) the producer sells during the taxable year for use by the purchaser (a) in the production of a qualified biodiesel mixture in the purchaser’s trade or business, (b) as a fuel in a trade or business, or (c) for sale at retail to another person who places the agri-biodiesel in that person’s fuel tank; or (2) the producer uses or sells for any of such purposes. Aggregation rules are provided for determining the 15 million and 60 million gallon limits, rules for applying the limits to passthrough entities, and rules for allocating productive capacity among multiple persons with interests in one facility, and anti-abuse regulations are authorized. The section also permits IRC §1381(a) cooperative organizations to elect to apportion the eligible small agri-biodiesel producer credit among their patrons, and sets forth the election procedure. The eligible small agri-biodiesel producer credit is effective for taxable years ending after the date of enactment and sunsets after December 31, 2008.

Renewable Diesel (Sec. 1346). This provision extends the income tax credit, excise tax credit, and payment provisions for biodiesel (as discussed above) for “renewable diesel.” However, credit amounts differ from those for biodiesel, and there is no special credit for small producers of renewable diesel as there is for small ethanol producers. “Renewable diesel” is defined as diesel fuel derived from biomass (excluding petroleum, natural gas, coal, or any product thereof) using a thermal depolymerization process that meets certain registration and testing requirements. The section also requires that all producers of renewable diesel be registered with the Treasury Secretary. It is effective for fuel sold or used after December 31, 2005.

Modification of Small Ethanol Producer Credit (Sec.1347). Section 1347 of P.L. 109-58 liberalizes the previously existing small ethanol producer tax credit. It raises the maximum annual alcohol production capacity for an eligible small ethanol producer from 30 million gallons to 60 million gallons. The provision also modifies the election by a cooperative to allocate the credit to its patrons by conditioning the validity of the election on the cooperative's mailing a written notice of the allocation to its patrons during the period beginning on the first day of the taxable year covered by the election and ending with the fifteenth day of the ninth month following the close of that taxable year. This is effective for taxable years ending after the date of the enactment.

Sunset of Deduction for Certain Clean-Fuel Vehicles and Certain Refueling Property (Sec.1348). This provision accelerates the termination date of the IRC §179A deduction to December 31, 2005, from December 31, 2006.

Background and Policy Context. As a result of the two energy crises of the 1970s (the 1973 oil embargo and the Iranian revolution in 1979, which precipitated a tenfold increase in crude oil prices) there was a shift in the focus of energy tax policy away from oil and gas toward energy conservation and toward the development of alternative fuels and nonconventional forms of energy.

In the transportation sector, which is the single largest petroleum consuming sector in the United States, federal energy tax policies became focused on reducing petroleum consumption, stimulating the production and use of alternative fuels, and reducing petroleum import dependence. Beginning in 1978, the Energy Tax Act (P.L. 95-618), which was part of President Carter's National Energy Plan, provided gasohol (a blend of gasoline and 10% ethanol produced from corn and other grains or agricultural products) a total exemption from the 4¢ per gallon gasoline tax. Such a tax policy approach — subsidies to the supply of fuel ethanol — typically has been the way in which federal tax policy has promoted alternative fuels.

The Energy Policy Act of 1992 (P.L. 102-486) included another policy instrument in this area: a \$2,000 tax deduction for alternative fuel vehicles and to refueling facilities for alternative fuels, thus targeting the capital stock. This deduction expired at the end of 2005 and has been replaced by a system of tax credits for various types of alternative technology vehicles (ATVs), diesel, hybrid, advanced lean-burn, or fuel cell vehicles that meets certain fuel efficiency standards.

The ATV tax credits are somewhat complicated to calculate, but they are structured to give greater incentives for more energy efficient ATVs. For example, the credit for hybrids starts at a base level of \$400 but may be as high as \$3,400 depending on fuel efficiency and estimated lifetime fuel savings. Lifetime fuel savings are estimated for a vehicle that is assumed to travel, over its lifetime, 120,000 miles. Obviously, the potential tax benefit — the reduction in vehicle purchase price — is much greater under the new tax credit than under the previous tax deduction. The following table shows the structure of the hybrid vehicle tax credits.

Table 1. Fuel Economy Credit

Credit	If City Fuel Economy of the Hybrid Vehicle is:	
	at least	but less than
\$400	125% of base fuel economy	150% of base fuel economy
\$800	150% of base fuel economy	175% of base fuel economy
\$1,200	175% of base fuel economy	200% of base fuel economy
\$1,600	200% of base fuel economy	225% of base fuel economy
\$2,000	225% of base fuel economy	250% of base fuel economy
\$2,400	250% of base fuel economy	

Table 2. Conservation Credit

Estimated Lifetime Fuel Savings (gal.)	Conservation Amount
At least 1,200 but less than 1,800	\$250
At least 1,800 but less than 2,400	\$500
At least 2,400 but less than 3,000	\$750
At least 3,000	\$1,000

Example. As an example of how the credit would be computed for passenger cars and light trucks weighing 8,500 lbs. or less (which, incidentally, comprises the vast majority of the vehicle stock in the United States), consider a hybrid automobile weighing 4,000 lbs. and having a city fuel efficiency rating of 60 miles-per-gallon (MPG). Further, assume that a comparable 2002 gasoline engine automobile has a city fuel economy of 25 MPG. Since the fuel economy of the hybrid is 240% of the base fuel economy ($60 \div 25 \times 100 = 240\%$), the purchaser of this vehicle would qualify for a fuel economy tax credit of \$2,000 (as shown in **Table 1**).

These tax credits are expected to increase the demand for hybrid vehicles, which are competitively priced with conventional gasoline vehicles. However, the phase-out of the credit that begins as soon as a manufacturer sells 60,000 vehicles might dampen demand, particularly from established automakers such as Toyota and

Honda. Conversely it rewards those manufacturers that have recently entered the hybrid market such as domestic auto manufacturers.

Subtitle E — Additional Energy Tax Incentives

Summary of Provisions. This brief subtitle expands the research and development tax credit and authorizes two energy studies.

Expansion of Research Credit (Sec. 1351). Section 1351 adds a third component to the amount of the research credit: 20% of the “qualified energy research expenditures” (as defined under previously existing law) that a taxpayer pays or contributes to an “energy research consortium” in carrying on a trade or business. “Energy research consortium” is defined as under previous law, but with the following additions: (1) the energy research consortium must be organized and operated primarily to conduct energy research and development in the public interest; (2) at least five unrelated persons must pay or incur amounts to the organization within the calendar year; and (3) no one person may pay or incur more than 50% of the total amounts that the research consortium receives during the calendar year. This section also repeals the 65% limitation under IRC §41(b)(3) on contract research expenses paid to a university, a federal laboratory, or an “eligible small business” (i.e., any person with an average of no more than 500 employees during either of the two preceding calendar years, with respect to which the taxpayer does not own 50% or more of the stock by vote or value if the business is a corporation or 50% of the capital and profits interests if the business is not a corporation). This section is effective for amounts paid or incurred after the date of enactment, in taxable years ending after that date.

National Academy of Sciences Study and Report (Sec. 1352). No later than 60 days from the date of enactment, the Secretary of the Treasury must enter into an agreement with the National Academy of Sciences (NAS) to conduct a study of energy costs and benefits that are not or may not be fully incorporated into the market price or tax structure. A report on the study is to be submitted to Congress not later than two years after the agreement is entered into.

Recycling Study (Sec. 1353). The Secretary of the Treasury, in consultation with the Secretary of Energy, is to conduct a study to determine and quantify the energy savings achieved through the recycling of glass, paper, plastic, steel, aluminum, and electronic devices, and to identify tax incentives that would encourage recycling of such materials. The study must be submitted to Congress within one year of the date of enactment.

Background. Prior to the enactment of P.L. 109-58 there were two tax incentives for research and development (R&D) spending: a 20% tax credit for a taxpayer’s qualified R&D spending above a base amount, or, alternatively, a deduction as a current business expense for certain R&D expenditures. Energy R&D was not excluded from qualifying for these incentives, but the new energy R&D credit targets R&D expenditures by firms specifically in the business of doing research on energy technology, such as the development of alternative fuels or more fuel-efficient and environmentally friendly ATVs.

Policy Context. The credit has the effect of lowering the net cost to a firm of conducting qualified research. Economists and policymakers agree that without tax incentives the market economy under-invests in R&D due to the external benefit (spillovers). Investment in R&D is also critical for innovation, which is a precursor to economic growth. The evidence suggests that the social rate of return to R&D investment is greater than the private rate of return. At the same time, it is unclear whether a new tax subsidy specifically targeted to the energy sector was necessary given that energy R&D already qualified for the preexisting tax subsidies.

Subtitle F — Revenue Raising Provisions

Summary of Provisions. P.L. 109-58 includes \$2.9 billion of energy tax increases, and \$171 million of non-energy increases (both over 11 years). About \$2.5 billion of the \$2.9 billion of energy tax increases are from the reinstatement of the excise tax on oil purchased and used by U.S. refineries. The remaining \$400 million is from the reauthorization of the 0.1¢/gallon excise tax on motor fuels that goes into the Leaking Underground Storage Tank (LUST) Trust Fund.

