CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE

November 9, 2007

H.R. 3221

Renewable Energy and Conservation Tax Act of 2007

As passed by the House of Representatives on August 4, 2007

SUMMARY

H.R. 3221 would modify numerous federal energy policies, programs, and tax measures. CBO and the Joint Committee on Taxation (JCT) estimate that enacting the legislation would increase direct spending by $0.9 billion over the 2008-2012 period and by $1.7 billion over the 2008-2017 period. CBO and JCT also estimate that enacting H.R. 3221 would increase revenues by $1.6 billion over both the 2008-2012 period and the 2008-2017 period.

H.R. 3221 also would authorize appropriations over the 2008-2012 period for existing and new energy-related programs. CBO estimates that funding those activities would increase discretionary spending by $1.5 billion in 2008 and $33.3 billion over the 2008-2012 period, assuming appropriation of the necessary amounts.

CBO has reviewed the nontax provisions of H.R. 3221 and determined that they contain intergovernmental mandates as defined in the Unfunded Mandates Reform Act (UMRA). CBO estimates that the annual cost of those mandates would not exceed the threshold established in UMRA ($66 million for intergovernmental mandates in 2007, adjusted annually for inflation). JCT has reviewed the tax provisions of the act and determined that they contain no intergovernmental mandates within the meaning of UMRA.

In addition, CBO has determined that the nontax provisions of H.R. 3221 contain numerous private-sector mandates as defined in UMRA. CBO expects that the mandates contained in the bill's titles on natural resources (title VII) and energy and commerce (title IX) would have the greatest impact on private-sector entities. For the provisions reviewed by CBO, we estimate that the cost of complying with the private-sector mandates, in aggregate, would exceed the annual threshold established in UMRA ($131 million in 2007, adjusted annually for inflation) in at least one of the first five years the mandates are in effect.

JCT has determined that the tax provisions of the bill contain two private-sector mandates as defined in UMRA: (1) the denial of deduction for income attributable to domestic production of oil, natural gas, or primary products thereof; and (2) clarification of determination of foreign oil and gas extraction income. Based on information provided by JCT, CBO estimates that the costs of the mandates would significantly exceed the annual threshold established in UMRA.

Section 4 of the Unfunded Mandates Reform Act excludes from the application of that act any legislative provisions that are necessary for the ratification or implementation of international treaty obligations. CBO has determined that title VIII, subtitle D, part 2 of the bill falls within that exclusion because it would implement the Protocol of 1997 to the International Convention for the Prevention of Pollution from ships, 1973 (MARPOL). Consequently, CBO has not reviewed those provisions for the presence of mandates.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of H.R. 3221 is summarized in Table 1. The costs of this legislation fall primarily within budget functions 050 (national defense), 150 (international affairs), 250 (general science, space, and technology), 270 (energy), 300 (natural resources and environment), 350 (agriculture), 370 (commerce and housing credit), 600 (income support), and 950 (undistributed offsetting receipts).

TABLE 1. ESTIMATED BUDGETARY IMPACT OF H.R. 3221, AS PASSED BY THE HOUSE

	By Fiscal Year, in Millions of Dollars						
	2008	2009	2010	2011	2012	2008-2012	2008-2017
Changes in Direct Spending [a]							
Estimated Budget Authority	32	179	588	402	378	1,579	2,492
Estimated Outlays	-229	66	535	266	250	888	1,690
Changes in Revenues [a]	164	410	402	544	113	1,640	1,647
Changes in Spending Subject to Appropriations							
Estimated Authorization Level	7,275	10,163	10,542	9,298	9,022	46,300	n.a.
Estimated Outlays	1,455	4,535	8,153	9,438	9,752	33,333	n.a.

Note: n.a. = not applicable.

a. See Table 2 for annual changes in direct spending and revenues over the 2008-2017 period.

BASIS OF ESTIMATE

For this estimate, CBO assumes that H.R. 3221 will be enacted before the end of calendar year 2007 and that authorized amounts will be provided near the start of each fiscal year. The following sections describe the major budgetary effects of each title of H.R. 3221.

Direct Spending

CBO estimates that enacting H.R. 3221 would reduce direct spending by $229 million in 2008 but increase it by $888 million over the 2008-2012 period and $1.7 billion over the next 10 years. Major provisions affecting direct spending are presented by title in Table 2 and discussed below.

Title II: International Climate Cooperation and Re-engagement. Title II would establish an International Clean Energy Foundation and allow it to accept and spend gifts and donations. Any gifts and donations to the foundation would increase revenues. The spending of such revenues would constitute direct spending, but CBO estimates this provision would have no significant effect on direct spending and revenues.

Title IV: Science and Technology. Title IV would create a Solar Energy Industries Research and Promotion Board within the Department of Energy (DOE) to advance the use of solar energy products. The legislation would require manufacturers of solar energy products to pay assessments to the board, which would be used for solar research, marketing campaigns, and some administrative expenses. Such assessments would generate revenues starting in 2009. The legislation would authorize the board to spend 50 percent of the projected assessments for each year, plus interest earnings on the balance of the funds. CBO estimates that resulting increases in direct spending would total about $8 million over the next 10 years.

Title V: Agriculture. Title V would reauthorize, amend, and expand energy programs created in the Farm Security and Rural Investment Act of 2002 that direct the U.S. Department of Agriculture (USDA) to promote the production, use, research, and development of renewable and biobased sources of energy. CBO estimates that enacting this title would increase direct spending by $1.6 billion over the 2008-2012 period and $5.3 billion over the 2008-2017 period.

