Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

Comprehensive Federal Legislation to Regulate Greenhouse Gas Emissions

by Tom Mounteer

Tom Mounteer is a partner in the Washington, D.C., office of Paul Hastings, where he co-chairs the firm's environmental practice.*

Editors' Summary

A few weeks before the 2008 presidential election, Tom Mounteer and his Paul Hastings colleagues submitted a manuscript that ELI published this past July as the Climate Change Deskbook. *In a book jacket testimonial, Prof. Arnold Reitze of the University of Utah College of Law wrote of the* Deskbook, *"Hopefully it will be the first of many editions that will be needed as the field expands and matures." Certainly there has been much maturation since the presidential election of 2008, including the House of Representatives' passage of a comprehensive bill. This Article is a first effort to take up Professor Reitze's challenge to update the* Deskbook *to reflect developments since its publication just a few months ago. It serves as replacement text for Section 3.3 of the* Deskbook. *Tempting fate, the authors completed the manuscript that became this Article before Congress returned from its August recess and before a comprehensive bill was introduced in the Senate. Professor Reitze's challenge, no doubt, endures.*

I. The Politics of Climate Change

From 2007 through 2009, when the topic turned to comprehensive federal climate change legislation, the discussion was generally about which variations of cap-and-trade legislation bills gained the most traction in the U.S. Congress: on the U.S. Senate side, S. 3036, the Climate Security Act of 2008,[1] the principal sponsors of which were Sens. Joseph Lieberman (I-Conn.) and John Warner (R-Va.), and so the bill is commonly referred to as Lieberman-Warner, and, on the U.S. House of Representatives side, H.R. 2454, the American Clean Energy and Security Act of 2009, the principal sponsors of which were Reps. Henry Waxman (D-Cal.) and Ed Markey (D-Mass.), and so the bill is commonly referred to as Waxman-Markey.[2] During the 2008 presidential campaign, bookended by Senate and House consideration of these leading bills, when the two presidential candidates discussed climate change directly, they too did so mostly in terms of cap-and-trade legislation. While cap and trade may have been its focus, Waxman-Markey contained laundry lists of new federal programs to spur clean energy, reduce mobile source greenhouse gas (GHG) emissions, and foster "smart grid" technology.

A. *2007–2009 Activity*

On December 5, 2007, the Senate Environment and Public Works Committee reported the Lieberman-Warner Bill, which embraced an economywide cap-and-trade approach,

Since 1997, he has been an adjunct professor in the masters in environmental law program at George Washington University Law School. He is the author of the Climate Change Deskbook *(ELI 2009).* *He expresses appreciation to Bob Strieter, vice president for environmental, health, and safety for the Aluminum Association, for his thoughtful comments on the manuscript. He thanks associates Jeff Allmon, Matt Raeburn, and Jennifer Shea, in the environmental practice group of Paul Hastings' Washington office, for their contributions. The author also acknowledges with deep appreciation the substantial contributions of members of the 2009 summer associate class of Paul Hastings' Washington office in digesting the 1,400-page Waxman-Markey Bill: Joshua Christensen (University of Wisconsin Law School); Sarah Farnham (George Washington University Law School); Abbey Morrow (Vanderbilt University Law School); Elizabeth Norton (University of Virginia Law School); Dana Parsons (George Washington University Law School); Noah Pinegar (Indiana University Law School); Adam Weiss (Tulane University Law School); and Devon Winkles (Emory University School of Law).*

1. *See* S. 3036, 110th Cong. §2 (2008); *see also* S. Rep. No. 110-337, at 1-3, 106 (2008). The bill was originally introduced as S. 2191, 110th Cong. (2007).
2. H.R. 2454, 111th Cong. §711 (2009). *See generally* Greg Hitt & Stephen Power, *House Passes Climate Bill*, Wall St. J., June 27, 2009, at A1.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

out of Committee.[3] It was the first climate change bill to pass out of a congressional committee. On June 2, 2008, the Senate voted 74 to 14 to allow debate on the bill.[4] On June 4, Republicans required Sen. Barbara Boxer's (D-Cal.) amendment to the bill, in the nature of a substitute, to be read aloud in the Senate chamber for eight hours.[5] On June 6, Senate Democrats were unable to muster the 60 votes (falling 12 votes short) needed to break a filibuster to continue debating the bill. Senate Democratic leaders, recognizing they would not be able to get a vote on the bill, pulled it off the floor.

With Lieberman-Warner's demise, the prospects for comprehensive climate change legislation before the 2008 presidential election ended.

> [S]upporters had hoped to get the Senate on the record on several amendments that could help shape a climate change bill in the next Congress. Instead, the Senate never addressed issues that will be critical to any future legislation, such as the role of nuclear power or whether to preempt more stringent action at the state level.[6]

Failure of Lieberman-Warner led a proponent of legislation, Eileen Claussen, of the Pew Center, to conclude the next proposal would have to be simpler.[7] Indeed, observers have attributed states' success in enacting measures to curtail GHG emissions to the fact that they have not adopted (and perhaps did not have to adopt) comprehensive legislation.[8]

In the 2008 presidential campaign, there was some consensus at the top of the tickets. Sens. John McCain (R-Ariz.) and Barack Obama (D-Ill.) agreed that climate change is the leading environmental problem confronting the country. They agreed on a cap-and-trade approach to the problem. They disagreed, however, on the elements that cap-and-trade legislation should include.

On June 26, 2009, the House passed Waxman-Markey by a close vote of 219 to 212.[9] The horse-trading by which Chairman Waxman eked out the slim margin of victory by which H.R. 2454 passed was epic, even by Washington standards.

Support for comprehensive climate change legislation divides along both party and geographic lines. Reporting a few days before the House vote on Waxman-Markey, the *Washington Post* described it as a feud "between coastal liberals, who supported a hard cap, and legislators from the Rust Belt and farm states."[10] One of the biggest issues involved concerns of the coal-producing states and the result the GHG emissions reduction mandate could have on their communities, and that, in contrast, the biggest supporters of the bill represented wealthier coastal states that would see little economic impact.[11] In the vote passing Waxman-Markey by a slim margin, 44 Democrats from 24 states joined nearly all Republicans in voting against the bill, and eight Republicans from six states broke ranks to support the measure.[12] All eight of the House Republicans who supported the bill came from states with two Democratic senators who were strong supporters of cap-and-trade legislation, and seven of them came from districts that President Obama carried in the 2008 election.[13]

One illustration of the type of horse-trading that Chairman Waxman used to secure H.R. 2454's passage involved the bill's provisions to "allow farmers to sell 'offsets' for [carbon dioxide (CO_2)] that their crops soak up from the air or for reducing [GHGs] from animal waste."[14] At the time the House was considering Waxman-Markey, the U.S. Environmental Protection Agency (EPA) was in the midst of accepting public comment on a proposal that would have factored in "indirect land use change-related emissions, including emissions from land clearing and agricultural practices in other countries due to domestic demand for biofuels" in its development of a renewable fuels standard.[15] This was perceived as favoring wind and solar energy as truly renewable sources to the detriment of the U.S. biofuels industry. Chairman Markey's draft bill vested authority of this issue in EPA. House Agriculture Committee Chairman Collin Peterson (D-Minn.) "want[ed] the Agriculture Department to have the authority to decide whether environmentally friendly actions by farmers would qualify for lucrative benefits under a system in which allowances to emit [GHG] would be bought and sold."[16] To secure the support of members from agricultural districts, Chairman Markey revised the bill to

3. S. Rep. No. 110-337, *supra* note 2, at 2.
4. Dean Scott, *Democrats Look to Break Impasse, but Cloture Vote Could Mean End of Bill*, BNA Daily Env't Rep. A-9 (June 6, 2008).
5. Avery Palmer, *Climate Change Bill Stalls at Start*, Cong. Q. Wkly. (June 7, 2008) [hereinafter Palmer].
6. *Id.*
7. *Id.*
8. Bradford Plumer, *A New Leaf*, Audubon 63, 64 (Sept./Oct. 2008) ("one reason many states haven't been afflicted by the legislative paralysis that's plaguing Congress is that they don't try to ram through one big climate change bill all at once") [hereinafter Plumer].
9. *Id.*
10. Paul Kane et al., *Close Win Predicted for Cap-and-Trade Bill*, Wash. Post, June 26, 2009, at A4.
11. Brandon Lorenz, *Rep. Henry Waxman's Bill to Cap Carbon Dioxide Faces Long Odds*, Facilities Net (June 2009), http://www.facilitiesnet.com/green/article/Rep-Henry-Waxmans-bill-to-Cap-Carbon-Dioxide-Faces-Long-Odds--10874.
12. *House Climate Bill May Foreshadow Senate Trouble Spots*, Inside EPA (July 6, 2009).
13. *Id.*
14. Paul Kane et al., *Close Win Predicted for Cap-and-Trade Bill*, Wash. Post, June 26, 2009, at A4. *See also* Steven Mufson, *Vote Set on House Climate Bill*, Wash. Post, June 24, 2009, at A03 (referring to "credits farmers could receive for tilling and conservation practices that keep carbon dioxide stored in soil") [hereinafter Mufson, *Vote Set*].
15. *House Climate Bill Deal Raises Questions Over Fate of EPA RFS Plan*, Inside EPA (July 25, 2009).
16. Steven Mufson, *Democrats Struggling for Consensus on Climate Bills,* Wash. Post, June 15, 2009, at A5.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

give this authority to the U.S. Department of Agriculture, not EPA.[17]

B. Key Policy Disputes

1. Wide Range of Estimated Economic Impacts

The effect that GHG emissions caps would have on the U.S. economy—especially during recessionary times—was and continues to be an area of great dispute. Some see capping GHG emissions as inevitably driving up energy costs, thereby dealing another blow to an already hurting U.S. economy. Predicted adverse economic impacts were, in large part, a reason the Senate scuttled the Lieberman-Warner Bill in 2008. Similar predictions also likely accounted for the slim margin of victory for Waxman-Markey in the House in 2009.

The leading trade association for electricity generators, the Edison Electric Institute, said that Lieberman-Warner's schedule of emissions reductions was "unrealistic given that significant deployment of new nuclear power plants is a decade away and that carbon capture technologies are not expected to be available until at least 2020."[18] While one report focused on the Lieberman-Warner Bill's potential to increase consumers' energy bills, amounting to an "increase [in] gasoline prices [of] only about 2.5 cents per gallon per year,"[19] others predicted more dire consequences. While Lieberman-Warner was pending before the Senate, the National Association of Manufacturers released a study that predicted the bill would be "responsible for losses of between $151 billion and $210 billion in gross domestic product by 2020, along with the loss of as many as 1.8 million jobs in that period and a 33% increase in electricity prices."[20] Consequences of this magnitude became grist for television advertising. The Chamber of Commerce aired an advertisement in 2007 showing a "family bundled in ear muffs, scarves, and winter coats," a "man frying eggs over a candle," "[c]ommuters jogging to work carrying their briefcases." The voice-over announcer declared: "Climate legislation being considered by Congress could make it too expensive to heat our homes, power our lives, and drive our cars."[21]

The economic effect of capping GHG emissions was also a source of consternation during House deliberations over Waxman-Markey. In Committee, Democrats expressed fear that their districts would not be able to meet the standards set forth in the bill, and that their constituents would pay more for everything from utilities to basic consumer goods, simply because manufacturers would have to pass along the economic costs of carbon reduction.[22] Supporters and opponents brought forth competing economic models of the legislation's expected effect. The legislation's cost would be "less than 50 cents per household per day according to estimates by the U.S Environmental Protection Agency and the Congressional Budget Office."[23] On the other hand, the Heritage Foundation, "a conservative think tank, [says] the cost would be much steeper: $11.78 per day in the coming decades."[24] The National Center for Public Policy Research and the Heritage Foundation, among others, claimed that Waxman-Markey would (1) cut millions of jobs, (2) burden households with over $1 billion in costs disproportionately borne by the poor, and (3) create geographic inequities because the economic impact will be greatest on the poorer southern and midwestern states (while most Democratic supporters of the bill represent wealthier coastal states).[25] Although the Congressional Budget Office estimated that the consumer price increases from a 15% cut in emissions would cost the average middle-class household less than 3% of its annual after-tax income, the lower class would pay more than 3%.[26]

Even after the House's passage of Waxman-Markey, the debate over its effects on the economy raged. In the lead-up to hoped-for Senate consideration of companion legislation, two leading Senate proponents took to the pages of the *Washington Post* to argue with the economic doomsayers. "Time and again, pessimists—often affiliated with polluting industries—predicted job losses and great costs to taxpayers. Each time, our environmental laws have cleaned the water we drink, the air we breathe, and the communities we live in *at far lower cost than initially expected*."[27] Within just a few weeks, opponents of the legislation were prepared to counter the senators' lofty rhetoric with empirical analysis. According to their analysis, the effect of the legislation would be to depress gross domestic product (GDP) by 1.8% (under a low-cost scenario) and up to 2.4% (under a high-cost scenario) by 2030.[28] This would be accompanied by job losses of between 1.79 to 2.44 million jobs.[29]

A subsequent study by the U.S. Department of Energy's (DOE's) Energy Information Administration (EIA) concurred that Waxman-Markey would increase the cost of

17. Mufson, *Vote Set*, *supra* note 14.
18. Elizabeth Wasserman, *Companies Warm to Climate Change*, Cong. Q. Wkly. (Apr. 20, 2008) [hereinafter Wasserman].
19. *Id.*
20. *Id.*
21. *Id.* When Environmental Defense sent letters to about 40 Chamber members complaining about the spot, and the members contacted the Chamber, "[t]he ad aired in Washington for only a month before Chamber officials dropped it like a hot potato." *Id.*
22. Office of the Republican Whip, *Whip Count—What Democrats Are Saying About the Democrat's Cap-And-Tax Bill*, *available at* http://republicanwhip.house.gov/blog/5.5.09%20Democrats%20On%20Cap-And-Tax.pdf [hereinafter *Whip Count*].
23. David Fahrenthold & Steven Mufson, *Deconstructing the Climate Bill*, Wash. Post, July 6, 2009, at A6 [hereinafter *Deconstruct*].
24. *Id.*
25. National Center Blog, *Outrage of the Day: The Costly Waxman Markey Global Warming Tax* (Apr. 6, 2009, 17:42 EST), http://www.nationalcenter.org/2009/04/outrage-of-day-costly-waxman-markey.html; *Who Pays for Cap and Trade?* Wall St. J. Online, Mar. 9. 2009, *available at* http://online.wsj.com/article/SB123655590609066021.html [hereinafter *Who Pays*].
26. *Who Pays, supra* note 25.
27. Barbara Boxer & John F. Kerry, *What Palin Got Wrong About Energy*, Wash. Post, July 24, 2009, at A21 (emphasis added).
28. SAIC, *Analysis of the Waxman-Markey Bill Using the National Energy Modeling System* (a report for the American Council for Capital Formation and the National Association of Manufacturers) (Aug. 12, 2009), *available at* http://www.accf.org/publications/126/accf-nam-study. *See also* Leora Falk, *Waxman-Markey Bill Would Lead to Job Loss, Slower Growth, Manufacturing Group Says,* BNA Daily Env't Rep. A-12 (Aug. 13, 2009) [hereinafter Falk, *Job Loss*].
29. Falk, *Job Loss*, *supra* note 28.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

using energy, reducing real economic output as a result, thereby reducing purchasing power and aggregate demand for goods and services.[30] EIA acknowledged major areas of uncertainty in estimating Waxman-Markey's effect on the economy. While the bill puts a ceiling on Covered Entities' use of offsets to satisfy their compliance obligation, EIA found "their actual use is an open question."[31] The other major area of uncertainty is the "timing, cost, and public acceptance of low- and no-carbon technologies."[32] Because of these uncertainties, EIA arrayed a range of possible outcomes to estimate the legislation's potential economic impact.[33] On the basis of this array, EIA foresaw possible GDP-dampening effects ranging from as little as -0.2% to as much as -1.3%.[34]

The refinery industry used the EIA forecast as a basis for assessing Waxman-Markey's impact on the U.S. domestic refinery sector.[35] That assessment showed the bill reducing domestic refining by 4.4 million barrels per day and shifting the proportion of U.S. consumption of refined products from 9.6% to 19.4%.[36] This would result in an 88% ($89.7 billion) decline in annual U.S. refining investments.[37] The assessment concludes that the reduced GHG emissions achieved domestically would largely be offset by the relocation of refinery operations overseas and concomitant increase in GHG emissions.[38]

2. Whether Legislation Would Stimulate U.S. Jobs or Send Them Abroad

Given the historically high unemployment rate during congressional consideration of these bills, the effect that capping U.S. GHG emissions would have on domestic jobs was an even "hotter button" than the bills' generalized economic impacts. During House deliberations over Waxman-Markey, there was bipartisan concern that stringent GHG regulation in the United States would cause job losses to China. For example, Democrats on Chairman Waxman's Energy and Commerce Committee voiced concern that the bill would drive industries and jobs away from the United States and into countries with more lenient emissions standards.[39]

President Obama viewed the bill as having the opposite effect. In a Rose Garden ceremony on the eve of the House vote, President Obama "mostly emphasized non-environmental benefits, such as new jobs in clean energy and reduced reliance on foreign oil." "Make no mistake: This is a jobs bill," the president declared.[40]

To assure the bill's passage, Chairman Markey addressed committee members' concerns head on. "The bill includes provisions from a 'manager's amendment' that would require the president to impose a tariff after 2010 on some goods from countries that do not limit their [GHG] emissions."[41] Waxman-Markey identifies certain sectors that are heavily exposed to global trade, and these groups would get government rebates to help keep their products globally competitive.[42] Specifically, trade-related language would require the president in 2020 to propose a border adjustment to address uncompensated costs for industries receiving free allowances.[43]

C. *Ball in Senate's Court*

The month before the Senate left Washington for its August 2009 recess, Majority Leader Sen. Harry Reid (D-Nev.) "tasked a handful of committee chairs with completing their portions of the legislation by September 18, at which point he hopes to cobble together the pieces and get the package to the floor late in the fall."[44] Proponents of the legislation hope for Senate action by late fall, prior to participation by the United States in international talks on the contours of an international agreement to govern GHG emissions after 2012, that is, after the expiration of the Kyoto Protocol.

