



To: CESA Members
From: Lew Milford and Allison Schumacher
Date: August 4, 2005
Re: Overview of Energy Policy Act of 2005
Cc: CESA Staff

Dear CESA Members:

The Energy Policy Act of 2005 was passed by the House of Representatives and the Senate on July 28 and 29, respectively. Final signature by the President is expected next week at a ceremony at Sandia National Laboratories in New Mexico on August 8. CESA staff has analyzed the bill for new measures of interest and importance to CESA members.

This overview is devoted to highlights, new funding appropriations, tax credits and possible directions for CESA to take in light of these developments. These are in chronological order for simplicity, not necessarily in order of importance or relevance. We recommend you read beyond the RE title as some provisions that merit attention are contained in R&D or tax sections (tax provisions are under Title XIII starting on page 10).

Some of the new tax credits and appropriations under RD&D are substantial and might warrant a fuller discussion at the CESA fall meeting in Boston to identify the best leveraging opportunities for your programs. We are considering contacting pro bono tax counsel through the ABA for further assistance and clarification on the tax provisions, and might propose that we have some tax counsel come in to the meeting and lead a discussion of the tax provisions (especially the new ones, the financial implications in typical projects and any further implications for state program design in light of these new financial tools). We would like your reaction to that idea.

Please note: We have added emphasis in a few cases where the measures are more discretionary than concrete as evidenced by nuances in the bill language, or do not have a hard appropriation (i.e., “the Secretary may make grants to States...”; or, “Authorized only as sums necessary for...”). *This means that there are no hard dollars allocated to these provisions until they go through the appropriations process.*

There are many groups writing summaries of the bill that we will likely share with you in the near future. (We are certain to have missed some provisions or will find interpretations that might raise some new approaches we have not addressed). And if you or your staff are independently developing any information on the bill, please forward that to us.

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Finally, many of these provisions may seem to indicate there is new “free” money available for projects and activities. For those familiar with DC, the likely story is that someone responsible for the provision may have an inside track on the funding, making it less available than it may appear from a simple reading of the provision.

The full bill can be accessed at http://energy.senate.gov/public/_files/ConferenceReport0.pdf

[RPS. A national renewable portfolio standard of 10 percent renewable electricity by 2020 was struck during conference and is NOT part of the Energy Bill.]

Title I—ENERGY EFFICIENCY

Sec. 126: Low Income Community Energy Efficiency Pilot Program (p.63). DOE competitive grant program focused on renewable energy investments, energy efficiency projects, and energy conservation programs in low income rural and urban communities. Local government, private and non-profit community development organizations as well as Indian Tribes are eligible. Authorized: \$20 million each year FY 06–08.

Sec. 127: State Technologies Advancement Collaborative (p.65). Federal and State research, development, demonstration, and deployment collaborative formed for common renewable energy, energy efficiency, and fossil energy interests. Aimed at leveraging Federal and State cost sharing, the reduction of redundancies in funding, as well as creation of multistate projects. To be run by DOE and State-based organizations. Authorized: only as sums necessary for FY 06–10.

Sec. 139: Energy Efficient Electric and Natural Gas Utilities Study (p.151). Within one year, DOE in conjunction with NARUC and NASEO, will carry out a study of state and regional policies that promote cost-effective programs to reduce energy consumption.

Title II—RENEWABLE ENERGY

Sec. 201: Assessment of Renewable Energy Resources (p. 161). Authorizes \$10 million annually in FY06-10 for renewable energy resource and cost assessment study (includes resource capacity inventories, identification of barriers to development, etc).

Sec. 202: Renewable Energy Production Incentive (REPI) (p. 163). REPI has been extended to provide a 1.5 cent/kWh incentive (with inflation adjustment) to solar thermal electric, landfill gas, wind, biomass, geothermal electric, fuel cells and anaerobic digestion. REPI amends to give priority to “true” renewables (solar, wind, ocean, geothermal, closed-loop biomass) for payments if appropriations are insufficient to cover all qualified facilities. The definition of eligible

qualified facilities is amended to include publicly-owned electric utilities, rural electric cooperatives, and local or State governments and their political subdivisions. Authorization: sums as necessary FY06-2026. *REPI is a previously existing program administered by DOE that has been dormant for some time due to a lack of appropriations.*

Sec. 203: Federal Purchase Requirement (p. 167). Establishes an annual federal government renewable energy purchase requirement of 3 percent in FY07– 09; 5 percent FY 2010 –2012; 7.5 percent FY 2013 onward. Limited by “to the extent economically feasible” language. Provides for a double multiplier if renewable energy is produced onsite, on federal lands or on Indian lands.

