

# CRS Report for Congress

## Climate Change: Comparison of S. 2191 as Reported (now S. 3036) with Proposed Boxer Amendment

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## Summary

On December 7, 2007, the Senate Environment and Public Works (EPW) Committee ordered reported an amended version of S. 2191, the Lieberman-Warner Climate Security Act of 2008 (originally entitled America's Climate Security Act of 2007). On April 10, 2008, an amendment to make the bill revenue-neutral was submitted to CBO for analysis along with the committee version of S. 2191.

On May 20, 2008, S. 2191 was reported by EPW. At the same time, Senator Boxer introduced S. 3036, which is identical to the reported version of S. 2191 except that it contains the proposed budget amendment. Both bills were placed on the Senate legislative calendar. On Thursday, May 22, Senator Reid filed for cloture on the motion to proceed on S. 3036. The cloture vote is scheduled for Monday, June 2 at 5:30 pm, with the preceding hour set for debate.

In addition to S. 3036, Senator Boxer has proposed an amendment in the nature of a substitute, with significant changes from the committee version of S. 2191.

This report provides a comparison of five key differences between S. 2191/S. 3036 and the proposed Boxer Amendment. This report supersedes a CRS Congressional Distribution Memorandum entitled "Comparison of S. 2191 as Reported (now S. 3036) with Proposed Boxer Substitute," dated May 28, 2008.

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# Climate Change: Comparison of S. 2191 as Reported (now S. 3036) with Proposed Boxer Amendment

S. 2191 (the Lieberman-Warner Climate Security Act of 2008<sup>1</sup>), introduced by Senator Lieberman, was reported by the Senate Committee on Environment and Public Works (EPW) on May 20, 2008. The bill would establish a mandatory cap-and-trade system to reduce greenhouse gas emissions from most sectors of the economy.<sup>2</sup> As reported, S. 2191's emissions cap is estimated by its sponsors to require a 71% reduction from 2005 levels by 2050 from covered entities (the covered entities are estimated by the sponsors to account for 87% of total U.S. greenhouse gas emissions). Overall, the sponsors estimate that S. 2191 would reduce total U.S. greenhouse gas emissions by up to 66% from 2005 levels by 2050. On April 10, 2008, a proposed deficit reduction amendment was announced, aimed at making the bill revenue-neutral.<sup>3</sup> A new version of the bill, S. 3036 — identical to S. 2191 but also containing the deficit reduction amendment — was introduced May 20, and a cloture motion was filed on that bill May 22. The Senate may begin discussion of S. 3036 the week of June 2.

On May 21, 2008, Senator Boxer announced a proposed substitute amendment to the Lieberman-Warner bill.<sup>4</sup> This amendment would make significant changes to the bill. For a detailed discussion of key terms and concepts used in this report, see CRS Report RL34489, *Climate Change: Costs and Benefits of S. 2191*, which provides background and much more detailed analysis of the bill.

CRS has identified five key changes that would be made by the Boxer Amendment. These five do not represent all changes in the amendment. Considering the time constraints these five are discussed in this report; other changes may also be of interest in the debate. The five key changes discussed below are:

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<sup>1</sup> Originally entitled America's Climate Security Act of 2007.

<sup>2</sup> For more a more detailed discussion of S. 2191 (as reported) provisions, see CRS Report RL34489, *Climate Change: Costs and Benefits of S. 2191*, by Larry Parker and Brent Yacobucci. For a comparison with other proposals, see CRS Report RL33846, *Greenhouse Gas Reduction: Cap-and-Trade Bills in the 110<sup>th</sup> Congress*, by Larry Parker and Brent Yacobucci.

<sup>3</sup> Submitted to CBO April 9, 2008. CBO, *S. 2191, America's Climate Security Act, with an Amendment* (April 10, 2008).

<sup>4</sup> As of May 23, 2008, the substitute amendment was available at the EPW website: [<http://epw.senate.gov/public/>].

- The establishment of a “cost-containment auction” that would expand the number of allowances available in early years;
- Changes to the limits and applicability of domestic offsets, international offsets, and international allowances;
- Elimination of the Climate Change Credit Corporation and the establishment of a Climate Change Technology Board;
- Major changes in the scheme for how allowances are auctioned or distributed at no cost to covered entities and non-covered entities; and
- Establishment of carbon market oversight mechanisms.

**Cost-Containment Auction.** The Boxer Amendment would establish a “cost-containment auction.” For this auction, the amendment would take a share of allowances from 2031 through 2050 and make them available for auction in the early years of the program (2012 through 2027). At the end of 2012, a maximum of 450 million allowances would be available for sale. In each successive year, the number available would be reduced by 1%. In total, up to 6 billion allowances would be available through these cost-containment auctions.