Oil Spill Liability Trust Fund Financing Rate (Sec. 1361). In general, a 5¢ per-barrel tax was imposed on crude oil received at a U.S. refinery and on imported petroleum products received for consumption, use, or warehousing. The fund's tax applied after December 31, 1989, and before January 1, 1995, but was in effect only if the unobligated balance in the Fund was less than \$1 billion. Section 1361 reinstates the 5¢ Oil Spill Liability Trust Fund tax, applicable April 1, 2006. The tax is to be suspended during a calendar quarter if the Secretary estimates that, as of the close of the preceding calendar quarter, the unobligated balance in the fund exceeds \$2.7 billion. The tax terminates after December 31, 2014.

Extension of Leaking Underground Storage Tank Trust Fund Financing Rate (Sec. 1362). This provision extends until April 1, 2011, the 0.1¢ per-gallon Leaking Underground Storage Tank (LUST) Trust Fund tax of IRC §4081(d)(3). The excise tax expired April 1, 2005. Exported fuels are exempt. The LUST Fund is available only for purposes of §9003(h) of the Solid Waste Disposal Act. This is effective in general on October 1, 2005.

Modification of Recapture Rules for Amortizable Section 197 Intangibles (Sec. 1363). This section provides that, if multiple IRC §197 intangibles are sold or otherwise disposed of in a single transaction or series of transactions, the seller must calculate recapture as if all of the §197 intangibles were a single asset. Thus, any gain on the sale or other disposition of the intangibles would be recaptured as ordinary income to the extent of ordinary depreciation deductions previously claimed on any of the §197 intangibles. An exception is provided for any amortizable §197 intangible whose adjusted basis exceeds its fair market value. This is effective for dispositions of property after the date of enactment.

Clarification of Tire Excise Tax (Sec. 1364). This section adds to the existing definition of a “super single tire” (which is eligible for a special rate of tax) a sentence clarifying that the term does not include any tire designed for steering. This section also requires that the IRS report to the Congress on the amount of tax

collected under IRC §4071 for each class of taxable tire (e.g., bias-ply, super single, or other) for calendar year 2006 and the number of tires in each class on which tax is imposed during 2006.²³ The IRS must submit the report to Congress by July 1, 2007. This section is effective as if included in §869 of the American Jobs Creation Act of 2004 (sales in calendar years beginning after November 21, 2004).

Background. The Oil Spill Liability Trust Fund was created as part of the Omnibus Budget Reconciliation Act of 1986 (P.L. 99-510) to finance the costs of cleaning up oil spills. However, the 1.3¢ tax on refineries was not collected due to the absence of authorizing legislation (both the Omnibus Budget Reconciliation Act of 1986 and the 1988 Technical and Miscellaneous Revenue Act prohibited the tax from being collected until Congress enacted authorizing legislation for the fund). The Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239) authorized collection of the tax, which the law also raised to 5¢/barrel, but the tax expired on January 1, 1995.

The LUST Trust Fund was established by the Comprehensive Environmental Response, Compensation, and Liability Act (P.L. 96-510). All motor fuels for highway, aviation, and inland waterway use are assessed this 0.1¢/gallon tax with the exception of propane and liquefied natural gas. The tax has been amended and reauthorized several times, although the tax rate has remained unchanged at 0.1¢. Most recently, the LUST fund tax expired on October 1, 2005.

Policy Context. Tax increases were not originally a part of comprehensive energy policy legislation. The first comprehensive energy policy bill to be approved by the House (H.R. 4, 107th Congress) contained \$33.5 billion in energy tax cuts and no energy tax increases. This reflected the perceived seriousness of the country's energy difficulties and the relatively healthy fiscal balance (budget surpluses).

During 2001 and 2002, however, federal budget surpluses began to decline and then turned into deficits. These budgetary constraints implied that 1) any energy tax bill had to be smaller, and 2) there would have to be revenue offsets to minimize the cost of the incentives.

The \$2.9 billion in energy tax increases, which increase the tax burden of U.S. refineries, offsets the \$2.6 billion in tax cuts for the oil and gas industry as a whole. In fact, focusing only on refineries, their \$2.9 billion in tax increases far outweigh the \$400 million of tax cuts provided by the act (over 11 years).

²³ The Conference Report statement, but not the statutory language itself, further states that (1) the IRS is directed to revise the Form 720, Quarterly Federal Excise Tax Return, to collect the information necessary to prepare the report; and (2) the report also must include total tire tax collections for an equivalent one-year period preceding October 22, 2004, the date of enactment of the American Jobs Creation Act of 2004.

Title XIV — Miscellaneous

Subtitle A — In General

Sense of Congress on Risk Assessments (Sec. 1401). The Energy Policy Act of 1992 is amended to add the sense of Congress that federal agencies conducting risk assessments of energy-related technologies should use sound and objective scientific practices that consider the best available science, and describe the weight of the scientific evidence about such risks.

Energy Production Incentives (Sec. 1402). States may provide credits for certain coal-fired electricity generation against any state taxes or fees owed to the state either under a state law or federal law without violating the commerce clause of the U.S. Constitution. The provision applies to electricity generation in the state from coal mined in the state, if such generation meets all applicable federal and state laws and if the generating facility uses scrubbers or other forms of clean coal technology.

Regulation of Certain Oil Used in Transformers (Sec. 1403). Vegetable oil made from soybeans and used in electric transformers shall not be regulated as petroleum oil under the Edible Oil Regulatory Reform Act (33 U.S.C. 2720). This means that electric utilities do not have to develop a “Spill Prevention, Control, and Countermeasure Plan” for soy bean oil use in transformers under 40 CFR Part 112.12-15.

Petrochemical and Oil Refinery Facility Health Assessment (Sec. 1404). The Secretary of Energy is to study the health impacts of living near petrochemical and oil refining plants. In designing the study, the Secretary must consult with the National Cancer Institute and other governmental bodies having expertise. The Secretary must transmit the report to Congress within six months of enactment.

National Priority Project Designation (Sec. 1405). This provision establishes a presidential National Priority Project designation for organizations with projects certified by the Secretary of Energy as advancing renewable energy technology. Projects involving wind, biomass, or buildings must be at least 30 megawatts (MW) in size, while projects involving solar photovoltaics or fuel cells can be as small as three megawatts. The provision authorizes such sums as are necessary.

Cold Cracking (Sec. 1406). The Secretary of Energy shall study the use of radiation to increase the yield of refined petroleum products from crude oil at standard temperature and pressure.

Oxygen-Fuel (Sec. 1407). DOE is directed to create a program for oxygen-fuel systems, in which pure oxygen is substituted for air in high-temperature boilers of industrial and electric utility steam generators. If feasible, the program must include two small (10 to 50 megawatt) units, one retrofit and one new; and two

large (100 megawatts or larger) units, one retrofit and one new. Annual appropriations of \$100 million are authorized for FY2006-FY2008.

Subtitle B — Set America Free

Summary of Provisions. The legislation requires establishment of a commission to make recommendations for the design of a coordinated North American energy policy for the intention of achieving energy self-sufficiency by 2025.

Short Title (Sec. 1421). The subtitle is called the “Set America Free Act of 2005 (SAFE).”

Purpose (Sec. 1422). The language of this section establishes a U.S. commission to make recommendations for “a coordinated and comprehensive North American energy policy that will achieve energy self-sufficiency by 2025” for not only the United States, but Canada and Mexico as well.

United States Commission on North American Energy Freedom (Sec. 1423). This section establishes particulars for nominating and appointing individuals to the commission, as well as the commission’s operation. Citizens of any of the United States, Canada, and Mexico may be among the 16 appointees to the commission. The law authorizes \$10 million over two fiscal years to carry out the requirements of the SAFE Act.

North American Energy Freedom Policy (Sec. 1424). The President is to submit a response or set of recommendations pursuant to the commission’s report within 90 days of receipt of the report.

Title XV — Ethanol and Motor Fuels

Subtitle A — General Provisions

Summary of Provisions. Title XV repeals the Clean Air Act requirement that reformulated gasoline contain at least 2% oxygen — the requirement that forces refiners and importers to use MTBE (methyl tertiary butyl ether), ethanol, or other oxygenates in their reformulated gasoline (RFG).²⁴ In place of this requirement, it provides a major new stimulus to promote the use of ethanol — a provision that the annual production of gasoline contain at least 7.5 billion gallons of renewable fuel by 2012.

²⁴ While overall requirements for RFG formulation have significantly reduced the emissions of ozone-forming pollutants, some research indicates that these emissions reductions have resulted from RFG requirements other than the oxygenate standard, and that the benefits of the oxygenate standard alone are questionable.

The law uses the term “renewable fuel” rather than ethanol, so the requirement can be met by other fuels, including natural gas produced from landfills, sewage treatment plants, feedlots, and other decaying organic matter. The renewable fuel definition also encompasses biodiesel, which can be made from soy oil or other cooking oils. However, ethanol is the only renewable motor fuel currently being produced in significant quantities. In 2004, roughly 3.4 billion gallons of ethanol were blended with gasoline.²⁵ Biodiesel, the next most significant renewable motor fuel, is currently consumed at a rate of about 50 million gallons annually, less than 2% of the amount of ethanol consumed.²⁶

The act requires that reductions in emissions of toxic substances achieved by RFG in 2001 and 2002 be maintained; it requires the consolidation of summertime volatility standards for RFG produced for northern and southern markets; and allows ethanol credit trading among refiners and importers of fuels.