TABLE 2. ESTIMATED CHANGES IN DIRECT SPENDING AND REVENUES UNDER H.R. 3221

	By Fiscal Year, in Millions of Dollars											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008-2012	2008-2017
CHANGES IN DIRECT SPENDING												
Title IV, Science and Technology												
Estimated Budget Authority	0	1	1	1	1	1	1	1	1	1	4	9
Estimated Outlays	0	0	1	1	1	1	1	1	1	1	3	8
Title V, Agriculture Energy												
Estimated Budget Authority	266	293	356	477	784	769	769	768	767	767	2,176	6,016
Estimated Outlays	138	213	295	357	551	694	756	762	765	767	1,554	5,298
Combined Effect of Titles VI: Carbon-Neutral Government, Title VII: Transportation and Infrastructure, and Title IX: Energy and Commerce												
Estimated Budget Authority	378	387	434	344	148	48	53	54	54	503	1,691	2,403
Estimated Outlays	245	345	438	353	253	98	52	54	54	444	1,634	2,336
Title VII, Natural Resources Committee Provisions												
Estimated Budget Authority	-781	-502	-541	-620	-724	-800	-1,010	-966	-879	-834	-3,168	-7,657
Estimated Outlays	-787	-507	-541	-620	-724	-800	-1,010	-966	-883	-834	-3,179	-7,672
Title XII, Conservation												
Estimated Budget Authority	169	0	338	200	169	169	169	169	169	169	876	1,721
Estimated Outlays	169	0	338	200	169	169	169	169	169	169	876	1,721
Total Changes in Direct Spending												
Estimated Budget Authority	32	179	588	402	378	187	-18	26	112	606	1,579	2,492
Estimated Outlays	-229	66	535	266	250	162	-32	20	105	547	888	1,690
CHANGES IN REVENUES												
Title IV, Science and Technology												
Estimated Revenues	0	1	1	1	1	1	2	2	2	2	4	13
Title XI, Production Incentives												
Estimated Revenues	-294	-433	-348	-448	-723	-964	-1,077	-1,091	-1,168	-1,236	-2,242	-7,777
Title XII, Conservation												
Estimated Revenues	-109	-297	-538	-481	-723	-856	-776	-764	-648	-613	-2,145	-5,802
Title XIII, Revenue Provisions												
Estimated Revenues	567	1,139	1,287	1,472	1,558	1,647	1,732	1,826	1,934	2,052	6,023	15,213
Total Changes in Revenues	164	410	402	544	113	-172	-119	-27	120	205	1,640	1,647

Notes: Amounts may not sum to totals because of rounding.

Changes in revenues in titles XI, XII and XIII were estimated by the Joint Committee on Taxation.

Under the legislation, a new Feedstock Flexibility Program would subsidize the use of sugar as a feedstock in the production of ethanol, thus increasing the demand for sugar. The resulting savings in USDA's sugar support program, combined with the spending for the Feedstock Flexibility Program, would reduce outlays by $68 million over the 2008-2012 period and by $158 million over the 2008-2017 period. In addition, USDA's bioenergy program subsidizes the cost of agricultural feedstocks used to produce ethanol or other biofuels. CBO estimates that amendments made by H.R. 3221 to that program would increase direct spending by $865 million over the 2008-2012 period and $2.3 billion over the 2008-2017 period.

Other provisions in this title would authorize direct spending for several new grant and loan guarantee programs supporting the development of biomass and biofuels projects. Based on the amounts specified in the act, CBO estimates that outlays for those programs would total $0.8 billion over the next five years and $3.2 billion over the 2008-2017 period.

Combined Effects of Title VI: Carbon-Neutral Government, Title VIII: Transportation and Infrastructure, and Title IX: Energy and Commerce. H.R. 3221 would establish various targets and standards for federal agencies to increase energy efficiency, reduce greenhouse gasses, and increase the use of renewable energy resources in agency operations. It also would expand and extend federal agencies' authority to use alternative financing mechanisms to fund investments in efficiency measures as well as renewable and other energy supplies. CBO estimates that enacting those new directives and authorities—which are included in various provisions in titles VI, VIII, and IX—would increase net direct spending by $1.6 billion over the 2008-2012 period and $2.3 billion over the 2008-2017 period.

Federal Energy Efficiency and Renewable Energy Initiatives. The federal government is the largest single consumer of energy in the United States. Current law direct federal agencies to meet certain goals for reducing the amount of energy used and to increase the consumption of electricity that is generated from renewable sources such as wind and solar energy. To support investments related to achieving those goals, federal agencies can sometimes use long-term contracts and borrowed funds (known as third-party financing) to pay for their costs.

Changes in federal goals related to energy consumption. H.R. 3221 would expand certain goals related to federal agencies' energy consumption. Specifically, the legislation would:

- Require federal agencies to reduce their emissions of greenhouse gases by at least 2 percent annually in order to achieve net zero emissions by 2050;

- Accelerate the timetable for federal energy and water-efficiency investments by requiring agencies to complete audits of major buildings within 18 months after enactment of the legislation and implement all recommended efficiency measures within a two-year period;

- Expand the types of efficiency measures being implemented by requiring agencies to implement all energy and water-efficiency measures with a payback period of 12 years or less (compared to the current practice of targeting projects with a payback period of 10 years or less);

- Direct agencies to increase their use of geothermal heat pumps; and

- Direct agencies to reduce their peak level of demand for electricity by 2 percent annually with a goal of reducing each agency's peak demand by 20 percent by 2018.

Changes to long-term contracting tools. To help achieve those new requirements (as well as existing requirements), H.R. 3221 would modify federal agencies' authority to use certain long-term contracts that enable nonfederal entities to finance federal capital project costs. H.R. 3221 would expand agencies' authority to enter into energy savings performance contracts (ESPCs), a specific type of long-term contract, for a variety of new purposes. The act also would authorize agencies to enter into such long-term financing contracts with utilities. (Under current law, such contracts are limited to 10 years.)

Specifically, provisions of H.R. 3221 would:

- Expand the scope of projects that can be financed by ESPCs to include cogeneration and certain thermal energy projects as well as renewable energy sources;

- Permanently extend agencies' authority to enter into ESPCs beyond 2016; and

- Allow agencies to sign long-term contracts—up to 30 years—for certain electricity supplies.