Sec. 204: Use of Photovoltaic Energy in Public Buildings (p. 170). GSA may create a PV commercialization program for the procurement and installation of PV on new and existing public buildings. Acquisition level of at least 150 MW peak targeted during the 5-year program. Authorization: \$50 million annually for acquisition in FY06-FY10, and \$10 million annually authorized for PV system evaluation in FY06-FY10.

Sec. 205: Biobased Products (p. 174). Amends existing preference provisions concerning federal biobased product procurement to include plastic ring products that comply with EPA regulations for naturally degradable material which decomposes within the time frame set in the regulations.

Sec. 206: Renewable Energy Security (includes consumer rebate program for renewables) (p. 174). DOE will establish a Rebate Program for expenses incurred by consumers in connection with the installation of renewable energy systems in dwelling units or small businesses. Rebates are limited to 25% of expenditures with a cap of \$3,000. Authorization: \$150 million FY06, \$200 million FY07 and 08, \$250 million FY09 and 2010 with remainder available until expended. (*We will provide more information to CESA members as it becomes available on how DOE will administer this program and how it could link to existing state fund rebate programs*). This section also contains a provision for a Renewable Fuels Inventory that DOE must submit to Congress with a focus on renewable fuels available for consumers and future projections of supply.

Sec. 209: Rural and Remote Community Electrification Grants (p. 183). DOE, in consultation with the DOA and DOI, may provide grants for the purpose of: (1) increasing energy efficiency, siting, or upgrading transmission and distribution lines serving rural areas; or (2) providing or modernizing electric generation facilities that serve rural areas. Authorized: \$20 million each year FY06–2012.

Sec 210: Grants to Improve the Commercial Value of Forest Biomass for Electric Energy, Useful Heat, Transportation Fuels, and Other Commercial Purposes (p. 186). DOA and DOI may make grants (only) to persons in preferred communities, under the Biomass Commercial Use Grant Program, that own or operate a facility that uses biomass as a raw material to produce electric energy, sensible heat, or transportation fuels. A grant under the Commercial Use Program may not exceed \$20 per green ton on biomass delivered. Biomass for the purposes of this entire section is defined as nonmerchantable materials or precommercial

thinning byproducts, such as trees, wood, chips, etc, that are removed from a federal or Indian forest to reduce fuel for forest fires or reduce diseased or infect infestation in a forest or to restore forest health. Qualified persons include artificial (corporations) and natural persons that live in a preferred community. Preferred communities are small, rural communities located near federal or Indian land that has forests at risk from wildfires, disease or insects. The section also establishes an Improved Biomass Use Grant Program whereby DOA or DOI may make grants to offset the cost of projects to develop or research opportunities to improve the use of, or add value to, biomass. Persons in preferred communities get preference in this program, but others may also qualify. Authorized: \$50 million for both grant programs for each year FY06 –2016. A report to Congress is due by start of FY2010.

Sec. 211: Sense of Congress Regarding Generation Capacity of Electricity from Renewable Energy Resources on Public Lands (p.192). It is the sense of Congress that the Secretary of the Interior should, within 10 years of enactment, seek to have approved non-hydropower renewable energy projects located on public lands with a generation capacity of at least 10,000 MW of electricity.

Title III—OIL AND GAS

Sec. 388: Alternate Energy-Related Uses on the Outer Continental Shelf (p.460).

The Outer Continental Shelf Lands Act is amended to give the Secretary of the Department of Interior, through the Mineral Management Services, the lead authority to grant leases, easements, or rights-of-way for alternate energy-related uses on the outer Continental Shelf, including offshore wind projects and their related transmission and support facilities. The Secretary must establish fees or other payments to ensure a fair return to the U.S. for the rights of way or leases for these renewable energy projects. The Secretary also must provide 27% of the revenues received from these lease revenues for equitable distribution among coastal states that have a coastline located within 15 miles of a project's center. Leases or rights of way are to be issued on a competitive basis unless there is no competitive interest. Finally, the MMS is required to issue necessary regulations to implement this program no later than 270 days from enactment of the Energy Policy Act.

Title IV—COAL

Sec. 411: Integrated Coal/Renewable Energy System (p. 489). Subject to availability of appropriations, DOE may provide loan guarantees for an advanced integrated gasification combined cycle technology (IGCC) that is 1) combined with wind and other renewable sources; 2) minimizes and offers the potential to sequester CO₂ emissions; and 3) provides a ready source of hydrogen for near-site fuel cell demonstrations. A loan guarantee under this section does not preclude such a facility from receiving an allocation for an ITC under section 48A of IRS code, and use of ITC does not prohibit use of other clean coal program funding.