For the auctions, the amendment would establish a “Cost-Containment Auction Price” — effectively a reserve price for the auction. For 2012, the President would determine the initial reserve price of between \$22 and \$30 per ton. In each successive year, the reserve price would increase by the rate of inflation plus 5%.

This provision would essentially allow the borrowing of a limited number of future allowances at a reduced rate. In general, both the bill and the Boxer Amendment allow borrowing, but require a 10% annual rate of interest on borrowed allowances. Assuming the allowance price for a given year is above the “cost-containment price,” participants in the auction will likely bid up the price to something similar to the current allowance price. On the other hand, if the allowance price on the secondary market is below the “cost-containment price,” there may be limited participation in the cost-containment auction. All other things being equal, having a larger pool of allowances early should lower the price of allowances, but it is difficult to predict the magnitude of that price effect.

**Use of Domestic Offsets, International Offsets, and International Allowances.** The Boxer Amendment would substantially alter the amount and type of offsets that covered sources could use to comply with the emissions cap. Under the reported version of the bill, a covered entity could only use domestic offsets and/or international allowances. The Boxer Amendment expands the offset opportunities to include international offsets and international forest credits. In the reported version of the bill, an individual covered entity could meet up to 15% of its allowance requirement through the use of domestic offsets and an additional 15% through the use of international allowances. The Boxer Amendment would eliminate the facility-specific limitation and would direct EPA to restrict the available pool of domestic offsets to 15%, international offsets to 5%, and international forest credits to 10% of the aggregate quantity of emission allowances distributed under the cap.

International allowances could be used, if any of the above percentages were not maximized.<sup>5</sup>

Although the Boxer Amendment would increase flexibility by removing the facility-specific limitation for offset use, the amendment would effectively reduce the total number of offsets potentially available in a given year. The example below illustrates this substantial change:

In 2012, both S. 2191 and the Boxer Amendment set the number of allowances available to covered entities at 5,775 million allowances. In the reported version, a covered facility must submit to EPA an allowance, offset, or international allowance for each ton of actual emissions. By allowing facilities to submit offsets and/or international allowances to satisfy up to 30% of their allowance submission (15% from domestic offsets and 15% from international allowances), the total allowance cap (5,775) would essentially represent 70% of actual emissions permitted. For instance, if there was only one covered facility in the United States and it emitted 8,250 million tons of CO<sub>2</sub>-e in 2012, the facility could submit 5,775 million allowances and 2,475 million tons in offsets and international allowances.<sup>6</sup> However, under the Boxer Amendment, the total number of offsets — which would include domestic, international, forestry credits, and international allowances — would be limited to 30% of the aggregate pool of allowances distributed under the cap. Therefore, the hypothetical facility described above could only use 1,733 tons in offsets.<sup>7</sup>

In addition, eliminating restrictions on the use of certified offsets, the expansion of allowable offset types — international offsets and forest credits — may lower the costs of the cap-and-trade program. Under the reported bill, covered entities had only indirect access (by purchasing international allowances) to these lower-cost reduction opportunities. The Boxer Amendment permits direct use of these options. However, there may be some concern that the increased use of international offsets, particularly those in the forestry sector, could flood the market with possibly questionable emission reductions.<sup>8</sup>

**Changes in Established Entities.** The reported version of S. 2191 would establish a Climate Change Credit Corporation to auction allowances under the program. The corporation would use the proceeds from those auctions to fund various purposes, including technology development and adaptation programs. As reported, S. 2191 states that “the Corporation shall not be considered an agency or establishment of the Federal government.” The Boxer Amendment would eliminate

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<sup>5</sup> An international allowance is an allowance purchased from an approved foreign cap and trade system. In lieu of using or trading the allowance within its own system, a foreign firm could choose to sell the allowance to a U.S. firm, who could use the allowance for compliance with the U.S. program in lieu of an allowance allocated domestically.

<sup>6</sup>  $8,250 \times 0.3 = 2,475$ .

<sup>7</sup>  $5,775 \times 0.3 = 1,733$

<sup>8</sup> See CRS Report RL34436, *The Role of Offsets in a Greenhouse Gas Emissions Cap-and-Trade Program: Potential Benefits and Concerns*, by Jonathan L. Ramseur.

the corporation. Instead, allowances would be auctioned by EPA. The funds from those auctions would be disbursed by a Climate Change Technology Board, explicitly established as an agency of the federal government.