If the Senate does consider its own version of an economy-wide cap-and-trade bill, either in the fall of 2009 or later, supporters and opponents are expected to be as evenly divided as they were in the House. In the Senate, there is perceived to be a greater problem with southern and Great Plains senators than with their midwestern counterparts.[45] In early reports, at least six Senate Democrats are expected to have trouble supporting cap-and-trade legislation: Sens. Robert Byrd and Jay Rockefeller of West Virginia; Sens. Kent Conrad and Byron Dorgan of North Carolina; Sen. Tim Johnson

30. Energy Information Administration, U.S. DOE, *Energy Market and Economic Impacts of H.R. 2454, the American Clean Energy and Security Act of 2009* xiii (Aug. 2009), *available at* http://www.eia.doe.gov/oiaf/servicerpt/hr2454/index.html?featureclicked=1&.
31. *Id.* at vii.
32. *Id.*
33. *Id.*
34. *Id.* at xiii.
35. Ensys Energy, *Waxman-Markey (H.R. 2454) Refining Sector Impact Analysis* (prepared for the American Petroleum Institute) (Aug. 21, 2009), *available at* http://www.api.org/Newsroom/upload/ENSYS_W_M_Briefing_Report_2009-8_20.pdf. *See also* Ari Natter, *Oil Industry Study Say Waxman-Markey Would Push Refinery Operations Overseas,* BNA Daily Env't Rep. A-6 (Aug. 25, 2009).
36. *Id.* slide 3.
37. *Id.*
38. *Id.* slide 14.
39. *Whip Count*, *supra* note 22. (citing Thomas Burr, *Veterans Group Takes on Matheson Over Energy Bill*, Salt Lake Trib. (Apr. 27, 2009); Darren Goode, *On Opening Day of Hearings, Dem Leaders Get an Earful*, Nat'l J. Cong. Daily (Apr. 22, 2009); Alex Isenstadt, *Cap and Trade Hits Speed Bumps*, Politico (Apr. 27, 2009); Tom LoBianco, *House Lawmakers Take Stands in Hearings on Climate Change*, Wash. Times (Apr. 22, 2009); Patrick O'Connor & Lisa Lerer, *Dingell Dems Fret About Cap and Trade*, Politico (Apr. 28, 2009); Mary Orndorff, *Davis Shifts With Critique of Obama Budget*, Birmingham News (Mar. 18. 2009); Stephen Power, *EPA Previews Carbon Caps' Impact*, Wall St. J. (Apr. 22, 2009); Darren Samuelsohn, *House Democrats Still Talking in Quest to Pass Climate Bill*, N.Y. Times (Apr. 27, 2009); Gerard Shields, *La. Democrats Key Figures in Federal Emissions Debate*, Baton Rouge Advoc. (May 2, 2009); *House Dems Aim to Curb Job "Leakage" Under Cap and Trade*, Env't. & Energy Daily (Mar. 25, 2009)).
40. Paul Kane et al., *Close Win Predicted for Cap-and-Trade Bill*, Wash. Post, June 26, 2009, at A4.
41. Steven Cook, *Climate Bill Imposes Emissions Trading, Energy Efficiency, Renewables Requirements*, BNA Daily Env't Rep. A-7 (June 30, 2009).
42. *Cushions and Crutches: How Would the Cap-and-Trade Bill Protect Vulnerable Industries?*, Wall St. J., Mar. 31, 2009, *available at* http://blogs.wsj.com/environmentalcapital/2009/03/31/cushions-and-crutches-how-would-the-cap-and-trade-bill-protect-vulnerable-industries/.
43. *Following Intense Deal Making, Climate Change Bill Clears House*, Inside EPA (June 29, 2009).
44. Paul Kane, *Push and Pull in Senate May Recast Climate Bill*, Wash. Post, July 7, 2009, at A3.
45. *Id.*

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

of South Dakota; and Sen. Mary Landrieu of Louisiana.[46] Senators from those states are expected to push "for more incentives to help their depressed industries shift to alternative energy sources."[47] In early August 2009, 10 Democratic senators wrote President Obama expressing their support for a "border adjustment mechanism" to "prevent the export of jobs and related [GHG] emissions to countries that fail to take actions to combat the threat of global warming comparable to those taken by the United States."[48]

In the face of this controversy, and even before August 2009 had ended, key proponents of a Senate counterpart to Waxman-Markey backed off their pledge to introduce a bill the day after Labor Day, instead predicting introduction "later in September."[49] Clearly, health care reform diverted focus from climate change.[50] As Congress returned to Washington, interest groups were gearing up to oppose the legislation. The National Association of Manufacturers was reported to be spending millions on television ads in 13 states calling the bill "anti-jobs, anti-energy."[51] The Chamber of Commerce was engaged in field organizing and called for a new "Scopes Monkey Trial" on the very existence of climate change.[52]

II. Creating a Federal Cap-and-Trade Program

Under a cap-and-trade program, also known as an emissions trading program, a regulatory agency sets a limit on the amount of a pollutant that can be emitted from a given area. Regulated entities, in turn, are required to hold enough emissions allowances to account for the amount of pollutants they emit. The total number of allowances in the program cannot exceed the cap set by the regulatory agency. Typically, the cap is progressively decreased to achieve greater emissions reductions over time.[53] Entities that cannot efficiently reduce emissions can purchase allowances from entities that can more easily reduce emissions. In essence, the buyer of allowances is paying for the right to pollute, while the seller is rewarded for efficient emissions reductions.[54] There have been several cap-and-trade programs used federally in the United States to reduce emissions of air pollutants. The Acid Rain Trading Program was the first such federal program.[55]

Many of the leading congressional cap-and-trade proposals for GHG emissions follow a similar pattern but differ in the sectors they apply to and the pollutants they regulate, their CO_2 reduction goal, how they distribute and trade emission allowances, how auction revenue will be used, what "safety valves" will exist, and what portion of required emissions reductions regulated entities can make up with "offsets."

A. GHG Emissions and Sources Subject to Cap

1. GHGs Covered

There is some variation in the GHG gases covered in the various bills introduced in Congress in 2008 and 2009. Most cover the six Kyoto Protocol gases: CO_2, methane, nitrogen oxide (NO_x), hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride. Representative Markey's 2008 bill, H.R. 6186 (Investing in Climate Action and Protection Act),[56] and Rep. John Dingell's (D-Mich.) draft legislation[57] both allowed EPA to designate other gases based on the Agency's determination that the gases contribute to global warming as much as CO_2. Other bills cover different pollutants. For example, Sen. Tom Carper's (D-Del.) S. 1177 (Clean Air Planning Act)[58] covered sulfur dioxide (SO_2), NO_x, mercury, and CO_2.

Waxman-Markey embraces five of the six Kyoto Protocol gases and seven total GHGs: CO_2, methane, NO_x, sulfur hexafluoride, HFCs emitted as a byproduct, perfluorocarbons, and nitrogen trifluoride.[59] This approach is virtually identical to the approach EPA took in its March 10, 2009, proposed rule for mandatory GHG reporting. Waxman-Markey excludes HFCs as GHGs but instead covers them under a separate cap.[60] Section 712 of the bill lists the CO_2 equivalent (CO_2e) for each gas, figures that require periodic review of equivalence values by the Administrator, and §713 directs EPA to establish a federal GHG registry and comprehensive reporting system for GHG emissions.[61]

2. Sources Covered

Proponents of comprehensive federal climate change legislation that has advanced the farthest—the Lieberman-Warner Bill that reached the Senate floor in 2008 and the Waxman-Markey Bill that the House passed in 2009—describe their aims as having an "economywide" applicability. Not all proposals, however, have taken an economywide approach. Pro-

46. *Id.*
47. *Id.*
48. Letter from Sens. Sherrod Brown, Debbie Stabenow, Russell Feingold, Carl Levin, Evan Bayh, Robert Casey, Robert Byrd, Arlen Specter, John D. Rockefeller IV, and Al Franken, to President Obama (Aug. 6, 2009), *available at* http://brown.senate.gov/newsroom/press_releases/release/?id=ad9cc0fa-53c2-442c-ab20-eee0a7572f02.
49. *Climate Bill Delayed (Again)*, Inside EPA (Aug. 31, 2009).
50. Dean Scott, *Boxer to Delay Introduction of Senate Bill; Committee Markup Not Likely Until October,* BNA Daily Env't Rep. A-7 (Sept. 1, 2009).
51. David Fahrenthold, *Environmentalists Slow to Adjust in Climate Debate*, Wash. Post, Aug. 31, 2009, at A1.
52. *Id.*
53. As one press account succinctly summarized Waxman-Markey: it would "set a limit on [GHG] emissions and gradually tighten it. Major emitters of [GHG]-including any business that burns fossil fuels such as oil, natural gas, or coal, would have to reduce their emissions or buy allowances, which would be traded on markets like commodities." *Deconstruct, supra* note 23.
54. *See generally* David Harrison et al., *Using Emissions Trading to Combat Climate Change: Programs and Key Issues*, 38 ELR 10367 (June 2008) [hereinafter Harrison et al., *Combat*].
55. *Id.* at 10369-71 (discussing three federal and two state and regional programs).
56. H.R. 6186, 110th Cong. §704 (2008).
57. Discussion Draft, §701, http://energycommerce.house.gov/Climate_Change/CLIM08_001_xml.pdf (last visited Oct. 8, 2008) [hereinafter *Dingell Draft*].
58. S. 1177, 110th Cong. §2 (2007).
59. H.R. 2454, *supra* note 2, §711.
60. *Id.* §332. These HFCs have a separate reduction schedule that targets reaching 15% of the baseline by 2032.
61. *Id.*

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

posals such as Senator Carper's (S. 1177)[62] or Sen. Dianne Feinstein's (D-Cal.) (S. 317)[63] would have applied only to the power sector, like some of the regional initiatives. During the 2008 presidential campaign, senator and presidential candidate McCain supported a broad, but not economywide approach.[64] Senator and presidential candidate Obama supported an economywide approach.[65]

The economywide sobriquet deserves some examination. Behind the sobriquet typically lies a list of covered sources emitting greater than a threshold amount of CO_2e. Proponents of economywide cap-and-trade bills characterize their bills as covering "downstream" emitters (such as power plants), which are "downstream for the chain of energy production, distribution, and end use," and "upstream" emitters, those "at the point of production or first sale of fossil fuels."[66]

Even if a source falls within a covered industrial sector, economywide proposals typically subject sources to the GHG emissions cap only if they generate greater than a stated amount of CO_2e emissions. Waxman-Markey again follows EPA's 2009 proposed rule for GHG reporting by establishing a threshold of 25,000 metric tons CO_2e, a figure that EPA set in the proposed GHG reporting rule based on a desire to maximize coverage of U.S. emissions and yet to exclude smaller emitters.[67]

Waxman-Markey specifically provides for the establishment of a federal GHG registry of upstream, downstream, and midstream sources of substantial GHG emissions estimated to cover up to 85% of U.S. GHG emissions.[68] Waxman-Markey refers to these regulated emissions sources as Covered Entities.[69]

- The main *downstream* sources Waxman-Markey applies to include coal, oil, and natural gas-fired power plants,[70] which also account for more than one-half of energy-related GHG emissions in the United States. The bill also covers certain stationary industrial sources of emissions, such as aluminum producers, cement producers, and oil refineries.[71] It also extends to other large industrial emissions sources and other stationary sources emitting more than 25,000 tons of CO_2e that are not otherwise covered, such as ethanol producers and iron and steel producers that burn coal, oil, or natural gas.[72]
- The primary *midstream* sources Waxman-Markey covers are large natural gas distribution companies and local distribution companies with customers that are not themselves Covered Entities.[73]
- Finally, the main *upstream* sources covered are producers and importers of petroleum-based or coal-based liquid fuels, petroleum, or liquid natural gas, such as ethane, propane, butane, and isobutene.[74] Also covered are any sources that produced, imported, manufactured, or delivered any of the covered GHGs above the specified 25,000 ton CO_2e threshold, and any entity that delivers electricity to an energy-intensive facility in an industrial sector.[75]

While Waxman-Markey initially only targets entities that emit greater than 25,000 tons of CO_2e, the bill provides that EPA may increase coverage to include entities that emit greater than 10,000 tons of CO_2e after 2020.[76] During the bill's consideration, business lobbies, including the Chamber of Commerce, raised concerns about EPA's using existing Clean Air Act (CAA) authority to regulate sources that emit far less than 10,000 tons of CO_2e.[77] The CAA's prevention of significant deterioration (PSD) and new source review (NSR) programs subject new and modified "major" sources of "air pollutants" to conventional pollution controls. This includes large industrial sources emitting at least 100 tons per year of regulated pollutants and other sources emitting at least 250 tons per year. Waxman-Markey would not necessarily trigger PSD/NSR, because it does not make GHGs an "air pollutant."[78] An "endangerment finding" under CAA §108, however, could have that effect.[79] Waxman-Markey, in fact, seeks to address any issues that may arise from an endangerment finding under §108 by expressly exempting new and modified sources of GHG from the PSD/NSR programs.[80] Waxman-Markey also exempts sources of GHG covered by the bill from regulation under Title V of the CAA.[81] Moreover, the 10,000-ton floor should provide additional relief from this concern.