Under ESPCs or long-term utility contracts, the government is obligated to make payments in the future. Using such contracts to finance facilities intended to produce electricity for federal consumption is equivalent to exercising borrowing authority for a federal activity even if the initial spending for such a facility is done by a private entity on behalf of the government. Thus, consistent with governmentwide accounting principles, the budget should record those commitments as new obligations at the time the government enters into such contracts.

Taken together, CBO expects that federal agencies would significantly increase their use of long-term contracts to invest in renewable energy systems, energy-efficiency measures, and other capital projects to meet existing energy goals and new goals under H.R. 3221. Based on current levels of investment in such activities and information from DOE and other agencies, we estimate additional direct spending would total $1.6 billion over the 2008-2012 period and $2.3 billion over the 2008-2017 period.

Other Provisions in Title VI: Photovoltaic System. H.R. 3221 would require the General Services Administration (GSA) to install a photovoltaic system at a DOE facility in Washington, D.C. Photovoltaic systems use solar-power technology to convert energy from the sun into electricity. The legislation would direct GSA to use up to $30 million in unobligated balances in the Federal Buildings Fund, which currently has over $2 billion available, beginning in fiscal year 2008, to install the system.

CBO estimates that H.R. 3221 would modify the expected spending pattern of balances in the Federal Buildings Fund but would not increase budget authority. Based on information from DOE about the anticipated construction schedule, CBO estimates that undertaking this project would cost $6 million in 2008 and $30 million over the 2008-2012 period. However, we also estimate that this project would not affect net federal outlays over the 2008-2012 period because spending on this project would be offset by decreased spending on other projects or activities later in that period.

Other Provisions in Title IX. Title IX would require the Tennessee Valley Authority and Bonneville Power Administration to provide customers certain information about their electric power purchases. CBO estimates that implementing those measures would increase net direct spending by $25 million over the 2008-2017 period but would result in no net cost over time because such costs would eventually be offset by higher proceeds from the agencies' sales of electricity.

Title VII: Natural Resources. Title VII would amend the Department of the Interior's authority to collect and spend offsetting receipts from energy and mineral development on federal lands. CBO estimates that enacting those provisions would reduce direct spending by $3.2 billion over the 2008-2012 period and $7.7 billion over the 2008-2017 period. Major provisions that would affect direct spending include the following:

Resource Management. Provisions in subtitles A and B of title VII regarding management of federal lands would reduce direct spending by a total of $295 million over the 2008-2017 period, CBO estimates. Subtitle A would repeal the Bureau of Land Management's (BLM's) existing authority to spend one-half of rental payments from onshore leases for a pilot program to expedite permitting (which expires after 2015), thereby reducing direct spending by an estimated $260 million over the next 10 years. Subtitle B would require BLM to levy a due diligence fee of $1 per acre on all nonproducing onshore oil and gas leases and would allow the agency to spend the proceeds, without further appropriation, to repair damage to federal lands caused by oil and gas development. CBO estimates that implementing that fee would reduce net direct spending by $15 million over the 2008-2017 period because of the lag between the collection of new fees and their expenditure. Repealing the Minerals Management Service's (MMS's) existing obligation to pay interest to lessees if they overpay royalties is estimated to increase offsetting receipts by $20 million over the next 10 years.

Outer Continental Shelf Leases. Subtitle E of title VII would make several changes related to the development of oil and gas resources on the Outer Continental Shelf (OCS). Taken together, CBO estimates that implementing those provisions would increase offsetting receipts by a total of $7.5 billion over the 2008-2017 period.

Most of those savings would result from provisions affecting certain deepwater OCS leases issued in 1998 and 1999 that provided royalty relief regardless of the market price of oil or gas. Under this act, those holding deepwater leases without such price limitations would be obligated to pay a "conservation of resources" fee on production from those leases and would be unable to acquire new leases for OCS resources. Under the oil price assumptions in CBO's March baseline, the proposed fee would be more costly than paying royalties. Thus, we expect that most lessees would renegotiate the affected leases to include the price thresholds specified in the bill. Based on information from MMS regarding production and royalties from such leases, CBO estimates that enacting those provisions would increase offsetting receipts by $5.8 billion over the next 10 years.

Subtitle E also would impose a "conservation of resources" fee on all OCS nonproducing oil and gas leases in the Gulf of Mexico and directs that such proceeds be classified as offsetting receipts. CBO estimates that implementing that fee would increase offsetting receipts by about $1.65 billion over the 2008-2017 period. Finally, subtitle E would repeal provisions in the Energy Policy Act of 2005 (Public Law 109-58) that provided royalty relief for oil and gas produced from the OCS from ultra-deep wells, very deep wells, and Alaska, increasing net receipts by about $45 million over the next 10 years, CBO estimates.

Roan Plateau. Section 7604 would require that future oil and gas leases issued by the Secretary of the Interior for certain federal lands in the Roan Plateau, Colorado, prohibit lessees from occupying the surface of those lands for purposes of exploring for or developing oil and gas resources. Although the amount and value of oil and gas resources in the Roan Plateau are uncertain, CBO expects that leasing in that area will generate significant receipts for the federal government under current law.

Prohibiting lessees from occupying the surface land covered by their leases would likely reduce the total volume of resources produced in the future, thereby reducing anticipated federal receipts from royalties. Relative to current law, the prohibition also would introduce uncertainty about the profitability of affected leases, particularly because lessees would have to rely on indirect methods—such as directional drilling—to access oil and gas resources. As a result, CBO expects that the government would collect fewer receipts from bonus bids—upfront payments from lessees for the right to develop oil and gas resources—reducing net federal receipts by about $60 million over the 2008-2012 period and $120 million over the 2008-2017 period. (Those estimates include corresponding reductions in direct spending for payments to Colorado to share the proceeds of federal leases issued for lands within that state.)