**Allocation Scheme.** Both S. 2191 and the Boxer Amendment use a detailed scheme for allocating allowances to covered entities, non-covered entities, and auctions. The total number of allowances for all years is equal in S. 2191 and the Boxer Amendment, although the timing of those allocations may be different, as the Boxer Amendment allows for the auction of some allowances early (see “Cost-Containment Auction” above). Further, the reported bill and the Boxer Amendment would distribute those allowances differently. In all years, relative to the reported version, the Boxer Amendment would allocate a larger share of allowances to non-covered entities (e.g., states), and a smaller share for covered entities and for auctions. For example, in 2012, the reported version of S. 2191 would allocate roughly 36% of allowances to covered entities, 33% to non-covered entities, and 31% for auctions. Under the Boxer Amendment, assuming all available cost-containment allowances are purchased, 32% of allowances would go to covered entities, 34% to non-covered entities, and 30% would be auctioned. **Table 1** shows allowance allocations in various years for the reported version of S. 2191, as amended by the proposed deficit reduction amendment (identical to the introduced version of S. 3036), and **Table 2** shows the allocation of auction revenues. **Tables 3 and 4** show allowance allocations in the same years under the Boxer Amendment. For each table, direct allocations to covered sectors are labeled “COV,” direct allocations to non-covered entities are labeled “NC,” and auctions are labeled “AUC.”<sup>9</sup>

Various groups have modeled the economic effects of S. 2191, including projections of allowance prices in each year of the program. Using one of the low-cost scenarios — EPA’s ADAGE-TECH scenario — estimates of the values of the allowance allocations and auction revenues in S. 2191 and the Boxer Amendment are shown in **Tables 5 and 6**.<sup>10</sup> The same allowance price was used in both tables; however, it should be noted that some of the changes made by the Boxer Amendment would likely reduce costs.<sup>11</sup> To the extent that allowance prices increase or decrease in one version of the bill relative to another, the value of allocations and the estimated auction revenues would also increase or decrease.

**Carbon Market Oversight Mechanisms.** The Boxer Amendment would establish a Carbon Markets Working Group including the EPA Administrator, the Secretary of the Treasury, and the Chairmen of the Securities and Exchange Commission, the Commodities Futures Trading Commission, and the Federal Energy Regulatory Commission. The Group must identify “the major issues related to the integrity, efficiency, orderliness, fairness, and competitiveness” of the carbon market,

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<sup>9</sup> In each of the tables, the allocations are presented in the section-by-section order they appear in the bill or amendment.

<sup>10</sup> For a detailed analysis of the assumptions used in EPA’s model, as well as CRS’s assumptions about certain program costs, see CRS Report RL34489, *Climate Change: Costs and Benefits of S. 2191*, by Larry Parker and Brent Yacobucci.

<sup>11</sup> The economic effects of the Boxer Amendment had not been modeled as of May 28, 2008.

as well as recommendations for market regulation, policy coordination, contingency planning, and necessary legislative action.<sup>12</sup>

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<sup>12</sup> For more information on carbon market regulation, see CRS Report RL34488, *Regulating a Carbon Market: Issues Raised By the European Carbon and U.S. Sulfur Dioxide Allowance Markets*, by Mark Jickling and Larry Parker.