Title VI—NUCLEAR MATTERS

Sec. 634: Demonstration Hydrogen Production at Existing Nuclear Power Plants (p. 604). DOE shall establish 2 projects in diverse geographic areas to demonstrate the commercial production of hydrogen at existing nuclear power plants. Before making an award, DOE must determine whether the use of existing nuclear power plants is a cost-effective means of producing hydrogen. Authorized: not more than \$100 million.

Title VII—VEHICLES AND FUELS

Sec. 783: Federal Procurement of Stationary, Portable, and Micro Fuel Cells (p.753). Not later than January 1, 2006, the head of any federal agency that uses electrical power from stationary, portable, or microportable devices shall lease or purchase a fuel cell to meet any applicable energy savings goals, subject to cost considerations when DOE in cooperation with Hydrogen and Fuel Cell Technical Task Force (est. Sec. 806) and the Technical Advisory Committee (est. Sec. 807) pays the cost of leasing or purchasing the equipment. Authorized: \$20 million FY06; \$50 million FY07; \$75 million FY08; \$100 million FY09; \$100 million FY 2010; and sums as necessary for each year FY 2011–2015.

Title VIII—HYDROGEN

Sec. 804: Plan (p.777). Six months after enactment DOE must give Congress a coordinated plan for the programs described in the hydrogen title and any other programs that are directly related to fuel cells or hydrogen.

Sec. 805: Programs (p.779). DOE shall conduct a research and development program on technologies relating to the production, purification, distribution, storage, and use of hydrogen energy, fuel cells, and related infrastructure. The goal of this program is to demonstrate and commercialize the use of hydrogen for multiple energy applications including vehicles, fuel cells, hydrogen energy infrastructure. Further, public education programs as well as private sector partnerships are provided. The Hydrogen Supply Portions of the program (production, storage, transport, related education, etc) are authorized: \$160 million FY06; \$200 million FY07; \$220 million FY08; \$230 million FY09; \$250 million FY 2010; and sums as necessary FY 2011–2020. The Fuel Cell Technologies focused programs are authorized: \$150 million for FY06; \$160 million for FY07; \$170 million for FY08; \$180 million for FY09; and \$200 million for FY 2010; and sums as necessary each year FY 2011 – 2020.

Sec. 806: Hydrogen and Fuel Cell Technical Task Force (p.787). Not later than 120 days after the date of enactment, the President shall establish an interagency task force chaired by the Secretary of Energy. The task force shall work towards: a safe, economical and environmentally sound fuel infrastructure for hydrogen; fuel cells in government and other applications; distribute power generation; uniform hydrogen codes, standards, and safety protocols; and vehicle

hydrogen fuel system integrity safety performance. It shall seek to foster the exchange of generic information and technology among industry, academia, and government.

Sec. 807: Technical Advisory Committee (p. 790). Establishes a Hydrogen Technical and Fuel Cell Advisory Committee to advise the Secretary of Energy on the programs and activities under this title. The Technical Advisory Committee shall review and make recommendations to the Secretary on: the implementation of programs and activities under this title; the safety, economical, and environmental consequences of technologies for the production, distribution, delivery, storage, or use of hydrogen energy and fuel cell; and the plan under Section 804.

Sec. 808: Demonstration (p. 793). The Secretary shall fund a limited number of demonstration projects, consistent with this title and a determination of the maturity, cost-effectiveness, and environmental impacts of technologies supporting each project. Authorized: \$185 million for FY06; \$200 million for FY07; \$250 million for FY08; \$300 million for FY09; \$375 million for FY 2010; and sums as necessary each year FY 2011–2020.

Sec. 809: Codes and Standards (p. 799). The Secretary shall provide grants to support timely and extensive development of safety codes and standards relating to fuel cell vehicles, hydrogen energy systems, and stationary, portable, and micro fuel cells. Authorized: starting at \$4 million for FY06 and ramping to \$9 million in FY 2010, with sums as necessary thereafter.

Sec. 811: Reports (p. 800). Not later than 2 years after enactment the Secretary of Energy shall submit to Congress a report describing activities carried out by the Department under this title, for hydrogen technology; measures taken during the preceding 3 years to support the transition of primary industry to a fully commercialized hydrogen economy; any change made to the strategy relating to hydrogen and fuel cell technology to reflect the results of the learning demonstrations; progress made in achieving the goal of producing deploying hydrogen fueled vehicles; progress made toward achieving the goal of supplying hydrogen at a sufficient number of fueling stations by 2010; any problem relating to the design, execution, or funding of a program under this title; progress made toward and goals achieved in carrying out this title; and any updates to strategic plans. Authorized: \$1.5 million for each year FY06–2020.