Title XII: Conservation. H.R. 3221 includes several provisions that would make changes to tax law. (The revenue effects of the legislation are presented in Table 2 and described more fully in the following section.) One of those provisions would provide the city of New York and the state of New York with tax credits for certain expenditures for transportation infrastructure related to the New York Liberty Zone. The credits could be used against the income taxes that the jurisdictions withhold from the paychecks of their employees and remit to the Internal Revenue Service. Because the jurisdictions do not pay federal income taxes, the credits are essentially grants and are considered direct spending. The Joint Committee on Taxation estimates that instituting the credits would increase direct spending by $876 million over the 2008-2012 period and $1.7 billion over the 2008-2017 period. (Title XII also would repeal the existing business tax incentives for the New York Liberty Zone. The resulting revenue effects are discussed below under “Revenues.”)

Revenues

JCT and CBO estimate that enacting H.R. 3221 would increase revenues by $164 million in 2008 and $1.6 billion over both the 2008-2012 period and the 2008-2017 period. Provisions affecting revenues are presented by title in Table 2 (see page 4) and discussed below.

Title IV: Science and Technology. Title IV would create a Solar Energy Industries Research and Promotion Board within DOE to advance the use of solar energy products. Under the legislation, manufacturers of solar energy products would be required to pay assessments to the board primarily for marketing campaigns. CBO estimates that revenues from such assessments would total $13 million over the 2008-2017 period. This amount is net of changes in payroll and income taxes. (H.R. 3221 would authorize the board to spend 50 percent of the gross revenues plus interest earnings on the balance of the funds without further appropriation action).

Title IX: Energy and Commerce. CBO estimates that a provision to require retail electric suppliers to meet certain goals related to renewable energy could increase revenues, but we expect any such increases over the 2008-2017 period would be negligible.

Subtitle H of title IX would require that, starting in 2010, retail electric suppliers increase the amount of renewable energy production by certain amounts each year. Such production would be measured from a base amount and would equal, by 2020, an additional 15 percent of a supplier's energy sold. In the years 2020 through 2039, it would be required to stay at or above that level.

To comply with the proposed targets, retail electric suppliers would either remit federally issued credits or make cash payments. The Department of Energy would oversee a system for trading two types of federal credits: renewable energy credits and energy efficiency credits. Renewable energy credits would be based on the amount and source of renewable electricity generated, while energy efficiency credits would be based on qualified electricity savings achieved by certain energy efficiency measures. DOE would issue those credits to parties that generate electricity from renewable sources and that achieve energy efficiencies, and retail electric suppliers could in turn obtain them through purchase or exchange. CBO estimates that transactions associated with the proposed federal permits would have no impact on the federal budget.

Budgetary Treatment. CBO is in the process of assessing the appropriate budgetary treatment of certain regulatory programs—such as the renewable portfolio standard envisioned under H.R. 3221 or proposals to establish a federal cap-and-trade system to limit emissions of carbon dioxide. There is a case to be made that credits like the renewable energy and energy efficiency credits in H.R. 3221 should be reflected in the budgetary scoring process—specifically, that the value of any credits initially distributed at no cost to the recipients should be scored as both revenues and outlays, with no net effect on the budget deficit. A different perspective would suggest that issuing credits or allowances at no charge should be viewed as a straightforward regulatory action, with no direct budgetary consequences. A significant consideration in evaluating these perspectives will be the liquidity and depth of the secondary markets in credits or allowances. In any case, federal income from cash compliance payments would clearly be recorded in the federal budget as revenues resulting from the government's sovereign power to impose federal regulations.

Estimated Budgetary Effects Under H.R. 3221. Even if transactions associated with the proposed federal credits would be viewed as governmental, CBO estimates that they would have no significant net impact on the federal budget. We further estimate that, over the 2008-2017 period, any revenues from compliance payments would be negligible. Based on information from the Energy Information Administration about anticipated levels of renewable electricity generation in future years, CBO expects that, over the next 10 years, suppliers could meet the proposed standard with federally issued credit cards.

Title XI: Production Incentives. Title XI would extend and modify certain energy tax credits and provisions related to bond issuance. JCT estimates that title XI would reduce revenues by $294 million in 2008, $2.2 billion over the 2008-2012 period, and $7.8 billion over the next 10 years.

The legislation includes a provision that would extend and modify the renewable energy tax credit. Currently, the production of electricity from certain energy resources (such as wind and solar energy) is allowed an income tax credit that is set to expire for property placed in service after 2008. H.R. 3221 would extend the tax credit for new property through December 31, 2012, and it would expand the definition of qualified energy resources. Additionally, rather than phasing out the credit (as under current law), the bill would place an annual limit on the total credits that may be claimed by a facility. JCT estimates that this provision would reduce revenues by $1.4 billion over the 2008-2012 period and $6.6 billion over the 2008-2017 period.

Title XII: Conservation. Among other provisions, title XII would restructure certain New York Liberty Zone tax incentives for businesses, which were enacted following the September 11, 2001, terrorist attacks. The legislation would repeal the provisions that allow accelerated depreciation for certain property in the Liberty Zone. JCT estimates that repealing those provisions would increase revenues by $49 million over the 2008-2012 period and by $44 million over the 2008-2017 period. (As noted above, this provision would, however, increase direct spending by providing funds to New York City and the state of New York.)

In addition, title XII would allow a credit for plug-in hybrid vehicles; create energy conservation bonds (to be used, for example, to finance expenditures made to reduce energy consumption); and allow a five-year recovery period for time-based meters that measure and record electricity use at different points in the day and provide that data to the supplier or provider. (Those meters are allowed a 20-year recovery period under current law.) JCT estimates that this title would reduce revenues by $2.1 billion over the 2008-2012 period and $5.8 billion over the 2008-2017 period.

Title XIII: Revenue-Raising Provisions. Title XIII includes multiple provisions that would raise revenues. As a whole, JCT estimates that this title would increase revenues by $6.0 billion over the 2008-2012 period and $15.2 billion over the 2008-2017 period.

First, the legislation would deny a tax deduction under section 199 of the Internal Revenue Code to any income from the sale or exchange of oil, natural gas, or related products, beginning in 2008. JCT estimates that this provision would increase revenues by $4.2 billion over the 2008-2012 period and $11.4 billion over the 2008-2017 period. Second, H.R. 3221 would modify the methods that transnational firms use to calculate their foreign oil and extraction income and their foreign oil-related income. JCT estimates that those provisions would increase revenues by $1.6 billion over the 2008-2012 period and $3.6 billion over the 2008-2017 period.