Renewable Content of Gasoline (Sec. 1501). A renewable fuels standard (RFS) is established, requiring that gasoline contain 4.0 billion gallons of renewable fuel in 2006, increasing to 7.5 billion gallons in 2012. EPA has the authority to establish the requirement in subsequent years, but no lower than the percentage in 2012. A gallon of cellulosic ethanol counts as 2.5 gallons of renewable fuel. After 2012, a minimum of 250 million gallons of cellulosic ethanol is required in fuel annually.

Not later than December 1, 2006, and annually thereafter, the EPA Administrator is required to conduct a survey to determine the market shares of conventional gasoline and RFG containing ethanol and other renewable fuels in conventional and RFG areas in each state.

Findings (Sec. 1502). This section makes various findings on MTBE, including that in response to the Clean Air Act Amendments of 1990, the fuel industry made substantial investments in MTBE production capacity.

Claims Filed After Enactment (Sec. 1503). Any claim or legal action filed after August 8, 2005, that involves possible MTBE contamination may be removed to a federal district court where jurisdiction and venue would otherwise be appropriate. MTBE, a gasoline additive, has been found to contaminate groundwater in several states. This provision thus allows state-law-based claims that would otherwise be ineligible for federal court review to be heard by federal judges. The substantive law of the state will still be applied in federal court, although most rules of procedure would be supplied by federal law.

²⁵ This is roughly 2% of total U.S. gasoline demand. Renewable Fuels Association, *Ethanol Industry Outlook 2005*, Washington, D.C., January 2005.

²⁶ For additional information on ethanol and biodiesel, see CRS Report RL30758, *Alternative Transportation Fuels and Vehicles: Energy, Environment, and Development Issues*, by Brent D. Yacobucci.

Elimination of Oxygen Content Requirement for Reformulated Gasoline (Sec. 1504). Section 211(k) of the Clean Air Act is amended to eliminate the requirement that reformulated gasoline contain at least 2% oxygen. This provision takes effect 270 days after enactment, except in California, where it takes effect immediately upon enactment.

Section 211(k)(1) of the Clean Air Act is also amended to require that each refinery or importer of gasoline maintain the average annual reductions in emissions of toxic air pollutants achieved by the reformulated gasoline it produced or distributed in 2001 and 2002. An exception is provided for California, which has more stringent state requirements. This provision is intended to prevent backsliding, since the reductions actually achieved in those years exceeded the regulatory requirements. A credit trading program is established for emissions of toxic air pollutants. The anti-backsliding provision applies only to the extent that the quantity produced or imported is less than or equal to the average annual quantity produced or imported in the two base years.

EPA is required to promulgate final regulations to control hazardous air pollutants from motor vehicles and their fuels by July 1, 2007. If the promulgated regulations achieve and maintain greater overall reductions in emissions of air toxics from RFG than what would be achieved under the anti-backsliding requirements described above, the anti-backsliding requirements shall be null and void.

Section 1504 also eliminates the less stringent requirements for volatility applicable to reformulated gasoline sold in VOC (volatile organic compounds) Control Region 2 (northern states) by applying the more stringent standards of VOC Control Region 1 (southern states) to both regions.

Public Health and Environmental Impacts of Fuels and Fuel Additives (Sec. 1505). This amends §211(b) of the Clean Air Act to require manufacturers of fuels and fuel additives to conduct tests of the products' health and environmental impacts (currently, these tests are at EPA's discretion and do not include environmental effects). It also requires EPA, within two years, to conduct a study of the health and environmental effects of MTBE substitutes, including ethanol-blended RFG.

Analyses of Motor Vehicle Fuel Changes (Sec. 1506). A new §211(p) is added to the Clean Air Act. Within four years of enactment, the EPA Administrator must publish a draft analysis of the effects of the fuels provisions in Title XV on air pollutant emissions and air quality. Within five years of enactment, the Administrator is required to publish a final version of the analysis.

Additional Opt-in Areas Under Reformulated Gasoline Program (Sec. 1507). Governors of 12 northeastern states (the Ozone Transport Region) may petition EPA to require RFG use in attainment areas in their states. The Administrator shall do so unless he determines that there is insufficient capacity to produce RFG, in which case the commencement date of the requirement shall be delayed.

Data Collection (Sec. 1508). The Department of Energy is required to collect and publish monthly survey data on the production, blending, importing, demand, and price of renewable fuels, both on a national and regional basis.

Fuel System Requirements Harmonization Study (Sec. 1509). The EPA Administrator and the Secretary of Energy are required to conduct a study of federal, state, and local motor fuels requirements. They are required to analyze the effects of various federal and state fuel standards and emission control programs on consumer prices, fuel availability, domestic suppliers, air quality, and emissions. They must include the effects on sensitive populations. Further, they are required to study the feasibility of developing national or regional fuel standards, and to provide recommendations on legislative and administrative actions to improve air quality, increase supply liquidity, and reduce costs to consumers and producers. A report must be submitted to Congress by December 1, 2008.

Commercial Byproducts From Municipal Solid Waste and Cellulosic Biomass Loan Guarantee Program (Sec. 1510). The Secretary of Energy is required to establish a loan guarantee program for the construction of facilities to produce fuel ethanol and other commercial byproducts from municipal solid waste and cellulosic biomass. Applicants for loan guarantees must provide assurance of repayment (at least 20%) in the form of a performance bond, insurance collateral, or other means. The section authorizes such sums as may be necessary for the program.

Renewable Fuel (Sec. 1511). The Secretary of Energy is required to establish loan guarantees for no more than four projects to demonstrate the commercial feasibility and viability of converting cellulosic biomass or sucrose into ethanol. Loan guarantees can cover a maximum of \$250 million per project, but in no case more than 80% of a project's estimated cost, as well as up to 80% of project costs in excess of the estimate. No new funding is authorized.

Annual funding of \$4 million for FY2005-FY2007 is authorized for Mississippi State University and Oklahoma State University for a resource center to further develop bioconversion technology using low-cost biomass for the production of ethanol.

Annual funding of \$25 million for FY2006-FY2010 is authorized for research, development, and implementation of renewable fuel production technologies in RFG states with low rates of ethanol production.

The Secretary of Energy is permitted to provide grants for the construction of facilities to produce ethanol from municipal waste or agricultural residues. A total of \$650 million is authorized to be appropriated between FY2006 and FY2007.

Conversion Assistance for Cellulosic Biomass, Waste-Derived Ethanol, Approved Renewable Fuels (Sec. 1512). The Secretary of Energy is permitted to provide grants for the construction of facilities to produce renewable fuels (including ethanol) from cellulosic biomass, agricultural byproducts, agricultural waste, and municipal solid waste. A total of \$750 million is authorized

to be appropriated between FY2006 and FY2008. (This provision is similar to the grant program in §1511(e).)

Blending of Compliant Reformulated Gasolines (Sec. 1513).

Retailers may blend batches of reformulated gasoline with and without ethanol, as long as both batches are compliant with the Clean Air Act. In a given year, retailers may blend batches over only two ten-day periods in the summer months.

Advanced Biofuel Technologies Program (Sec. 1514). The EPA Administrator shall establish a program to demonstrate new technologies for the production of biofuels. The program must fund at least four different technologies for producing cellulosic biomass ethanol and at least five technologies for the production of value-added biodiesel fuel co-products. Preference is given to projects that enhance geographical diversity of alternative fuel production and to projects with feedstocks used in 10% or less of annual ethanol and biodiesel production. Annual funding of \$110 million is authorized for FY2005 through FY2009.

Waste-Derived Ethanol and Biodiesel (Sec. 1515). The definition of “biodiesel” under the Energy Policy Act of 1992 is amended to explicitly include biodiesel produced from animal waste, municipal solid waste, and wastewater treatment byproducts.

Sugar Ethanol Loan Guarantee Program (Sec. 1516). The Secretary of Energy is authorized to issue loan guarantees to demonstrate the commercial feasibility and viability of converting sugarcane and sugarcane byproducts into ethanol. Loan guarantees can cover a maximum amount of \$50 million per project, but in no case more than 80% of a project’s estimated cost, as well as up to 80% of project costs in excess of the estimate. No new funding is authorized. (This program is similar to that created by §1511(b), except that the maximum per-project funding is lower in §1516, and §1516 applies only to ethanol produced from sugarcane. §1511(b) applies to ethanol produce from sugarcane or cellulosic biomass.)

Background. Under the Clean Air Act Amendments of 1990, gasoline sold in numerous areas of the country with poor air quality was required to contain MTBE, ethanol, or other substances containing oxygen as a means of improving combustion and reducing emissions of ozone-forming compounds and carbon monoxide. The act had two programs that required the use of oxygenates, but the more significant of the two was the reformulated gasoline (RFG) program, which took effect January 1, 1995. Under the reformulated gasoline program, areas with “severe” or “extreme” ozone pollution (124 counties with a combined population of 73.6 million) must use reformulated gasoline; areas with less severe ozone pollution may opt into the program as well, and many have done so. In all, portions of 17 states and the District of Columbia use reformulated gasoline; a little more than 30% of the gasoline sold in the United States is RFG.