Sec. 812: Hydrogen from Solar and Wind Technologies (p. 803). DOE shall prepare road maps for carrying out the provision of the Hydrogen Title related to the use of solar and wind technologies. Provides for 5 demonstration projects for the production of hydrogen from solar power as well as the 5 for hydrogen from wind. Establishes a program studying the development, construction, and optimization of concentrating solar devices for hydrogen production (new and existing facilities to be supported). Creates another solar program to develop methods and study the use of photovoltaic devices and small scale electrolysis for the onsite production of hydrogen. DOE is also directed to support solar and wind hydrogen production programs at institutions of higher education. Authorized: only sums as necessary each year FY06 – 2020.

Sec. 813: Technology Transfer (p. 809). In carrying out this title, the Secretary of Energy shall carry out programs that provide for the transfer of critical hydrogen and fuel cell technologies to the private sector, accelerate wide application of those technologies in the global market, foster

the exchange of generic, nonproprietary information, and assess technical and commercial viability of technologies relating to the production, distribution, storage, and use of hydrogen energy and fuel cells.

Sec. 815: Cost Sharing (p.815). The costs of carrying out projects and activities under this title shall be shared in accordance with Section 988. (Sec. 988 lays out that for R&D not less than 20% of the cost shall be provided from a non-Federal source--this limitation does not apply to R&D of a “basic or fundamental nature” at the discretion of DOE). For Demonstration and Commercial Application projects not less than 50% of the cost shall be provided by a non-Federal source. For all of these cost sharing aspects DOE has the discretion to reduce the amount of cost sharing.

Title IX—RESEARCH AND DEVELOPMENT

Sec. 921: R&D for Distributed Energy and Electric Energy Systems (p. 838). The Secretary of Energy shall carry out programs of RD&D to improve the reliability and efficiency of distributed energy resources and systems. This subtitle describes the activities (see below). This section outlines the authorization of appropriations for the entire subtitle: \$240 million of FY07; \$255 million for FY08; and \$273 million for FY09.

Sec. 922: High Power Density Industry Program (p.840). The Secretary shall establish a program focused on RD&D and commercial application to improve the efficiency of high power density facilities (data centers, server farms, telecommunications centers) and related technologies (thermal controls, load management, peak load reduction, and the efficient cooling of electronics). There would likely be an opportunity for fuel cells and microturbines to play a role in the RD&D under this section.

Sec. 923: Micro-Cogeneration Energy Technology (p. 840). DOE shall make competitive, merit-based grants to consortia for the development of micro-cogeneration energy technology. The consortia shall use the money to explore aspects of small scale CHP in the residential setting. This section is specifically authorized via Sec. 921 with an earmark out of the authorization for the entire subtitle of \$20 million for each year FY07 and 08.

Sec. 924: Distributed Energy Technology Demonstration Programs (p. 841). The Secretary of Energy may provide financial assistance to coordinating consortia of interdisciplinary participants for demonstrations designed to accelerate the use of distributed energy technology. The Secretary shall establish a program to develop working models of small scale portable power devices, with expert university coordination to the fullest extent possible.

Sec. 931: Renewable Energy RD&D (p. 850). The Secretary shall conduct programs concerning renewable energy RD&D and commercial application including those activities in this subtitle. Specifically, programs shall be conducted regarding solar energy, wind energy, geothermal energy, and hydropower. **DOE must also conduct RD&D for other miscellaneous projects such as ocean energy (including wave power), combining renewable technologies with others such as coal gasification and wind power, renewables for co-generation of hydrogen and electricity, and kinetic hydro turbines.** This section authorizes the

appropriations for the entire subtitle: \$632 million for FY07; \$743 million for FY08; and \$852 million for FY09. The solar program has a specific earmark from this general authorization of \$140 million for FY07, \$200 million for FY08, and \$250 million for FY09 of which \$50 million shall be for Sec. 935 (Renewable energy in public buildings). Further, the Secretary shall conduct an analysis and evaluation on renewable energy technologies.