Spending Subject to Appropriation

CBO estimates that fully funding the programs authorized by H.R. 3221 would require the appropriation of $46.3 billion over the 2008-2012 period. Of this amount, $40.2 billion would be specifically authorized by H.R. 3221, primarily for DOE programs and activities related to energy efficiency. CBO estimated additional authorizations, totaling $6.1 billion, based on information from affected agencies on historical funding levels for existing and similar activities. Table 3 presents, by title, total specified and estimated authorization levels.

Title I: Green Jobs. Title I would amend the Workforce Investment Act of 1998 to create a new training program for energy efficiency and renewable energy workers. The act would authorize appropriations of $125 million for each fiscal year for market research, job referral, and job training. Assuming appropriation of the authorized amounts, CBO estimates that implementing title I would cost $390 million over the 2008-2012 period.

Title II: International Climate Cooperation and Re-engagement. Title II would authorize the appropriation of an estimated $230 million in 2008 and about $1.2 billion over the 2008-2012 period to develop and promote methods to generate energy using solar technology, wind technology, geothermal technology, hydroelectric technology, and carbon-capture technology. CBO estimates that implementing this title would cost $770 million over the 2008-2012 period, assuming appropriation of the specified and estimated amounts.

Section 2202 would authorize the appropriation of $200 million a year over the 2008-2012 period for the United States Agency for International Development to provide aid to developing countries for the development of energy technologies that result in lower emissions of greenhouse gases than currently used technologies. Based on spending patterns for similar programs, CBO estimates that implementing this section would cost $20 million in 2008 and about $635 million over the 2008-2012 period, assuming appropriation of the specified amounts. Other sections in title II would authorize an estimated $30 million a year over the 2008-2012 period for an international foundation and various programs at the Departments of State and Commerce and would cost about $135 million over the 2008-2012 period.

TABLE 3. ESTIMATED SPENDING SUBJECT TO APPROPRIATION UNDER H.R. 3221

	By Fiscal Year, in Millions of Dollars					
	2008	2009	2010	2011	2012	2008-2012
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Title I, Green Jobs						
Authorization Level	125	125	125	125	125	625
Estimated Outlays	5	45	95	120	125	390
Title II, International Climate Cooperation Reengagement Act of 2007						
Estimated Authorization Level	230	230	231	231	231	1,153
Estimated Outlays	37	127	182	207	217	770
Title III, Small Energy-Efficient Businesses						
Estimated Authorization Level	40	40	40	40	41	201
Estimated Outlays	4	16	30	34	37	121
Title IV, Science and Technology						
Estimated Authorization Level	774	1,669	2,745	1,874	1,747	8,809
Estimated Outlays	366	1,055	2,037	2,049	1,973	7,480
Title V, Agriculture Energy						
Estimated Authorization Level	6	6	6	82	82	182
Estimated Outlays	2	3	5	44	66	120
Title VI, Carbon-Neutral Government						
Estimated Authorization Level	200	318	315	223	236	1,292
Estimated Outlays	196	316	315	223	236	1,286
Title VII, Natural Resources Committee Provisions						
Estimated Authorization Level	323	508	652	796	911	3,190
Estimated Outlays	133	300	498	677	808	2,416
Title VIII, Transportation and Infrastructure						
Estimated Authorization Level	1,162	1,144	292	292	4	2,894
Estimated Outlays	184	532	625	533	447	2,321
Title IX, Energy and Commerce						
Estimated Authorization Level	4,411	6,119	6,133	5,632	5,642	27,937
Estimated Outlays	524	2,137	4,363	5,548	5,840	18,412
Title XII, Conservation						
Estimated Authorization Level	2	3	3	3	3	14
Estimated Outlays	2	3	3	3	3	14
Title XIV, Other Provisions						
Estimated Authorization Level	2	1	0	0	0	3
Estimated Outlays	2	1	0	0	0	3
Total Changes						
Estimated Authorization Level	7,275	10,163	10,542	9,298	9,022	46,300
Estimated Outlays	1,455	4,535	8,153	9,438	9,752	33,333

Title III: Small Energy-Efficient Businesses. Title III would modify several existing Small Business Administration loan and grant programs and create new programs to encourage small businesses to invest in technologies to improve energy efficiency. The act would create the Renewable Fuel Capital Investment Program, which would provide guarantees on debentures and grants to newly created renewable fuel investment companies. H.R. 3221 would authorize the appropriation of $15 million per year for operational grants and such sums as are necessary to cover the subsidy costs of guarantees. CBO estimates that implementing this provision would cost $70 million over the 2008-2012 period.
The act also would authorize grants to small business development centers to assist small businesses in developing, marketing, and investing in energy-saving technology. Assuming appropriation of the necessary amounts, CBO estimates that implementing this provision would cost $51 million over the 2008-2012 period.

Title IV: Science and Technology. Title IV would specifically authorize the appropriation of $762 million in fiscal year 2008 and $8.8 billion over the 2008-2012 period primarily for DOE research and grant programs supporting the development of renewable energy sources and greenhouse gas reduction technologies. CBO estimates that an additional $12 million in 2008 and $47 million over the 2008-2012 period would be necessary under the bill for other grant programs and reporting requirements. Assuming appropriation of the authorized and necessary amounts, CBO estimates that implementing title IV would result in discretionary spending of $367 million in fiscal year 2008 and nearly $7.5 billion over the 2008-2012 period. Estimated outlays over the five-year period for specific programs would include:

- $4.1 billion to establish the Advanced Research Projects Agency-Energy within DOE, which would award competitive grants, cooperative agreements, and contracts for projects with energy and environmental applications;

- $1.3 billion to expand the carbon sequestration research and demonstration projects for field testing on carbon-capture technologies (a method of storing carbon emissions from the use of fossil fuels);

- $220 million for marine renewable energy research (energy derived from waves, tidal flows, and currents) and grants to institutes of higher education to establish marine renewable energy centers;

- $418 million to support research into the production and use of geothermal energy sources (heat stored in the Earth’s surface), including expanding programs within DOE and awarding grants to establish three demonstration projects;

- $276 million to promote the utilization and development of solar-energy products; most of this amount would be awarded to states for the purchase of photovoltaic technologies (solar cells that convert light energy into electricity);

- $100 million to award grants to institutes of higher education to research bioenergy technologies (energy or fuel derived from biological sources, such as corn or wheat);

- $29 million for a program to award monetary prizes for innovations in hydrogen energy technology;

- $50 million for an interagency United States Global Changes Research Program to support climate-change programs; and

- $963 million for other renewable energy projects.

