



CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

June 9, 2005

S.10

Energy Policy Act of 2005

*As ordered reported by the Senate Committee on Energy and Natural Resources
on May 26, 2005*

SUMMARY

The legislation would authorize funding for several programs aimed at energy production, conservation, and research and development. It would authorize the use of energy savings performance contracts (ESPCs), make several changes to the regulatory framework governing the nation's electricity system, and establish a mandate for the use of renewable fuels.

Most of the bill's estimated costs would stem from changes in spending subject to appropriation. We estimate that implementing the bill would cost \$5.1 billion in 2006 and \$35.9 billion over the 2006-2010 period from appropriated funds, assuming appropriation of the necessary amounts.

CBO estimates that enacting the bill also would increase direct spending by \$728 million over the 2005-2010 period but would reduce direct spending by \$591 million over the 2005-2015 period. CBO estimates that enacting the bill would increase net revenues by \$75 million in 2006 and would result in a net loss of revenues totaling \$1.2 billion over the 2006-2010 period and \$1.0 billion over the 2006-2015 period.

The bill contains numerous mandates as defined in the Unfunded Mandates Reform Act (UMRA) that would affect both intergovernmental and private-sector entities.

CBO cannot determine the cost of all the mandates in the bill because several of the requirements established by the bill would hinge on future regulatory action about which information is not available. Though CBO cannot estimate the cost of each mandate, we expect that the total cost of private-sector mandates in the bill would exceed the annual threshold established in UMRA (\$123 million in 2005, adjusted annually for inflation). That conclusion is based on our analysis of the renewable fuels standard, which would impose substantial costs on the motor fuels industry.

CBO estimates, however, that the total cost of complying with intergovernmental mandates in the bill would not exceed the threshold established in UMRA (\$62 million in 2005, adjusted annually for inflation). The bill also would authorize numerous grants and initiatives that would benefit state, local, and tribal governments; any costs those governments incur for these projects and initiatives would result from complying with conditions for receiving this federal assistance.

Based on its review of the bill, CBO expects that the mandates contained in the bill's titles on renewable energy (title II), nuclear energy (title VI), electricity (title XII), and energy efficiency (title I) would have the greatest impact on private-sector entities and state and local governments.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of the legislation is shown in Table 1. The costs of this legislation fall within budget functions 270 (energy), 300 (natural resources and environment), 350 (agriculture), 450 (community and regional development) and 800 (general government).

BASIS OF ESTIMATE

For this estimate, CBO assumes that the Energy Policy Act of 2005 will be enacted near the end of fiscal year 2005. Additionally, CBO assumes that the authorized and necessary amounts will be appropriated for each year and that spending will follow historical rates for ongoing activities. Table 2 details the components of estimated spending subject to appropriation under the bill. (Table 3, provided later, details the bill's direct spending effects.)

Spending Subject to Appropriation - Overview

The bill contains several provisions that specify amounts authorized to be appropriated for programs related to energy research, development, production, and conservation. Additionally, the bill would authorize unspecified amounts to be appropriated for energy conservation, loan guarantees for certain energy facilities and projects to develop innovative technologies, incentives to use renewable energy, and several other energy programs, studies, and reports. Assuming appropriation of the necessary amounts, CBO estimates that implementing these provisions would cost \$5.1 billion in 2006 and \$35.9 billion over the 2006-2010 period. The following two sections detail the costs of specified and estimated

authorizations. (A discussion of direct spending and revenue effects follows the next two sections.)

TABLE 1. ESTIMATED BUDGETARY IMPACT OF THE ENERGY POLICY ACT OF 2005

	By Fiscal Year, in Billions of Dollars					
	2005	2006	2007	2008	2009	2010
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Spending Under Current Law for Energy Science Programs						
Budget Authority ^a	6.0	0.0	0.0	0.0	0.0	0.0
Estimated Outlays	5.4	2.9	0.6	0.1	*	*
Proposed Changes						
Specified Authorization Levels						
Authorization Level	0.0	9.7	10.5	11.5	2.4	2.5
Estimated Outlays	0.0	4.8	8.8	10.6	6.9	3.2
Estimated Authorization Levels						
Estimated Authorization Level	0.0	0.4	0.3	0.4	0.3	0.3
Estimated Outlays	0.0	0.3	0.3	0.4	0.3	0.3
Total Proposed Changes						
Estimated Authorization Level	0.0	10.1	10.8	11.9	2.7	2.8
Estimated Outlays	0.0	5.1	9.2	10.9	7.2	3.5
Spending Under the Energy Policy Act of 2005 for Energy and Science Programs						
Estimated Authorization Level ^a	6.0	10.1	10.8	11.9	2.7	2.8
Estimated Outlays	5.4	8.0	9.7	11.0	7.2	3.6
CHANGES IN DIRECT SPENDING						
Estimated Budget Authority	*	0.1	0.4	0.3	0.1	-0.1
Estimated Outlays	*	0.1	0.3	0.3	0.1	-0.1
CHANGES IN REVENUES						
Estimated Revenues	0.0	0.1	*	-0.2	-0.4	-0.7

NOTES: * = less than \$50 million.

Components may not sum to totals because of rounding.

a. The 2005 amount is the amount appropriated for that year for energy conservation, development, production, and science programs.