Sec. 932: Bioenergy Program (p. 858). The definition of biomass under this section covers any organic material grown for conversion into energy, any organic byproduct of agriculture that can be converted into energy, and any waste material (NOT including municipal solid waste or paper that is commonly recycled) from forest resources or wood waste (old pallets, crates, etc) that can be converted into energy. DOE shall conduct a program of RD&D and commercial application for bioenergy including bioproducts, biofuels, biorefineries, biopower energy systems, and feedstock analysis. Specific goals are laid out for the biofuels and bioproducts program. Further, Integrated Biorefinery Demonstration Projects are required with no more than 100 million for any single demonstration. The funding for these demonstration projects favors lignocelluloses (barley, rapeseed, soybean matter, rice hulls, rice straws, etc.) as a feedstock among, other preferences. Requests for proposals for these advanced biorefineries are required to begin no later than six months after enactment. Additionally, this section establishes a University Biodiesel Program focused on demonstrating biodiesel feasibility with diesel generator sets. This section has its own earmark, via Sec. 931, out of the general authorization for this subtitle of \$213 million for FY07 (of which \$100 million shall be for the Integrated Biorefinery Demonstration Projects), \$251 million for FY08 (of which \$125 million shall be for the Integrated Biorefinery Demonstration Projects), and \$274 million of FY09 (with \$150 million specific to the Integrated Biorefinery Demonstration Projects).

Sec. 934: Concentrating Solar Power Research Program (p.864). DOE shall conduct a R&D program to evaluate the potential for concentrating solar power for hydrogen production. This section provides for the administration and assessment of the program. Not later than 5 years after the date of enactment, the Secretary of Energy shall report to Congress concerning the economic and technical feasibility of using concentrating solar power for hydrogen production, including recommendations for the potential construction of a pilot demonstration facility suitable for commercial hydrogen production.

Sec. 935: Renewable Energy in Public Buildings (p. 867). DOE shall establish a program to demonstrate innovative technologies for solar and other renewable energy sources in buildings owned or operated by a State or local government. Funding is limited to no more than 40% of the incremental costs of a demonstration project. Applicants must demonstrate a continuing commitment to use renewable energy and state how any award under this section would further their transition to the significant use of renewable energy.

Sec. 942: Production Incentives for Cellulosic Biofuels (p.885). Cellulosic biofuels are defined as any fuel that is produced from cellulosic feedstocks. In conjunction with others, DOE (consulting with DOA, DOD, and EPA) must establish an incentive program for the production of cellulosic biofuels. Eligibility depends on being a U.S. producer of cellulosic biofuels who meets all the applicable permitting requirements and the financial criteria to be established by DOE. The incentives will first be awarded on a per gallon basis with DOE to set the rate until

the first reverse auction. The first reverse auction (government gives awards beginning with the request [bid] that represents the lowest level of production incentive per gallon basis and then on up till the funding is used) must occur no later than 3 years after enactment. Eligible entities shall receive the amount of production incentive requested for each gallon produced and sold during the first 6 years of their operation. All the awards under this section are conditioned on the eligible entity entering into an agreement with DOE to begin production of cellulosic biofuels not later than 3 years after the date of the reverse auction in which they participate. The reverse auctions must not award at a per gallon rate greater than is set by DOE during the first 4 years of the program. The reverse auction will continue for 10 years after enactment or until the annual production of cellulosic biofuels in the U.S. reaches 1 billion gallons. This section authorizes an appropriation for the program of \$250 million.

Sec. 943: Procurement of Biobased Products (p. 890). This section amends section 9001 of the Farm Security and Rural Investment Act of 2002 to include a new section regarding the procuring agency (any agency as well as their contractors), and procurement in general. In addition, it amends section 9002 by adding a provision that not later than 90 days after the date of enactment of this Act, the Architect of the Capitol and others must establish procedures that apply the requirements of this section and send them to be used for procurement for the Capitol Complex. A public education regarding the Capitol's use of biobased products is required.

Sec. 944: Small Business Bioproduct Marketing and Certification Grants (p.894). The Secretary of Agriculture shall make competitive basis grants for the biobased product marketing and certification. Preference goes to small entities (fewer than 50 employees). Grants awarded under this section are one a one time basis, and shall not exceed \$100,000. Grant recipients shall provide matching non-Federal funds equal to the grant amounts and the matches must be expended in advance of grant funding. Authorized: \$1 million for FY06 and sums as necessary for each year FY07 – 2015.

Sec. 945: Regional Bioeconomy Development Grants (p. 897). DOA shall make available, on a one-time basis, competitive basis grants to eligible entities (bioeconomy regional development associations, agricultural or energy trade associations, or Land Grant institutions) for promoting the growth and development of a regional bioeconomy. Grant recipients must provide equal non-Federal matching funds expended prior to the DOA grant being received. Grants are limited to \$500,000. Authorized: \$1 million FY06; and sums as necessary each year FY07 – 2015.

Sec. 946: Preprocessing and Harvesting Demonstration Grants (p. 899). The Secretary of Agriculture shall make competitive basis grants available to enterprises owned by agricultural producers to demonstrate cost-effective, cellulosic biomass innovations in preprocessing and harvesting. The recipient must use the material harvested under the auspices of the grant to produce ethanol or for another energy purpose, such as the generation of heat or electricity. No more than 5 demonstration projects per fiscal year are to be funded. The non-Federal cost share under this section shall not be less than 20%. This section authorizes an appropriation for such projects at \$5 million each year FY06 – 2010.