**Table 1. Estimated Allowances (millions) Allocated Under S. 3036 (S. 2191 as Reported plus Amendment)**

			2012	2020	2030	2040	2050
<b>Total Allowances</b>		Sec. 3101 (as amended)	5,775	4,924	3,860	2,796	1,732
<b>Remainder Allowances</b>		Sec. 1201	5,423	4,510	3,303	2,349	1,455
<b>Deficit Reduction Fund</b>	AUC	Sec. 3101 (as amended)	352	414	557	447	277
<b>Early Auction</b>	AUC	Sec. 3101	271	0	0	0	0
<b>Auction</b>	AUC	Sec. 3102	1,166	1,646	2,073	1,632	1,011
<b>Early Action</b>	NC	Sec. 3201	271	0	0	0	0
<b>States</b>							
<b>Energy Savings</b>	NC	Sec. 3301(a)	108	90	66	47	29
<b>Building Efficiency</b>	NC	Sec. 3301(b)	54	45	33	23	15
<b>Programs that Exceed Fed. Targets</b>	NC	Sec. 3302	108	90	66	47	29
<b>General Allocation - by LIHEAP Share</b>	NC	Sec. 3303(b)(1)	81	68	50	35	22
<b>General Allocation - by Population Share</b>	NC	Sec. 3303(b)(2)	81	68	50	35	22
<b>General Allocation - by Fossil Production CO2</b>	NC	Sec. 3303(b)(3)	81	68	50	35	22
<b>Mass Transit</b>	NC	Sec. 3304	54	45	33	23	15
<b>State Subtotal</b>			569	474	347	247	153
<b>Tribal Communities</b>	NC	Sec. 3303(d)	27	23	17	12	7
<b>Low/Middle-Class Electricity Consumers</b>	NC	Sec. 3401	488	406	297	211	131
<b>Low/Middle-Class Natural Gas Consumers</b>	NC	Sec. 3501	108	90	66	47	29
<b>CCS Bonus Allowances</b>	COV	Sec. 3601	217	180	132	0	0
<b>Domestic Agriculture and Forestry</b>	NC	Sec. 3701	271	226	165	117	73
<b>International Forest Protection</b>	NC	Sec. 3803	136	113	83	59	36
<b>Fossil Fueled Electric Plants</b>	COV	Sec. 3901	1,030	722	33	0	0
<b>Rural Electric Cooperatives</b>	COV	Sec. 3901	54	45	33	0	0
<b>Special Allocation to VA and MT</b>	COV	Sec. 3903(a)(2)	8	7	0	0	0
<b>Energy-Intensive Manufacturing Facilities</b>	COV	Sec. 3901	542	361	8	0	0
<b>Petroleum Production/Import Facilities</b>	COV	Sec. 3901	108	90	8	0	0
<b>HFC Producers/Importers</b>	COV	Sec. 3901	108	90	8	0	0
<b>Landfill and Coal Mine Methane Reduction</b>	NC	Sec. 3907	54	45	33	23	15

**Source:** CRS Analysis of S. 2191 as reported by the Senate Committee on Environment and Public Works and as amended by proposed revenue-neutral amendment.

**Table 2. Allocation of Revenues from Auctions of Remainder Allowances Under S. 3036**(percentage of “remainder allowance” auction revenues after “Off-the-Top”<sup>a</sup> [designated “ss”] distributions are made)

		2012	2020	2030	2040	2050
<b>Off-the-Top Allocation of Auction Proceeds</b>						
<b>BLM Emergency Firefighting Fund</b>	Sec. 4302(b)(1)	ss	ss	ss	ss	ss
<b>Forest Service Emergency Firefighting Fund</b>	Sec. 4302(b)(2)	ss	ss	ss	ss	ss
<b>CSA Management Fund</b>	Sec. 4302(b)(3)	ss	ss	ss	ss	ss
<b>Percentage of Remaining Proceeds</b>						
<b>Technology Deployment</b>	Sec. 4302(b)(4)(B)	52%	52%	52%	52%	52%
<b>Zero- or Low- Carbon Energy Technology</b>	Sec. 4401(1)	16.6%	16.6%	16.6%	16.6%	16.6%
<b>Advanced Coal and Sequestration Technology</b>	Sec. 4401(2)	13.0%	13.0%	13.0%	13.0%	13.0%
<b>Fuel from Cellulosic Biomass</b>	Sec. 4401(3)	3.1%	3.1%	3.1%	3.1%	3.1%
<b>Advanced Technology Vehicles Manufacturing Incentives</b>	Sec. 4401(4)	6.2%	6.2%	6.2%	6.2%	6.2%
<b>Sustainable Energy Program</b>	Sec. 4401(5)	13.0%	13.0%	13.0%	13.0%	13.0%
<b>Energy Independence Acceleration Fund</b>	Sec. 4302(b)(4)(C)	2%	2%	2%	2%	2%
<b>Energy Assistance Fund</b>	Sec. 4302(b)(4)(D)	18%	18%	18%	18%	18%
<b>LIHEAP</b>	Sec. 4501(1)	9.0%	9.0%	9.0%	9.0%	9.0%
<b>Weatherization</b>	Sec. 4501(2)	4.5%	4.5%	4.5%	4.5%	4.5%
<b>Rural Energy Assistance</b>	Sec. 4501(2)	4.5%	4.5%	4.5%	4.5%	4.5%
<b>Climate Change Worker Training Fund</b>	Sec. 4302(b)(4)(E)	5%	5%	5%	5%	5%
<b>DOE University Programs</b>	Sec. 4606(a)	1.25%	1.25%	1.25%	1.25%	1.25%
<b>Adaptation Fund</b>	Sec. 4302(b)(4)(F)	18%	18%	18%	18%	18%
<b>DOI - Wildlife Conservation and Restoration</b>	Sec. 4702(b)(1)	6.3%	6.3%	6.3%	6.3%	6.3%
<b>DOI - Adaptation Activities</b>	Sec. 4702(b)(2)	3.42%	3.42%	3.42%	3.42%	3.42%
<b>DOI - Cooperative Grant Programs</b>	Sec. 4702(b)(3)	0.9%	0.9%	0.9%	0.9%	0.9%
<b>DOI - Tribal Wildlife Grants</b>	Sec. 4702(b)(4)	0.2%	0.2%	0.2%	0.2%	0.2%
<b>Land and Water Conservation Fund</b>	Sec. 4702(c)	1.8%	1.8%	1.8%	1.8%	1.8%
<b>Forest Service Adaptation Activities</b>	Sec. 4702(d)	0.9%	0.9%	0.9%	0.9%	0.9%
<b>EPA Adaptation Activities</b>	Sec. 4702(e)	0.9%	0.9%	0.9%	0.9%	0.9%
<b>Army Corps of Engineers Adaptation Activities</b>	Sec. 4702(f)	1.8%	1.8%	1.8%	1.8%	1.8%
<b>Department of Commerce Adaptation Activities</b>	Sec. 4702(g)	1.8%	1.8%	1.8%	1.8%	1.8%
<b>Climate Change and National Security Fund</b>	Sec. 4302(b)(4)(G)	5%	5%	5%	5%	5%