TABLE 2. ESTIMATED EFFECTS OF THE ENERGY POLICY ACT OF 2005 ON SPENDING SUBJECT TO APPROPRIATION

	By Fiscal Year, in Millions of Dollars					
	2005	2006	2007	2008	2009	2010
SPENDING SUBJECT TO APPROPRIATION						
Discretionary Spending Under Current Law for Energy and Science Programs						
Budget Authority ^a	5,953	0	0	0	0	0
Estimated Outlays	5,366	2,882	556	86	29	29
Proposed Changes						
Specified Authorization Level	0	9,684	10,454	11,492	2,440	2,539
Estimated Outlays	0	4,765	8,843	10,553	6,889	3,228
Estimated Authorizations:						
Energy Conservation Measures at Federal Agencies						
Estimated Authorization Level	0	93	99	106	107	114
Estimated Outlays	0	76	98	105	108	113
Loan Guarantees for Innovative Technologies						
Estimated Authorization Level	0	85	85	85	85	60
Estimated Outlays	0	85	85	85	85	60
Indian Energy Programs						
Estimated Authorization Level	0	36	51	61	71	56
Estimated Outlays	0	21	41	55	67	60
Renewable Energy Production Incentive (REPI)						
Estimated Authorization Level	0	100	23	13	8	27
Estimated Outlays	0	70	46	16	10	21
Cellulosic Biomass and Cane Sugar Loan Guarantee						
Estimated Authorization Level	0	30	0	40	0	40
Estimated Outlays	0	30	0	40	0	40
Other Provisions						
Estimated Authorization Level	0	46	50	56	14	14
Estimated Outlays	0	43	49	56	14	14
Subtotal, Estimated Authorizations						
Estimated Authorization Level	0	390	307	360	284	310
Estimated Outlays	0	325	318	357	283	307
Total Proposed Changes						
Estimated Authorization Level	0	10,073	10,761	11,852	2,724	2,849
Estimated Outlays	0	5,090	9,161	10,910	7,172	3,535
Discretionary Spending Under the Bill for Energy and Science Programs						
Estimated Authorization Level ^a	5,953	10,073	10,761	11,852	2,724	2,849
Estimated Outlays	5,366	7,972	9,717	10,996	7,201	3,564

a. The 2005 amount is the amount appropriated for that year for energy conservation, development, production, and science programs.

Spending Subject to Appropriation: Specified Authorizations

The legislation would specifically authorize the appropriation of \$36.6 billion over the next five years for several energy-related programs. Assuming appropriation of the authorized amounts, CBO estimates that implementing the bill's programs with specified authorizations would cost \$4.8 billion in 2006 and \$34.3 billion over the 2006-2010 period. That estimate includes:

- Nearly \$2.5 billion for the Department of Energy's (DOE's) energy conservation programs (title I);
- Nearly \$700 million for renewable energy grants and research projects (title II);
- \$3.3 billion for programs related to federal oil and gas resources and for financial assistance to coastal states (title III);
- \$400 million to research and demonstrate new technologies that use coal (title IV);
- \$134 million for programs to research and develop energy resources on Indian lands (title V);
- About \$540 million for a new program to research, develop, design, construct, and operate an Advanced Reactor Hydrogen Cogeneration Project and \$16 million for a nuclear decommissioning project in Arkansas (title VI);
- About \$450 million for research and demonstration of vehicles that use alternative transportation fuels (title VII);
- \$2.8 billion for research, development, and demonstration of hydrogen-based fuel technologies and infrastructure for hydrogen fuels (title VIII);
- \$23 billion to research energy efficiency technologies, renewable energy sources, fossil energy development, basic science, and other energy sources and new technologies (title IX);
- \$45 million to promote a technology infrastructure program and support small business participation in DOE research activities (title X);

- About \$300 million for training personnel to work in the energy technology industry, and providing awards and fellowships in science, mathematics, and energy education (title XI); and
- About \$40 million for incentive payments for advanced power technologies (title XII).

Spending Subject to Appropriation: Estimated Authorizations

Based on information from DOE, the Department of the Interior (DOI), the Environmental Protection Agency (EPA), other affected agencies, and industry sources, CBO estimates that implementing the provisions of the bill that are subject to appropriation and have no specified authorization level would cost \$325 million in 2006 and \$1.6 billion over the 2006-2010 period. Key components of this estimate are described below.

Energy Conservation at Federal Agencies. Title I would amend several energy conservation goals and requirements that apply to the federal government. CBO estimates that implementing those provisions would cost \$500 million over the 2006-2010 period, subject to appropriation of the necessary amounts. Most of those goals, such as reducing energy use by 2 percent per year relative to 2003 consumption and purchasing energy-efficient products when economical, are being pursued under current executive orders. Where practical, the bill would require that hourly electricity meters be installed at all federal buildings by 2012. Such meters would provide data at least once daily and measure hourly consumption of electricity. The data would be available to facility energy managers.

Based on information from the DOE, we assume that it would only be economical to meter 20 percent of the government's inventory of 500,000 buildings and that installing meters would cost, on average, \$4,000 per building. We assume that meters would be installed in 20,000 buildings per year until 2012, when the project would be complete. We estimate that implementing the metering provisions of the legislation would cost \$57 million in 2006 and \$323 million over the 2006-2010 period. CBO estimates that other requirements in this title, such as providing technical assistance to states, establishing new programs and rules for making products more energy-efficient, and monitoring the equipment installed using energy savings performance contracts would cost \$19 million in 2006 and \$177 million over the next five years.

Based on experience in the private sector, metering the hourly electricity use of buildings can lead to reduced energy consumption and reduce costs enough to recoup the cost of installing meters within two to four years. It is possible that this requirement could lead to a future reduction in appropriations for energy use in federal buildings, but any such savings would

depend on how metering information is used by federal agencies. Additionally, metering can reveal where energy use is high, but capital investment and other changes in how federal buildings consume energy would likely be needed to achieve savings. In any case, any savings are not likely to be significant over the next five years because most of the new metering and required capital investment would not be completed until the end of that period or after 2010.

Loan Guarantees for Innovative Technologies. The bill would establish a credit assistance program for energy production technologies that reduce greenhouse gas emissions and employ new or significantly improved technologies over those currently available. Currently, DOE has no authority to provide credit assistance and has developed no plans for how it would use this authority. For this estimate, we assume DOE would provide an 80 percent guarantee of loans worth about \$3.75 billion over the 2006-2010 period. Assuming appropriation of the necessary amounts, CBO estimates that implementing this provision would cost \$400 million over the 2006-2010 period and an additional \$200 million after that. CBO assumes—after providing loan guarantees for \$3.75 billion worth of projects over the next five years—that DOE’s credit assistance under the program would probably accelerate after that period as the department gained experience. The department could offer more or less credit assistance than we have assumed here. All costs of such credit assistance would be subject to appropriation.