Title XII—ELECTRICITY

Sec. 1234: Study on the Benefits of Economic Dispatch (p. 1140). DOE is directed to produce a study within 90 days, and annually thereafter, describing potential revisions to economic dispatch to improve availability of non-utility generation resources and the benefits to consumers of such revisions.

Sec. 1242: Funding New Interconnection and Transmission Upgrades (p. 1146). Allows FERC to implement participant funding plan for transmission upgrades or new generator interconnection.

Sec. 1251: Net Metering and Additional Standards (p. 1147). Amends the Public Utility Regulatory Policies Act (PURPA) to require all utilities to offer net metering. Does not pre-empt existing state policies.

Sec. 1253: Cogeneration and Small Power Production Purchase and Sale Requirements (p. 1163). Amends PURPA to revoke the requirement that utilities purchase power from cogeneration and small power producers if the facility has access to transmission and wholesale markets. Only impacts new contracts. Looks like generators can appeal this before FERC.

Sec. 1254: Interconnection (p. 1173). Amends PURPA to require utilities to offer interconnection services to on-site generating facilities according to IEEE Standard 1547.

Title XIII—ENERGY POLICY TAX INCENTIVES

Sec. 1301: Renewable Production Tax Credit (p. 1222). The federal production tax credit of 1.9 cent/kWh (with inflation adjustment) for wind, solar, geothermal and closed-loop biomass technologies was extended through December 31, 2007. The provision covers other technologies such as landfill gas, municipal solid waste, cogeneration, refined coal, small irrigation and open-loop biomass with a PTC of 0.9 cent/kWh (with inflation adjustment). The PTC applies for the project's first 10 years of operations for wind and closed-loop biomass, and for 5 years for other technologies.

Sec. 1302: Application of Section 45 Credit to Agricultural Cooperatives (p. 1235). Agricultural cooperatives that are more than 50% owned by agricultural producers may elect to allocate the PTC to their patrons (rather than claim it on the cooperative's tax return) in proportion to the amount of business each patron did with the cooperative that year. Presumably this applies to taxable cooperatives only—CESA will seek further clarification on this).

Sec. 1303: Clean Renewable Energy Bonds (p. 1238). This section allows for municipal utilities, rural cooperatives and governments to issue clean renewable energy bonds. The term "issuer" means these eligible tax-exempt entities borrow the money and issue a bond (promissory note) to the bondholder (referred to in the bill as the "taxpayer"). The money received may only be used by a qualified borrower, (i.e., also municipal utilities, rural coops and governments) on

qualified projects. The Federal government will give the bondholder a tax credit for what they would usually receive from the issuer in the way of interest. For example, a state clean energy fund could borrow money to pay for municipal/cooperative/government renewable energy project hardware (and other fixed costs) interest free, thereby allowing money from the funds to sit and grow. Principal must be paid back in equal installments. The maximum limitation for bond funding available under this section is \$800 million, with not more than \$500 million available to governments under this provision. *These new bonds could be of interest to community-wind projects, etc.*

Sec. 1331: Energy Efficient Buildings Deduction (p. 1332). Commercial green buildings are eligible for a tax deduction of \$1.80/square foot for 2006-2007. For public buildings (Federal, State or local), the designer of the building is eligible to take the deduction in lieu of the building owner. DOE is directed to establish a certification process for this provision.

Sec. 1335: Credit for Residential Energy Efficient Property (p. 1344). Establishes a 30% income tax credit (ITC) for PV, solar hot water and fuel cells. This residential ITC is capped at \$2,000 for PV and solar hot water, and at \$500 per 0.5/kW for fuel cells and is available for 2006-2007. *It is not known at this time if this provision can be combined with the rebate program offered under Sec. 206.*

Sec. 1336: Credit for Business Installation of Qualified Fuel Cells and Stationary Microturbine Power Plants (Investment Tax Credit) (pp. 1383). Businesses that install a stationary fuel cell are eligible to receive an investment tax credit (ITC) of 30% with a cap of up to \$500 per 0.5kW for 2006-2007. Microturbines are eligible for a 10% ITC for 2006-2007.