Title V: Agriculture Energy. CBO estimates that funding provisions of title V would require appropriations totaling $182 million over the 2008-2012 period. That amount includes $150 million specifically authorized for the 2011-2012 period for research, education, and outreach related to biobased technologies and products. It also includes $32 million estimated to be necessary for a program to promote energy audits for farmers, ranchers, or rural small businesses and for the costs of establishing an energy council within the Department of Agriculture. Based on historical spending patterns for existing and similar activities, CBO estimates that implementing those provisions would cost $120 million over the 2008-2012 period.

Title VI: Carbon-Neutral Government. Title VI would establish standards for energy efficiency for the federal government. In addition, the legislation would:

- Establish a two-year pilot program for federal purchases of greenhouse gas offsets (as specified in the act) and renewable energy certificates;

- Require agencies to purchase low greenhouse gas-emitting vehicles;

- Require energy-efficiency standards for new (and renovated) federal buildings;

- Authorize the Environmental Protection Agency (EPA) to establish a carbon cap-and-trade program for use by federal agencies; and

- Establish a federal telework requirement.

CBO estimates that implementing title VI would increase discretionary costs by $1.3 billion over the 2008-2012 period, primarily for the purchase of low greenhouse gas-emitting vehicles and for participation in the pilot program for qualified greenhouse gas offsets.

Title VII: Natural Resources. Total discretionary spending to carry out title VII would be about $2.4 billion over the 2008-2012 period. Title VII would direct agencies within the Departments of Commerce, Agriculture, and the Interior to establish programs to protect natural resources from the effects of global warming and other environmental impacts of energy production, transmission, and use. This title also would authorize grants to states and tribes for conservation activities, and would require new federal programs and regulations concerning the development and transmission of energy on public lands and waters. CBO estimates that funding those provisions would increase discretionary spending by nearly $2.4 billion over the 2008-2012 period, assuming appropriation of the necessary amounts. The act also would specifically authorize the appropriation of $55 million for three studies. Assuming appropriation of that specified amount, CBO estimates that conducting those studies (primarily on carbon storage) would cost $11 million in 2008 and $55 million over the five-year period.

Title VIII: Transportation and Infrastructure. Title VIII would authorize the appropriation of about $2.9 billion for programs to reduce environmental emissions from a variety of modes of transportation and to increase the energy efficiency of certain buildings in the federal government. Assuming appropriation of the amounts specified and estimated to be necessary, CBO estimates that implementing this title would cost $2.3 billion over the 2008-2012 period.

Public Transportation and Rail Grants. The title would establish and specifically authorize appropriations for several grant programs. For public transportation entities, the act would authorize the appropriation of $850 million in each of fiscal years 2008 and 2009 to aid such entities to either reduce fares or expand service. For operators of railroads, the act would authorize the appropriation of $250 million annually through 2011 to rehabilitate, preserve, or improve railroad track to increase the capacity of that track. The act also would authorize the appropriation of $10 million annually through 2011 for grants to railroad carriers to purchase locomotives that produce low emissions.

Other Provisions. The act also would specifically authorize $100 million to be appropriated to the Department of Transportation (DOT) for a loan guarantee program to increase the use of a certain type of short-distance transportation of cargo by sea called short-sea transportation. Other provisions of the title would fund pilot projects to mitigate aviation-related effects on air quality, or water quality, implement the Protocol of 1997 to the International Convention for the Prevention of Pollution from ships, 1973 (MARPOL), establish a Commission on Water Resources, establish a Center for Climate Change and

Environment at DOT, and require several federal agencies to complete studies regarding opportunities for certain infrastructure projects to reduce environmental emissions.

Title IX: Energy and Commerce. Title IX would amend and expand existing laws related to energy supply and conservation and would authorize appropriations totaling $27.9 billion over the 2008-2012 period, CBO estimates. Assuming appropriation of the specified and necessary amounts, CBO estimates implementing title IX would cost about $500 million in 2008 and $18.4 billion over the 2008-2012 period, with additional spending of $9.5 billion occurring after 2012.

Provisions with Specified Authorizations. The bill would specifically authorize $26.5 billion for a variety of activities that would be carried out primarily by DOE. That amount includes:

- $10.9 billion for grants to state and local governments to support a broad array of efforts to promote energy efficiency;

- $6.4 billion for grants to state and local governments and other activities aimed at increasing the energy efficiency of residential buildings;

- $2.8 billion for new initiatives to improve electric power transmission systems and reduce power electricity at peak times;

- $2.8 billion for efforts to enhance the energy efficiency of public institutions, particularly by financing investments in sustainable energy systems;

- $2.1 billion for grants, research, and other activities to promote the development and use of renewable fuels;

- $1.0 billion for grants and other initiatives to improve the energy efficiency of industrial facilities; and

- $500 million for a range of other activities related to energy supply and conservation.

Taken as a whole and assuming appropriation of the specified amounts, CBO estimates that implementing those provisions would cost $17.2 billion over the 2008-2012 period, with additional spending of $9.3 billion occurring in later years. That estimate is largely based on historical spending patterns for existing and similar activities carried out by DOE.