Description of Loan Guarantee Program. The bill would provide DOE with broad authority to make loan guarantees to a variety of energy projects, ranging from renewable energy systems, to advanced nuclear energy facilities, integrated coal gasification combined-cycle technology, petroleum coke gasification technology, and carbon sequestration technology, as well as other new technologies. The legislation sets no limits on the number of projects, or total principal that could be guaranteed, nor does it indicate any priority for one type of project over another.

Under the bill, DOE could not guarantee loans for more than 80 percent of a project’s cost; it could sell, manage, or hire contractors to take over a facility to recoup losses in the event of a default, or it could take over a loan and make payments on behalf of borrowers prior to a default. Such payments could result in DOE effectively providing a direct loan with as much as a 100 percent subsidy rate—essentially a grant—that could be used by the borrower to pay off its debts.

Under the Federal Credit Reform Act, funds must be appropriated in advance to cover the subsidy cost of loan guarantees, measured on a present value basis. The costs of such subsidies could vary widely depending on the terms of the contracts and the financial and technical risk associated with different types of projects. According to Standard and Poor’s, the cumulative default risk for projects rated as speculative investments can range from about

20 percent to almost 60 percent, depending on a project's cash flows and contractual terms. Subsidy costs also are affected by amounts that could be recovered by the government in the event of default, which in turn depend on the value of the security backing the guarantee as well as contractual protections. For this estimate, CBO assumes that, over the next five years, DOE would not provide guarantees to projects with a subsidy cost greater than 20 percent.

The bill would authorize DOE to accept payments from borrowers sufficient to cover the subsidy cost of loan guarantees. However, because the technologies covered by the program would be new and would be seeking government backing, CBO expects that projects seeking a guarantee would not be in a position to fund the federal subsidy cost of a loan guarantee. The bill specifies that DOE shall charge fees to cover the costs of administering the credit program.

Types of Projects Guaranteed. The legislation contains general guidelines that projects must meet to qualify for credit assistance and specifies criteria for selecting at least two coal gasification projects. For purposes of this estimate, we assume that DOE would guarantee about \$3 billion in coal gasification projects, which would include the two specified in the legislation and at least one other project. We also assume that the department would use the authority in the bill to provide loan guarantees for \$625 million worth of renewable energy systems, such as biomass or geothermal electricity plants.

Coal Gasification. Gasification projects require large capital investments, ranging from over \$500 million for a 400 megawatt gasification plant to \$1 billion or more for a plant that would produce electric power and other fuels using petroleum coke. Such gasification technologies are not new—they have been tested and deployed to some extent in other countries—but they have not been proven economically competitive in the United States. Profitability would depend on numerous factors, including future electricity and fuel prices; the price, quality, and availability of feedstocks; and various regulatory approvals.

For this estimate, CBO assumes that DOE would provide an 80 percent guarantee on investments totaling about \$3 billion over the next five years, which would include the planning and construction of the two coal gasification plants specifically mentioned in the legislation and additional investment in other clean coal technologies.

Given the current outlook for energy prices, CBO expects that the credit risk of gasification loans would likely fall within the middle of the range for speculative investments, but the risk of default could be higher or lower depending on the contract terms and specific technology. CBO estimates that loan guarantees for such projects would probably involve a 20 percent subsidy. Thus, we estimate that implementing this provision would cost \$350 million over

the 2006-2010 period, assuming appropriation of the necessary amounts. Additional outlays of \$150 million would occur after 2010 as construction progressed on such projects.

Renewable Energy. The legislation also would authorize DOE to make loan guarantees for renewable energy projects such as biomass and geothermal sources for electricity generation. Such projects could range in cost from \$10 million for a small 5 megawatt geothermal plant to \$250 million for an ethanol production plant. We expect that subsidy rates for loans guaranteed under this title would be 20 percent. For this estimate, we assume that \$625 million worth of renewable energy projects would receive an 80 percent loan guarantee over the next 5 years. Such loan guarantees for renewable energy systems would cost \$50 million over the 2006-2010 period, and an additional \$50 million after that period.

Nuclear Energy. Because of DOE's support of emerging nuclear technology through a current program called Nuclear Power 2010, we expect that the department would use the program to provide a guarantee to at least one new nuclear facility over the 2011-2015 period. Such a guarantee could be for more than \$2 billion and carry a significant subsidy cost (perhaps as much as 30 percent).

Indian Energy Programs. Title V would authorize the Department of the Interior to provide grants and loans to Indian tribes for energy resource development projects. That title also would authorize DOE to provide loan guarantees for energy development projects on Indian land and to establish an Office of Indian Energy Policy and Programs. In total, CBO estimates that these programs would cost \$21 million in 2006 and \$244 million over the 2006-2010 period.

DOI Grants and Loans. The bill would authorize DOI to provide loans and grants to Indian tribes for energy resource development and integration and regulation of tribal energy resources and to develop energy resource agreements through leases, business agreements, and rights-of-way. Based on information from DOI, CBO estimates that such grants and loans would cost about \$11 million in 2006 and \$97 million over the 2006-2010 period.

DOE Loan Guarantees. Title V would authorize the Secretary of Energy to guarantee up to \$2 billion in loans for energy projects on Indian lands. Based on information from the Council of Energy Resource Tribes, CBO expects that DOE would provide loan guarantees for a variety of projects on Indian lands, including electricity transmission lines, fossil fuel electricity generation, and renewable fuels. CBO expects that the subsidy cost of loans guaranteed under this program could range from 2 or 3 percent for routine conventional projects to 50 percent or more for unproven technologies.

For this estimate, CBO assumes that about half of the program would provide loan guarantees for electricity transmission lines, which should pose relatively little credit risk under standard contract terms. We assume that the remaining loan guarantees would be divided between fossil fuel electricity generation and renewable fuel projects. Under these assumptions, we estimate that the average subsidy cost for loans guaranteed under the program would be 10 percent. CBO expects that loans would be disbursed over the next 10 years, and we estimate that the loan guarantee program would cost \$7 million in 2006 and \$132 million over the 2006-2010 period, assuming appropriation of the necessary amounts for the estimated subsidy costs.