62. S. 1177, 110th Cong. §2 (2007).
63. S. 317, 110th Cong. §701 (2007).
64. *See* JohnMcCain.com, *McCain-Palin 2008*, http://www.johnmccain.com/Informing/Issues/da151a1c-733a-4dc1-9cd3-f9ca5caba1de.htm (last visited Sept. 23, 2008) ("The cap and trade system would encompass electric power, transportation fuels, commercial business, and industrial business—sectors responsible for just below 90% of all emissions. Small businesses would be exempt.") [hereinafter *McCain GHG Plan*].
65. Barack Obama & Joe Biden, *New Energy for America*, http://my.barackobama.com/page/content/newenergy_more (last visited Sept. 23, 2008) [hereinafter *Obama GHG Plan*].
66. Harrison et al., *Combat*, *supra* note 54, at 10375.
67. EPA, *Frequently Asked Questions: Proposed Mandatory Greenhouse Gas Reporting Rule*, *at* http://www.epa.gov/climatechange/emissions/ghg_faq.html (last visited June 8, 2009).
68. Kate Zyla & Gabriel Pacyniack, *Overview of State-Related Provisions, American Clean Energy and Security (ACES) Act of 2009* 7 (Georgetown State-Federal Climate Resource Center, May 21, 2009).
69. H.R. 2454, *supra* note 2, §700(13).
70. *Id.* §700(13)(A).
71. *Id.* §700(13)(F).
72. *Id.* §700(13)(H).
73. *Id.* §700(13)(J).
74. *Id.* §700(13)(B).
75. *Id.* §700(13)(C).
76. *Id.* §722(g).
77. *EPA to Target Greenhouse Gas Sources Emitting More Than 25,000 Tons a Year,* World Climate Change Rep. (May 13, 2009); *see also* Statement of the U.S. Chamber of Commerce, Joint Caucus Hearing on "Cap and Trade: Impact on Jobs in the West, and the Nation" (July 30, 2009), *available at* http://www.uschamber.com/NR/rdonlyres/eoawe6zqnyo5vgp2dswjrc5t4lr4we765kgcgwuuke57zvnemz33udyjkdqdk36smeyj34kblfwnivhblrr7b4hl4ug/090730_capandtrade_testimony.pdf.
78. *Cf.* H.R. 2454, *supra* note 2, §711 (designating seven compounds as "greenhouse gases," but not designating them as "air pollutants" under §108 of the CAA).
79. *See* 42 U.S.C. §7408(a)(1) (2009); *see also* U.S. Chamber of Commerce, Prevention of Significant Deterioration (last visited Sept. 1, 2009), http://www.uschamber.com/issues/index/environment/psd_prevention_of_significant_deterioration.htm.
80. *See* H.R. 2454, *supra* note 2, §331 (proposing CAA §834).
81. *Id.*

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

3. Emissions Caps

It is the foregoing downstream, midstream, and upstream sources that would be subject to GHG emission caps under Waxman-Markey. Under the bill, emission caps would begin to become effective in 2012, with some of the caps on sources not being phased in until 2016, when all Covered Entities would be subject to the caps. The phase-in is to occur on the following schedule: 2012, electricity and transportation sectors; 2014, industrial processes and combustors; and in 2016, residential, commercial, and small industrial natural gas consumers, as well as local distribution companies that deliver natural gas.[82]

Waxman-Markey creates emissions reduction goals for Covered Entities based on a 2005 baseline year.[83] In 2005, the emissions for these sources were approximately equal to 7.2 billion tons of CO_2e.[84] As described in the next section, Waxman-Markey sets percentage GHG emission reduction targets for 2005, 2012, 2020, 2030, and 2050.[85]

Under Waxman-Markey, HFCs would be subject to a separate cap-and-trade program that will regulate HFC emissions production and consumption under a new CAA section. The overall goal of this program is to reduce HFCs 85% by 2032.[86]

B. CO_2 Reductions Achieved

Legislative proposals for reducing GHG emissions introduced in Congress in 2008 and 2009 contained similar targeted reductions as the 2005 baseline emissions tagged to similar benchmark years. The specifics of the proposals differed, but the similarities were generally greater than the differences. Congress will enact these reductions against the backdrop of an international framework of targeted emissions reductions. The ultimate effectiveness of these emissions reduction goals will have to be evaluated in terms of their avoidance of the deleterious climatic effects of GHG emissions, were these emissions to continue unchecked.

Among the prominent proposals were the following, which clustered around certain target years and percentage reductions:

- The Lieberman-Warner Climate Security Act of 2007 would have established reductions at a rate of 19% below the 2005 level (4% below the 1990 level) in 2020, and 63% below the 2005 level in 2050.[87]
- The Lieberman-Warner Bill that reached the floor of the Senate was more aggressive in its ambition, capping CO_2 emissions in 2020, at nearly 20% below 2005 levels, and a 70% reduction by 2050.[88]
- Representative Markey's 2008 bill proposed an 85% reduction from 2005 emissions by 2050.[89]
- A bill introduced by Reps. Dingell and Rick Boucher (D-Va.) proposed to set a slower reduction pace than Waxman, targeting reductions at 6% below 2005 levels in 2020, 44% below 2005 levels in 2030, and 80% below 2005 levels in 2050.[90]
- The VanHollen Cap-and-Dividend Act of 2009 proposes reductions at a rate of 25% below 2005 levels in 2020, 45% below 2005 levels in 2030, and 85% below 2005 levels in 2050.[91]

Of course, targets and timetables were not the exclusive province of legislative proposals. The 2008 presidential campaigns had their own ambitions. During the presidential campaign, Senator Obama supported an 80% reduction,[92] which was more ambitious than the Lieberman-Warner Bill[93] but less than Representative Markey's bill.[94] Senator McCain's 60% reduction by 2050 goal was the least ambitious of all.[95]

The Waxman-Markey Bill that the House ultimately passed in June 2009 would impose economywide GHG reduction goals 3% below 2005 levels by 2012, 20% below 2005 levels by 2020, 42% by 2030, and 83% below 2005 levels by 2050.[96] In the midst of House consideration of the Waxman-Markey Bill, the World Resource Institute reported that, by its calculation, the net emission reductions achieved under the bill—when one accounts for the effects of all the different components of the bill—would be more along the

82. H.R. 2454, *supra* note 2, §722.
83. Neal McAliley et al., *Analyzing the Waxman-Markey Draft*, Law360 (May 7, 2009), *available at* http://energy.law360.com/articles/99446.
84. *Id.*
85. H.R. 2454, *supra* note 2, §703.
86. *Id.* §332.
87. Press Release, Office of Sen. Joseph Lieberman (I-Conn.), Lieberman and Warner Introduce Bipartisan Climate Legislation (Oct. 18, 2007), *available at* http://lieberman.senate.gov/newsroom/release.cfm?id=285619.
88. S. 3036, 110th Cong., §1201 (2008); *see also* S. Rep. No. 110-337, at 19. The emissions allowances for 2020 increased when S. 2191, 110th Cong. was replaced by S. 3036, raising the cap from approximately 15% to approximately 20%.
89. H.R. 6186, 110th Cong. §§2, 711.
90. Institute for Energy Resources, *Dingell-Boucher Cap-and-Trade Bill Analysis*, *available at* http://www.instituteforenergyresearch.org/2008/10/07/dingell-boucher-cap-and-trade-bill/ (last visited June 11, 2009); Marten Law Group, *Environmental News—Three Key Issues Emerge in Congressional Climate Debate* (Oct. 16, 2008), http://www.martenlaw.com/news/?20081016-congressional-climate-debate; Pew Center, *Summary of the Dingell-Boucher Draft* http://www.pewclimate.org/docUploads/Dingell-Boucher-summary-Dec2008_0.pdf.
91. Press Release, Office of Rep. Chris Van Hollen (D-Md.), Van Hollen Introduces the Cap and Dividend Act of 2009 (Apr. 1, 2009), *available at* http://vanhollen.house.gov/HoR/MD08/Newsroom/Press+Release+by+Date/2009/4-1-09+Van+Hollen+Introduces+the+Cap+and+Dividend+Act+of+2009.htm.
92. *Obama GHG Plan*, *supra* note 65; *see also* Press Release, *Barack Obama's Plan to Make America a Global Energy Leader* (2008), *available at* http://obama.3cdn.net/4465b108758abf7a42_a3jmvyfa5.pdf.
93. S. 3036, *supra* note 88, §1201; *see also* S. Rep. No. 110-337, at 19.
94. H.R. 6186, 110th Cong. §§2, 711.
95. *McCain GHG Plan*, *supra* note 64.
96. H.R. 2454, *supra* note 2, §702. Though arguments were made for 1990 to be the baseline year, ultimately 2005 was chosen for the bill. John Larsen et al., *Brief Summary of the Waxman-Markey Discussion Draft*, World Resources Inst. (Apr. 20, 2009), *available at* http://www.wri.org/stories/2009/04/brief-summary-waxman-markey-discussion-draft. This baseline is consistent with other programs, such as the Western Climate Initiative and the Midwestern Regional Greenhouse Gas Accord.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

lines of 15% below 2005 levels in 2020 and 73% below 2005 levels by 2050.[97]

In addition to its economywide goals, Waxman-Markey would also include separate goals for Covered Entities.[98] Reduction targets for Covered Entities differ only slightly from the economywide goals. Waxman-Markey would cap and reduce GHG emissions each calendar year, such that emissions from Covered Entities will be 3% below 2005 levels in 2012, 17% below 2005 levels in 2020, 42% by 2030, and 83% below 2005 levels in 2050.[99]

Waxman-Markey ended up with these goals through deliberate political compromise. Prior to the bill's Subcommittee markup (completed on May 21, 2009), the draft bill (released March 31, 2009) called for a 2020 cap-and-trade program target-level set at 20%.[100] Several members balked at the 20% reduction, calling it too aggressive and fearing that their districts would be unable to meet the proposed standards. Although Chairman Waxman had already anticipated that he would not have Republican support, he encountered considerable opposition from moderate Democrats, who were nicknamed the "Carbon Nine."[101] The Carbon Nine represent districts whose industries are more carbon-intensive than those in the rest of the country; and their per capita carbon emissions tend to be more than three times higher than the national median.[102]

Chairman Waxman knew that in order for the bill to pass through the Subcommittee, he would have to convert and recruit these moderate Democrats. This required a series of compromises to the draft bill. After some discussion, Democrats, including Reps. Boucher, Al Green (D-Tex.), and Charles Gonzalez (D-Tex.) achieved a concurrence with Waxman. Among the measures agreed to, the bill would donate 2% of CO_2 emissions permits to refiners.[103] Other changes agreed to were a plan to give more than 50% of emission allowances to local electric power distributors, trade-sensitive industries, and automakers. Finally, Waxman agreed to adjust the 2020 levels to 17%, a 3% reduction from the original amount. The bill went into a Subcommittee Markup period from May 18-22, 2009, and the Energy and Commerce Committee approved the bill by a vote of 33 to 25 on May 21, 2009.[104] Only 4 Democrats voted no.[105]

The House passed the Waxman-Markey Bill against a backdrop of further scientific understanding of GHG emissions' effect on the climate and while international negotiators were considering the legal regime that should become effective after the lapse of the Kyoto Protocol. On the scientific front, a study released on May 27, 2009, by the National Center for Atmospheric Research in Colorado indicated that temperature increases caused by climate change will cause sea-level rises, particularly along the Atlantic coast.[106] The study attributed the sea-level rise to climate change's making waters in the northern Atlantic warmer, causing the release of freshwater from melting glaciers in Greenland. This could result in a one- or two-foot rise in sea level along the north Atlantic coast. On June 16, 2009, a collective of U.S. government agencies, operating as the "U.S. Global Change Research Project," issued the most comprehensive report on global climate change impacts in the United States.[107] Among its noteworthy findings was that parts of the South that currently experience about 60 days a year of temperatures greater than 90 degrees could experience as many as 150 such days by the end of the century.

Also while the House was considering the Waxman-Markey Bill, international negotiators were meeting in Bonn to prepare for the U.N. Climate Change meeting scheduled for Copenhagen in December 2009 to consider, among other things, what the post-Kyoto goals should be.[108] Reports from Bonn in early June 2009, where Kyoto parties considered what emissions reductions have to be achieved in the post-Kyoto, i.e., post-2012, world, focus on a 16 to 24% reduction from 1990 emissions levels (equivalent to an approximately 12 to 21% reduction from 2005 levels for developed nations).[109]

Against this evolving scientific understanding of GHG emissions' effects on climate change and emerging international political consensus, there were conflicting opinions as to whether the Waxman-Markey Bill would avert catastrophe. Chief among supporters was the U.S. Climate Action Partnership (USCAP), which generally endorsed the bill's targeted GHG reductions while noting that not all of the reduction targets are at optimum levels.[110] Other studies predict that Waxman-Markey would have no significant net

97. John Larsen & Robert Heilmayr, *Emission Reductions Under the American Clean Energy and Security Act of 2009* (World Research Inst. 2009), *available at* http://pdf.wri.org/usclimatetargets_2009-05-19.pdf; *see also* posting of Andrew Light et al., *Counting the Real Progress on Climate Action,* to American Progress, http://www.americanprogress.org/issues/2009/05/counting_progress.html (May 27, 2009).
98. H.R. 2454, *supra* note 2, §703.
99. *Id.* §703(a).
100. Charles Komanoff, *Waxman-Markey: "80% Less by 2050" Is Too Hard, Let's Do 46%*, Grist (May 21, 2009), *available at* http://www.grist.org/article/waxman-markey-80-less-by-2050-is-too-hard-lets-do-46 [hereinafter Komanoff]; David A. Fahrenthold, *Democrats to Relax House Emissions Bill*, Wash. Post, May 13, 2009, at A6; *House Energy Committee Democrats Reach Deal on Interim Emissions Cuts; Bill Markup Set for May 18*, World Climate Rep. (May 12, 2009) (discussing the draft bill release date versus the markup deadline) (paid subscriber service).
101. Brad Johnson, *CBO Releases Analysis of Waxman Markey*, Hill Heat (June 8, 2009), *available at* http://www.hillheat.com/articles/tag/waxman-markey [hereinafter Johnson]; Komanoff, *supra* note 100. The Carbon Nine are: Jason Altmire (Pa.), Rick Boucher (Va.), Artur Davis (Ala.), Baron Hill (Ind.), Charlie Melancon (La.), Earl Pomeroy (N.D.), Mike Ross (Ark.), John Tanner (Tenn.), and Gene Taylor (Miss.).
102. *Id.*
103. Steven Mufson, *High-Stakes Quest for Permission to Pollute*, Wash. Post, June 5, 2009, at A11.
104. H.R. Rep. No. 111-137, at 320 (2009).
105. Johnson, *supra* note 101. Charlie Melancon (La.), Mike Ross (Ark.), Jim Matheson (Utah), and John Barrow (Ga.) cast "no" votes.
106. *See* Press Release, National Center for Atmosphere Research, *Melting Greenland Ice Sheets May Threaten Northeast United States, Canada*, *available at* http://www.ucar.edu/news/releases/2009/sealevel.jsp.
107. *See* U.S. Global Change Research Program, Global Climate Change Impacts in the United States (2009), *available at* http://www.globalchange.gov/component/content/article/67-themes/154-publications?format=pdf.
108. United Nations Climate Change Conference Home Page, http://en.cop15.dk/.
109. *See generally Bonn Climate Change Talks*, http://unfccc.int/meetings/sb30/items/4842.php.
110. USCAP, *Blueprint for Legislative Action* 5 (2009), *available at* http://www.us-cap.org/pdf/USCAP_Blueprint.pdf; Press Release, USCAP, USCAP Statement on Passage of the American Clean Energy and Security Act (May 21, 2009), *available at* http://www.us-cap.org/pdf/USCAP_Statement-on-PASSAGE-of-ACESA_5-21-09-FINAL.pdf.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

effect over the next 100 years,[111] and that a slower reduction pace followed by steeper reductions, like those proposed in the Dingell-Boucher Bill, would have been more effective.[112] Of course, there remain those who question whether the Waxman-Markey targets are feasible or even necessary.

C. Distribution of Emissions Allowances

Cap-and-trade proposals differ in how they initially allocate allowances to regulated entities: either at no cost or by selling them at auction. The no-cost model is preferred by some for its familiar feel. It functions similarly to "traditional 'command-and-control' environmental regulation,"[113] such as the CAA's new source performance standards (NSPS),[114] as it "allows sources to emit up to a permitted level for free."[115] In traditional cap-and-trade schemes, "allowances have been allocated initially to covered sources free of charge, based on emissions during some historical period before the program's commencement."[116] Free allocation's most significant historical analogue was the U.S. Acid Rain Program,[117] in which SO_2 allowances were "distributed for free to emitters based on a combination of historical heat input and emissions performance benchmarks."[118]

Industry stakeholders support free allocation as a way to keep energy costs down.[119] This can be of particular concern where compliance with emissions caps forces firms to "prematurely retire long-lived capital investments."[120] While some support no-cost distribution because it will ease the transition of electric utilities, "steel, cement, and other carbon-intensive industries,"[121] others worry that an auction would bring with it undesirable characteristics. These include "an invitation to Wall Street speculators to develop schemes to manipulate the market, turn emission allowances into just another commodity like pork bellies and essentially allow Wall Street to determine electricity prices."[122]

Supporters of an auction approach look to the "polluter-pays" principle.[123] An auction approach allows price discovery on what the market will bear, assures emissions are put to their highest and best use, eliminates need for the government to regulate entrants and exiters from the market, and reduces the likelihood of overcompensating firms through free allowances where firms can pass the costs along to consumers.[124] In addition, an auction approach means the possibility of generating revenue for other uses. Then-presidential candidate Obama advocated an auction approach, suggesting it "ensures that all industries pay for every ton of emissions they release."[125] The revenues "would ensure ample resources to accelerate development of clean energy sources but would probably result in higher compliance costs than what [some] would accept."[126] Though a full-auction approach remained the goal during the spring of 2009, the White House was quick to add that it would "be flexible during the policymaking process."[127]

As discussed elsewhere in the *Deskbook*, while Congress was considering comprehensive federal legislation, it had several regional precedents to look to, to determine whether emission allowances should be auctioned or given away for free. Regional cap-and-trade programs provided a reference point for federal lawmakers.