Since the mid-1990s, the addition of MTBE to RFG and its use in conventional gasoline has become increasingly controversial. The additive has caused numerous incidents of water contamination across the nation. The primary source of MTBE in groundwater and drinking water has been petroleum releases from leaking

underground storage tanks. MTBE has been detected in drinking water sources in at least 36 states,²⁷ and 22 states have taken steps to ban or regulate its use. The most significant of these bans (in California and New York) took effect at the end of 2003, leading many to suggest that Congress revisit the issue to modify the oxygenate requirement and set more uniform national requirements regarding MTBE and its potential replacements (principally ethanol).

Subtitle B — Underground Storage Tank Compliance

Summary of Provisions. As part of the legislative effort to address drinking water contamination by MTBE, this subtitle amends Subtitle I of the Solid Waste Disposal Act (SWDA) to add new leak prevention provisions to the underground storage tank (UST) regulatory program. It also broadens the allowable uses of the Leaking Underground Storage Tank (LUST) Trust Fund, and specifically authorizes states and EPA to use funds appropriated from the fund to address MTBE leaks.²⁸

Sections 1521-1533: Underground Storage Tank Compliance Act of 2005. **Section 1522** directs EPA to allot at least 80% of the funds made available from the LUST Trust Fund to the states for the LUST cleanup program. It also requires EPA or a state, when determining the portion of cleanup costs to recover from a tank owner or operator, to consider the owner or operator's ability to pay for cleanup and still maintain basic business operations. This subtitle also requires EPA or states to conduct compliance inspections of USTs every three years (**Sec. 1523**); adds operator training requirements (**Sec. 1524**); and authorizes EPA and states to use LUST Trust Fund money to respond to tank leaks involving oxygenated fuel additives (e.g., MTBE and ethanol) (**Sec. 1525**). **Section 1526** authorizes EPA and states to use LUST funds to conduct inspections and enforce tank release prevention and detection requirements. The bill also prohibits fuel delivery to ineligible tanks (**Sec. 1527**); clarifies and expands UST compliance requirements for federal facilities (**Sec. 1528**); and requires EPA, with Indian tribes, to develop and implement a strategy to address releases on tribal lands (**Sec. 1529**).

Sec. 1530 requires states to do one of the following to protect groundwater: 1) require that new tanks are secondarily contained and monitored for leaks if the tank is within 1,000 feet of a community water system or potable well; or 2) require that UST manufacturers and installers maintain evidence of financial responsibility to pay for corrective actions. It also requires that persons installing UST systems are certified or licensed, or that their UST system installation is certified by a professional engineer or inspected and approved by the state, or is compliant with a

²⁷ American Water Works Research Foundation, *Occurrence of MTBE and VOCs in Drinking Water Sources of the United States*, 2003.

²⁸ The LUST Trust Fund is funded primarily through a 0.1 cent-per-gallon motor fuels tax. Congress appropriated from the fund nearly \$70 million for FY2005 for the LUST program. EPA provides roughly 81% of the appropriated amount for states to oversee and enforce cleanups by responsible parties, and uses the remainder for its program responsibilities and for LUST activities on Indian lands. (Section 1572 extends this tax through March 2011.)

code of practice or other method that is no less protective of human health and the environment.

Sec. 1531 authorizes to be appropriated from the LUST Trust Fund, for each of FY2005 through FY2009, \$200 million for cleaning up leaks from petroleum tanks generally, and another \$200 million for responding to tank leaks involving MTBE or other oxygenated fuel additives (e.g., other ethers and ethanol). This section further authorizes to be appropriated from the trust fund, for each of FY2005 through FY2009, \$155 million for EPA and states to carry out and enforce the UST leak prevention and detection requirements added by this bill and the LUST cleanup program. From general revenues, this section authorizes the appropriation of another \$50 million, for each of FY2005 through FY2009, for EPA and states to carry out the general UST program.

Subtitle C — Boutique Fuels

Reducing the Proliferation of Boutique Fuels (Sec. 1541). The EPA Administrator is permitted to temporarily waive fuel requirements, including state fuel requirements and RFG standards, in the case of a natural disaster, Act of God, pipeline or refinery equipment malfunction, or other unforeseeable event. In addition, the Administrator may not approve a fuel standard under a State Implementation Plan if that standard would increase the number of unique state formulations above the number as of September 1, 2004.

Title XVI — Climate Change

Subtitle A — National Climate Change Technology Deployment

Summary of Provisions. Subtitle A amends Title XVI of the 1992 Energy Policy Act to add a new Section 1610 establishing a new governmental structure to develop a national response strategy to promote technologies and practices to reduce greenhouse gas intensity, coordinate federal climate change technology activities, identify barriers to technologies that improve carbon intensity, and recommend technology deployment projects.

Greenhouse Gas Intensity Reducing Technology Strategies (Sec. 1601). Subtitle A amends the 1992 Energy Policy Act by adding a new Section 1610, requiring that a national strategy to promote the deployment and commercialization of technologies and practices to reduce greenhouse gas intensity be submitted to the President and Secretary of Energy by a new interagency Committee on Climate Change Technology within 18 months of enactment. The Energy Secretary shall create within the Department the Climate Change Technology Program to assist the committee in coordinating climate change technology activities, and conduct an inventory and evaluation of current activities. In addition, the Energy Secretary may establish a Climate Change Technology Advisory Committee

consisting of various stakeholder groups to identify barriers to commercialization of such technologies and recommend solutions.

Based on the work conducted above, the Committee on Climate Change Technology shall develop recommendations for removing barriers to commercialization, including considering the need for demonstration projects. Subject to appropriations, the Energy Secretary shall support demonstration projects that fulfill specific criteria in the legislation and require cost-sharing in accordance with the provisions of §988 of this act. The Energy Secretary may also enter into cooperative research and development agreement under §12 of the Stevenson-Wylder Technology Innovation Act of 1980 (15 U.S.C. 3710a).

Subtitle B — Climate Change Technology Deployment in Developing Countries

Summary of Provisions. Subtitle B amends the Global Environmental Protection Assistance Act of 1989 by adding a new Part C entitled “Technology Deployment in Developing Countries.” Provisions establish a complementary program designed to encourage U.S. exports of greenhouse gas intensity reducing technology to developing countries and to assist demonstration of such technologies in developing countries.

Climate Change Technology Deployment in Developing Countries (Sec. 1611). The Global Environmental Protection Assistance Act of 1989 (P.L. 101-240) is amended by adding a new Part C (§731-§739) — Technology Deployment in Developing Countries, with the following provisions:

Definitions (Sec. 731). This section defines carbon sequestration, greenhouse gas, and greenhouse gas intensity as used in the new Part C.

Reduction of Greenhouse Gas Intensity (Sec. 732). Within 18 months of enactment, the Secretary of State shall submit to Congress a report identifying the 25 developing countries that have the greatest greenhouse gas emissions, and the potential for projects and practices that would reduce greenhouse gas intensity. Coordinating with the U.S. Agency for International Development, the Secretary of State shall provide assistance, either directly or through agreements with major international institutions, to developing countries for projects that reduce greenhouse gas intensity. Priority shall be given to the projects in the 25 countries identified in the required report.

Technology Inventory for Developing Countries (Sec. 733). The Secretary of Energy shall submit a report to Congress providing an inventory of appropriate technologies for use in developing countries, a list of barriers to technology transfer and commercialization, compilation of previous federal results in this area, and market analysis.

Trade-Related Barriers to Export of Greenhouse Gas Intensity Reducing Technologies (Sec. 734). Within one year of enactment, the U.S. Trade Representative shall identify trade-relations barriers to U.S. export of greenhouse gas

intensity reducing technologies to foreign countries and negotiate with such countries for their removal. An annual progress report is required.

Greenhouse Gas Intensity Reducing Technology Export Initiative (Sec. 735). This section establishes an interagency working group headed by the Secretary of State to promote the export of greenhouse gas intensity reducing technologies by identifying priority countries for export and barriers to adoption of such technologies. An annual performance review of actions taken and a report to Congress is required, including recommendations for increasing potential exports.

Technology Demonstration Projects (Sec. 736). The Secretary of State shall facilitate the development of demonstration projects in at least 10 countries that meet specific political and economic criteria contained in the section. Selected projects shall focus on the opportunity for reducing greenhouse gas intensity and generating economic growth.

Fellowship and Exchange Programs (Sec. 737). The Secretary of State shall carry out fellowship and exchange programs to educate officials from developing countries about best practices to reduce greenhouse gas intensity in their countries.

Authorization of Appropriations (Sec. 738). Such sums as are necessary are authorized to be appropriated for implementing this part.

Effective Date (Sec. 739). Unless otherwise noted, this part takes effect on October 1, 2005.

Background. U.S. policy toward global climate change evolved from a “study only” to a more “study and action” orientation in 1992 with ratification of the U.N. Framework Convention on Climate Change (UNFCCC) in Rio de Janeiro. Arguing that “the developed country Parties should take the lead” in reducing emissions, the convention states that developed countries shall aim toward returning their greenhouse gas emissions to their 1990 levels by the year 2000. In line with this goal, developed countries were to adopt national plans and policy options to mitigate climate change by reducing anthropogenic emissions and enhancing sinks. The United States submitted such plans in 1992, 1994, 1997, and 2002. None of these plans achieved the commitment the United States made at Rio.