Provisions with Estimated Authorizations. In addition, CBO estimates that fully funding other provisions of title IX would require appropriations totaling $1.4 billion over the next five years. That amount includes:

- $859 million for various forms of assistance for the production and use of vehicles and machinery powered by electricity;

- $251 million for activities and programs to promote energy efficiency;

- $195 million for new initiatives to improve electric power transmission systems and reduce power electricity at peak times;

- $58 million for activities related to renewable fuels; and

- $50 million for the costs of administering a program to require retail electric suppliers to meet certain standards related to renewable energy production.

Based on information from DOE and other affected agencies and assuming appropriation of the necessary amounts, CBO estimates that implementing those provisions would cost $1.2 billion through 2012, with additional spending of about $200 million occurring in later years.

Title XII: Conservation. The legislation would expand the use of transportation fringe benefits for federal employees to include bicycle commuters. The provision would allow up to $20 per month for repair expenses, equipment costs, and storage costs for employees who regularly use a bicycle for commuting purposes. Based on information from the U.S. Census Bureau, CBO estimates that about 11,000 federal employees currently commute to work via bicycle. Assuming the appropriation of the necessary amounts, CBO estimates that implementing this provision would cost $14 million over the 2008-2012 period.

Title XIV: Other Provisions. H.R. 3221 would require two reports to the Congress by the National Academy of Sciences. One report would evaluate tax provisions in the Internal Revenue Code of 1986 that affect carbon and greenhouse gas emissions, while the other report would concern biofuels, including their present status and future potential. Based on the cost of similar studies and assuming the appropriation of the specified and necessary amounts, CBO estimates that those studies would cost $3 million over the 2008-2009 period.

ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS

CBO has reviewed the nontax provisions of H.R. 3221 and determined that they contain intergovernmental mandates as defined in UMRA. CBO estimates that the annual cost of those mandates would not exceed the threshold established in UMRA ($66 million for intergovernmental mandates in 2007, adjusted annually for inflation). In general, implementing the legislation would benefit state and local governments.

JCT has determined that the tax provisions of the reported bill contain no intergovernmental mandates as defined by UMRA.

Intergovernmental Mandates

Title III would preempt state and local laws that would limit the Small Business Administration's ability to exercise its ownership rights in certain debentures issued by a renewable fuel capital investment company; that preemption constitutes an intergovernmental mandate as defined in UMRA. CBO estimates that the preemption would impose insignificant additional costs on state, local, or tribal governments.

Subtitle A of title IX contains several intergovernmental mandates as defined in UMRA. Specifically, part 1 would establish new energy standards for previously unregulated products. Doing so would preempt state authority. Section 9031 would require states to certify to the Secretary of Energy that they reviewed and updated their laws to meet or exceed new national model building standards. Section 9061 would create a program to inventory recoverable waste energy. While the program would be voluntary, state regulatory authorities and nonregulated electric utilities would be required to consider whether recovered energy identified by the inventory would be eligible for resale to utilities.

CBO estimates that the costs to comply with the preemption and the waste-recovery requirement would be small. CBO cannot precisely estimate the total costs of complying with the requirements to review and update building codes because state procedures vary widely. In general, however, because most states already have processes to review and update their building codes, the costs of the new requirements are not expected to be large. Furthermore, the legislation would provide incentive grants to assist states in updating and improving building codes and to implement the waste-recovery projects.

Title IX would amend the Public Utilities Regulatory Act of 1978 (PURPA) to require state regulatory authorities and nonregulated utilities to consider new standards and reconsider existing ones. That new requirement would be an intergovernmental mandate. Since

PURPA requires the consideration, but not necessarily the implementation of those standards, CBO estimates that the administrative costs of the requirement would be modest.

Subtitle H of title IX would create a federal renewable portfolio standard for certain electric utilities. State and local governments, including municipal utilities, would be exempt from the requirements of the new standard, but the subtitle would restrict state and local authority to regulate rates. Regulatory entities would not be allowed to prohibit utilities from recovering prudent costs associated with meeting the portfolio standard. That restriction of state and local authority is an intergovernmental mandate, but CBO estimates that the administrative costs associated with it, if any, would be minimal.

Exclusion

CBO has not reviewed subtitle D, part 2 of title VIII for the presence of intergovernmental mandates. Section 4 of UMRA excludes from the application of that act any legislative provisions that are necessary for the ratification or implementation of international treaty obligations. CBO has determined that part 2 falls within that exclusion because it would implement annex VI of the MARPOL Convention.

Other Impacts

In general, the legislation would benefit state and local governments by authorizing several grants, programs, and incentives for renewable energy and energy efficiency. In addition, participating public institutions of higher education would benefit from various research and development programs for geothermal, solar, and marine energy. Any costs state and local governments might incur to comply with grant requirements, including matching funds, would be incurred voluntarily.

ESTIMATED IMPACT ON THE PRIVATE SECTOR

CBO has reviewed the nontax provisions of the bill and has determined that those provisions contain numerous mandates, as defined in UMRA, that would affect private-sector entities. Those mandates include, but are not limited to:

- A due-diligence fee on certain oil, gas, and coal operators that hold onshore federal leases at the time of enactment;

- Energy-efficiency standards for dehumidifiers, clothes washers, dishwashers, boilers, and other products;

- A prohibition on the sale of certain types of light bulbs that do not meet efficiency standards; and

- A renewable portfolio standard that would require certain electric utilities to meet specified targets for electricity generated from renewable energy resources.

H.R. 3221 would require certain oil, gas, and coal operators that hold onshore federal leases to pay $1 for each acre of land that is not in production for a given year. Because operators with existing federal leases would be required to pay a fee that is not a duty under their current lease agreements, the new requirement for those operators would be considered a mandate under UMRA. Based on information from BLM, CBO estimates that the direct cost of the mandate would be about $30 million in 2008. As those existing leases expire, the cost of the mandate would decline in subsequent years.