- Under the Regional Greenhouse Gas Initiative (RGGI) each of the 10 participating states "independently decided on the percentage of allowances they would auction as opposed to directly allocate to covered sources and independently decided how to use the proceeds from the auctions."[128] For example, Delaware initially auctioned 60% of its allowances, allocating the remaining 40%.[129] Delaware is scheduled to auction 100% of its allowances by the year 2014.[130]
- The Midwestern Greenhouse Gas Reduction Accord, to begin in 2012, takes a hybrid approach that phases into full auctioning, though they do not specify what proportions of available allowances should be auctioned versus allocated for free.[131]
- In the Western Climate Initiative, each partner jurisdiction is given an allowance apportionment toward the regional target of cutting GHG emissions by 15% below 2005 levels by the year 2020.[132] In the design recommendations, each partner's apportionment is

111. Posting of Chip Knappenberger (*Climate Impacts of Waxman-Markey (the IPCC-Based Arithmetic of No Gain)*) to Master Source, http://masterresource.org/?p=2355 (May 6, 2009) (anticipating lowering global temperatures by approximately 0.1°C by 2100).
112. Committee on Energy and Commerce, *Climate Change Legislation Design White Paper* (Oct. 2007), *available at* http://archives.energycommerce.house.gov/Climate_Change/White_Paper.100307.pdf.
113. Pew Ctr. for Global Climate Change, *Greenhouse Gas Emissions Allowance Allocation*, 3 (Nov. 2008), *available at* http://www.pewclimate.org/congressional-policy-brief-series [hereinafter *Pew Allocation*].
114. CAA, §111, 42 U.S.C. §7411 (2000).
115. *Pew Allocation*, *supra* note 113, at 3.
116. Harrison et al., *Combat, supra* note 54, at 10368.
117. 42 U.S.C. §§7651 et seq. (2000).
118. *Pew Allocation*, *supra* note 113, at 3.
119. Juliet Eilperin, *Science Chief Discusses Climate Strategy*, Wash. Post, Apr. 9, 2009, at A2.
120. *Pew Allocation*, *supra* note 113, at 4.
121. Dean Scott, *Waxman May Opt for Full Committee Markup; Republicans Launch Opposition Campaign*, BNA Daily Env't Rep. A-15 (May 7, 2009).
122. Tina Peng, *Tweak Climate Bill or Endanger Economy: Experts*, Law360.com (Apr. 23, 2009), *available at* http://energy.law360.com/articles/98366.
123. *Id.*
124. *Pew Allocation*, *supra* note 113, at 6-8. *See also* Jesse Greenspan, *Treasury Official Backs Carbon Auctions*, Law360.com (May 7, 2009), *available at* http://energy.law360.com/articles/100020.
125. *Obama GHG Plan, supra* note 65.
126. Dean Scott & Steven D. Cook, *House Will Take Lead on Emissions Caps, Support From Obama Likely, Boucher Says*, BNA Daily Env't Rep. A-1 (Oct. 20, 2008).
127. Dean Scott, *Obama Team "Still Pushing" for Full Auction of Carbon Emissions, but Suggests Flexibility on Issue*, BNA Daily Env't Rep. A-9 (Apr. 10, 2009).
128. Aff. of Michael Sheehan, 24, Indeck Corinth v. Paterson, No. 369-2009 (N.Y. Sup. Ct. May 11, 2009).
129. Regional Greenhouse Gas Initiative website, http://www.rggi.org/states/state_regulations (last visited July 11, 2009).
130. *Id. See also* 7-1000-1100 Del. Code Regs. §1147 (Weil 2009), *available at* http://regulations.delaware.gov/AdminCode/title7/1000/1100/index.shtml#TopOfPage.
131. *Draft Final Recommendations,* §3.5 (July 16, 2009), *available at* http://www.midwesternaccord.org/Accord_Draft_Final_7-16-09.pdf.
132. Pew Ctr. on Global Climate Change website, *Western Climate Initiative*, *available at* http://www.pewclimate.org/WesternClimateInitiative (last visited July 11, 2009).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

based on the best estimate of expected emissions for covered sources based on factors including population growth, economic growth, and voluntary and mandatory emission reductions.[133]

In addition to these regional initiatives, House Members had federal precedent to look to as well. The Lieberman-Warner Bill took a hybrid approach.[134] Under Lieberman-Warner, free allowances would have totaled 75.5% in 2012, shifting to 58.75% auction between 2032-2050.[135] In 2012, under Lieberman-Warner, 18% of the allowances would have been allocated to power plants and 11% to manufacturers, but that would transition to zero by 2031.[136]

Waxman-Markey followed the Lieberman-Warner precedent. In the substitute filed with the House Rules Committee, "[a]pproximately 80% of allowances are distributed without charge during [the period between 2012 and 2025] to ease the transition to a clean energy economy."[137] Phasing out the transition period would begin at 2026, so that by 2031, about 70% of the allowances would be auctioned.[138]

The House-passed legislation, in §782, distributes emissions allowances at no cost.[139] Waxman-Markey specifies the percentage of the allowances to be freely distributed to various sectors of the economy for what appears to be three general purposes: consumer assistance to utility ratepayers; direct support of capped industries; and advancing certain public policy goals. Electric utilities are to receive 43.7% of the allowances in 2012 and 2013, which declines to 35% in 2016 to 2025.[140] From 2016 through 2025, the natural gas industry receives 9% of the allowances.[141] This allocation declines gradually starting in 2026 from 7.2% down to 1.8% in 2029.[142] While the bulk of emission allowances are allocated to the electricity and natural gas distribution sectors, the allocation is conditioned upon local electricity and natural gas distribution companies using these allocations for some form of consumer benefit.[143] Given the significant portion of allowances distributed for ratepayer benefit in Waxman-Markey, certain commentators have argued that its distribution scheme hardly represents a corporate giveaway.[144]

Other economic sectors, such as petroleum refiners, who receive only 2% of allocated emission allowances under Waxman-Markey, would take their allocations with no such strings attached.[145] Similarly, merchant coal generators receive their allocations purely for their own use.[146] Additional and larger proportionate distributions are granted directly to "energy-intensive, trade-exposed entities," such as steel and aluminum manufacturers.[147] During years 2012 and 2013, up to 2% of emission allowances are granted to such industries. Thereafter, starting in year 2014, the allocation to energy-intensive, trade-exposed entities becomes 15% of emission allowances subject to an annual decline in proportion to the overall decline in total emission allowances under the Waxman-Markey cap.[148] Such energy-intensive, trade-exposed industries are also eligible for a rebate as determined by the EPA Administrator. In determining the eligibility for such rebates, the EPA Administrator is supposed to consider energy or GHG intensity and trade intensity of a given economic sector.[149] This approach to softening Waxman-Markey's impact upon energy-intensive, trade-exposed industries is consistent with an earlier approach to address this issue through administrative action and stands in contrast to the Lieberman-Warner's broad sectoral designations.[150]

In addition to allocations directly to industries and those directed at natural gas and electricity ratepayers, Waxman-Markey contains allocations of emissions allowances intended for the benefit of certain policies. For instance, 9.5% of emission allowances would be distributed to states for improving energy efficiency.[151] Though, this allocation drops to only 1% during years 2022 through 2025, while increasing back to 4.5% during years 2026 through 2050. The allocation of allowances, a departure from President Obama's initial pursuit of a full auction, contributed to consternation regarding the bill.[152] It was widely reported, however, that the no-cost allocation during the initial years of the program was necessary to win its passage.[153]

While Waxman-Markey allocates percentages of the total allowances to specific sectors of the economy, much of the details remain to be determined by EPA. The legislation tasks EPA with implementing rules in consultation with appropriate federal agencies.[154] This is made more complex where a program implicates multiple agencies.[155] With the volume of

133. *Western Climate Initiative, Design Recommendations* §1, 4-5 (Sept. 23, 2008), *available at* http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program/design-recommendations.
134. S. 3036, *supra* note 88, §3101.
135. Pew Ctr. for Global Climate Change, *Economy-Wide Cap-and-Trade Proposals in the 110th Congress*, 1 (Dec. 1, 2008), *available at* http://www.pewclimate.org/federal/analysis/congress/ 110/cap-trade-bills.
136. *Id.*
137. House Energy and Commerce Committee, *Summary of H.R. 2454, as Filed With the Rules Committee*, 4 (June 23, 2009), *available at* http://energycommerce.house.gov/Press_111/20090623/hr2454_rulessummary.pdf.
138. *Id.*
139. H.R. 2454, *supra* note 2, §782.
140. *Id.* §§782(a), 783.
141. *Id.* §§782(b), 784.
142. *Id.* §782(b).
143. *See id.* §§783(b)(5), 784(c).
144. *See*, *e.g.*, Robert N. Stavins, *The Wonderful Politics of Cap-and-Trade: A Closer Look at Waxman-Markey, an Economic View of the Environment* (May 27, 2009), *available at*: http://belfercenter.ksg.harvard.edu/analysis/stavins/?p=108.
145. H.R. 2454, *supra* note 2, §782(j).
146. *Id.* §783(b)(1).
147. *See id.* §782(e) (referring also to "Trade-vulnerable Industries").
148. *See, e.g.*, *id.* §782(e)(1)(C) (establishing a reduction factor for energy-intensive, trade-exposed industries based upon the proportionate decline in the Waxman-Markey cap during the previous year).
149. *See id.* §401 (proposing new CAA §§763 and 764).
150. James Bradbury, Legislative Assistant to Rep. Jay Inslee, Output-Based Allowance Allocation, Presentation on the Carbon Leakage Prevention Act (Jan. 8, 2009) (on file with author).
151. H.R. 2454, *supra* note 2, §782(g).
152. *See*, *e.g.*, Myron Ebell, *Waxman-Markey Is Hilarious, but the Joke Is on Us* (June 29, 2009), *posted at* http://townhall.com/columnists/MyronEbell/2009/06/29/waxman-markey_is_hilarious_but_the_joke_is_on_us?page=2 ("the real reason for giving the ration coupons away is to buy enough political support to pass the bill").
153. *See*, *e.g.*, Shalaigh Murray & Dan Balz, *Despite Majority, Obama to Be Tested*, Wash. Post, June 30, 2009, at A1.
154. H.R. 2454, *supra* note 2, §783(f) (directing EPA to work with FERC to development regulations to implement the program designed to assist consumer ratepayers).
155. *Id.* §§782(d), 2201 (directing the EPA Administrator to auction the allowances, the revenues for which will be distributed to the states by the Secretary

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

allowances, and corresponding dollar value at stake, leaving the details to EPA in such a fashion may mean that significant debate over the allowances, if Waxman-Markey were to become law, lies ahead in the rulemaking.

Under an approach that awards allowances based on baseline emissions, there can be difficulties allocating allowances based on "increasingly outdated emissions data."[156] Fossil fuel-fired power plants may have baseline emissions data that reflect CO_2 emissions and regional programs such as the RGGI, which is applicable only to such power plants. There have been voluntary initiatives for collecting baseline CO_2 emissions information from industrial sectors beyond power generation, albeit with limited success.

Waxman-Markey layers additional policy objectives atop its sectoral allocation. For example, allowances are dedicated to local electricity distribution (LED) companies to benefit retail ratepayers.[157] Waxman-Markey "specifies that the bulk of free allowances given to utilities can be given only to a gas or electric distributor—not to a stand-alone retailer or generator."[158] State regulators, with access to the account books of the regulated entities, will determine how the distributor can use the allowance to consumers' benefit.[159] LED companies are afforded a limited degree of discretion in determining the mechanism they use for benefiting consumers with their free allocation of emission allowances. The intended aim, however, is not for LEDs to redistribute emission allowances. For instance, Waxman-Markey contemplates LEDs providing consumer benefit in the form of a rebate on electricity purchases.[160] While LEDs may provide consumer benefit in the form of rebates, LEDs may not apportion rebate funds based upon electricity usage—except in certain situations where electricity costs increase for industrial users.[161] With respect to proportions, consumer benefits provided by LEDs under Waxman-Markey, generally, must be apportioned among ratepayer classes ratably per electricity deliveries per class, and equitably among individual ratepayers within each class.[162] Similar limitations apply to the obligations of local natural gas distribution companies to provide for consumer benefit.[163]

This design feature, intended to ensure that the value is passed through to the consumer, led some observers to remark that "[t]he state energy regulatory community is the single most important policy actor in the United States—more so as we electrify transportation and our transport fuels flow through state-regulated grids as well as nearly all the rest of our energy."[164]

Elsewhere in the House-passed Waxman-Markey Bill, states are tasked directly with implementing a program designed to help insulate low-income families from the legislation's impact.

D. GHG Emissions Trading Market

Congressional sponsors of comprehensive GHG legislation are not unmindful of the importance of regulating the markets in which GHG allowances are traded. Waxman-Markey would, for example, put in place a framework to support emissions allowance trading and delegate broad authority to the executive branch to establish and oversee this market. The bill does this by allowing outside parties, along with owners and operators of Covered Entities,[165] to hold, sell, exchange, and transfer regulated allowances,[166] which will be tracked by a recording system created by EPA.[167] These provisions facilitate the "cash market" for regulated allowances, while the bill also permits the creation of a derivatives market.[168]

Waxman-Markey would split oversight of the cash and derivatives markets between the Federal Energy Regulatory Commission (FERC) and the president. FERC, which currently regulates the interstate transmission of natural gas, oil, and electricity,[169] will regulate and oversee the cash, regulated allowance market.[170] FERC was previously given this role in the Dingell-Boucher Bill, which would have created an Office of Carbon Market Oversight within FERC to oversee regulated allowances and derivatives.[171]

In the Waxman-Markey Bill, oversight of derivatives trading has been delegated to the president, who will create a "Working Group" to regulate the market.[172] This Working Group will include the Administrator of EPA as well as the heads of other "relevant agencies."[173] The derivatives market is expected to grow as large as $2 trillion,[174] and the bill initially gives the Commodity Futures Trading Commission (CFTC) jurisdiction over these derivatives.[175] Though the

of Health & Human Services, who is to coordinate with the Agriculture Secretary regarding the "seamless" co-administration of the low-income assistance program and the Supplemental Nutrition Assistance Program).

156. Harrison et al., *Combat*, *supra* note 54, at 10379.
157. *Id.*
158. Peter Fox-Penner & Marc Chupka, *Preventing Windfalls for Polluters but Preserving Prices—Waxman-Markey Gets It Right With Its Allocations to Regulated Utilities* (May 27, 2009), *available at* http://climateprogress.org/2009/05/27/exclusive-report-foxpenner-chupka-waxman-markey-utility-allowances/ [hereinafter Fox & Chupka].
159. H.R. 2454, *supra* note 2, §783(b)(6).
160. *Id.* §783(b)(5).
161. *Id.*
162. *Id.* §783(b)(5)(B).
163. *Id.* §784(c).
164. Fox & Chupka, *supra* note 158.
165. *Id.* §311 (amending the CAA §724(b)).
166. *Id.* (amending the CAA §724(a)). Regulated allowances include emission allowances, compensatory allowances, offset credits, and federal renewable electricity credits. *Id.* §341 (amending the Federal Power Act §401(a)(5)).
167. *Id.* §311 (amending CAA §§724(c)-(d), 721(h)).
168. *Id.* §341 (amending the Federal Power Act §401(c)(1)). The derivatives market will consist of regulated allowance derivatives, such as options and futures, whose value is linked to the price of a regulated allowance or other regulated allowance derivative. *Id.* (amending the Federal Power Act §401(a)(6)).
169. Dean Scott, *U.S. FERC Chief Welcomes Commission Role Overseeing Carbon Markets Under House Bill*, World Climate Change Rep. (Oct. 23, 2008).
170. H.R. 2454, *supra* note 2, §341 (amending the Federal Power Act §401(b)(1)).
171. Dingell Draft, *supra* note 57, §§401-409.
172. H.R. 2454, *supra* note 2, §341 (amending the Federal Power Act §401(c)(1)).
173. *Id.* (amending the Federal Power Act §401(d)(1)).
174. Robin Bravender & Ben Geman, *House Panel Launches 4 Days of Climate, Energy Bill Hearings*, N.Y. Times, Apr. 20, 2009, *available at* http://www.nytimes.com/cwire/2009/04/20/20climatewire-energy-and-commerce-panel-launches-4-days-of-10588.html?scp=1&sq=House%20Panel%20Launches%204%20Days%20of%20Climate&st=cse.
175. H.R. 2454, *supra* note 2, §358(a) (amending the Commodity Exchange Act §352(k)).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

president can pick another entity to oversee this market,[176] the CFTC currently oversees the Chicago Climate Exchange and the Chicago Climate Futures Exchange,[177] and was the expected choice for this role.[178]

Waxman-Markey grants FERC and the Working Group broad authority to regulate and oversee their respective markets. Both are expected to pass regulations to prohibit fraud and market manipulation and establish standards for trading.[179] They are given the power to enforce their regulations through fines and the ability to revoke trading registrations, and FERC must establish and collect transaction fees to recover federal costs.[180] The bill also provides default rules for the derivatives market, which limit market participants to a maximum of 10% control in any regulated allowance derivative and prohibit over-the-counter trading.[181] The Working Group can, however, overrule these default rules.[182]

Waxman-Markey's approach to overseeing the cash and derivatives market is similar in approach to the RGGI as well as previous federal proposals. RGGI created the CO_2 Allowance Tracking System to register allowance ownership and allows the trading of allowances and derivatives.[183] The Lieberman-Warner Bill would also have allowed outside parties to hold, trade, and sell allowances,[184] with EPA tracking the transfers.[185] That bill, however, would have created a new Carbon Market Efficiency Board to monitor the market and its economic impact, collect information, and make changes as needed to aid and preserve the market.[186] The board's powers would have included the ability to increase the quantity of emissions offsets or allowances and to lower interest rates on the borrowing of allowances.[187]

Other prior bills had been less specific about the regulation of emissions trading markets. For example, S. 1766 would have merely required, without providing much direction, that the president implement and establish all of the rules for an emissions trading system.[188] Likewise, H.R. 6186 called for the EPA Administrator to create the rules and regulations for an emission trading market.[189] Presumably, the emissions trading markets that would be created by these bills would have borne similarities to the Clean Development Mechanism; some of the voluntary carbon markets; or existing multi-state, regional cap-and-trade programs. None of these prior bills, however, specifically acknowledged the prior operation of the regional cap-and-trade markets. Thus, all of the previous GHG legislation proposed in Congress—save for the Lieberman-Warner Bill—had delegated development of domestic emissions trading market to the executive branch, and the potential relationship with regional programs remained uncertain. Waxman-Markey removes this uncertainty though, by prohibiting the implementation or enforcement of state cap-and-trade programs from 2012 to 2017.