**Source:** CRS Analysis of S. 2191 as reported by the Senate Committee on Environment and Public Works and as amended by proposed revenue-neutral amendment.

a. Auction revenues must first be allocated to these accounts. However, necessary amounts are not specified in the bill, as they depend on a given year’s expenditures from that account. For a more detailed discussion, see CRS Report RL34489, *Climate Change: Costs and Benefits of S. 2191*.

**Table 3. Estimated Allowances Allocated Under Boxer Amendment, Part I (millions)**

Year	Section	2012	2020	2030	2040	2050	
<b>Total Allowances (millions)</b>	Sec. 201	5,775	4,924	3,860	2,796	1,732	
<b>Cost Containment Pool</b>	Sec. 535	6,000	2,524	0	0	0	
<b>Cost Containment Allowances Auctioned</b>	Sec. 536	450	415	0	0	0	
<b>Cost Containment Allowances Borrowed</b>	Sec. 535	0	0	0	295	395	
<b>Remaining Allowances</b>		5,775	4,924	3,860	2,501	1,337	
<b>Total Available Allowances</b>		6,225	5,339	3,860	2,501	1,337	
<b>Allowance Accounts</b>							
<b>Agriculture and Forestry Program</b>	NC	Sec. 331	245	209	164	113	60
<b>New Technology Incubator</b>		Sec. 332(b)	14	12	10	6	3
<b>Transition Assistance for Workers</b>	AUC	Sec. 542(b)	58	98	116	75	40
<b>Transition Assistance for Carbon-Intensive Manufacturers</b>	COV	Sec. 551(b)	635	542	39	0	0
<b>Currently Operating Facilities</b>	COV	Sec. 552(b)	610	520	37	0	0
<b>New Entrant Facilities</b>	COV	Sec. 522(f)	25	22	2	0	0
<b>Petroleum Refiners (Discretionary)</b>	COV	Sec. 522(h)	64	54	4	0	0
<b>Transition Assistance for Fossil Fuel Electric Generators</b>	COV	Sec. 561(b)	1,040	739	106	0	0
<b>Rural Electric Cooperatives (Maximum)</b>	COV	Sec. 562(c)	52	37	5	0	0
<b>Pilot Program for MT and VA</b>	COV	Sec. 562(c)(2)(a)	8	6	1	0	0
<b>Transition Assistance for Petroleum Fuel Refiners</b>	COV	Sec. 571	116	49	39	0	0
<b>Transition Assistance for Natural Gas Processors</b>	COV	Sec. 581	43	37	29	0	0
<b>Federal Program for Consumers</b>	AUC	Sec. 592(b)	202	295	463	375	201
<b>Partnerships with State Governments</b>							
<b>Customer Assistance Through LDCs</b>							
<b>Electricity</b>	NC	Sec. 611(a)	549	480	386	250	134
<b>Natural Gas</b>	NC	Sec. 611(a)	188	160	135	88	47
<b>Assistance to States with Heavy Reliance on Manuf. and Coal</b>	NC	Sec. 612(a)	173	160	135	100	53
<b>Manufacturing</b>	NC	Sec. 612(b)	87	80	68	50	27
<b>Coal</b>	NC						

Source: CRS Analysis of proposed Boxer Amendment.