The legislation would amend the Energy Policy and Conservation Act to increase the energy efficiency standards for various commercial and residential appliances and products. In addition, H.R. 3221 would ban the sale of certain light bulbs that do not meet efficiency standards. Although CBO does not have sufficient data to determine the incremental cost for each product to comply with the mandate, the direct costs incurred by the industries would be substantial due to the large number of products that would be affected that are not currently in compliance with the standards outlined in the act. Based on information from the Department of Energy about certain household appliances, boilers, electric motors, incandescent reflector lamps, and light bulbs, CBO expects the cost of complying with the standards would exceed the threshold in 2012.

The act also would require that a certain percentage of the electricity sold by utilities come from renewable sources by the year 2020. The data do not allow us to determine where electricity from renewable services is sold (either by municipal, cooperative, or private utilities) because most electricity is sold by utilities that do not actually produce the electricity (utilities buy from wholesalers and such information is not recorded). Because of that uncertainty, CBO cannot estimate the incremental cost of this mandate to the private sector.

CBO estimates that the cost of complying with the private-sector mandates, in aggregate, would exceed the annual threshold established in UMRA ($131 million in 2007, adjusted annually for inflation) in at least one of the first five years the mandates are in effect.

Section 4 of the Unfunded Mandates Reform Act excludes from the application of that act any legislative provisions that are necessary for the ratification or implementation of international treaty obligations. CBO has determined that title VIII, subtitle D, part 2 of the bill falls within that exclusion because it would implement annex VI of the MARPOL Convention. Consequently, CBO has not reviewed those provisions for the presence of mandates.

JCT has determined that the tax provisions of the bill contain two private-sector mandates as defined in UMRA: (1) the denial of deduction for income attributable to domestic production of oil, natural gas, or primary products thereof; and (2) clarification of determination of foreign oil and gas extraction income. Based on information provided by JCT, CBO estimates that the costs of those mandates would significantly exceed the annual threshold established in UMRA.

PREVIOUS CBO ESTIMATES

CBO has completed several estimates for bills with provisions similar to provisions of H.R. 3221. For example:

- Title I is similar to H.R. 2847, the Green Jobs Act of 2007, as ordered reported by the House Committee on Education and Labor on June 27, 2007, for which CBO transmitted a cost estimate on July 13, 2007;

- Title II is similar to H.R. 2420, the International Climate Cooperation Re-engagement Act of 2007, as ordered reported by the House Committee on Foreign Affairs on May 23, 2007, for which CBO transmitted a cost estimate on June 8, 2007;

- Title III is similar to H.R. 2389, the Small Energy Efficient Businesses Act, as ordered reported by the House Committee on Small Business on May 23, 2007, for which CBO transmitted a cost estimate on July 20, 2007;

- Title IV is similar to provisions of several bills ordered reported by the House Committee on Science and Technology for which CBO transmitted cost estimates between June 1, 2007, and July 11, 2007. Those bills include:

  – H.R. 364, a bill to provide for the establishment of the Advanced Research Projects Agency-Energy, as ordered reported on May 23, 2007;

  – H.R. 2313, the Marine Renewable Energy Research and Development Act of 2007, as ordered reported on June 13, 2007;

- H.R. 2304, the Advanced Geothermal Energy Research and Development Act of 2007, as ordered reported on June 13, 2007;

- H.R. 2774, the Solar Energy Research and Advancement Act, as ordered reported on June 27, 2007;

- H.R. 2773, the Biofuels Research and Development Enhancement Act, as ordered reported on June 27, 2007;

- H.R. 1933, the Department of Energy Carbon Capture and Storage Research, Development, and Demonstration Act of 2007, as ordered reported on June 27, 2007; and

- H.R. 906, the Global Change Research and Data Management Act of 2007, as ordered reported on June 27, 2007;

• Title V is similar to title XI of H.R. 2419, the Farm, Nutrition, and Bioenergy Act of 2007, as passed by the House of Representatives on July 27, 2007, for which CBO transmitted a cost estimate on October 5, 2007;

• Title VI is similar to H.R. 2635, the Carbon-Neutral Government Act of 2007, as ordered reported by the House Committee on Oversight and Government Reform on June 12, 2007 (with a subsequent amendment provided in June 27, 2007), for which CBO transmitted an estimate on June 28, 2007;

• Provisions of title VII are similar to H.R. 2337, the Energy Policy Reform and Revitalization Act of 2007, as ordered reported by the House Committee on Natural Resources on June 13, 2007, for which CBO transmitted a cost estimate on July 13, 2007. Other provisions of that title are similar to H.R. 6, the CLEAN Energy Act of 2007, as introduced on January 12, 2007, for which CBO transmitted a cost estimate on January 12, 2007;

• Title VIII is similar to H.R. 2701, the Transportation Energy Security and Climate Change mitigation Act of 2007, as ordered reported by the House Committee on Transportation and Infrastructure on June 20, 2007, for which CBO transmitted a cost estimate on July 18, 2007; and

• Titles XI, XII, XIII, and XIV are similar to provisions of H.R. 2776, the Renewable Energy and Energy Conservation Tax Act of 2007, as ordered reported by the House Committee on Ways and Means on June 20, 2007, for which CBO transmitted a cost estimate on June 27, 2007.

In most cases, CBO's estimates of discretionary spending under H.R. 3221 and similar legislation are the same; differences reflect differences in authorization levels. There are some significant differences, however, among estimates of direct spending and revenues. In particular:

- Our estimates of direct spending and revenues under title IV of H.R. 3221 are greater than under previous estimates because that title would establish a board to advance the use of solar-energy products.

- Our estimates of direct spending under title V of H.R. 3221 are lower than under H.R. 2419 primarily because H.R. 3221 would provide less funding for energy-related programs.

- Our estimates of direct spending under H.R. 3221 take into account overlapping and interacting provisions of titles VI, VIII, and IX. Our estimate of their combined effects is different from the sum of previous estimates for similar stand-alone legislation.

- Current estimates of provisions in title VII affecting the OCS have been updated since January to reflect CBO's March baseline assumptions.

- JCT's estimates of revenues and direct spending under titles XI through XIV of H.R. 3221 have been updated to reflect a later assumed date of enactment.

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