Sec. 1337: Business Solar ITC (also includes Geothermal) (p. 1389). Commercial solar and geothermal installations are eligible for an ITC of 30% through 2007. According to SEIA, the new business ITC provision has no cap (until now, this program has been administered with a cap of \$25,000 per year, plus 25% of the total tax remaining after the credit is taken). Starting January 1, 2008, the ITC reduces to 10%. *See attached newsletter from SEIA for further details.*

Sec. 1352: National Academy of Sciences Study and Report (p. 1454). Directs Department of the Treasury to contract with the National Academy of Sciences to produce a study within two years with the scope of defining and evaluating the health, environmental, security, and infrastructure external costs and benefits associated with the production and consumption of energy that are not or may not be fully incorporated into the market price of such energy.

Title XV—ETHANOL AND MOTOR FUELS

Sec. 1501: Renewable Content of Gasoline (p. 1482). This section amends the Clean Air Act and provides definitions for a Renewable Fuel Program to be established by EPA. It sets the following volumetric schedule for introduction of renewable fuel content for gasoline in the U.S. (excluding noncontiguous States or territories): 4.0 billion gallons FY06; 4.7 billion gallons FY07; 5.4 billion gallons FY08; 6.1 billion gallons FY09; 6.8 billion gallons FY2010; 7.4 billion gallons FY2011; 7.5 billion gallons FY2012, and determined thereafter by the Administrator in

conjunction with DOA and DOE. For FY2013 and thereafter there is a minimum volume for renewable fuels derived from cellulosic biomass set at 250 million gallons.

Sec. 1510: Commercial Byproducts from Municipal Solid Waste and Cellulosic Biomass Loan Guarantee Program (p. 1541). The Secretary of Energy is directed to establish a program to provide guarantees of loans by private institutions for the construction of facilities for the processing and conversion of municipal solid waste and cellulosic biomass into fuel ethanol and other commercial byproducts. Authorized: sums as necessary.

Sec. 1511: Renewable Fuel (p. 1545). Amends the Clean Air Act to include renewable fuel definitions and provides funds for the creation of a cellulosic biomass ethanol and municipal solid waste loan guarantee program to carry out not more than four commercial demonstration projects for cellulosic biomass and sucrose-derived ethanol. Guarantees under this section can be issued for up to 80% of the estimated cost of a project, not to exceed \$250 million per project. Also provides renewable fuel production R&D grants in states with low rates of ethanol production. Authorization for R&D grants: \$25 million per year for FY06-2010. Also provides assistance for cellulosic biomass ethanol conversion to eligible producers, authorizing \$250 million for FY06 and \$400 million for FY07.

Sec. 1512: Conversion Assistance for Cellulosic Biomass, Waste-derived Ethanol, Approved Renewable Fuels (p. 1552). Amends the Clean Air Act to provide grants to merchant producers of cellulosic biomass ethanol, waste-derived ethanol and approved renewable fuels to assist with building of production facilities. Authorized: \$100 million for FY06; \$250 million for FY07; \$400 million for FY08.

Sec. 1514: Advanced Biofuel Technologies Program (p. 1558). EPA in consultation with DOA and the Biomass Research and Development Technical Advisory Committee shall establish the Advanced Biofuel Technologies Program to demonstrate advanced technologies for the production of alternative transportation fuels. This program shall fund demonstration projects to develop not less than four different conversion technologies for producing cellulosic biomass ethanol and develop not less than five technologies for coproducing value-added bioproducts. Authorized: \$110 million per year for FY05-09, subject to competitive process and cost-sharing requirements.

Sec. 1515: Waste-derived Ethanol and Biodiesel (p.1560). Amends definition for biodiesel under the Energy Policy Act of 1992 to include biodiesel derived from municipal solid waste and sludges and oils derived from wastewater and the treatment of wastewater, in addition to biodiesel derived from animal wastes, including poultry fats and poultry wastes and other waste materials.

Sec. 1516: Sugar Ethanol Loan Guarantee Program (p.1561). Funds may be provided for the cost of loan guarantees to carry out commercial demonstration projects for ethanol derived from sugarcane, bagasse and other sugarcane byproducts. Loan guarantees can be for up to 80% of estimated project costs, not to exceed \$50 million per project.

Title XVI—CLIMATE CHANGE

Sec. 1601, 1610 and 1611: Greenhouse Gas Intensity Reducing Technology Strategies (p. 1618). *The Sense of the Senate Resolution on Climate Change amended to the Senate version of the bill was struck during conference and is NOT part of the Energy Bill. This amendment would have required Congress to enact a national program of mandatory, market-based limits for greenhouse gases.* However, it is expected that Senators will resume deliberations on market-based climate change measures, independent of the Energy Bill, in the fall.