Office of Indian Energy Policy and Programs. The bill also would authorize DOE to establish a new office that would be responsible for promotion and development of Indian tribal energy concerns. Based on information from DOE, CBO estimates that the salaries, expenses, benefits, space, and travel costs of the DOE employees that would administer such programs would be about \$3 million annually.

Renewable Energy Production Incentive (REPI). The REPI program currently provides cash payments to public utilities and electric cooperatives that generate energy using renewable sources. The payment is based on the annual kilowatt-hours of electricity generated using qualified renewable energy sources. Section 202 would reauthorize the REPI program for an additional 20 years, and make Indian tribes eligible for the program. Annual funding appropriated for the program has not kept pace with applications for payment from eligible utilities. Specifically, eligible utilities have generated electricity from renewable resources since 1994 in an amount that qualifies for about \$76 million in REPI payments that have not been appropriated. Based on information from DOE, CBO estimates that fully funding this program, including the backlog of applications, would cost \$70 million in 2006 and \$163 million over the 2006-2010 period.

Cellulosic Biomass and Cane Sugar Loan Guarantee Program. Section 204 would authorize DOE to issue loan guarantees to help finance the construction of facilities to produce fuel ethanol from agricultural residue. The development of such facilities poses some risk mainly because the technology that would be used to process ethanol from such sources is new and is not well-proven.

For this estimate, we expect that such facilities would be debt-financed and sponsors would recover costs through the sale of ethanol. Prices for ethanol have a history of fluctuating widely and the likelihood of future fluctuations could contribute additional credit risk for such a project. Moreover, the cash flow for these projects also would rely heavily on the cost of purchasing feedstock. According to DOE, a plant's reliance on feedstock from these sources would increase a project's credit risk because prices for feedstock can become competitive if demand for such products increases.

Under credit reform procedures, funds must be appropriated in advance to cover the subsidy cost of loan guarantees, measured on a present value basis. Because of the significant level of risk associated with these types of projects, the costs of subsidizing such loan guarantees could vary widely. At worst, the government could absorb all of the risk, effectively converting the loan guarantees into grants. This provision would authorize DOE to issue loan guarantees limited to \$250 million per project. However, the provision does not set any limits on the number of loan guarantees that could be made. Under this legislation, an applicant for a loan guarantee would have to be currently operating an existing facility that produces at least 50,000 gallons of ethanol per year.

CBO estimates that, over the next five years, DOE would probably provide loan guarantees for three projects, each with a total construction cost of about \$250 million. Because the bill also would require applicants to contribute at least 20 percent of the project's total cost, CBO estimates that the value of each loan guarantee would be about \$200 million. In addition, based on information from DOE, CBO assumes that the department would seek projects with a financial outlook similar to those of bonds rated B- or better by companies such as Standard and Poor's and Moody's. Projects with this rating typically have a cumulative default risk of over 40 percent. Under those assumptions, CBO estimates that loans guaranteed under the bill would be likely to have a subsidy rate between 15 percent and 20 percent and would cost \$110 million over the 2006-2010 period.

Electricity Regulations. Title XII would require the Federal Energy Regulatory Commission (FERC) to establish several new rules for managing the nation's electricity system and governing the business practices of the electricity industry. Such rules would affect transmission services, construction and siting permits for building new transmission lines, and the reliability of the nation's electricity transmission infrastructure. The bill also would repeal the Public Utility Holding Company Act of 1935, require FERC to take over certain regulatory procedures currently undertaken by the Securities and Exchange Commission, and amend the Public Utilities Regulatory Policies Act.

Based on information from FERC, CBO estimates that implementing these provisions would cost \$11 million in 2006 and \$47 million over the 2006-2010 period. Such costs would cover additional data processing and storage, additional staff, and travel related to the agency's new duties. Because FERC recovers 100 percent of its costs through user fees, such additional costs would be offset by an equal change in fees that the commission charges. Hence, these provisions would have no net budgetary impact.

Other Provisions. The bill includes several provisions that would authorize various new studies, reports, and activities related to energy consumption and production. Those provisions would authorize federal agencies to:

- Establish new programs related to federal oil and natural gas resources;
- Authorize a direct loan to upgrade a nonoperational clean-coal technology plant in Alaska to a traditional coal-fired electricity plant;
- Reorganize certain offices within DOE; and
- Prepare several other studies and reports on energy resources and efficiency.

Based on information from the agencies that would be responsible for implementing these provisions, CBO estimates that these activities would cost \$43 million in 2006 and \$176 million over the 2006-2010 period, subject to the availability of appropriated funds.

Direct Spending and Revenues

Several provisions in the bill would affect direct spending and revenues. The estimated effects of these provisions are shown in Table 3. The bill would establish a mandate for the use of renewable motor fuels, provide permanent authorization for the use of energy savings performance contracts; establish an Electric Reliability Organization to manage the reliability of the nation's electricity system; allow the Western Area and Southwestern Power Administrations to accept up to \$100 million in financing from private sources for electricity transmission projects; make changes to federal programs related to oil and natural gas; and require the Rural Utilities Service to change the terms of certain loans.

CBO estimates that enacting the bill also would increase direct spending by \$728 million over the 2005-2010 period but would reduce direct spending by \$591 million over the 2005-2015 period. CBO estimates that enacting the bill would increase net revenues by \$75 million in 2006 and would result in a net loss of revenues totaling \$1.2 billion over the 2006-2010 period and \$1 billion over the 2006-2015 period. In addition, we estimate that new civil penalties imposed by the bill would result in an increase in revenues of less than \$500,000 annually.