E. Use of Auction Revenue

While many aspects of cap-and-trade climate change legislation have been controversial, even among supporters of the legislation, one aspect of the legislation about which supporters have generally agreed are the purposes to which revenue generated by allowance auctions should be put. Proponents generally agree that such revenue should be used to address problems created by climate change and to ameliorate the detrimental economic effects on consumers resulting from cap-and-trade legislation. Depending on how many allowances are auctioned (versus given away for free), allowance auctions are projected to raise a significant amount of revenue over the coming decades.[190]

As described earlier in this Article, Waxman-Markey would initially auction only 15% of the total allowance emissions but would gradually shift to a full auction over time. Waxman-Markey would, therefore, generate less revenue in its early years than the 100% auction approach candidate Obama championed during the 2008 presidential campaign. The Congressional Budget Office estimates that auctions conducted pursuant to Waxman-Markey would generate $279.9 billion in gross revenue ($209.9 billion net) between 2010 and 2019.[191] After becoming president, President Obama projected $646 billion in auction revenue under his plan during the same time period.[192]

When it comes to spending money, Congress is rarely at a loss for ideas, and the legislative precursors to Waxman-Markey were replete with spending programs. President Obama, during his campaign and upon assuming the presidency, identified a host of programs to which he would have dedicated GHG allowance auction proceeds. Amidst these federal proposals, there is also the RGGI's design for the allocation of auction revenues to guide Congress. These progenitors set the stage for the ultimate outlays incorporated into Waxman-Markey.

Prior to Waxman-Markey, the most well-developed federal legislative proposals for the use of GHG allowance auctions were the prior Markey Bill (H.R. 6186, the Investing in Climate Action and Protection Act of 2008) and the

176. *Id.* §358(b).
177. U.S. Commodity Futures Trading Commission, http://www.cftc.gov (last visited July 8, 2009).
178. Leora Falk, *Commodity Futures Committee Meeting Focuses on Role in Governing Carbon Market*, World Climate Rep. (May 13, 2009).
179. H.R. 2454, *supra* note 2, §341 (amending the Federal Power Act §401(b)(2)).
180. *Id.* (amending the Federal Power Act §§401(b)(3)-(4), (e)).
181. *Id.* (amending the Federal Power Act §401(c)(4)).
182. *Id.*
183. Regional Greenhouse Gas Initiative, http://rggi.org/rggi (last visited Aug. 17, 2009).
184. S. 3036, *supra* note 88, §§2101-2102.
185. *Id.* §§2103, 2104.
186. *Id.* §2601-4.
187. *Id.* §2604.
188. S. 1766, 110th Cong. §103.
189. H.R. 6186, 110th Cong. §731.
190. The Congressional Budget Office uses a "middle of the road" estimate of price responsiveness to determine allowance prices, which indicates how much firms and households would reduce their emissions for a given allowance price. Congressional Budget Office, *Cost Estimate: H.R. 2454* 13 (June 5, 2009), *available at* http://www.cbo.gov/ftpdocs/102xx/doc10262/hr2454.pdf [hereinafter *CBO Estimate*].
191. *Id.* at 6.
192. Kim Chipman & Catherine Dodge, *Obama's Plan Has $79 Billion From Cap-and-Trade in 2012*, Bloomberg.com (Feb. 26, 2009), *available at* http://www.bloomberg.com/apps/news?pid=20601130&sid=aAO_KEIgeOOc [hereinafter Chipman & Dodge].

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

Lieberman-Warner Bill (S. 2191, the Climate Security Act of 2008). These proposals took different approaches regarding the manner in which auction revenues would be utilized. The prior Markey legislation provided that the auction proceeds would be used to establish and maintain 12 specific funds.[193] Among these was the Climate Change Education and Outreach Fund, which would have received $50 million annually to promote public awareness of climate change and to establish national centers for collaborative research and information-sharing.[194] The prior Markey bill would have allocated the remainder of the annual auction proceeds among the following funds:

- Climate Trust Rebate Fund: This fund would have used approximately 7.5% of auction proceeds in conjunction with a climate trust tax credit to help "offset any increased direct or indirect energy costs such households may experience as a result of regulation of greenhouse gas emission."[195]
- Low-Carbon Technology Fund: 12.5% of the revenue would have been used to encourage the rapid and effective development of advanced low-carbon energy technologies to reduce GHG emissions in a manner that would have promoted job growth.[196]
- National Energy Efficiency Fund: Another 12.5% of annual revenue would have been allocated to fund programs to encourage widespread adoption of energy efficiency policies including weatherization and home energy assistance, recycling of energy-intensive consumer goods, enforcement of robust building efficiency codes, and reduction of vehicle miles traveled.[197]
- Agriculture and Forestry Carbon Fund: Approximately 5% of proceeds would have been utilized to achieve increases in carbon sequestration by, and reductions in GHG emissions from, forest and agriculture management activities.[198]
- Climate Change Worker Transition Fund: This fund would have absorbed a small amount of revenue (around 2% annually) to support worker training programs in the renewable and energy efficiency industries as well as to provide assistance to those workers laid off as a result of the transition to a low-carbon economy.[199]
- Natural Resource Conservation Fund: This fund would have directed approximately 2% of annual proceeds to support programs to protect natural resources, wildlife, and fisheries from the adverse effects of climate change.[200]

193. H.R. 6186, 110th Cong. §722(a) (2008).
194. *Id.* §§381, 722(d).
195. *Id.* §301.
196. *Id.* §311.
197. *Id.* §321.
198. *Id.* §331.
199. *Id.* §341.
200. *Id.* §371.

The Climate Security Act of 2008, initially introduced by Senators Lieberman and Warner and later amended with a proposal by Senator Boxer, would have allocated the revenue from allowance auctions in the following manner: technology deployment, 52%; energy independence acceleration, 2%; energy assistance, 18%; climate change worker training, 5%; adaptation, 18%; and climate change and national security, 5%[201] The most significant distinction between the Lieberman-Warner and the prior Markey bills with respect to auction revenue distribution, aside from Lieberman-Warner's stronger emphasis on the technology sector, was that Lieberman-Warner was more explicit in defining which federal agency would have had authority over the programs created by the legislation.[202]

Of the regional initiatives, the RGGI was the most advanced at the time of the House's passage of Waxman-Markey.[203] The RGGI gives each state member independent discretion to allocate allowances—either for free or via auction—and to spend any auction revenues that may be generated.[204] Since its inception, the RGGI states have decided to auction nearly 100% of their allowances and to use the proceeds primarily to benefit the public.[205] Thus far, the majority of the proceeds have been channeled into energy efficiency programs at the state and local level that are designed to save consumers money and reduce the cost of the RGGI by lowering demand for energy and for allowances.[206] Specific expenditures vary state-by-state but are generally directed toward activities such as low-income weatherization and heating assistance, clean energy and sequestration research, and consumer rebates.[207]

During his presidential campaign, President Obama endorsed a cap-and-trade program that would incorporate a 100% auction of emission allowances and, therefore, would have created substantially more auction revenue to distribute than the Waxman-Markey compromise ultimately did.[208] President Obama's first budget reflected this total auction assumption and estimated that allowance auctions would generate a total of $645.7 billion in revenue between 2010 and 2019.[209] This auction revenue "could have been used to slash the deficit, pay for health care, cut payroll taxes, or fund energy research."[210]

201. Congressional Research Service, *Climate Change: Comparison of S. 2191 as Reported (now S. 3036) With Proposed Boxer Amendment*, tbl. 2, at 7 (May 30, 2008), *available* at http://ncseonline.org/NLE/CRSreports/08Jun/RL34515.pdf.
202. *See id.*
203. Muskie School of Public Service, *RGGI Allowances: How to Use the Revenues?* 1 (Apr. 2007), *available at* http://efc.muskie.usm.maine.edu/docs/Greenhouse_Gas_Allowances.pdf [hereinafter *Muskie*].
204. Environment Northeast, *RGGI Allowance Allocations & Use of Auction Proceeds* (Mar. 20, 2009), *available at* http://www.env-ne.org/public/resources/pdf/ENE_Auction_Tracker_3.20.09.pdf [hereinafter *Environment Northeast*].
205. *Id.*
206. *Id.*, *Muskie*, *supra* note 203, at 3.
207. *Muskie*, *supra* note 203, at 4-5; *Environment Northeast*, *supra* note 204.
208. Barack Obama & Joe Biden, *Barack Obama and Joe Biden: Promoting a Healthy Environment* 2, *available at* http://www.barackobama.com/pdf/issues/EnvironmentFactSheet.pdf.
209. Chipman & Dodge, *supra* note 192.
210. *Deconstruct*, *supra* note 23.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

President Obama would have distributed the bulk of the auction proceeds to consumers who felt the brunt of increased electric bills because of utilities' need to pay for allowances, the costs of which they would pass on to consumers. Under a cap-and-trade regime in which all of the allowances used by the electricity sector are distributed via auction, some economists estimate that consumers would bear eight times greater cost, as power suppliers pass their increased costs along to consumers through increased prices.[211] Low-income individuals and households are expected to be affected most severely, and President Obama proposed to use auction proceeds to protect this demographic.[212] Under President Obama's plan, an estimated $504 billion in refunds would be distributed directly to individuals and households by extending the Making Work Pay tax credit.[213] The principal downside to this course of action would have been that the tax credit could only be received by those working Americans who file tax returns and would, therefore, exclude many of the most vulnerable populations in the country including retirees, the unemployed, and the disabled.[214]

In addition to assisting consumers who would bear higher utility costs, President Obama would also have used some of the auction revenues ($120 billion) to promote clean energy technologies. He would have used the remainder of the funds to cover the administrative costs of managing the cap-and-trade program.[215]

Waxman-Markey would pick up on some of the President Obama's concerns regarding the impact of cap-and-trade programs on consumers and would use a substantial portion of the auction proceeds to assist consumers through a number of programs.

- *Waxman-Markey would create two programs specifically targeted at low-income consumers*. Waxman-Markey specifically provides that any auction revenue be used "for the benefit of low-income consumers to fund subtitle C of title IV of [the Act]."[216] Subtitle C—entitled Consumer Assistance—provides for a refundable low-income tax credit and an energy rebate program.[217] The "Refundable Low-Income Tax Credit," aimed at offsetting the impact of higher energy prices on low-income families caused by the bill, would be based on the average loss of purchasing power for the poorest one-fifth of the population.[218] The credit would vary depending on family size, the share of total expenditures made by those families, and the GHG intensity of that spending.[219] This credit would also be refundable, meaning that taxpayers would not need to owe any taxes in order to receive the credit.[220] The "Low-Income Energy Rebate" would complement the Low-Income Tax Credit by reaching those families or individuals who do not file tax returns.[221] The amount of the rebate would equal that of the tax credit; those who receive the tax credit would not be eligible to receive the rebate as well.[222] The rebate would be delivered directly to each household via electronic transfer on a monthly basis.[223]
- *Waxman-Markey would create a fund to benefit all consumers experiencing rate increases as a result of the cap-and-trade program*. Waxman-Markey calls for the deposit, beginning in 2025, of a percentage of auction proceeds into a Consumer Climate Rebate Fund from which the Secretary of Treasury would distribute to each household in the United States on a per capita basis.[224] One advantage of such direct refund programs, aside from protecting the public from increasing energy prices, is that consumers will still see their rates increase. Under a cap-and-trade regime, if energy consumers do not see the prices on their bills increase, then they will have no immediate incentive to reduce future electricity consumption.[225] Together, the energy rebate and energy tax credit programs are estimated to result in a $114 billion increase in direct spending between 2010 and 2019.[226]
- *Waxman-Markey would create a worker assistance program to benefit workers displaced by the effects of the cap-and-trade program*. Waxman-Markey would use a portion of the auction proceeds to fund a program entitled "Climate Change Worker Assistance," which would be administered by the U.S. Department of Labor.[227] Under this program, workers who lose their jobs as a result of measures their employers take to comply with provisions of the bill could receive up to 156 weeks of benefits, including cash benefits equal to 70% of their average weekly wage.[228] Those individuals who receive assistance would not, however, be eligible to receive unemployment compensation.[229]

In addition to its consumer assistance elements, Waxman-Markey would make available an estimated $50 billion in discretionary spending, assuming appropriation, which various agencies would then use.[230] Among the authorized uses of these funds would be: (1) the creation of the Clean Energy Deployment Administration within DOE, which would be

211. Dallas Burtaw, *Cap, Auction, and Trade: Auctions and Revenue Recycling Under Carbon Cap and Trade* 7 (Jan. 23, 2008), *available at* http://www.rff.org/focus_areas/features/Documents/CT-Burtraw-Testimony-08-01-23.pdf [hereinafter Burtaw].
212. Richard L. Revesz & Michael A. Livemore, *Obama's Carbon Cap-and-Trade Plan Can Boost Growth*, Bus. Wk. (Mar. 10, 2009), *available at* http://www.businessweek.com/bwdaily/dnflash/content/mar2009/db20090310_825431.htm.
213. *Id.*
214. *Id.*
215. *Id.*
216. H.R. 2454, *supra* note 2, §782(d).
217. *Id.* §§431-432.
218. *CBO Estimate*, *supra* note 190, at 20.
219. *Id.*
220. *Id.* at 21.
221. *Id.* at 27.
222. *Id.*
223. *Id.*
224. H.R. 2454, *supra* note 2, §789.
225. Burtaw, *supra* note 211, at 14.
226. *CBO Estimate*, *supra* note 190, tbl. 4, at 26.
227. *Id.* at 24.
228. *Id.*
229. *Id.*
230. *Id.* at 28-34.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

authorized to provide direct loans for clean energy projects; (2) loans to manufacturers of certain vehicles; and (3) energy efficiency and clean energy technology programs. Finally, Waxman-Markey calls for $25.5 billion of the revenue generated from auctions between 2010 and 2019 to be deposited into three funds established by the U.S. Treasury.

- $5.3 billion would be credited to the Natural Resources Climate Change Adaptation Fund and used to support adaptation activities managed by the U.S. Departments of the Interior, Commerce, and EPA.
- $900 million credited to Climate Change Health Protection and Promotion Fund to support efforts by the U.S. Department of Health and Human Services to assist professionals in preparing for and responding to impacts of climate change on public health.
- $19.3 billion credited to the Stratospheric Ozone and Climate Protection Fund and used to support DOE's appliance deployment and EPA's program to encourage recovery, recycling, and reclamation of HFCs.

Spending from these funds would require further appropriation action.

F. Flexibility: Offsets, Reserves, and Banking and Borrowing

Cap-and-trade programs typically incorporate some flexibility to prevent the costs of allowances from being too high and the burden on businesses too great. Such mechanisms protect against unexpected fluctuations in prices that are common in cap-and-trade programs.[231] If the initial cap is too stringent, for example, allowances will be in demand and the price of allowances will be so high that it could detrimentally impact the economy.[232] The first regional initiative to be fully fleshed out, the RGGI, contained mechanisms of this sort.