**Table 4. Estimated Allowances Allocated Under Boxer Amendment, Part II (millions)**

Year		Section	2012	2020	2030	2040	2050
<b>Partnerships with States, Tribes, and Localities to Reduce Emissions</b>							
	<b>Transportation Sector</b>	AUC Sec. 621(c)	58	98	106	69	37
	<b>Efficiency and Conservation Block Grant Program</b>	AUC Sec. 624(a)	116	98	77	50	27
	<b>States that Have Led in Reducing Emissions</b>	NC Sec. 625(a)	231	246	309	250	134
<b>Partnerships with States and Tribes to Adapt to Climate Change</b>							
	<b>Coastal States</b>	NC Sec. 632(b)	69	64	54	40	21
	<b>Freshwater and Agriculture</b>	NC Sec. 633(a)	43	40	34	25	13
	<b>Alaska</b>	NC Sec. 634(a)	35	32	27	20	11
	<b>Indian Tribes</b>	AUC Sec. 635(d)	26	24	20	15	8
<b>Partnerships with States, Tribes, and Localities to Protect Nat. Resources (Wildlife Adaptation)</b>							
	<b>Early Action Program</b>	NC Sec. 702	289	49	0	0	0
	<b>Efficient Buildings</b>	NC Sec. 811	43	37	29	19	10
	<b>Efficient Equipment and Appliances (SEAD Program)</b>	NC Sec. 821	43	37	29	19	10
	<b>Efficient Manufacturing</b>	NC Sec. 831	43	37	29	19	10
	<b>Renewable Energy</b>	NC Sec. 841	231	197	154	25	13
	<b>Low- and Zero-Carbon Electricity Technology</b>	AUC Sec. 913	101	86	77	25	13
	<b>Advanced Research (ARPA-E)</b>	AUC Sec. 921	14	12	10	6	3
	<b>Carbon Capture and Sequestration (CCS) Technology Fund</b>	AUC Sec. 1012	58	49	0	0	0
	<b>CCS Bonus Allowances</b>	COV Sec. 1021	173	148	154	25	13
	<b>Clean Medium- and Heavy-Duty Hybrid Fleets</b>	NC Sec. 1112	29	0	0	0	0
	<b>Advanced Vehicle Manufacturers</b>	AUC Sec. 1122	58	49	39	25	13
	<b>Cellulosic Biofuel</b>	NC Sec. 1131	58	49	39	0	0
	<b>Federal Program to Protect Nat. Res. (Firefighting and Wildlife Adapt.)</b>	AUC Sec. 1212(b)	173	123	154	125	67
	<b>International Forestry</b>	NC Sec. 1323	58	49	39	25	13
	<b>International Technology Deployment</b>	AUC Sec.1334	29	0	0	0	0
	<b>International Adaptation</b>	AUC Sec. 1342(b)	58	98	154	175	94
	<b>Deficit Reduction Fund</b>	AUC Sec. 1402(b)	332	394	531	419	224
	<b>Climate Security Act Administrative Fund</b>	AUC Sec. 1712	43	37	39	25	13

Source: CRS Analysis of proposed Boxer Amendment.