TABLE 3. ESTIMATED DIRECT SPENDING AND REVENUE EFFECTS OF THE ENERGY POLICY ACT OF 2005

	By Fiscal Year, in Millions of Dollars										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
CHANGES IN DIRECT SPENDING											
Renewable Fuels Requirement and Agricultural Support Programs											
Estimated Budget Authority	0	0	-59	-164	-366	-569	-669	-697	-750	-768	-771
Estimated Outlays	0	0	-59	-164	-366	-569	-669	-697	-750	-768	-771
Energy Savings Performance Contracts											
Estimated Budget Authority	0	0	301	307	314	320	327	334	341	348	355
Estimated Outlays	0	0	256	306	313	319	326	333	340	347	354
Electric Reliability Organization											
Estimated Budget Authority	0	100	102	104	106	108	110	113	115	117	120
Estimated Outlays	0	100	102	104	106	108	110	113	115	117	120
Financing of Federal Electricity Transmission Projects											
Estimated Budget Authority	0	0	50	0	50	0	0	0	0	0	0
Estimated Outlays	0	0	10	20	30	20	20	0	0	0	0
Federal Oil and Natural Gas Programs											
Estimated Budget Authority	0	8	7	10	9	12	5	11	8	10	7
Estimated Outlays	0	8	7	10	9	12	5	11	8	10	7
Assistance for Rural Communities with High Energy Costs											
Estimated Budget Authority	46	0	0	0	0	0	0	0	0	0	0
Estimated Outlays	46	0	0	0	0	0	0	0	0	0	0
Total Changes in Direct Spending Under the Energy Policy Act of 2005											
Estimated Authorization Level	46	108	401	257	113	-129	-227	-239	-286	-293	-289
Estimated Outlays	46	108	316	276	92	-110	-208	-240	-287	-294	-290
CHANGES IN REVENUES ^a											
Renewable Fuels Requirement											
	0	0	-64	-264	-509	-754	-262	0	0	0	0
Electric Reliability Organization - Fees Charged on Electricity Consumers											
	0	75	77	78	80	81	83	84	86	87	89
Total Changes in Revenues Under the Energy Policy Act of 2005											
	0	75	13	-186	-429	-673	-179	84	86	87	89

a. Net of income and payroll tax offsets.

Renewable Fuels Requirement and Agricultural Support Programs. CBO estimates that enacting section 204 would lower direct spending by about \$4.8 billion over the next 10 years and lower revenues by about \$1.9 billion over the same period.

Section 204 would require that motor fuels sold by a refiner, blender, or importer contain specified amounts of renewable fuel. The required volume of renewable fuel would start at 4 billion gallons in 2006, escalate to 8 billion gallons for 2012, and increase thereafter at the rate of growth in gasoline consumption. CBO expects that the use of renewable fuels would be significantly affected starting in 2007, when the bill's renewable fuel requirement would exceed the amount of renewable fuel use CBO estimates under current law.

CBO expects that most of the fuel produced to meet the requirements under the bill would be ethanol. Because ethanol is primarily derived from corn, demand for corn would rise with the requirement to use more ethanol. CBO expects that corn prices would increase up to 10 percent by the end of the 2007-2015 period. Accordingly, the costs of federal programs to support farm prices and provide income support to agricultural producers would fall over the 2007-2015 period. CBO estimates that spending for farm price and income supports would decline by about \$4.8 billion over the 2007-2015 period.

Section 204 also would affect revenues. Because ethanol-blended fuels are taxed at a lower rate than gasoline, receipts from taxes on motor fuels would change when ethanol use changes. CBO estimates that increased ethanol use would reduce revenues starting in 2007, and continue affecting revenues through part of 2011. Although ethanol use would increase significantly under the bill, the special tax treatment of ethanol fuels under current law will expire at the end of calendar year 2010. Therefore, changes in ethanol use would not significantly affect federal revenues after that time.

Energy Savings Performance Contracts (ESPCs). The bill would provide authorization for the use of energy savings performance contracts through 2016. Under current law, the authority to enter into such contracts expires at the end of fiscal year 2006. Overall, CBO estimates that entering into ESPCs would increase direct spending by \$256 million in 2007 and \$2.9 billion over the 2005-2015 period.

ESPCs enable federal agencies to enter into long-term contracts with an energy savings company (ESCO) for the acquisition of energy-efficient equipment, such as new windows, lighting, and heating, ventilation, and air-conditioning systems. Using such equipment can reduce the energy costs for a facility, and the savings from reduced utility payments can be used to pay the contractor for the equipment over time. Because the government does not pay for the equipment at the time it is acquired, the ESCO borrows money from a nonfederal lender to finance the acquisition and installation of the equipment. When it signs the ESPC, the government commits to paying for the full cost of the equipment as well as the interest

costs on the ESCO's borrowing for the project. Since the ESCO faces higher borrowing costs than the U.S. Treasury, total interest payments for the equipment acquisition will be higher than if the government financed the acquisition of the equipment directly with appropriated funds.

The obligation to make payments for the equipment and the financing costs is incurred when the government signs the ESPC. Under current law, agencies can use ESPCs to acquire new energy-efficient equipment, paying over a period of up to 25 years without an appropriation for the full amount of the purchase price. Thus, consistent with government accounting principles, CBO believes that the budget should reflect that commitment as new obligations at the time that an ESPC is signed and that the authority to enter into these contracts without budget authority for the full amount of the purchase price constitutes direct spending.

CBO's estimate of direct spending reflects an amount equal to the cost of the energy conservation measures as installed, plus the portion of borrowing costs attributable to contract interest rates that exceed U.S. Treasury interest rates. (Borrowing costs equivalent to the amount of Treasury interest that would be paid if the equipment were financed with appropriated funds are not counted against this authority, consistent with the budget scorekeeping of regular interest costs associated with federal spending; that is, Treasury interest effects are not counted as a direct cost or savings to any particular legislative provision.)

Since 1998, the Department of Energy estimates that agencies have entered into ESPCs valued over \$800 million, \$252 million of that in 2003 alone. CBO estimates that, because the federal building inventory is aging, those contracts would continue to be used over time at roughly the same rate as currently used—about \$300 million in 2007 and increasing with anticipated inflation in each of the following years. Thus, we estimate that extending the authorization for ESPCs would increase direct spending by \$2.9 billion over the 2007-2015 period.