"Offsets" are one type of mechanism to create flexibility in cap-and-trade systems. Offsets reduce the emission allowances a capped source has to hold to authorize its GHG emissions. Companies that invest in projects to "offset" GHG emissions, such as renewable energy projects, can reduce the allowances they have to hold to authorize their emissions.[233]

Waxman-Markey incorporates offsets, a strategic reserve, and banking and borrowing to create flexibility in the carbon market. Incorporating these mechanisms into the bill made Waxman-Markey more politically palatable.[234]

The use of mechanisms designed to build flexibility into cap-and-trade systems has its detractors. "[M]any observers object to the possibility of relaxing the cap."[235] For example, a complexity that offsets can present is their effect on inter-jurisdictional trades. The "presence of a safety valve in a program may make . . . other jurisdictions unwilling to allow cross-program trading, as a safety valve in one program will effectively apply to any program that links to the first."[236] The concern applies more to offsets from outside the jurisdiction covered by the cap-and-trade program, which, in the case of Waxman-Markey, would mean outside the United States.

1. Offsets

A common way to create flexibility in cap-and-trade systems is to provide for offsets. Offset provisions make cap-and-trade programs more cost effective by including a broader scope of low- and moderate-cost emission reduction opportunities.[237] Waxman-Markey, Lieberman-Warner, and the first finalized regional rules all provide for the use of offsets. Offsets reduce a source's required GHG allowances by allowing the entity to subtract from emissions for which it would otherwise be required to hold allowances the GHG emissions avoided by a source not covered by the program.[238] For example, entities may earn offset credits by direct emissions reductions, including switching from high-GHG, e.g., coal, to low-GHG, e.g., biomass, fuels.[239] Other direct emissions methods include entities planting trees or capturing methane from landfills or livestock operations in lieu of (1) reducing their own emissions to the amount of allowances they hold, or (2) acquiring allowances for all the emissions they generate.[240] Interest groups have also suggested that recycling projects should qualify for offsets.[241]

Waxman-Markey would provide for domestic and international offset credits. EPA would be required to identify the types of projects that would be eligible to generate offset credits.[242] Waxman-Markey sets conditions on the types of deforestation prevention projects in developing countries that would qualify for offset credits,[243] as well as the types of agriculture and forestry projects within the United States that would generate offsets.[244]

Because the GHG emissions avoided by projects that qualify for offsets generally do not come from Covered Entities,

231. Pew Center on Global Climate Change, *Congressional Policy Brief: Containing the Costs of Climate Policy* 3 (Fall 2008) [hereinafter *Pew Cost Containment*].
232. Harrison et al., *Combat*, *supra* note 54, at 10377.
233. Offsets are "certificates given for [GHGs] that might have been omitted but were not or for emissions that were somehow removed from the atmosphere. . . . [I]f some offsets turn out to be bogus, the climate loses and the system bleeds credibility." *Deconstruct*, *supra* note 23.
234. *See* Lorraine Woellert, *Waxman Irks Allies by Bargaining With Companies on Climate Bill*, Bloomberg.com (June 3, 2009); Brandon Lorenz, *Rep. Henry Waxman's Bill to Cap Carbon Dioxide Faces Long Odds*, FACILITIESNET.COM (June 2009) ("'Fundamentally, the biggest issue is members of coal producing states who are concerned this will be economically devastating to their communities,' says Andrew L. Goldberg, senior director of federal relations for the American Institute of Architects.").
235. Harrison et al., *Combat*, *supra* note 54, at 10377.
236. *Id.*
237. *Issue Overview: Role of Offsets in Cap and Trade, United States Climate Action Partnership* (Mar. 2009), *available at* http://www.us-cap.org.
238. *Pew Cost Containment*, *supra* note 231, at 6.
239. Pew Center on Global Climate Change, *Congressional Policy Brief: Greenhouse Gas Offsets in a Domestic Cap-and-Trade Program* 5 (Fall 2008), *available at* http://www.pewclimate.org/docUploads/offsets.pdf [hereinafter *Pew Offsets*].
240. *Id.* at 2.
241. *See, e.g.*, Letter from John Skinner, Solid Waste Association of North America, to Henry Waxman, at 5 (Apr. 28, 2009), *available at* http://swana.org/Portals/Solutions/SWANA_Waxman-Markey_Comment_LTR.pdf.
242. H.R. 2454, *supra* note 2, §733(a).
243. *Id.* §754.
244. *Id.* Title V. The agricultural and forestry related offsets would be largely controlled by the U.S. Department of Agriculture.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

environmental groups have criticized reliance on them.[245] To ensure that offset credits represent true reductions in, or avoidance of, GHG emissions and, therefore, do not compromise the emissions cap, offsets should be in addition to reductions that would have been taken anyway.[246] To ensure the "additionality" of offsets, Waxman-Markey would establish an Offsets Integrity Advisory Board to ensure that offsets are measurable, additional, and permanent[247] and would establish an offsets reserve based on the risk of reversal.[248] The bill also includes an offset ratio that requires greater GHG reductions from international non-covered sources than from sources within the cap-and-trade program.[249]

Offsets raise concern among environmentalists for another reason as well. When compliance costs are lowered because sources can use offsets rather than purchase allowances, the price of allowances may be too low to induce innovation.[250] For this reason, quantitative, as well as qualitative, restrictions may be placed on the use of offsets.[251] Waxman-Markey, for example, would limit the total number of offset credits available to two billion tons annually and would limit the amount of offset credits each source could use to fulfill its compliance obligation.[252] So, in addition to the program-wide cap, each Covered Entity would be able to fill a limited proportion of its obligation with offset credits. For example, in 2012, entities could fulfill 30% of their obligations with offsets, split evenly between domestic and international offsets.[253] Lieberman-Warner would have allowed an entity to meet up to 15% of its compliance obligation with specified domestic offsets.[254] The first finalized regional rules allowed a less generous amount of offsets.

2. Strategic Reserve

Another mechanism to create flexibility and contain costs in Waxman-Markey is a strategic reserve.[255] Under Waxman-Markey, a small percentage of the available allowances from each year, plus unsold allowances, would be placed in the reserve.[256] Strategic reserve auctions would be held to offer a percentage of the reserve allowances for sale at a predetermined price (beginning at twice the estimated allowance price for 2012).[257] Entities would be able to purchase up to 20% of their needs at the strategic reserve auction.[258]

A strategic reserve would inject reserved allowances into the market at a predetermined price.[259] Because the price of the strategic reserve allowances is predetermined, expectations are that sources will only purchase allowances from the strategic reserve if the market price exceeds the predetermined strategic reserve price. In this way, a strategic reserve can act as a "safety valve" when the price of allowances becomes overly burdensome. The strategic reserve could be filled with allowances not sold at auction, with allowances borrowed from future periods, with offsets that are converted into allowances, or even with current allowances that essentially expand the cap.[260] If the strategic reserve is created from unsold or reserved allowances and the number of allowances available is limited, the cap is not loosened from the influx of allowances from the strategic reserve, but the price is controlled.[261] Lieberman-Warner would have similarly established "cost containment auctions" to sell allowances from an allowance reserve, which would contain allowances borrowed from future years.[262]

3. Banking and Borrowing

Banking is the use of previously unused allowances in future years and is included in most existing trading programs and proposals.[263] Banking is sometimes proposed with a provision for borrowing, which is the use in current years of allowances purchased for future years. Banking and borrowing reduce the absolute cost of compliance by making the caps flexible over time and by allowing regulated entities to plan for investments and technological changes and respond to economic shocks.[264]

Banking is particularly useful for hedging against future price increases and helps reduce short-time price volatility by

245. *See Hearing on the March 31, 2009 Discussion Draft of the American Clean Energy and Security Act of 2009 Before the H. Comm. on Energy and Commerce*, 111th Cong. (Apr. 24, 2009) (statement of Bill Becker, Executive Director of National Ass'n of Clean Air Agencies):
> To the extent capped sources purchase offset credits rather than reduce their own GHG emissions, this dilutes the effectiveness of the cap. Allowing up to two billion tons of GHG reductions from uncapped sources to substitute for GHG reductions from capped sources represents a lost opportunity to garner GHG reductions from capped sources. This provision is very troubling.

246. Offset Quality Initiative, *Ensuring Offset Quality* 3 (July 2008).
247. H.R. 2454, *supra* note 2, §731.
248. *Id.* §734(a)(3).
249. Waxman-Markey provides for a 5:4 offset ratio for international offset credits after five years. *Id.* §722(d)(1)(A).
250. *Pew Offsets*, *supra* note 239, at 2.
251. 110th Congress Final Staff Report, Select Committee on Energy Independence and Global Warming 54 (Oct. 31, 2008).
252. H.R. 2454, *supra* note 2, §722(d)(1).
253. *Id.* §722(d)(1)(B).
254. S. 3036, *supra* note 88, §2402.
255. H.R. 2454, *supra* note 2, §726.
256. *Id.*
257. *Id.*
258. *Id.* §726(e).
259. *Pew Cost Containment*, *supra* note 231, at 7.
260. *Id.*
261. *See* Brian C. Murray et al., *Balancing Cost and Emissions Uncertainty: An Allowance Reserve for Cap and Trade* (Nat'l Bureau of Econ. Research, Working Paper 14258, Aug. 2008), *available at* http://www.nber.org/papers/w14258:
> The basic idea goes one step beyond the safety valve: while the safety valve stipulates that an unlimited number of allowances be made available at the specified safety-valve price, the allowance reserve stipulates both a ceiling price at which cost relief is provided and a maximum number of allowances to be issued in exercising that relief.

262. S. 3036, *supra* note 88, Title V.
263. *See* Larry Parker, Congressional Research Service, *Climate Change: Design Approaches for a Greenhouse Gas Reduction Program* 16 (Nov. 24, 2008) ("Most existing trading programs include provisions for banking credits for either future use or future sale. Indeed, the absence of effective banking in the RECLAIM program is credited with contributing to RECLAIM's suspension during the California energy crisis.") [hereinafter *CRS Climate Change*]; Harrison et al., *Combat*, *supra* note 54, at 10377 ("Both the EU ETS and virtually all U.S. proposals allow banking.").
264. *CRS Climate Change*, *supra* note 263, at 16; *Flexibility in the Timing of Emission Reductions Under a Cap-and-Trade Program: Hearing on H.R. 2454 Before the H. Comm. on Ways & Means*, 111th Cong. (Mar. 26, 2009) (statement of Douglas W. Elmendorf, Director of the Congressional Budget Office) [hereinafter Elmendorf, *Flexibility*].

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

adding intertemporal flexibility.[265] It motivates early action by encouraging sources to make large emissions reductions sooner than necessary, enabling them to trade allowances in the future or avoid purchasing allowances at auction.[266] Borrowing, on the other hand, improves flexibility for firms that may want to make investments that do not pay off immediately, or if the firms will be better able to make emission-reducing investments in the future.[267]

Borrowing is more controversial than banking, however, because it may delay achievement of emission reduction goals, as sources can emit GHGs above the annual allowance cap in current years.[268] There is also a concern that, if a source had borrowed against future emissions, the source could, when the borrowing comes due, seek to have the borrowed allowances forgiven or be unable to pay for the borrowed allowances.[269]

Despite certain controversial aspects, major legislative proposals tend to include banking and borrowing. Lieberman-Warner provided for banking and borrowing, including increased borrowing in the event of significant harm to the economy caused by the cap-and-trade program.[270] Waxman-Markey also allows for flexibility through banking and borrowing.[271] It would permit Covered Entities to use an unlimited number of unused allowances from previous compliance years in current and future years.[272] Entities would also be able to borrow an unlimited number of allowances from the immediately following years, or from up to five years in the future subject to certain requirements such as paying interest.[273]

G. Reconciliation With Existing Programs

An effective and efficient comprehensive federal legal regime governing GHG emissions must somehow take into account past efforts to control GHG emissions. The comprehensive federal regime enshrined in the Waxman-Markey Bill strives for reconciliation with existing federal, state and regional, and international regimes governing GHG emissions. On the federal level, Waxman-Markey would generally supplant to-date theoretical avenues for regulating GHG emissions under existing CAA authorities while subjecting emissions sources not subject to the overall emissions cap to a modified form of NSPS. On the state and regional level, the bill preempts existing cap-and-trade regional initiatives while integrating state renewable energy credit (REC) programs and regional offset programs. Finally, on the international level, the bill attempts seamless integration with existing and anticipated market-based approaches to GHG regulation.

Through these efforts at reconciliation, Waxman-Markey avoids exposing GHG-emitting facilities to overlapping regulations that demand two different means of compliance for the same GHG-emitting activity.[274] The bill also guards against "leakages"[275] and double-counting,[276] both of which would frustrate the regulatory purpose of the legislation. Finally, the bill seeks economic efficiency and practicality by allowing entities regulated under previous programs to apply their earned credits, offsets, or allowances to the new federal regulations.

1. Reconciliation at the Federal Level

Waxman-Markey effects a reconciliation with the federal CAA (and its implementing regulations) in two significant ways. First, it responds both to the Supreme Court's decision in *Massachusetts v. EPA* and to the Bush Administration's advanced notice of proposed rulemaking on GHG by substituting a comprehensive, congressional-designed regime for a cobbled-together, and somewhat theoretical, avenue for regulating GHGs under the CAA. Second, it subjects so-called uncapped emissions sources to a modified version of the CAA's existing NSPS requirements.

The Waxman-Markey Bill would, as it should, settle the matter of whether EPA should proceed with regulation of GHG emissions under many of the variety of existing CAA authorities that have been identified as potential avenues of regulation. In so doing, it puts to rest the theoretical regulation of GHG emissions—and the resulting complexity of doing so—under a number of existing CAA programs.

- *The Waxman-Markey Bill would exempt GHGs from the CAA's list of "criteria pollutants."*[277] The Waxman-Markey Bill would prevent the listing of any GHG as a criteria pollutant, on the basis of the GHG's effect on climate change,[278] under the CAA's NAAQS. This exemption would avert a primary problem otherwise posed by regulating GHGs under the NAAQS program, which regulates criteria pollutants according to their relative concentrations within different air

265. *Pew Cost Containment*, *supra* note 231, at 4.
266. *Id.*
267. *Id.* at 5.
268. Harrison et al., *Combat*, *supra* note 54, at 10377.
269. *Pew Cost Containment*, *supra* note 231, at 5; Elmendorf, *Flexibility*, *supra* note 264, at 2 ("Existing cap-and-trade programs typically preclude borrowing, in part because of concerns that firms that borrow allowances might be unable to pay them back later.").
270. S. 3036, *supra* note 88, §2604(a)(1)(A).
271. H.R. 2454, *supra* note 2, §725.
272. *Id.* §725(a).
273. *Id.* §725(c).
274. *See*, *e.g.*, Megan McGuinness, *Overlapping State and Federal Climate Programs: Economic and Policy Considerations*, Climate Policy Economics Insights (Apr. 2009), http://www.nera.com/NewsletterIssue/NL_Climate_Policy_Insights_0409_FINAL.pdf (last visited July 15, 2009) [hereinafter McGuinness]; *see also* Advance Notice of Proposed Rulemaking (ANPRM) Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44354, 44503 (July 30, 2008) (discussing the increased compliance costs incurred if entities are regulated under both the CAA's NSR and cap-and-trade programs) [hereinafter *Bush GHG ANPRM*].
275. Leakages occur when regulated entities or consumers avoid compliance costs by moving the regulated activity—either GHG emission or the purchasing of products from GHG-emitting sources—to unregulated (foreign) jurisdictions. *Bush GHG ANPRM*, *supra* note 274, at 44413.
276. "Double-counting" occurs when a regulated entity uses an instrument of compliance, e.g., an offset credit or allowance, to comply multiple times or with multiple regulatory programs. *See* H.R. 2454, *supra* note 2, §101(a) (2009) (proposing §610(e)(8) of the Public Utility Regulatory Policies Act (PURPA) of 1978, 16 U.S.C. §§2601 et seq.).
277. H.R. 2454, *supra* note 2, §331 (proposing CAA §831).
278. *Id.* §331 (proposing CAA §831).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

sheds.[279] GHGs do not act like traditional air pollutants, because GHGs do not concentrate differently across the lower atmosphere. Instead, GHGs linger for a long time, achieving a relatively equal distribution in the upper atmosphere and creating the heat-trapping effect attributed to "global warming."[280] The CAA's traditional strategy of regulating criteria pollutants according to their relative concentrations would not translate well into a regulatory strategy for GHGs, which cloak the earth in a uniform concentration.[281]