**Table 5. Estimated Allowance Values and Auction Revenues  
Under S. 3036 (million 2005\$)**

Year	2012	2020	2030	2040	2050
<b>Total Allowances (millions)</b>	5775	4924	3860	2796	1732
<b>Allowance Price (2005\$/ton)</b>	\$18.54	\$28.30	\$46.00	\$74.60	\$120.80
<b>Deficit Reduction Fund</b>	\$6,531	\$11,705	\$25,622	\$33,352	\$33,455
<b>Early Auction</b>	\$5,027	\$0	\$0	\$0	\$0
<b>Auction</b>	\$21,616	\$46,590	\$95,341	\$121,784	\$122,160
<b>Early Action</b>	\$5,027	\$0	\$0	\$0	\$0
<b>States</b>					
<b>Energy Savings</b>	\$2,011	\$2,553	\$3,039	\$3,505	\$3,515
<b>Building Efficiency</b>	\$1,005	\$1,276	\$1,519	\$1,752	\$1,758
<b>Programs that Exceed Fed. Targets</b>	\$2,011	\$2,553	\$3,039	\$3,505	\$3,515
<b>General Allocation - by LIHEAP Share</b>	\$1,508	\$1,915	\$2,279	\$2,628	\$2,637
<b>General Allocation - by Population Share</b>	\$1,508	\$1,915	\$2,279	\$2,628	\$2,637
<b>General Allocation - by Fossil Production CO2 Share</b>	\$1,508	\$1,915	\$2,279	\$2,628	\$2,637
<b>Mass Transit</b>	\$1,005	\$1,276	\$1,519	\$1,752	\$1,758
<b>State Subtotal</b>	\$10,556	\$13,403	\$15,953	\$18,399	\$18,456
<b>Tribal Communities</b>	\$503	\$638	\$760	\$876	\$879
<b>Low/Middle-Class Electricity Consumers</b>	\$9,048	\$11,488	\$13,674	\$15,771	\$15,819
<b>Low/Middle-Class Natural Gas Consumers</b>	\$2,011	\$2,553	\$3,039	\$3,505	\$3,515
<b>CCS Bonus Allowances</b>	\$4,021	\$5,106	\$6,078	\$0	\$0
<b>Domestic Agriculture and Forestry</b>	\$5,027	\$6,382	\$7,597	\$8,761	\$8,789
<b>International Forest Protection</b>	\$2,513	\$3,191	\$3,798	\$4,381	\$4,394
<b>Transition Assistance</b>					
<b>Fossil Fueled Electric Plants</b>	\$19,102	\$20,423	\$1,519	\$0	\$0
<b>Rural Electric Cooperatives</b>	\$1,005	\$1,276	\$1,519	\$0	\$0
<b>Pilot Projects in VA and MT</b>	\$151	\$191	\$0	\$0	\$0
<b>Energy-Intensive Manufacturing Facilities</b>	\$10,054	\$10,212	\$380	\$0	\$0
<b>Petroleum Production/Import Facilities</b>	\$2,011	\$2,553	\$380	\$0	\$0
<b>HFC Producers/Importers</b>	\$2,011	\$2,553	\$380	\$0	\$0
<b>Landfill and Coal Mine Methane Reduction</b>	\$1,005	\$1,276	\$1,519	\$1,752	\$1,758
<b>BLM Emergency Firefighting Fund</b>	\$150	\$150	\$150	\$150	\$150
<b>Forest Service Emergency Firefighting Fund</b>	\$430	\$430	\$430	\$430	\$430
<b>CSA Management Fund</b>	\$1,071	\$1,393	\$1,776	\$2,086	\$2,092
<b>Technology Deployment</b>	\$10,382	\$23,201	\$48,352	\$61,942	\$62,134
<b>Zero- or Low- Carbon Energy Technology</b>	\$3,322	\$7,424	\$15,473	\$19,821	\$19,883
<b>Advanced Coal and Sequestration Technology</b>	\$2,595	\$5,800	\$12,088	\$15,485	\$15,533
<b>Fuel from Cellulosic Biomass</b>	\$623	\$1,392	\$2,901	\$3,717	\$3,728
<b>Adv. Tech. Vehicles Manufacturing Incentives</b>	\$1,246	\$2,784	\$5,802	\$7,433	\$7,456
<b>Sustainable Energy Program</b>	\$2,595	\$5,800	\$12,088	\$15,485	\$15,533
<b>Energy Independence Acceleration Fund</b>	\$399	\$892	\$1,860	\$2,382	\$2,390
<b>Energy Assistance Fund</b>	\$3,594	\$8,031	\$16,737	\$21,441	\$21,508
<b>LIHEAP</b>	\$1,797	\$4,015	\$8,369	\$10,721	\$10,754
<b>Weatherization</b>	\$898	\$2,008	\$4,184	\$5,360	\$5,377
<b>Rural Energy Assistance</b>	\$898	\$2,008	\$4,184	\$5,360	\$5,377
<b>Climate Change Worker Training Fund</b>	\$998	\$2,231	\$4,649	\$5,956	\$5,974
<b>Adaptation Fund</b>	\$3,594	\$8,031	\$16,737	\$21,441	\$21,508
<b>Climate Change and National Security Fund</b>	\$998	\$2,231	\$4,649	\$5,956	\$5,974

Source: CRS Analysis of S. 3036.