Electric Reliability Organization. The bill would authorize the Federal Energy Regulatory Commission (FERC) to exercise authority over the reliability of the nation's electricity transmission system through the establishment of an Electric Reliability Organization (ERO). Under the bill, FERC would select an organization to become the ERO based on several criteria, including the ability of the organization to charge fees to end users of the electricity system to cover its costs. CBO believes the ERO's collections and spending should be included in the federal budget because this new entity would conduct inherently governmental activities that could not be undertaken by a purely private organization. FERC would approve and enforce the collection of fees charged by the ERO.

Based on information from the North American Electric Reliability Council (NERC), CBO estimates that the newly formed ERO and its regional affiliates would spend between \$75 million and \$150 million a year. For this estimate, CBO assumes that spending by the ERO and its regional affiliates would start at \$100 million a year and increase by the rate of anticipated inflation. Thus, we estimate that spending by the ERO would total about \$100 million in 2006 and \$1.1 billion over the next 10 years.

Because the ERO and the regional organizations created by it would be governmental in nature, CBO believes that the collection of these fees should be recorded as revenues in the budget. Based on information from NERC, CBO estimates that net revenues collected by an ERO and its regional organizations would total \$75 million in 2006, \$391 million over the 2006-2010 period, and \$820 million over the 2006-2015 period.

Currently, the federal power marketing administrations, including the Tennessee Valley Authority and the Bonneville Power Administration, pay dues to the regional affiliates of NERC. We would expect that those payments would continue and would increase under the new regulatory scheme established by the ERO. Any increase in those fees would be offset by changes in the rates charged to customers of the federal agencies.

Financing of Federal Electricity Transmission Projects. The bill would authorize DOE's Western Area and Southwestern Power Administrations to accept from private entities up to \$100 million to assist in the design, development, construction, and operation of transmission projects that would contribute to reducing congestion on existing electricity lines. Such financing would be equivalent to incurring new federal debt, and the spending of such borrowed amounts should be recorded in the budget as direct spending. We estimate that such spending would cost \$10 million in 2007 and \$100 million over the 2007-2015 period.

Federal Oil and Natural Gas Programs. Title III would make several changes to federal programs related to the production of oil and natural gas. Several of these provisions would provide private producers of those resources with various forms of royalty relief or other credits that would reduce federal receipts, particularly over the next few years. By creating incentives for greater production of oil and natural gas, CBO expects that net receipts from royalties would eventually increase under some of those provisions, but not for several years. Based on information from DOI, CBO estimates that these provisions would result in a net loss of offsetting receipts (a credit against direct spending) totaling \$8 million in 2006 and \$87 million over the next 10 years

Assistance for Rural Communities with High Energy Costs. Section 210 of the bill would require the Rural Utilities Service (RUS) to change the loan terms offered to eligible electric cooperatives in Alaska that currently have loans provided by that agency. The bill would require that the term of loans be changed to reduce the electricity rates charged to

customers. Under the Federal Credit Reform Act, the cost of a loan modification is the change in the subsidy cost of the loan (on a present value basis) because of the modified loan terms. CBO estimates that the cost of this provision would be \$46 million and would be recorded in 2005, the assumed year of enactment.

Based on information from RUS, CBO estimates that six utilities would be eligible for the assistance authorized by the bill. The bill would require that the agency provide such assistance through deferrals, extensions, or reductions of loans. Currently, the six eligible borrowers have a total outstanding principal of \$57 million, at an average interest rate of about 3.5 percent. It is possible that the agency could decide to provide zero-interest loans, or lengthen the term of loans, thereby reducing payments owed to the government. The legislation would authorize the agency to forgive the full amount of the outstanding principal without recourse to the borrowers. CBO assumes that the cooperatives in the highest distress areas would apply for loan forgiveness and the remaining cooperatives would apply to receive zero-interest loans. CBO estimates that the net present value for all payments that would have been provided under current law results in a cost to the government of \$46 million, which would be recorded in 2005, the assumed year of enactment.

Civil Penalties. The bill also could affect governmental receipts and direct spending by establishing and increasing certain civil and criminal penalties. CBO estimates that any resulting increase in receipts and spending would be less than \$500,000 annually. Such penalties would be established for violations of regulations relating to:

- Violations of the Price-Anderson Act,
- Nuclear safety at nonprofit institutions,
- Willful destruction of a nuclear facility,
- The reliability of the nation's electricity system,
- Market trading of electricity, and
- The sale of renewable fuels.

Section 385 would raise the maximum civil and criminal penalty amounts imposed for violations of the Natural Gas Act (NGA) and the Natural Gas Policy Act of 1978. Currently the maximum amount FERC may assess varies depending on the violation, however, most fall between \$500 and \$25,000 per violation. The bill would increase those amounts to as much as \$1 million for violations of the NGA. Based on information from FERC, CBO expects that the penalty increases and the additional civil penalty authority would serve as a significant deterrent so that firms would very likely comply with the regulations, resulting in no significant effect on revenues.

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

The bill contains numerous mandates as defined in UMRA that would affect both intergovernmental and private-sector entities.

CBO cannot determine the cost of all the mandates in the bill because several of the requirements established by the bill would hinge on future regulatory action about which information is not available. Though CBO cannot estimate the cost of each mandate, we expect that the total cost of private-sector mandates in the bill would exceed the annual threshold established in UMRA (\$123 million in 2005, adjusted annually for inflation). That conclusion is based on our analysis of the renewable fuels standard, which would impose substantial costs on the motor fuels industry.

CBO estimates, however, that the total cost of complying with intergovernmental mandates in the bill would not exceed the threshold established in UMRA (\$62 million in 2005, adjusted annually for inflation). The bill also would authorize numerous grants and initiatives that would benefit state, local, and tribal governments; any costs those governments incur for these projects and initiatives would result from complying with conditions for receiving this federal assistance.

Based on its review of the bill, CBO expects that the mandates contained in the bill's titles on renewable energy (title II), nuclear energy (title VI), electricity (title XII), and energy efficiency (title I) would have the greatest impact on private-sector entities and state and local governments.