Sec. 1610 and 1611 contain measures on **Climate Change Technology Deployment** in the U.S. and in developing countries. The bill directs the President to establish an interagency Committee on Climate Change Technology chaired by the Secretary of Energy. Within 18 months, this committee will submit a **national strategy to promote the deployment and commercialization of greenhouse gas intensity** (defined as ratio of GHG emissions to economic output) **reducing technologies and practices** developed through research and development programs conducted by the National Laboratories, other Federal research facilities, institutions of higher education, and the private sector. The strategy will be updated every five years. Within 180 days a **Climate Change Technology Program** will be established within the Department of Energy to assist the committee in the interagency **coordination of climate change technology research, development, demonstration, and deployment to reduce greenhouse gas intensity.**

A **climate change technology demonstration program** will be developed to increase the reduction of the greenhouse gas intensity to levels below that which would be achieved by technologies being used in the United States; maximize the potential return on Federal investment; demonstrate distinct roles in public-private partnerships; produce a large-scale reduction of greenhouse gas intensity if commercialization occurred; and support a diversified portfolio to mitigate the uncertainty associated with a single technology. Authorized: such sums as are necessary; subject to cost-sharing requirement.

A **Greenhouse Gas Intensity Reducing Technology Export Initiative** will be developed to promote technologies and practices from the U.S. in priority developing countries. Technology demonstration projects in eligible developing countries will also be developed including coal gasification, coal liquefaction, and clean coal projects; carbon sequestration projects; cogeneration technology initiatives; renewable projects and lower emission transportation. Authorized: such sums as are necessary.

Title XVII—INCENTIVES FOR INNOVATIVE TECHNOLOGIES

Sec. 1703: Eligible Projects (incentives for innovative technologies) (p. 1653). Authorizes DOE to make available loan guarantees for projects that avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the U.S. at the time the guarantee is issued. Eligible categories include: **renewable energy systems**; advanced fossil energy technology (including coal gasification); **hydrogen fuel cell technology for residential, industrial or transportation applications**; advanced nuclear energy facilities; carbon capture

and sequestration practices and technologies, including agricultural and forestry practices that store and sequester carbon; **efficient electrical generation, transmission, and distribution technologies; efficient end-use energy technologies**; production facilities for fuel efficient vehicles, including hybrid and advanced diesel vehicles; pollution control equipment; and refineries. This section also provides for a guarantee for an IGCC project in a Western State. Projects that receive tax credits for clean coal technology are not disqualified from receiving a guarantee under this title. Authorized: such sums as are necessary.

Title XVIII—STUDIES

Sec. 1816: Study of Rapid Electrical Grid Restoration (p. 1681). Directs DOE to conduct a study within one year of the benefits of using mobile transformers and mobile substations to rapidly restore electrical service to areas subjected to blackouts. The analysis will include feasibility of using mobile transformers for military bases, the Federal Government, communications industries, first responders and other critical infrastructures.

Sec. 1817: Study of Distributed Generation (p. 1683). DOE in consultation with FERC will conduct a study within 18 months of the potential benefits of cogeneration and small power production.

Sec. 1818: Natural Gas Supply Shortage Report (p. 1687). Within 180 days, DOE will submit to Congress a comprehensive analysis of natural gas supply demand balance for period 2004-2015, including analysis of scenarios and recommendation for reducing demand and increasing supplies.

Sec. 1819: Hydrogen Participation Study (p. 1691). Within one year, DOE will submit a report to Congress evaluating methodologies to ensure the widest participation practicable in setting goals and milestones for DOE's hydrogen program.

Sec. 1820: Overall Employment in a Hydrogen Economy (p. 1691). DOE will conduct a study of the likely effects of a transition to a hydrogen economy in respect to overall employment in the U.S.

Sec. 1823: Alternative Fuels Report (p. 1694). Within one year, DOE will submit to Congress reports on the potential for biodiesel and hythane to become major, sustainable, alternative fuels. These reports will address energy security implications of alternative fuels and identify strategies for commercial deployment. DOE may provide grants to one or more colleges or universities to carry out research for these reports.

Sec. 1825: Fuel Cell and Hydrogen Technology Study (p. 1697). DOE will contract with the National Academy of Sciences and the National Research Council to undertake a study of fuel cell technologies that provides a budget roadmap for the development of fuel cell technologies and the transition from petroleum to hydrogen in a significant percentage of the vehicles sold by 2020.

Sec. 1826: Passive Solar Technologies (p. 1700). Within 120 days, DOE will submit to Congress the results of a study that determines the levelized cost of passive solar technologies, such as daylighting. The study will address projected energy savings from passive solar technologies if the technology were to receive incentives comparable to those for energy-producing technologies.

Sec. 1833: Renewable Energy on Federal Land (p. 1712). Within 90 days, DOI will enter into contract with NAS to study the potential for developing renewable energy Federal land.