The Energy Policy Act of 1992 (EPACT92) has been the principal statutory basis for programs making up the U.S. response to the UNFCCC. Primarily crafted as an energy policy response to the Iraqi takeover of Kuwait and the U.S.-led response, the act’s energy conservation, renewable energy, and other titles were also seen as having a beneficial effect on global climate change concerns being debated at this time in international circles. In its 1992 submission to the UNFCCC, the

George H.W. Bush Administration listed 11 different titles of EPACT as extremely important to its overall strategy for reducing greenhouse gases.²⁹

A central component of the UNFCCC was its establishment of a conference of parties (COP) to negotiate further agreements to counter global climate change. In 1997, the third COP completed negotiations on the Kyoto Protocol — a binding agreement on developed countries to reduce their greenhouse gas emission by 2008-2012. The Clinton Administration signed the Kyoto Protocol in 1998 but never submitted it to the Senate for ratification because it did not meet the conditions of S.Res. 98 — a 1997 Sense of the Senate resolution stating the United States should not sign an agreement limiting developed countries' greenhouse gas emissions unless that agreement also included limitations on developing countries' emissions and did not result in serious harm to the U.S. economy.

In June 2001, the George W. Bush Administration abandoned the Kyoto Protocol, stating it was “fatally flawed in fundamental ways.” Instead, in 2002, President Bush proposed to shift the nation’s climate change program from a goal of reducing emission *per se* to a goal of reducing greenhouse gas intensity — the amount of greenhouse gases emitted per unit of economy productivity. Under the proposal, the country’s greenhouse gas intensity, which has been declining for a number of years, would decline 18% between 2002 and 2012, as opposed to a 14% projected “business as usual” decline.

Policy Context. Title XVI attempts to provide some legislative support to the Bush Administration’s 2002 initiative on climate change that focused on reducing the country’s carbon intensity; that is, the ratio of greenhouse gas emissions per unit of Gross Domestic Product (GDP). As with previous Administrations’ climate change policies, the programs contained under Title XVI are voluntary — no mandatory emission reductions are included.

It is difficult to assess the potential for actual emission reductions under the new title, or their time frame. However, previous assessments of voluntary efforts versus mandatory programs do not suggest that any dramatic changes should be expected, at least in the near to mid-term. In its 2002 submission to UNFCCC, the Bush Administration contended that the United States achieved 242 million metric tons (carbon dioxide equivalent) in reductions for the year 2000 over a business as usual scenario.³⁰ Of the 50-plus programs summarized in the 2002 report, six are described as “regulatory.” However, this small subset of the total U.S. effort accounts for a large share of greenhouse gas emissions reductions achieved over the past decade. For example, EPA mandatory regulations on landfills and Significant New Alternatives Policy Determinations (SNAP) account for 65 million tons of the total reduction (27%).³¹

²⁹ U.S. Department of State, *National Action Plan for Global Climate Change*, 1992, p. 73.

³⁰ U.S. Department of State, *U.S. Climate Action Report*, May 2002.

³¹ See Brent D. Yacobucci and Larry Parker, *Climate Change Federal Laws and Policies Related to Greenhouse Gas Reductions*, CRS Report RL31931.

Besides uncertainty about results because of the voluntary nature of the program, it is unclear how Title XVI will interact with other titles that encourage the expansion of energy supply — supply that could increase greenhouse gas emissions depending on its source. Thirteen years after the passage of EPACT92, no definitive data on its overall impact on greenhouse gas emissions are available. Now the focus shifts to the potential impact of the Energy Policy Act of 2005.

Title XVII — Incentives for Innovative Technologies

Summary of Provisions. This title authorizes the Secretary of Energy to make loan guarantees for up to 80% of the cost of advanced energy projects, including fossil fuel, renewable, nuclear, and energy efficiency technologies.

Definitions (Sec. 1701). Definitions are provided for such terms as “commercial technology,” “eligible project,” and “guarantee.”

Terms and Conditions (Sec. 1702). The estimated federal cost of any loan guarantee must be covered in advance by specific appropriations or payments by the borrower. A loan guarantee may not cover more than 80% of the estimated cost of a facility. If a borrower is unable to make payments on a guaranteed loan and is not yet in default, the Secretary of Energy may make the payments if the borrower agrees to future reimbursement (plus interest) on mutually acceptable terms.

Eligible Projects (Sec. 1703). Loan guarantees may be provided only to projects that reduce man-made greenhouse gas emissions and employ new or significantly improved technologies. Eligible categories include renewable energy, fossil energy, fuel cells, nuclear energy, and energy efficiency. Criteria are established for providing loan guarantees to integrated gasification combined cycle (IGCC) projects, and emissions limits for certain air pollutants are specified.

Authorization of Appropriations (Sec. 1704). Such sums as necessary are authorized. Funds appropriated under the Clean Coal Power Initiative may be used for a loan guarantee for an IGCC project located in a taconite-producing region.

Background and Policy Context. Federal loan guarantees were provided to several large projects during the late 1970s and early 1980s to create synthetic fuels from domestic energy sources, such as coal and oil shale. Some major defaults resulted, such as the Great Plains Coal Gasification Plant in North Dakota (although it was a technological success and is still operating). Often the loan guarantees were used in combination with price guarantees, providing an especially strong incentive for private-sector participation, although also potentially increasing government costs.

Without price guarantees, the loan guarantees authorized by Title XVII will be attractive primarily for technologies that are already projected to be economically competitive, unless they also receive other subsidies. For example, advanced nuclear power plants are eligible for a production tax credit that may make them competitive with other electricity generating technologies. But because no new nuclear plants

have been constructed in the United States in many years, such a project still would pose significant financial risks that could be reduced by the loan guarantees.

Title XVIII — Studies

Summary of Provisions. A variety of studies are required, covering energy measurement, energy efficiency, renewable energy, distributed generation, and hydrogen. Subjects include resource assessments, technology analyses, and evaluation of potential energy and employment impacts.

Study on Inventory of Petroleum and Natural Gas Storage (Sec. 1801). The Secretary of Energy is directed to study petroleum (including crude oil and major refined products) and natural gas storage capacity to determine ultimate capacity and operational levels, regionally as well as nationwide. The study will determine minimum operating levels, explain why stocks drop below these levels, and describe the industry's ability to meet demand changes and avoid shortages. Within one year of enactment, the Secretary shall report the study findings to Congress, and make recommendations for preventing future supply shortages.

Study of Energy Efficiency Standards (Sec. 1802). DOE is directed to have the National Academy of Sciences study whether the goals of energy efficiency standards are best served by focusing measurement at the site (energy end-use) or at the source (the full fuel cycle). This provision relates to Executive Order 13123, which found that federal agencies should get credit toward meeting energy efficiency goals even where "source energy use declines but site energy use increases."

Telecommuting Study (Sec. 1803). DOE is required to study and report on the energy conservation potential of widespread adoption of telecommuting by federal employees. In this effort, DOE is required to consult with the Office of Personnel Management, General Services Administration, and National Telecommunications and Information Administration.

LIHEAP Report (Sec. 1804). The Department of Health and Human Services (HHS) is directed to report on how the Low-Income Home Energy Assistance Program (LIHEAP) could be used more effectively to prevent loss of life from extreme temperatures.

Oil Bypass Filtration Technology (Sec. 1805). DOE and EPA are required to jointly study the benefits of oil bypass filtration technology in reducing demand for oil and protecting the environment. This study will include a consideration of its use in federal motor vehicle fleets and an evaluation of products and manufacturers.

Total Integrated Thermal Systems (Sec. 1806). DOE is directed to study the potential for integrated thermal systems to reduce oil demand and to protect the environment. Also, DOE is required to study the feasibility of using this technology in Department of Defense and other federal motor vehicle fleets.

Report on Energy Integration with Latin America (Sec. 1807). The Secretary of Energy shall submit an annual report to the House and Senate energy committees about energy export development in Latin America, with particular focus on U.S. energy coordination with Mexico.

Low-Volume Gas Reservoir Study (Sec. 1808). The Secretary of Energy shall provide a grant to an organization of oil and gas producing states to conduct an annual study of low-volume natural gas reservoirs. Among other goals, the study shall produce detailed maps of low-volume reservoirs and related infrastructure and recommend production incentives.

Investigation of gasoline prices (Sec. 1809). In the wake of crude oil price rises, average retail gasoline prices in the country increased by about 25% between the beginning of 2005 and late July 2005. This provision directs the Federal Trade Commission (FTC) to investigate whether the price of gasoline is being manipulated by reducing refinery capacity or by any other form of market manipulation or price gouging. The National Petroleum Council (NPC) is directed to determine whether and to what extent environmental and other regulations affect construction of new domestic refineries or significant expansion of existing refinery capacity. The NPC, a federally chartered and privately funded committee, represents the views of the oil and natural gas industries in advising and making recommendations to the Secretary of Energy about oil and gas issues.

Alaska Natural Gas Pipeline (Sec. 1810). Within 180 days after enactment, and every 180 days thereafter, until the previously authorized Alaska natural gas pipeline begins operation, FERC shall submit to Congress a report describing the progress made in licensing and constructing the pipeline and any issues impeding that progress.

Coal-bed Methane Study (Sec. 1811). The Secretary of the Interior, along with the Administrator of EPA, is to arrange for an NAS study of the effect of coal-bed methane (CBM) production on surface and ground water resources including groundwater aquifers in several western states. A report to Congress is due within six months after results of the study.