Renewable Energy (Title II) - Renewable Fuels Standard

Section 204 would impose a private-sector mandate on domestic refiners, blenders, and importers of gasoline by requiring that gasoline sold or dispensed to consumers in the contiguous United States contains a minimum volume of renewable fuels. The bill also would establish a credit trading program for renewable fuels to allow producers who use more ethanol than would be required to sell credits to producers who would be in deficit. Those credits could only be used in the same year they are generated. The required volume of renewable fuel would start at 4.0 billion gallons in 2006 and increase to 8.0 billion gallons by 2012. CBO expects that the renewable fuels requirement would be met in 2006 without additional costs to the industry. The industry would begin to experience additional costs in 2007 as it begins to blend or purchase greater amounts of gasoline containing renewable fuels than it would in the absence of a standard. Based on Department of Energy estimates of the price impacts of similar renewable fuels standards on gasoline prices, CBO estimates that the direct costs of the renewable fuel requirement on private-sector entities would exceed UMRA's annual threshold for private-sector mandates.

Nuclear Matters (Title VI) - Increase in the Annual Premium

Under current law, in the event that losses from a nuclear incident exceed the required amount of private insurance, Nuclear Regulatory Commission licensees (both public and private) are assessed a charge to cover the shortfall in damage coverage. Section 603 would increase the maximum annual premium from \$10 million to \$15 million. CBO has determined that raising the maximum annual premium would increase the costs of existing mandates and would thereby impose both intergovernmental and private-sector mandates under UMRA. Because the probability of a nuclear accident resulting in losses exceeding the amount of private insurance coverage is low, CBO estimates that the annual costs for public and private entities of complying with the mandates (in expected value terms) would not be substantial over the next five years.

Electricity (Title XII)

Mandatory Reliability Standards. Section 1211 would require users of the bulk-power system to comply with standards issued by a newly established Electric Reliability Organization designated by the Federal Energy Regulatory Commission. Those users include intergovernmental entities such as municipally owned utilities as well as private-sector entities, including utilities, nonutility generators, and marketers. Currently, the North American Electric Reliability Council (NERC), a voluntary organization, promotes electricity reliability. According to several industry experts, almost all public and private-sector users of the bulk power system voluntarily comply with standards issued by NERC. The mandate would impose no significant additional costs in the short term relative to current practice since the ERO is not expected to significantly change current standards. In the future, market conditions may prompt the ERO to impose stricter standards to maintain reliability. In that case, costs for users of the bulk power system—that could otherwise elect to disregard NERC standards under current law—could increase substantially.

Mandatory Assessments. Section 1211 would direct the ERO to assess fees and dues to cover the costs of implementing and enforcing ERO standards. Although there is some uncertainty as to how those fees would be assessed, the most likely scenario is that the ERO would assess fees on its members, which is the current practice of NERC. As NERC members include both public and private entities, such fees would constitute intergovernmental and private-sector mandates as defined in UMRA.

CBO estimates that the increment in fee collections for the proposed compliance, monitoring, and enforcement activities under the bill would be about \$50 million annually. Based on industry data, CBO assumes that roughly 80 percent to 85 percent of the collections would

be borne by the private sector and another 10 percent to 14 percent would be borne by state and local government entities. The remainder would be paid by federally owned entities.

Regulatory Fees. The bill would require FERC to assume certain regulatory procedures that are currently under the jurisdiction of the Securities and Exchange Commission. In addition, the bill would require FERC to establish new rules for managing the nation's electricity system and governing the business practices of the electricity industry. Under current law, FERC has the authority to collect fees from investor-owned utility companies to offset its costs. The duty to pay those fee increases would impose a private-sector mandate on those entities. Based on information from FERC, CBO expects that investor-owned utilities would have to pay \$11 million in 2006 and \$47 million over the 2006-2010 period.

State Authority Over Electric Utilities. Section 1221 would preempt state authority to take action to ensure the safety, adequacy, and reliability of electric service within that state if the state's actions are inconsistent with the federal reliability standards. This preemption of state authority would impose no additional costs on state governments.

Sections 1251, 1252, and 1254 would require state regulators to review the use of net metering, time-based metering, demand-response systems, and interconnection services before permitting electric utilities to implement these federal standards. These sections contain intergovernmental mandates because they would increase a state's responsibilities under the existing mandates in the Public Utilities Regulatory Policies Act. However, CBO estimates that the states' costs to review additional standards would not be significant.

Jurisdiction over the Termination Payments of Certain Contracts. Section 1270 would grant the Federal Energy Regulatory Commission exclusive jurisdiction to determine whether the requirement to pay termination payments under certain contracts entered into between sellers and buyers of wholesale electricity was unjust and unreasonable. These contracts are currently before the Bankruptcy Court in the Southern District of New York. FERC has asserted jurisdiction over termination payments under wholesale power contracts for periods a seller was found to be in violation of Commission orders. While legislative provisions that would severely limit or extinguish a person's rights in court have been considered to be mandates under UMRA, CBO cannot determine if the language in this provision would extinguish the sellers' rights before the Bankruptcy Court or would simply make clear FERC's jurisdiction over the termination payments.

Energy Efficiency (Title I)

Energy Conservation. Section 135 would direct the Secretary of Energy to prescribe energy conservation standards restricting “standby-mode” energy consumption of household and commercial appliances. According to industry sources and DOE, up to 9,000 types of household and commercial appliances could be affected by this provision, and further, many such products may require significant modification to meet the standard for energy consumption in standby mode. DOE has not yet determined how it would implement this provision. Therefore, we cannot estimate the incremental cost to the industry of meeting such requirements.

If DOE applies standards to the majority of products potentially affected, costs to industry could be substantial. The magnitude of the costs also depends on the stringency of new standards that would affect the appliance manufacturers. For example, the bill would require DOE to apply new energy conservation standards to certain furnaces. Roughly three million oil, gas, and electric furnaces would have to comply with the new standards. According to a DOE report, the incremental costs to manufacturers of improving energy efficiency could range from \$5 to \$175 per unit, depending on the level of the standard that must be met. If DOE applies relatively high efficiency standards to the appliances covered under the bill, the incremental costs to the industry could be large, and thus could exceed UMRA’s threshold for private-sector mandates.