- *The Waxman-Markey Bill would prevent EPA from adding GHGs to the CAA's list of "hazardous air pollutants."*[282] Similar to the Waxman-Markey Bill's treatment of GHGs with respect to criteria pollutants, the bill would also prevent EPA from listing any GHG as a hazardous air pollutant solely on the basis of the GHG's effect on climate change.[283] This provision would not prevent the listing of a GHG that otherwise meets the CAA's listing criteria with respect to hazardous air pollutants.[284] Avoiding the addition of GHGs from the CAA's hazardous air pollutant list avoids high compliance costs generally associated with the Act's hazardous air pollutant program.[285]
- *The Waxman-Markey Bill would exempt GHGs from the requirements imposed on EPA with regard to the international effects of air pollutants released within the United States*.[286] The CAA requires EPA to trigger a series of remedial actions whenever EPA learns that air pollution emitted from U.S. sources is endangering public health or welfare within a foreign country.[287] Under the Waxman-Markey Bill, this requirement would not apply to GHGs solely because of their effects on global warming.[288] Instead, the bill would promote international cooperation in achieving GHG reduction through international agreements and regulatory programs.
- *Waxman-Markey would exempt major sources of GHGs from the CAA's NSR program*.[289] Title I, Part C of the CAA implements an NSR program to prevent the significant deterioration of air quality.[290] The NSR program requires new sources of air pollution to comply with permits of varying stringencies, depending upon the relative air quality of the new source's immediate environment.[291] The Waxman-Markey Bill would exempt major sources of GHGs from the NSR program.[292] This exemption avoids the logical problem of premising GHG regulation on the idea that pollutants reach different concentrations in different sections of the lower atmosphere. Because GHGs attain a uniform concentration around the earth, the entire United States (indeed, the planet) would be either "in" or "out of" attainment under the NSR guidelines. If the country is in attainment, regulated entities would be subject to both a technology standard and the federal cap-and-trade program.[293] If the country is out of attainment, the NSR's offset program would essentially establish a second cap-and-trade program by requiring all new emissions to be offset by reduced emissions elsewhere.[294] The overlapping NSR and cap-and-trade programs would then create both business and administrative inefficiencies, increasing marginal costs of compliance and requiring regulators to duplicate efforts.[295]
- *Waxman-Markey would exempt stationary sources of GHGs from the CAA's Title V permit program*.[296] Waxman-Markey confronts the inconvenient reality that "[m]ost of the largest emitters of GHGs are also large emitters of traditional air pollutants and therefore already regulated under the [CAA]."[297] Under Title V of the CAA, EPA regulates the emission of traditional air pollutants by requiring emitters to attain—and remain in compliance with—general permits.[298] By contrast, the Waxman-Markey Bill would subject GHG emitters to the regulations of the cap-and-trade program, requiring owners or operators of GHG-emitting sources to acquire allowances for each ton of GHGs emitted.[299] Therefore, to the extent that GHGs comprise all of a source's polluting emissions—and to the extent that global warming is the only harmful effect of those GHGs—the Waxman-Markey Bill would exempt such sources from having to obtain Title V permits.[300] However, owners or operators of sources emitting other air pollutants or GHGs causing harmful effects other than global warming would still be required to obtain Title V permits.[301] For such dually regulated entities, the Title V permit would simply incorporate the allowance and offset requirements established under the cap-and-trade program.[302]

In addition to ruling out regulating GHG emissions under any of the foregoing authorities, the Waxman-Markey Bill responds to public debate as to whether EPA should regulate

279. Air sheds are more technically referred to as Air Quality Control Regions (AQCRs). *See*, *e.g.*, 42 U.S.C. §§7407-7408.
280. *See Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44400-01, 44408.
281. *Id.*
282. H.R. 2454, *supra* note 2, §331 (proposing CAA §833).
283. *Id.* (regulating GHGs under the CAA's program for hazardous air pollutants).
284. 42 U.S.C. §7412(b).
285. *See Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44494.
286. H.R. 2454, *supra* note 2, §331 (proposing CAA §832).
287. Note that the foreign country would be required to have a reciprocal relationship with the United States. 42 U.S.C. §7415.
288. H.R. 2454, *supra* note 2, §331 (proposing CAA §832).
289. *Id.* (proposing CAA §834).
290. 42 U.S.C. §§7470-7492.
291. 42 U.S.C. §§7470-7492.
292. H.R. 2454, *supra* note 2, §331 (proposing CAA §834).
293. *Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44503.
294. *Id.* at 44502.
295. *Id.* at 44503; *see also* McGuinness, *supra* note 274.
296. H.R. 2454, *supra* note 2, §331 (proposing CAA §835).
297. *Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44507.
298. 42 U.S.C. §§7661-7661(f).
299. H.R. 2454, *supra* note 2, §311 (proposing CAA §§721-728).
300. *Id.* (proposing CAA §835).
301. *Id.* (proposing CAA §835).
302. *Id.* (proposing CAA §727) (describing the Waxman-Markey cap-and-trade permit program).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

stationary sources of GHG emissions by issuing NSPS pursuant to its CAA authority. Under the NSPS program, EPA develops technology standards that a given polluting industry must follow.[303] This forces the industry's current and future participants to internalize the costs of their pollution by investing in cleaner technology as they expand, evolve, or enter the market. Waxman-Markey's cap-and-trade program seeks the same result of reducing emissions by requiring industry participants to purchase emission allowances. An unreconciled overlap between the two programs could create inefficiencies for both the regulator and regulated.[304] At least one environmental group went on the record early expressing dissatisfaction with this expression of EPA's authority.[305]

Waxman-Markey attempts to reconcile this potential overlap by authorizing EPA to set NSPS for stationary sources of "*uncapped* emissions,"[306] but not for stationary sources of "*capped* emissions."[307] As an alternative to setting an NSPS for sources of uncapped emissions, EPA has discretion[308] to regulate such stationary sources by promulgating "a design, equipment, work practice, or operational standard, or any combination thereof."[309] An important cost consideration limits EPA's discretion in setting either an NSPS or the alternative design standard: the marginal cost of complying with the NSPS or design standard[310] must not be expected to exceed the projected allowance prices over the relevant time period.[311] This limitation may be designed to retain the proper incentives for owners and operators of "capped" and "uncapped" emission sources. Sources of "capped emissions" are generally the biggest GHG emitters and thus are subject to the more rigorous cap-and-trade program.[312] If EPA were to set NSPS or design standards with greater marginal costs than the cost of complying with the cap-and-trade program, then small emitters would have an incentive to increase emissions to the 25,000 ton threshold that triggers cap-and-trade regulation. Such a disproportionate compliance cost would also translate into even higher compliance costs for downstream, "uncapped emissions" sources that have already paid a higher price for, e.g., petroleum and coal-based fuel products regulated upstream.[313]

2. Reconciliation With Regional and State Programs

Waxman-Markey reconciles comprehensive federal GHG regulation with preexisting state and regional programs in a number of different ways. Most sweepingly, it preempts state and regional cap-and-trade programs. On the opposite end of the continuum, it borrows from, and attempts to integrate, preexisting state programs for RECs, offsets, and regional allowances.

Waxman-Markey would reserve to states the right to cap GHG emissions,[314] but it would preempt any state authority to implement or enforce a cap-and-trade program.[315] Under the legislation, states could cap GHG emissions or require owners or operators to use or surrender their federal emission allowances or offset credits to comply with state requirements.[316] Comparable to other federal environmental legislative regimes, states would only need to ensure that their standards or limitations were as stringent as those of the proposed federal regulations.[317] During the years 2012 to 2017,[318] the bill would preempt states from implementing

303. 42 U.S.C. §7411.

304. *See*, *e.g.*, McGuinness, *supra* note 274. Note that any technology standard required under §111would be based on demonstrated technology, and thus EPA could not require a covered entity to develop technology standards not yet in use. Some consider cap-and-trade programs to be "technology-forcing" in the sense that the largest emitters will have an incentive to reduce their compliance costs through adoption of cleaner technology. *Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44410, 44490. Regulating an entity under the cap-and-trade program alone would allow the entity's owner or operator to determine the most cost-efficient means of compliance—whether by alternative power sources, investing in cleaner technology, reducing output, purchasing offset credits or allowances, or any combination thereof. However, an owner or operator regulated under both an NSPS and a cap-and-trade program would lose that flexibility because he would have to invest in the cleaner technology regardless of how it might otherwise respond to the cap-and-trade system's incentives.

305. *Activists Condition Climate Bill Support on Restoring EPA Authority*, Inside EPA.com (July 24, 2009) (quoting Bruce Nilles, from the Sierra Club).

306. Sources of "capped emissions" generally emit at least 25,000 tons of CO_2e annually, or they operate in certain sectors identified as particularly reliant on GHG emissions. These sources are the entities "covered" by the proposed regulatory scheme. *See* H.R. 2454, *supra* note 2, §312 (proposing CAA §700(8) (providing the definition of "capped emissions") and CAA §700(13) (defining "covered entity")). By contrast, "uncovered" emitters of "uncapped emissions" operate within a less carbon intensive industry, or they emit less than 25,000 tons of CO_2e annually. *Id.* §312 (proposing CAA §700(13)). EPA may only issue NSPSs for "sources that individually had uncapped greenhouse gas emissions greater than 10,000 tons of CO_2 equivalent and that, in the aggregate, were responsible for emitting at least 20 percent annually of the uncapped greenhouse gas emissions." *Id.* §331 (proposing CAA §811(a)(1)).

307. H.R. 2454, *supra* note 2, §331 (proposing CAA §811(a)-(b)). This bar on NSPSs for GHG emission sources does not include any NSPS applied to a stationary source due to the non-climate change effects of that source's emissions. *Id.*

308. In contrast to §111(h) of the CAA, EPA need not first determine the feasibility of setting an NSPS.

309. H.R. 2454, *supra* note 2, §331 (proposing CAA §811(c)(2)).

310. The marginal cost of compliance is expressed as dollars per ton of CO_2e reduced. *Id.* (proposing CAA §811(c)(3)).

311. *Id.* (proposing CAA §811(c)(3)).

312. *Id.* (proposing CAA §811(d)). Recall that any technology standard required under §111 would be based on demonstrated technology, and thus EPA could not require a covered entity to develop technology standards not yet attained. Regulating the largest emitters under a cap-and-trade program is more "technology-forcing" because covered entities will always have an incentive to reduce their compliance costs through the development of cleaner technology. *Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44410, 44490.

313. Waxman-Markey identifies which industries are to be regulated by imposing a cap-and-trade on downstream versus upstream sources of GHG emissions. For example, the bill would regulate the emissions associated with petroleum or coal-based fuel at upstream sources that do not directly emit GHGs. *See* H.R. 2454, *supra* note 2, §312 (proposing CAA §700(13)(B)). This decision likely reflects the reality that any petroleum or coal-based fuel sold in the United States will lead to the emission of measurable quantities of GHGs, and yet many of the individual emitters will be small sources. Therefore, it is more efficient to internalize the cost of those emissions in the original sale transactions when a U.S. entity produces or imports the fuel in large quantities. The original producers or importers can then pass on to consumers the cost of complying with the cap-and-trade program, and EPA can avoid the administrative burden of calculating the millions of small emissions from individual downstream consumers. *See Mandatory Reporting of Greenhouse Gases*, 74 Fed. Reg. 16448, 16465-66 (Apr. 10, 2009).

314. H.R. 2454, *supra* note 2, §334 (proposing amendments to 42 U.S.C. §7416).

315. *Id.* §335 (proposing CAA §861).

316. *Id.* §334 (proposing amendments to 42 U.S.C. §7416).

317. *Id.*

318. Note that the bill appears silent on the status of state cap-and-trade programs after this time period.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

or enforcing any cap-and-trade program covering emissions capped[319] by the new federal legislation.[320] For purposes of this preemption, a "cap-and-trade program" would mean any system of GHG regulation "under which a state or political subdivision issues a limited number of tradable instruments in the nature of emission allowances and requires that sources within its jurisdiction surrender such tradable instruments for each unit of greenhouse gases emitted during a compliance period."[321]

Waxman-Markey would allow retail electric suppliers to redeem state-issued RECs in satisfaction of the federal program[322] and incorporate state efficiency standards and tracking systems "to the extent practicable."[323] Waxman-Markey would require FERC to issue federal RECs to retail electric suppliers that hold state-issued RECs, "whether through State alternative compliance payments or through payments to a State renewable electricity procurement fund or entity."[324] The bill reconciles the proposed federal program with existing state REC programs by means of a fixed (but not absolute) one-to-one exchange between federal RECs and each megawatt hour (Mwh) of renewable energy generated.[325] Therefore, a retail purchaser of state RECs would receive one federal REC for each generated Mwh of renewable energy attributable to the retail purchaser's payment.[326] Meanwhile, state generators of renewable energy would receive one federal REC for each Mwh of renewable energy generated but not yet sold as a state REC.[327] Under Waxman-Markey, no generated Mwh of renewable energy should be "double-counted," i.e., redeemed for a federal REC by either purchasers or generators of the renewable energy.[328]

Waxman-Markey would implement critical "safety-valves" for consumers and states facing prohibitive compliance costs. For example, retailers who can demonstrate that they face no cheaper alternative means of compliance could make "alternative compliance payments" of $25 for each REC that they lack.[329] States would also have the option of assuming responsibility for federal compliance on behalf of their retail electric suppliers.[330] Such "central procurement states" would essentially impose a tax on electricity consumers and then use the tax proceeds to procure RECs from generators of renewable energy.[331] Waxman-Markey would accommodate states already operating under this kind of system by crediting any renewable energy that they have already procured.[332] The concept of "central procurement states" could prove particularly accommodating to small or urban states, or any state that is not well-suited to develop renewable energy projects in satisfaction of federal REC requirements. Finally, Waxman-Markey would require FERC to establish combined efficiency and renewable electricity standards for retail electric suppliers.[333] In doing so, FERC would cooperate with the states to coordinate the existing state programs with the new federal program, thereby minimizing the administrative burdens for regulators, as well as the compliance costs for retail electric suppliers.[334] To "the extent practicable," such cooperation must involve federal incorporation of the best practices of state-run renewable electricity programs, energy efficiency programs, and tracking systems.[335]

Waxman-Markey would accommodate the redemption of offset credits issued by state and regional programs[336] prior to the bill's enactment.[337] Waxman-Markey would do this by amending the CAA by adding "Title VII—Global Warming Pollution Reduction Program."[338] The sections in this title would enact federal offset credit regulations in replacement of any such state regulations.[339] The bill would establish a uniform standard for offset programs[340] and, then, allow holders of state-issued offset credits to obtain federal credits to the extent that the state credits were issued in compliance with the bill's federal standard.[341] The bill primarily anticipates the redemption of credits generated after January 1, 2009, and before the three-year anniversary of the bill's enactment.[342] It further anticipates that such credits will have been issued through programs established under state law after January 1, 2001, and before January 1, 2009.[343] However, the bill would allow EPA to make exceptions by redeeming credits of programs that either were not established under state law or were established after January 1, 2009.[344] Such exceptions would be appropriate where EPA determines the programs to be as stringent as the state programs whose credits EPA has already approved.[345] Regardless of what kind of program issued the original credits, Waxman-Markey provides measures designed to prevent double-counting and fraud. For example, any credits that have already "expired or have been

319. H.R. 2454, *supra* note 2, §312 (proposing CAA §700(8)) (defining "capped emissions").
320. *Id.* §335 (proposing CAA §861).
321. A "cap-and-trade program" would *not* include: (1) GHG emission limits or proxies for limits that are not based on the trade of limited instruments; (2) "fleet-wide motor vehicle emission requirements that allow greater emissions with increased vehicle production"; or (3) "requirements that fuels, or other products, meet an average pollution emission rate or lifecycle greenhouse gas standard." *Id.*
322. *Id.* §101 (proposing PURPA §610(e)(2)).
323. *Id.* §101 (proposing PURPA §610).
324. *Id.* (proposing PURPA §610(e)(2)).
325. *Id.* (proposing PURPA §610(e)(1)).
326. *Id.* (proposing PURPA §610(e)(2)).
327. *Id.* (proposing PURPA §610(e)(2)).
328. *Id.* (proposing PURPA §610(e)(2)(A), (e)(5)(8)).
329. *Id.* (proposing PURPA §610(f)(1)).
330. *Id.* (proposing PURPA §610(g)(1)).
331. *Id.* (proposing PURPA §610(a)(7)).
332. *Id.* (proposing PURPA §610(e)(2)(B)).
333. *Id.* (proposing PURPA §610).
334. *Id.* (proposing PURPA §610(c)(3)).
335. *Id.* (proposing PURPA §610(c)(1)-(2)).
336. Note that the Waxman-Markey Bill does not specifically mention credits issued by regional offset programs. It refers to only two categories of non-federal offset programs: (1) those "established under State or tribal law or regulation"; and (2) those "not established under State or tribal law or regulation."
337. H.R. 2454, *supra* note 2, §§311-321.
338. *Id.* (proposing CAA §§700-795).
339. *Id.* (proposing CAA §§737, 740).
340. *Id.* (proposing CAA §§734-739).
341. The federal program would issue one offset credit for each ton of CO_2e reduced, avoided, or sequestered through the relevant offset project. *Id.* §311 (proposing CAA §§739(b), 740(a)). Compare proposed CAA 740(a) (describing which state-issued offset credits would be eligible for exchange with federal offset credits) to proposed CAA §§734-736 (providing EPA's guidelines and methodologies for approving offset projects).
342. *Id.* (proposing CAA §740(c)).
343. *Id.* (proposing CAA §740(a)).
344. *Id.* (proposing CAA §740(e)).
345. *Id.* (proposing CAA §740(e)(2)).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

retired, canceled, or used for compliance under a program under State or tribal law or regulation" would not be eligible for exchange with federal credits.[346] Furthermore, EPA would have authority to approve only those credit-issuing programs that adopted "standards, methodologies, and protocols [requiring] that credited emission reductions, avoidance, or sequestration [be] permanent, additional, verifiable, and enforceable."[347] In the future, the bill would require EPA to list the project types that are eligible to generate offset credits.[348] Individual project developers of listed project types would then be required to petition for EPA approval to receive federal offset credits.[349] Once EPA approves both generally of the project type and specifically of a given developer's project, EPA would issue offset credits directly to the project developer, who could then trade the credits accordingly.[350]