Backup Fuel Capability Study (Sec. 1812). The Secretary of Energy is directed to conduct a study to determine the effect of obtaining and maintaining fuel backup capability at gas-fired power generation facilities and other gas-fired industrial facilities. Within one year of enactment, the Secretary of Energy will submit the findings to Congress.

Indian Land Rights-of-Way (Sec. 1813). DOE and DOI will conduct a joint study in consultation with stakeholders of issues regarding energy rights-of-way on tribal land. Within one year of enactment they will submit a report to Congress analyzing historic rates of compensation paid for energy rights-of-way on tribal land. The report will recommend appropriate standards of fair compensation to tribes and assess the tribal self-determination and sovereignty interests implicated.

Mobility of Scientific and Technical Personnel (Sec. 1814). Within two years of enactment, DOE is required to report on any national laboratory operating policies that create disincentives to interlaboratory exchange of scientific and technical personnel. Further, the report is required to contain recommendations for improving such exchange of personnel.

Interagency Review of Competition in the Wholesale and Retail Markets for Electric Energy (Sec. 1815). An interagency task force is established to conduct a study of competition within the wholesale and retail electric markets. Within one year of enactment, the task force will submit its final report to Congress. The task force consists of five members: one employee of the Department of Justice, one employee of the Federal Energy Regulatory Commission, one employee of that Federal Trade Commission, one employee of the USDA's Rural Utilities Service, and one employee of the Department of Energy.

Study of Rapid Electrical Grid Restoration (Sec. 1816). The Secretary of Energy is directed to study the benefits of using mobile transformers and mobile substations to rapidly restore electric service to areas subjected to blackouts. Within one year of enactment, the Secretary of Energy will submit the findings to Congress.

Study of Distributed Generation (Sec. 1817). The Secretary of Energy is required to study and report on hybrid distributed power systems that combine at least one renewable electric power technology with at least one non-intermittent electric power technology.

Natural Gas Supply Shortage Report (Sec. 1818). Not later than 180 days after enactment, the Secretary of Energy is directed to submit a report to Congress on natural gas supply and demand. This report — to be based on a comprehensive analysis — will develop recommendations on achieving a balance between supply and demand in order to accommodate natural gas dependent industries and to assure reasonable prices to residential consumers, and to achieve clean air and carbon dioxide goals. The Secretary is called upon to consult experts in the field, as well as state and local government and consumer organizations. He is encouraged to hold public hearings and provide opportunities for public comment.

Hydrogen Participation Study (Sec. 1819). The Secretary of Energy is required to report to Congress on ways to ensure broad participation, including international participants, in setting goals for the DOE hydrogen program.

Overall Employment in a Hydrogen Economy (Sec. 1820). The Secretary of Energy is required to study and report to Congress on the likely effects of a transition to a hydrogen economy on national employment.

Hydrogen Participation Study (Sec. 1819). No later than one year after enactment, the Secretary of Energy must report to Congress on the methods to include widest participation (including international participants) in setting goals and milestones under the hydrogen program (Title VIII).

Overall Employment in a Hydrogen Economy (Sec. 1820). The Secretary of Energy is required to conduct a study, and report to Congress within 18 months of enactment, on the effects on overall U.S. employment of the transition to a hydrogen economy.

Study of Best Management Practices for Energy Research and Development Programs (Sec. 1821). The Secretary of Energy is directed to have the National Academy of Public Administration study and report to Congress on management practices for DOE R&D programs. This is to include practices that could improve linkage between the Office of Science and mission-oriented offices and practices used by the Department of Defense's Advanced Research Projects Agency.

Effect of Electrical Contaminants on Reliability of Energy Production Systems (Sec. 1822). Within 180 days after enactment, the Secretary of Energy will enter into a contract with the National Academy of Sciences under which NAS will determine the effect that electrical contaminants may have on the reliability of energy production systems, including nuclear energy.

Alternative Fuels Reports (Sec. 1823). The Secretary of Energy is required to report on the potential for biodiesel and hythane to be "major, sustainable, alternative fuels."

Final Action on Refunds for Excessive Charges (Sec. 1824). FERC is directed to complete "as soon as possible" its investigation of the "unjust and unreasonable charges incurred by California during the 2000-2001 electricity crisis." A report to Congress will be submitted by December 31, 2005, that describes FERC's actions and establishes a timetable for further actions.

Fuel Cell and Hydrogen Technology Study (Sec. 1825). The Secretary of Energy is required to contract with the National Academy of Sciences to study fuel cell technologies. The study must include a roadmap for the transition from petroleum to hydrogen in a significant number of vehicles by 2020. The roadmap is to specify the amount of federal funding required and identify advantages and disadvantages of such a transition.

Passive Solar Technologies (Sec. 1826). The Secretary of Energy is directed to study and report to Congress on the levelized cost of electricity generation that can be avoided through passive solar technologies and on the potential energy savings if these technologies were to be eligible for incentives comparable to those provided for electricity generation technologies.

Study of Link Between Energy Security and Increases in Vehicle Miles Traveled (Sec. 1827). This section requires a study to be conducted by the National Academy of Sciences to examine links between development patterns and vehicle miles traveled (VMT), and whether VMT and the number of vehicle trips can be reduced by better planning, design, development, and infrastructure decisions by state and local officials. The study must be submitted to Congress within two years of enactment.

Science Study on Cumulative Impacts of Multiple Offshore Liquefied Natural Gas Facilities (Sec. 1828). The Secretary of Energy, in consultation with other federal agencies and non-government stakeholders, is required to study the potential marine environmental impacts of multiple offshore liquefied natural gas (LNG) import facilities using “open-rack” vaporization in the Gulf of Mexico.

“Open-rack” vaporization of LNG uses a continuous flow of seawater to reheat cryogenic LNG to a gaseous state. This study is prompted by concerns among federal and state environmental regulators, private environmental groups, and fishery-related industries that multiple open-rack systems may kill a significant portion of commercial and non-commercial marine species, especially non-migratory species (e.g. redfish), in the waters near new offshore LNG terminals employing such systems. Open-rack systems are favored by some LNG terminal developers because they operate at lower cost than “closed-loop” systems, which are used primarily on land, and which require the burning of natural gas to generate heat for LNG vaporization. The open-rack process dramatically cools large quantities of seawater, potentially killing all fish eggs, immature fish, plankton, and other living organisms passing through the system. Depending upon the depth and configuration of open-rack systems, they may also cause significant marine siltation by continuously disturbing the sea floor. Open-rack vaporization is a new technology, however, so its potential impacts on marine life are not well understood. Recent studies by various government agencies and private stakeholders have reached widely varying conclusions about the potential effects of open-rack systems on the marine environment.

Energy and Water Saving Measures in Congressional Buildings (Sec. 1829). The Architect of the Capitol is required to study ways to improve the energy efficiency and energy security of the Capitol Complex through green building, green roof, computer-based building management, onsite renewable energy, and other measures.

Study of Availability of Skilled Workers (Sec. 1830). The National Academy of Sciences is to study the short- and long-term availability of skilled energy and mineral workers in the United States. The study shall analyze the need for such workers and recommend actions to assure future requirements. The Secretary of Energy must submit a report on the study to Congress within two years after the date of enactment.

Review of Energy Policy Act of 1992 Programs (Sec. 1831). The language in §1831 is identical to §704. However, because of references to the impact “of amendments to the Energy Policy Act of 1992 made this title,” as opposed to specific section references, presumably the “this title” referred to in both sections is Title VII of the Energy Policy Act of 2005.

Study on the Benefits of Economic Dispatch (Sec. 1832). The Secretary of Energy, in consultation with the states, must study economic dispatch and issue an annual report to Congress and the states. Economic dispatch is defined as “the operation of generation facilities to produce energy at the lowest cost to

reliably serve consumers, recognizing any operational limits of generation and transmission facilities.”

Renewable Energy on Federal Land (Sec. 1833). The Secretary of the Interior is directed to have the National Academy of Sciences study the potential for wind, solar, and ocean energy resources on federal land and the outer continental shelf.

Increased Hydroelectric Generation at Existing Federal Facilities (Sec. 1834). Within 18 months of enactment, the Secretaries of the Interior, Energy, and the Army are required to submit a study of the potential for increasing electric power production capability at federally owned or operated water regulation, storage, and conveyance facilities.

Split-Estate Federal Oil and Gas Leasing and Development Practices (Sec. 1835). The Secretary of the Interior will conduct a review of how management practices by federal subsurface oil and gas development activities affect privately owned surface users. The review will detail the rights and responsibilities of surface and subsurface owners, compare consent provisions under the Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87) with provisions for oil and gas development, and make recommendations that address surface owner concerns.

Resolution of Federal Resource Development Conflicts in the Powder River Basin (Sec. 1836). The Secretary of the Interior will report to Congress on plans to resolve conflicts between development of coal and coalbed methane in the Powder River Basin (PRB).

Background. Groundwater levels and water quality are among the most significant environmental issues facing coalbed methane producers. According to the Wyoming Department of Environmental Quality, most water from CBM production does not flow to surface supplies but rather seeps into underground aquifers and formations and could result in sodium-tainted water.