In prescribing the energy conservation standards required under sections 135 and 136 for household appliances and consumer products, the Secretary would preempt state and local energy efficiency standards currently in place for those products and appliances. CBO estimates that no costs would result from this preemption.

Testing Requirements. Section 135 would direct the Secretary of Energy to prescribe energy efficiency testing requirements for appliances specified in the bill and future appliances to be determined by the Secretary. The provision would require manufacturers of those appliances to have their appliances tested to determine energy efficiency ratings. The testing and rating would be conducted by the DOE. CBO estimates that the cost to comply with the mandate to have appliances tested would not be large.

Ban of Mercury Vapor Lamp Ballasts. Section 135 would prohibit the manufacturing and importing of mercury vapor lamp ballasts after January 1, 2008. A ballast is an electrical device for starting and regulating fluorescent and certain other lamps. The mercury vapor lamp ballast has been decreasing in its share of the market for ballasts during the last 20 years. Moreover, according to industry contacts, few, if any mercury vapor lamp ballasts are imported into the United States. The majority of such ballasts are manufactured in the United States for domestic use. According to industry sources, mercury vapor lamp ballasts

are now only manufactured for rural street lights and residential floodlights. Based on information provided by industry and government sources, the value of annual shipments of such ballasts amounts to about \$15 million. The cost of the mandate, measured in lost net income to the industry, would be less than that amount.

Energy Efficiency Resources Program. Section 141 would require ratemaking authorities for gas and electric utilities (including states, local municipalities, or co-ops) to either demonstrate that an energy efficiency resource program is in effect or to hold a public hearing regarding the benefits and feasibility of implementing an energy efficiency resources program for electric and gas utilities. CBO estimates no significant costs would result from this requirement.

PREVIOUS CBO ESTIMATES

Federal Budget Effects

On April 19, 2005, CBO transmitted a cost estimate for H.R. 1640, the Energy Policy Act of 2005, as ordered reported by the House Committee on Energy and Commerce on April 13, 2005. Like this legislation, H.R. 1640 would authorize appropriations for a wide array of energy-related activities. Differences between the estimates of spending subject to appropriation under this bill and H.R. 1640 reflect differences in authorization levels, particularly for the Low-Income Home Energy Assistance Program and activities related to science and coastal impact assistance.

Like H.R. 1640, this legislation would authorize FERC to establish an ERO to oversee the nation's electricity transmission system. Both bills would authorize the new organization to collect and spend fees (which would be classified as revenues). However, H.R. 1640 would cap those fees at \$50 million a year. This legislation contains no such cap; therefore, our estimates of direct spending and revenues related to the proposed ERO are higher than under H.R. 1640.

CBO previously completed two cost estimates for bills that would permanently authorize the use of ESPCs: H.R. 1640 and H.R. 1533, the Federal Energy Management Improvement Act of 2005. CBO transmitted a cost estimate for H.R. 1533, as ordered reported by the House Committee on Government Reform, on April 13, 2005. Provisions of this legislation and H.R. 1533 related to ESPCs are similar; however, H.R. 1640 would cap total payments under ESPCs at \$500 million a year. Therefore, our estimate of spending for ESPCs is lower under H.R. 1640 than under this bill or H.R. 1533. Also, this bill would authorize the use of ESPCs through 2016.

Finally, on May 23, 2005, CBO transmitted a cost estimate for S. 606, the Reliable Fuels Act, as ordered reported by the Senate Committee on Environment and Public Works on March 16, 2005. Like this legislation, S. 606 would require that motor fuels sold by a refiner, blender, or importer contain specified amounts of renewable fuel but with two key differences. First, the required level of renewable fuels under this bill would be higher than under S. 606. Second, S. 606 would allow producers of motor fuels to accumulate ethanol-use credits for exceeding the ethanol target in any year. Under S. 606, such credits could be used in subsequent years to meet the ethanol target. In contrast, this legislation contains no such provision for use of credits over multiple years. As a result, CBO expects that demand for corn-based ethanol under this bill would increase more than under S. 606, leading to higher demand for corn and, subsequently, a larger decrease in federal spending to support farm prices and provide income to farmers.

Mandates

The bill includes many of the same state and local mandates as in H.R. 6, the Energy Policy Act of 2005, as approved by the House Committee on Resources on April 20, 2005. However, the estimate of state and local mandates in this bill is not identical to the statement included in CBO's cost estimate for that earlier legislation. Section 1502 of H.R. 6 is not included in this bill. That provision would shield manufacturers of motor fuels and other persons from liability for claims based on defective product relating to motor vehicle fuel containing methyl tertiary butyl ether or renewable fuel. That provision in H.R. 6 would impose an intergovernmental mandate as it would limit existing rights to seek compensation under current law.

The state and local mandates in this bill that are the same as the mandates in H.R. 6 include the increase in the retrospective premiums, the mandatory reliability standards and assessments, the state authority over electric utilities, and the energy conservation provision. In contrast, section 141 of the legislation was not included in H.R. 6. That provision would require ratemaking authorities for gas and electric utilities (including states, local municipalities, or co-ops) to either demonstrate that an energy efficiency resource program is in effect or to hold a public hearing regarding the benefits and feasibility of implementing an energy efficiency resources program for regulated and nonregulated electric and gas utilities. CBO estimates that no significant costs would result from this requirement.

Regarding private-sector mandates, most of the mandates contained in the bill were also contained in the legislation considered in the House. H.R. 6 and H.R. 1640 contain a mandate establishing a renewable fuel standard for motor fuels, which would impose costs on refiners, importers, and blenders of gasoline similar to the one in the Renewable Fuels title of this bill. However, the renewable fuels standard in the House bills would require the industry to use a lower yearly level of renewable fuels than the standard contained in this bill.

In the case of the House bills, CBO found that the motor fuels industry would be able to meet the renewable fuels requirement in the first five years that the mandate is in effect without significant additional costs to the industry. The House bills also contain a mandate that would extend the existing requirement for licensees to pay fees to offset roughly 90 percent of the Nuclear Regulatory Commission's annual appropriation. That provision is not included in the bill.

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