**Table 6. Estimated Allowance Values and Auction Revenues Under Boxer Amendment (million 2005\$)**

Year	2012	2020	2030	2040	2050
<b>Total Allowances (millions)</b>	5775	4924	3860	2796	1732
<b>Allowance Price (2005\$)</b>	\$18.54	\$28.30	\$46.00	\$74.60	\$120.80
<b>Agriculture and Forestry Program</b>	\$4,550	\$5,922	\$7,546	\$8,396	\$7,268
New Technology Incubator	\$268	\$348	\$444	\$466	\$404
<b>Transition Assistance for Workers</b>	\$1,071	\$2,787	\$5,327	\$5,597	\$4,845
<b>Transition Assistance for Carbon-Intensive Manufacturers</b>	\$11,778	\$15,328	\$1,776	\$0	\$0
Currently Operating Facilities	\$11,306	\$14,715	\$1,705	\$0	\$0
New Entrant Facilities	\$471	\$613	\$71	\$0	\$0
Petroleum Refiners (Discretionary)	\$1,178	\$1,533	\$178	\$0	\$0
<b>Transition Assistance for Fossil Fuel Electric Generators</b>	\$19,272	\$20,902	\$4,883	\$0	\$0
Rural Electric Cooperatives (Maximum)	\$964	\$1,045	\$244	\$0	\$0
Pilot Program for MT and VA	\$145	\$157	\$37	\$0	\$0
<b>Transition Assistance for Petroleum Fuel Refiners</b>	\$2,141	\$1,393	\$1,776	\$0	\$0
<b>Transition Assistance for Natural Gas Processors</b>	\$803	\$1,045	\$1,332	\$0	\$0
<b>Federal Program for Consumers</b>	\$3,747	\$8,361	\$21,307	\$27,986	\$24,226
<b>Partnerships with State Governments</b>					
Electricity LDCs	\$10,172	\$13,587	\$17,756	\$18,657	\$16,151
Natural Gas LDCs	\$3,480	\$4,529	\$6,215	\$6,530	\$5,653
Assistance to States with Manuf. and Coal	\$3,212	\$4,529	\$6,215	\$7,463	\$6,460
<b>Partnerships with States, Tribes, and Localities</b>					
Transportation Sector	\$1,071	\$2,787	\$4,883	\$5,131	\$4,442
Efficiency and Conservation Block Grant Program	\$2,141	\$2,787	\$3,551	\$3,731	\$3,230
States that Have Led in Reducing Emissions	\$4,283	\$6,967	\$14,205	\$18,657	\$16,151
<b>Partnerships with States and Tribes to Adapt to Climate Change</b>	\$3,212	\$4,529	\$6,215	\$7,463	\$6,460
Coastal States	\$1,285	\$1,812	\$2,486	\$2,985	\$2,584
Freshwater and Agriculture	\$803	\$1,132	\$1,554	\$1,866	\$1,615
Alaska	\$642	\$906	\$1,243	\$1,493	\$1,292
Indian Tribes	\$482	\$679	\$932	\$1,119	\$969
<b>Partnerships with States, Tribes, and Localities - Wildlife</b>	\$2,141	\$2,787	\$7,102	\$7,463	\$6,460
<b>Early Action Program</b>	\$5,353	\$1,393	\$0	\$0	\$0
<b>Efficient Buildings</b>	\$803	\$1,045	\$1,332	\$1,399	\$1,211
<b>Efficient Equipment and Appliances (SEAD Program)</b>	\$803	\$1,045	\$1,332	\$1,399	\$1,211
<b>Efficient Manufacturing</b>	\$803	\$1,045	\$1,332	\$1,399	\$1,211
<b>Renewable Energy</b>	\$4,283	\$5,574	\$7,102	\$1,866	\$1,615
<b>Low- and Zero-Carbon Electricity Technology</b>	\$1,874	\$2,439	\$3,551	\$1,866	\$1,615
Advanced Research (ARPA-E)	\$268	\$348	\$444	\$466	\$404
<b>Carbon Capture and Sequestration (CCS) Technology Fund</b>	\$1,071	\$1,393	\$0	\$0	\$0
<b>CCS Bonus Allowances</b>	\$3,212	\$4,180	\$7,102	\$1,866	\$1,615
<b>Clean Medium- and Heavy-Duty Hybrid Fleets</b>	\$535	\$0	\$0	\$0	\$0
<b>Advanced Vehicle Manufacturers</b>	\$1,071	\$1,393	\$1,776	\$1,866	\$1,615
Cellulosic Biofuel	\$1,071	\$1,393	\$1,776	\$0	\$0
<b>Federal Program on Firefighting and Wildlife Adaptation</b>	\$3,212	\$3,484	\$7,102	\$9,329	\$8,075
<b>International Forestry</b>	\$1,071	\$1,393	\$1,776	\$1,866	\$1,615
<b>International Technology Deployment</b>	\$535	\$0	\$0	\$0	\$0
<b>International Adaptation</b>	\$1,071	\$2,787	\$7,102	\$13,060	\$11,306
<b>Deficit Reduction Fund</b>	\$6,156	\$11,148	\$24,415	\$31,251	\$27,053
<b>Climate Security Act Administrative Fund</b>	\$803	\$1,045	\$1,776	\$1,866	\$1,615

Source: CRS Analysis of proposed Boxer Amendment