The federal government owns over half the mineral rights in the PRB, while the majority of the surface rights are held privately, resulting in split estates. However, most of the current production of CBM is taking place on private lands. Over 80% of the land overlying CBM wells is privately or state held in Wyoming, and some surface owners oppose development while others contend they are not compensated fairly for surface use.

National Security Review of International Energy Requirements (Sec. 1837). The Secretary of Energy, in consultation with the Secretary of Defense and Secretary of Homeland Security, shall conduct a study of the growing energy requirements of China and the implications of such growth on the political, strategic, economic, or national security interests of the United States. Among other requirements, the study will assess the type, nationality, and location of energy assets that have been sought for investment by entities located in China; assess the extent to which investment in energy assets by entities located in China has been on market-based terms and free from subsidies; and examine the relationship between

the United States and China in avoiding conflict over each nation's pursuit of energy interests. The report is required to be submitted within 120 days after enactment.

Used Oil Re-refining Study (Sec. 1838). The Secretary of Energy, in conjunction with the EPA Administrator, shall undertake a study of the energy and environmental benefits of re-refining used lubricating oil and report to Congress within 90 days of enactment. The study should include recommendations on improving collection of this oil and its beneficial re-use.

Transmission System Monitoring (Sec. 1839). Within six months after enactment, the Secretary of Energy and FERC will study and report to Congress on what would be involved in providing all transmission system owners and Regional Transmission Organizations with real-time transmission line operating status.

Report Identifying and Describing the Status of Potential Hydropower Facilities (Sec. 1840). Within 90 days of enactment, the Department of the Interior is directed to issue a report that inventories all water surface storage studies authorized since 1939 and, for each study, to identify the potential to develop hydroelectric facilities and to estimate the costs and benefits of such developments.

P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Sec. 132	HVAC Maintenance Consumer Education Program	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 133	Public Energy Education Program	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 134	Energy Efficiency Public Information Initiative	—	90.0	90.0	90.0	90.0	90.0	—	—	450.0
Sec. 140	Energy Efficiency Pilot Program	—	5.0	5.0	5.0	5.0	5.0	—	—	25.0
TITLE II	— RENEWABLE ENERGY									
Subtitle A	— General Provisions									
Sec. 201	Assessment of Renewable Energy Resources	—	10.0	10.0	10.0	10.0	10.0	—	—	50.0
Sec. 202	Renewable Energy Production Incentive (ss for FY06 - FY26)	—	ss	ss	ss	ss	ss	ss	ss	ss
Sec. 204	Use of Photovoltaic Energy in Public Buildings									
	Photovoltaic Energy Commercialization Program	—	50.0	50.0	50.0	50.0	50.0	—	—	250.0
	Photovoltaic Systems Evaluation Program	—	10.0	10.0	10.0	10.0	10.0	—	—	50.0
Sec. 206	Renewable Energy Security	—	150.0	150.0	200.0	250.0	250.0	—	—	1,000.0
Sec. 207	Installation of Photovoltaic System	—	20.0	—	—	—	—	—	—	20.0
Sec. 208	Sugar Cane Ethanol Pilot Program	—	36.0 ^a	—	—	—	—	—	—	36.0
Sec. 209	Rural and Remote Community Electrification Grants	—	20.0	20.0	20.0	20.0	20.0	20.0	20.0	140.0
Sec. 210	Grants to Improve the Commercial Value of Forest Biomass	—	50.0	50.0	50.0	50.0	50.0	50.0	250.0	550.0
Subtitle C	— Hydroelectric									
Sec. 242	Hydroelectric Production Incentives	—	10.0	10.0	10.0	10.0	10.0	10.0	40.0	100.0

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P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Sec. 243	Hydroelectric Efficiency Improvement	—	10.0	10.0	10.0	10.0	10.0	10.0	40.0	100.0
Subtitle D	— Insular Energy									
Sec. 251	Insular Areas Energy Security (* \$6M per year, no end date)	—	6.0	6.0	6.0	6.0	6.0	6.0	30.0	66.0*
Sec. 252	Enhancing Insular Energy Independence (* \$4.5M per year, no end date)	—	4.5	4.5	4.5	4.5	4.5	4.5	22.5	49.5*
TITLE III	— OIL AND GAS									
Subtitle A	— Petroleum Reserve and Home Heating Oil									
Sec. 301	Permanent Authority to Operate the Strategic Petroleum Reserve and Other Energy Programs	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Subtitle E	— Production Incentives									
Sec. 348	North Slope Science Initiative	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 349	Orphaned, Abandoned, or Idled Wells on Federal Land	—	25.0	25.0	25.0	25.0	25.0	—	—	125.0
Sec. 351	Preservation of Geological & Geophysical Data	—	30.0	30.0	30.0	30.0	30.0	—	—	150.0
Sec. 354	Enhanced Oil & Natural Gas Production through Carbon Dioxide Injection	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 355	Assessment of Dependence of State of Hawaii on Oil	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 356	Denali Commission	—	55.0	55.0	55.0	55.0	55.0	55.0	210.0	540.0
Subtitle F	— Access to Federal Land									
Sec. 362	Management of Federal Oil and Gas Leasing Programs (DOI)	—	70.0	70.0	70.0	70.0	70.0	—	—	350.0

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P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Sec. 712	Efficient Hybrid & Advanced Diesel Vehicles (ss for FY06-FY15)	—	ss	ss	ss	ss	ss	ss	ss	ss
Sec. 723	Authorization of Appropriations for Advanced Vehicles (secs.721-723)	—	200.0 ^a	—	—	—	—	—	—	200.0
Sec. 731	Fuel Cell Transit Bus Demonstration	—	10.0	10.0	10.0	10.0	10.0	—	—	50.0
Subtitle C	— Clean School Buses									
Sec. 741	Clean School Bus Program	—	55.0	55.0	ss	ss	ss	ss	ss	110.0
Sec. 742	Diesel Truck Retrofit & Fleet Modernization Program	—	20.0	35.0	45.0	ss	ss	—	—	100.0
Sec. 743	Fuel Cell School Buses (* 25M for FY06 through FY09)	—	25.0*	—	—	—	—	—	—	25.0
Subtitle D	— Miscellaneous									
Sec. 751	Railroad Efficiency	—	15.0	20.0	30.0	—	—	—	—	65.0
Sec. 755	Conserve by Bicycling Program	—	6.2 ^a	—	—	—	—	—	—	6.2 ^a
Sec. 756	Reduction of Engine Idling Heavy-Duty Vehicles	—	19.5	30.0	45.0	—	—	—	—	94.5
	Locomotives	—	10.0	15.0	20.0	—	—	—	—	45.0
Sec. 757	Biodiesel Engine Testing Program	—	5.0	5.0	5.0	5.0	5.0	—	—	25.0
Sec. 758	Ultra-efficient Engine Technology for Aircraft	—	50.0	50.0	50.0	50.0	—	—	—	200.0
Subtitle E	— Automobile Efficiency									
Sec. 771	Implementation & Enforcement of Fuel Economy Standards ^f	—	3.5	3.5	3.5	3.5	3.5	—	—	17.5

P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Subtitle F	— Federal & State Procurement									
Sec. 782	Fuel Cell Vehicles and Hydrogen Energy Systems (ss FY11- FY15)	—	—	—	15.0	25.0	65.0	ss	ss	105.0
Sec. 783	Federal Procurement of Stationary, Portable, and Micro Fuel Cells (ss FY11- FY15)	—	20.0	50.0	75.0	100.0	100.0	ss	ss	345.0
Subtitle G	— Diesel Emissions Reduction									
Sec. 797	Authorization of Appropriations	—	—	200.0	200.0	200.0	200.0	200.0	—	1,000.0
TITLE VIII	— HYDROGEN									
Sec. 805	Programs, Hydrogen Supply	—	160.0	200.0	220.0	230.0	250.0	ss	ss ^c	1,060.0
Sec. 808	Demonstration	—	185.0	200.0	250.0	300.0	375.0	ss	ss ^c	1,310.0
Sec. 809	Codes & Standards	—	4.0	7.0	8.0	10.0	9.0	ss	ss ^c	38.0
Sec. 811	Reports (* \$1.5M per year for FY12 - FY20)	—	1.5	1.5	1.5	1.5	1.5	1.5	13.5*	22.5
Sec. 812	Solar & Wind Technologies (ss for FY06 - FY20)	—	ss	ss	ss	ss	ss	ss	ss	ss
TITLE IX	— RESEARCH AND DEVELOPMENT									
Subtitle A	— Energy Efficiency									
Sec. 911(b)	Authorization of Appropriations Total for Subtitle A except as authorized in Sec. 911(d) <i>Part of the total above is specifically allocated as follows in italic:</i>	—	—	783.0	865.0	952.0	—	—	—	2,600.0

P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
	<i>Vehicles (sec. 911(a)(2)(A))</i>	—	—	200.0	270.0	310.0	—	—	—	780.0
	<i>Electric Motor Control Technology (sec. 911(a)(2)(D))</i>	—	—	2.0	2.0	—	—	—	—	4.0
	<i>Next Generation Lighting Initiative (sec. 912)</i>	—	—	50.0	50.0	50.0	—	—	—	150.0
	<i>Secondary Electric Vehicle Battery Use Program (sec. 915)</i>	—	—	7.0	7.0	7.0	—	—	—	21.0
Sec. 911(d)	Extended Authorization for “Next Generation Lighting Initiative” (sec. 912)	—	—	—	—	—	50.0	50.0	100.0	200.0
Subtitle B	— Distributed Energy and Electric Energy Systems									0.0
Sec. 921(b)(1)	Distributed Energy and Electric Energy Systems Activities Total for Subtitle B except as authorized under Sec. 921(b)(2)	—	—	240.0	255.0	273.0	—	—	—	768.0
	<i>Part of the total above is specifically allocated as follows in italic:</i>									
	<i>Micro-cogeneration Energy Technology (sec. 923)</i>	—	—	20.0	20.0	—	—	—	—	40.0
	<i>High Voltage Transmission Lines (sec.925(g))</i>	—	—	2.0	—	—	—	—	—	2.0
Sec. 921(b)(2)	Power Delivery Research Initiative (sec.925(e))	—	—	ss	ss	ss	—	—	—	ss

P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
	<i>Advanced Fuel Cycle Initiative (sec. 953)</i>	—	—	150.0	155.0	275.0	—	—	—	580.0
	<i>University Nuclear Science & Engineering Support (sec. 954)</i>	—	—	43.6	50.1	56.0	—	—	—	149.7
	<i>Alternatives to Industrial Radioactive Sources (sec. 957)</i>	—	—	6.0	6.0	6.0	—	—	—	18.0
Sec. 951(c)	Nuclear Infrastructure & Facilities (sec. 955)	—	—	135.0	140.0	145.0	—	—	—	420.0
Subtitle F	— Fossil Energy									
Sec. 961(b)	Fossil Energy Total for Sec. 961(b)	—	—	611.0	626.0	641.0	—	—	—	1,878.0
	<i>Part of the total is specifically allocated as follows in italic:</i>									
	<i>Coal & Related Technologies Program (sec. 962)</i>	—	—	367.0	376.0	394.0	—	—	—	1,137.0
	<i>Carbon Dioxide Capture Research & Development (sec. 963)</i>	—	25.0	30.0	35.0	—	—	—	—	90.0
	<i>Research & Development for Coal Mining Technologies (sec. 964)</i>	—	—	20.0	25.0	30.0	—	—	—	75.0
	<i>Low-volume Oil & Gas Reservoir Research Program (sec. 966)</i>	—	—	1.5	0.45	0.45	—	—	—	2.4
	<i>Office of Arctic Energyⁱ</i>	—	—	25.0	25.0	25.0	—	—	—	75.0
Sec. 961(d)	Extended Authorization - Office of Arctic Energy ⁱ	—	—	—	—	—	25.0	25.0	25.0	75.0
Sec. 968	Methane Hydrate Research	—	15.0	20.0	30.0	40.0	50.0	—	—	155.0
Subtitle G	— Science Programs									
Sec. 971(b,c)	Science, Authorization of Appropriations Total	—	—	4,153.0	4,586.0	5,200.0	—	—	—	13,939.0

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P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Sec. 1276	Authorization of Appropriations	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
TITLE XIV	— MISCELLANEOUS									
Subtitle A	— In General									
Sec. 1404	Petrochemical & Oil Refinery Facility Health Assessment	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Sec. 1405	National Priority Project Designation	—	ss	ss	ss	ss	ss	—	—	ss
Sec. 1406	Cold Cracking	—	0.25	—	—	—	—	—	—	0.3
Sec. 1407	Oxygen-Fuel	—	100.0	100.0	100.0	—	—	—	—	300.0
Subtitle B	— Set America Free									
Sec. 1423	U.S. Commission on North American Energy Freedom (lump sum of \$10M for FY06 & FY07)	—	5.0	5.0	—	—	—	—	—	10.0
TITLE XV	— ETHANOL AND MOTOR FUELS									
Subtitle A	— General Provisions									
Sec. 1511(c)	Renewable Fuel, Resource Center	4.0	4.0	4.0	—	—	—	—	—	12.0
Sec. 1511(d)	Renewable Fuel, Research & Development Grant	—	25.0	25.0	25.0	25.0	—	—	—	100.0
Sec. 1511(e)	Renewable Fuel, Cellulosic Biomass Ethanol Conversion Assistance	—	250.0	400.0	—	—	—	—	—	650.0
Sec. 1512	Conversion Assistance for Cellulosic Biomass & Waste-derived Ethanol, Approved Renewable Fuels	—	100.0	250.0	400.0	—	—	—	—	750.0
Sec. 1514	Advanced Biofuel Technologies Program	110.0	110.0	110.0	110.0	110.0	—	—	—	550.0

P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Subtitle B	— Underground Storage Tank Compliance (UST)									
Sec. 1531	Authorization of Appropriations Amends Subtitle I of the Solid Waste Disposal Act (SWDA) by adding Sec. 9014 to the end of it.									
	Sec. 9014(1) for Subtitle I (from general revenues) Generally to Administer & Enforce Current UST Program (except for secs. 9003(h), 9005(c), 9011, 9012)	50.0	50.0	50.0	50.0	50.0	—	—	—	250.0
	Sec. 9014(2) A, B, C & D below (from the Leaking Underground Storage Tank (LUST) Trust Fund ¹)									
	(A) Cleanup of Leaks from Underground Fuel Tanks, General (sec. 9003(h)) (except sec. 9003(h)(12))	200.0	200.0	200.0	200.0	200.0	—	—	—	1,000.0
	(B) Cleanup of Leaks Containing Oxygenated Fuels (e.g. MTBE, Ethanol) (sec. 9003(h)(12))	200.0	200.0	200.0	200.0	200.0	—	—	—	1,000.0
	(C) State UST/LUST Program Implementation and Tank Inspections. State Compliance Reports on govt.-owned tanks in State (sec. 9003(i)), Trust Fund Distribution (sec. 9004(f)), Inspections (sec. 9005(c))	100.0	100.0	100.0	100.0	100.0	—	—	—	500.0
	(D) UST Leak Prevention & Program Compliance/Enforcement. Operator Training (sec. 9010), Enforcement (sec. 9011), Delivery Prohibition (sec. 9012), Indian Lands Strategy (sec. 9013)	55.0	55.0	55.0	55.0	55.0	—	—	—	275.0
	(Total amount authorized from LUST Trust Fund)	555.0	555.0	555.0	555.0	555.0	—	—	—	2,775.0

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P.L. 109- 58	Title	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012- FY2016	FY2005- FY2016
Subtitle C	— Boutique Fuels									
Sec. 1541	Reducing the Proliferation of Boutique Fuels	—	0.5 ^a	—	—	—	—	—	—	0.5 ^a
TITLE XVI	— CLIMATE CHANGE									
Subtitle A	National Climate Change Technology Development									
Sec. 1601(i)	Greenhouse Gas Intensity Reducing Technology Strategies, Demonstration Projects	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
Subtitle B	Climate Change Technology Deployment in Developing Countries									
Sec. 1611	Climate Change Technology Deployment in Developing Countries	—	ss ^a	ss	ss	ss	ss	ss	ss	ss ^a
TITLE XVIII	— STUDIES									
Sec. 1808	Low-Volume Gas Reservoir Study	—	1.5	0.45	0.45	0.45	0.45	—	—	3.3
Sec. 1829	Energy & Water Saving Measures in Congressional Buildings (Architect of the Capitol)	—	2.0	2.0	2.0	2.0	2.0	—	—	10.0
Total Authorized Appropriations		\$5,868.0	\$12,368.9	\$17,092.5	\$12,594.5	\$12,216.5	\$2,917.5	\$1,395.0	\$3,461.0	\$67,913.7

Source: Table prepared by CRS using the text of the Energy Policy Act of 2005, P.L. 109-58, as enacted on August 8, 2005.

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Table Notes: This table shows funding that would be authorized, including loans but not loan guarantees, in P.L. 109-58. The section number in the far left column is the location of the authorizing language in the bill. When an activity is described in a separate section of the bill from where it is authorized, it is indicated in parentheses after the program title in column two.

ss. Such sums as may be necessary.

* an asterisk next to an amount indicates that there is a note within that row.

a. No fiscal year(s) indicated. A single amount in a row indicates a lump sum.

b. No more than specified amount(s).

c. Such sums as may be necessary for FY2012 - FY2020

d. Sec. 384. Does not need an authorization of appropriations. Receives funding from royalties paid on federal oil and gas leases.

e. Sec. 412. Total amount of direct loan shall not exceed \$80M.

f. Sec. 771. Funds go to the National Highway Traffic Safety Administration in the Department of Transportation.

g. Sec. 931(b). A minimum of \$5M per year is designated for Historically Black Colleges, Tribal Colleges, and Hispanic-serving Institutions.

h. Sec. 951. Funds may not be used to decommission the Fast Flux Text Facility.

i. Sec. 961(b)&(c). Office of Arctic Energy Authorized by the National Defense Authorization Act for Fiscal Year 2001 (U.S.C. 7144d).

j. Sec. 971(d). A minimum of \$5M per year must go to training of minority and socially disadvantaged farmers and ranchers.

k. Sec. 981. No more than \$1.1 billion in federal funds prior to operation of the accelerator.

l. Sec. 1531. The LUST Trust Fund has been funded primarily through a 0.1 cent-per-gallon motor fuels tax that commenced in 1987