Waxman-Markey would also accommodate the redemption of allowances issued by the state of California, the RGGI, or the Western Climate Initiative.[351] Waxman-Markey calls for the promulgation of regulations pertaining to the disposition of federal GHG emission allowances.[352] Similar to the exchange program for federal redemption of state-issued offset credits, the bill would allow holders of certain state-issued allowances to turn them in for federal equivalents.[353] The eligibility criteria for allowance exchange is, however, much more strict. Holders may only exchange those state allowances issued before December 31, 2011, and they may only exchange allowances issued by the state of California, the RGGI, or the Western Climate Initiative (collectively referred to as state allowances).[354] Thus, it appears that other, less developed, state and regional allowance programs—such as those of Florida, Massachusetts, and the Midwestern Greenhouse Gas Reduction Accord—would be preempted from issuing any allowances of value under the bill's proposed federal program. In facilitation of this federal-for-state allowance exchange, Waxman-Markey would establish an exchange rate dependent upon the average auction price of emission allowances auctioned in the year and under the same program in which the holder obtained the state-issued allowance.[355] To prevent double-counting, the bill would require EPA to deduct from one of the bill's allowance auctions[356] any allowances disbursed in exchange for state allowances.[357] Once exchanged for a federal allowance, a state allowance "must be retired for purposes of use under the program by or for which it was originally issued."[358]

346. *Id.* (proposing CAA §740(b)).
347. *Id.* (proposing CAA §740(a)(2)(C), (e)(2)).
348. *Id.* (proposing CAA §733).
349. *Id.* (proposing CAA §735).
350. *Id.* (proposing CAA §§739(b), 742) (referring to §724).
351. *Id.* (proposing CAA §790).
352. *Id.* (proposing CAA §§781-795).
353. *Id.* (proposing CAA §790).
354. *Id.* (proposing CAA §790(a)).
355. *Id.* (proposing CAA §790(b)-(c)).
356. *Id.* (proposing CAA §782(d)) (allocating, to the benefit of low-income consumers, the proceeds generated by 15% of auctioned allowances).
357. *Id.* (proposing CAA §790(b)(3)).
358. *Id.* (proposing CAA §790(b)(4)).

3. Reconciliation on the International Level

Waxman-Markey attempts to reconcile its implementation—and effects—on the international level in three ways. First, U.S. domestic sources subject to the cap could satisfy their compliance obligations, at least in part, with offsets originating from overseas sources. Second, U.S. sources could also satisfy their compliance obligations, again at least in part, with emission allowances generated under qualifying international programs. Third, Waxman-Markey attempts some reconciliation of its effects on international trade and commerce, including its potential economic impacts on U.S. companies.

With respect to offsets originating from overseas sources, Waxman-Markey would allow a Covered Entity to satisfy a certain percentage of its otherwise required allowances by using an international offset credit issued by projects that EPA deems eligible.[359] International offset projects could become eligible in one of two ways. EPA could approve international offset project through a listing and petition process like the one applied to the exchange of state-issued offset credits.[360] Upon EPA approval, a Covered Entity could demonstrate compliance with the U.S. cap-and-trade program by producing an international offset credit issued by the approved project.[361]

Alternatively, EPA could issue international offset credits directly to Covered Entities participating in one of three credit programs designed to reduce GHG emissions through activities within developing countries.[362] In the first, sector-based offset credit program, EPA could issue international offset credits for offsets created in industrial sectors that would be regulated in the United States but that operate in developing countries with either high GHG emissions or greater levels of economic development.[363] The second kind of credit program would involve co-existing international frameworks developed under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC).[364] Under that program, EPA could issue international offset credits in exchange for credits issued by an international body established pursuant to the UNFCCC or a related treaty or protocol.[365] The third such program would focus on deforestation in developing countries and would allow EPA to issue international offset credits for GHG reductions achieved through reduced deforestation.[366]

Waxman-Markey would attach different exchange rates to international offset credits, depending on the circumstances. Prior to calendar year 2018, a 1:1 ratio would apply, allowing Covered Entities to use one international offset credit in lieu of one emission allowance.[367] After calendar year 2018, the ratio would rise to 1.25:1, allowing a Covered Entity to use

359. *Id.* (proposing CAA §722(d)(1)).
360. *Id.* (proposing CAA §§733, 735).
361. *Id.* (proposing CAA §722(d)(1)).
362. *Id.* (proposing CAA §743(a)-(b)).
363. *Id.* (proposing CAA §743(c)).
364. *Id.* (proposing CAA §743(d)).
365. *Id.* (proposing CAA §743(d)).
366. *Id.* (proposing CAA §743(e)).
367. *Id.* (proposing CAA §722(d)(1)(D)).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

1.25 international offset credits in lieu of one emission allowance.[368] Finally, the bill would devalue international offset credits purchased at strategic reserve auctions,[369] providing to the purchasers "a number of emission allowances equal to 80 percent of the number of international offset credits" purchased (and then retired).[370]

With respect to redeeming international emission allowances to satisfy U.S. domestic obligations, Waxman-Markey would allow a Covered Entity to satisfy a certain percentage of its allowances by using an international emission allowance issued by a qualifying international climate change program.[371] Similar to its treatment of state allowance programs, Waxman-Markey addresses the issues of leakage, double-counting, and fraud through its criteria for qualifying international climate change programs.[372] The bill would allow EPA to qualify an overseas program if (1) the program is run by a national or supranational foreign government that imposes an absolute tonnage limit on GHGs, and (2) the program is at least as stringent as Waxman-Markey's proposed program, including provisions that ensure comparable monitoring, compliance, enforcement, quality of offsets, and restrictions on the use of offsets.[373] Waxman-Markey would also implement a certification procedure to prevent Covered Entities from double-counting their international allowances to comply with other foreign, international, or domestic regulatory programs.[374] Finally, the bill would allow EPA to limit the extent to which covered entities may use international emission allowances to satisfy their compliance obligations under the federal cap-and-trade program.[375]

Finally, and perhaps most controversially, under agreements that govern international trade, Waxman-Markey tries to temper the cap-and-trade program's domestic economic effects through both (1) awarding domestic producers that export their goods with "emission allowance rebates," and (2) requiring importers of competing foreign goods to acquire "international reserve allowances."[376] In incorporating these domestic-industry-protective measures, House proponents were clearly acknowledging criticisms that the legislation would impair U.S. industry's international competitiveness. The charge is that the increased costs of operation or production imposed by the cap-and-trade program could manifest itself in a number of ways, including: the movement of U.S. industry abroad to unregulated jurisdictions; consumers' increased purchase of (cheaper) foreign goods over domestic goods; and a competitive disadvantage experienced by domestic firms in comparison to unregulated foreign firms.[377]

Waxman-Markey would attempt to mitigate these effects by requiring EPA to establish an "emission allowance rebate" program[378] as well as an "international reserve allowance" program.[379] Under these programs, EPA would identify which industrial sectors and corresponding "covered goods" would be most prone to carbon "leakage"[380] and competitive disadvantages.[381] To reduce carbon "leakage" and competitive disadvantages, energy-intensive, trade-sensitive sectors would receive free emissions allowance rebates based on their output.[382] Over the longer term, the president would have the option to implement further allowance requirements, i.e., international reserve allowances, on U.S. importers for sectors still impacted beginning in 2020.[383]

Waxman-Markey anticipates the international reserve allowance program as having particular implications under international agreements.[384] The reserve allowance program would serve, for example, "to induce foreign countries, and, in particular, fast-growing developing countries, to take substantial action with respect to their greenhouse gas emissions consistent with the Bali Action Plan developed under the United Nations Framework Convention on Climate Change."[385] While the program may encourage other countries to develop commensurate environmental regulations, adverse implications under international trade agreements would likely result from any program that increases the cost of international trade for foreign firms or that relieves the cost of trade for domestic firms. Notably, the Waxman-Markey Bill does not name any international trade agreements, nor refer to them generally. The bill does provide, however, that one of the "purposes" of the international reserve allowance program would be to ensure that its design and implementation is "consistent with applicable international agreements to which the United States is a party."[386]

That rather oblique reference has been the topic of substantial controversy, with commentators lining up on both sides of the question: does the international reserve allowance program violate international agreements governing U.S. conduct of international trade. China has alleged that

368. *Id.* (proposing CAA §722(d)(1)(A)).
369. Note that EPA would allow the auction of international offset credits only if other allowances are depleted and EPA anticipates an additional market demand of at least 1.6 billion tons of CO_2e, i.e., 80% of 2 billion tons of CO_2e.
370. H.R. 2454, *supra* note 2, §311 (proposing CAA §722(h)).
371. *Id.* (proposing CAA §§722(d)(3) and 728).
372. *Id.* (proposing CAA §728(a)).
373. *Id.* (proposing CAA §728(a)).
374. *Id.* (proposing CAA §728(c)). Note that §728(c) appears to contain a typo. It refers to §722(d)(2), which does not discuss international emission allowances, but rather term offset credits. According to the U.S. House of Representatives' Manager's Amendment to H.R. 2454, *available at* http://energycommerce.house.gov/Press_111/20090626/hr2454_managerssummary.pdf, "term offset credits" are time-limited offset credits that could be issued under the domestic agricultural offsets program. It is likely that §728(c) should refer instead to §722(d)(3), which deals with international emission allowances.
375. *Id.* (proposing CAA §728(d)). Note that §728(d) appears to contain a typo. It refers to §722(d)(2), which does not discuss international emission allowances, but rather term offset credits. It is likely that §728(c) should refer instead to §722(d)(3), which deals with international emission allowances.
376. *Id.* (proposing CAA §768(a)(1)); *see also Bush GHG ANPRM*, *supra* note 274, 73 Fed. Reg. at 44414.
377. *Bush GHG ANPRM*, *supra* note 274; 73 Fed. Reg. at 44414.
378. H.R. 2454, *supra* note 2, §321 (proposing CAA §763).
379. *Id.* (proposing CAA §768).
380. "Leakage" is generally "a shift of carbon-intensive production to countries without climate controls." *See*, *e.g.*, Robert Stavins, *Worried About International Competitiveness? Another Look at the Waxman-Markey Cap-and-Trade Proposal* (June 18, 2009), *available at* http://belfercenter.ksg.harvard.edu/analysis/stavins/?taginternational-reserve-allowance-program [hereinafter Stavins].
381. H.R. 2454, *supra* note 2, §321 (proposing CAA §§762(2)-(3), 768); *see also Bush GHG ANPRM*, *supra* note 274; 73 Fed. Reg. at 44413-14.
382. H.R. 2454, *supra* note 2, §321 (proposing CAA §764).
383. *Id.* (proposing CAA §768).
384. *Id.* (proposing CAA §761(c)).
385. *Id.* (proposing CAA §761(c)(1)).
386. *Id.* (proposing CAA §761(c)(2)).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

these "border adjustments" will "disrupt the order of international trade."[387] The issue is whether the international reserve allowance program would "discriminate among trading nations."[388] At least one early commentator concluded the program was consistent with international trade agreements.[389] Four former U.S. Trade Representatives issued a statement on August 18, 2009, however, taking the position that these provisions are suspect,[390] and President Obama has distanced himself from them.[391]

III. Creating Other Federal Programs to Reduce or Control GHG Emissions

If and when Congress enacts comprehensive federal climate change legislation, the legislation may contain provisions that go well beyond the cap-and-trade program that has captured much attention. Federal legislation that creates incentives for energy efficiency and conservation; alternative energy; and carbon sequestration are logical targets for action. The House-passed Waxman-Markey Bill did, in fact, propose programs on these fronts—among others. Waxman-Markey contains provisions to create federal renewable electricity standards and to promote carbon capture and sequestration, clean transportation programs, "smart grid" advancement and transmission planning, and building energy efficiency programs. Several of these programs have antecedents in preexisting state programs. In creating all these additional programs, Waxman-Markey clearly ran afoul of the admonition of the Pew Center's Claussen, that, to succeed, comprehensive federal legislation will need to be simpler than Lieberman-Warner.[392]

The many elements of Waxman-Markey that go beyond its centerpiece cap-and-trade program to address renewable electricity standards, carbon capture and sequestration, clean transportation programs, etc. have to be considered in the context of the president's massive stimulus package, which Congress enacted only a few months before House passage of Waxman-Markey. The American Recovery and Reinvestment Act of 2009[393] provided for billions of dollars in tax incentives, bonds, and loan guarantees for the renewable and alternative energy sectors,[394] as well as for $16.8 billion in direct spending for renewable energy and energy efficiency programs.[395] The $16.8 billion in direct spending is to be directed toward: transmission grid development, $11 billion; research and development projects, $2.5 billion; advanced battery grants, $2.5 billion; and defense energy efficiency programs, $300 million.[396] Perhaps when the Senate considers its counterpart to Waxman-Markey, it will revisit some of this largesse in light of the Recovery Act's many programs.

A. *Creating Federal Renewable Electricity Standards*

Renewable portfolio standards, or renewable electricity standards, exist at the state level and generally require a certain amount of electricity generated within the state or by a utility generator to be derived from renewable sources. Several federal bills, including Waxman-Markey, propose to establish federal renewable energy standards.[397] All these federal proposals require retail electricity suppliers to increase, from year-to-year, the percentage of their electricity sales that are derived from renewable electricity generation.[398] In addition to providing a mechanism for reducing GHG emissions, these proposals seek to stimulate the market for renewable energy and allow renewable energy producers to become more competitive in the national energy market.[399] As it does on many fronts, Waxman-Markey incorporates a compromise among many renewable electricity proposals and seeks to offer greater flexibility for utility companies while still setting ambitious conservation goals.[400]

The combined efficiency and renewable electricity standards proposed by Waxman-Markey would amend portions of the Public Utility Regulatory Policies Act (PURPA) of 1978 in order to set percentages of electricity that utilities must obtain from renewable energy sources and require utilities to engage in energy-efficient practices.[401] The bill creates a scheme requiring "retail electric suppliers"[402] to submit a combination of "renewable electricity credits" and demonstrated electricity savings that amount to a specified annual target.[403] The annual combined target requires that the savings meet a required annual percentage that will begin at 6% in 2012 and increase to 20% by 2021.[404] A minimum of 75% of the annual target must come from renewable electricity credits (one credit is distributed for each Mwh of renewable

387. Quoted in John Kemp, *Empty Bluster Against U.S."Carbon Tariff,"* The Guardian (July 6, 2009), *available at* http://www.guardian.co.uk/business/feedarticle/8593900?FORM=ZZNR4 (last visited July 27, 2009) [hereinafter Kemp].
388. Stavins, *supra* note 380.
389. Kemp, *supra* note 387.
390. Leora Falk, *Former U.S. Trade Representatives Urge Caution as Congress, Administration Draft Policies*, BNA Daily Env't Rep. A-10 (Aug. 20, 2009). The statement itself is available at: http://pub.bna.com/ptg/Sup.doc.pdf.
391. *Senators Tell Obama They Need Protections for U.S. Manufacturing to Back Climate Bill*, BNA Daily Env't Rep. A-1 (Aug. 10, 2009).
392. Palmer, *supra* note 5.
393. American Recovery and Reinvestment Act of 2009, H.R. 1, 111th Cong. §406 (1st. Sess. 2009) [hereinafter *Recovery Act*]; *see also* 42 U.S.C. §16516 (2009).
394. *See* Tom Mounteer & Jeffrey Allmon, *Treasury Can Award Renewable Energy Grants Under Stimulus Package Without NEPA Review*, BNA Daily Env't Rep. B-1 (Apr. 27, 2009); Tom Mounteer & Jeffrey Allmon, *Environmental Review of Energy Projects Seeking Recovery Act Loan Guarantees,* BNA Env't Rep. 1210 (May 22, 2009).
395. American Council on Renewable Energy, *Renewable Energy Provisions: American Recovery and Reinvestment Act of 2009* 2-3, *available at* http://www.acore.org/files/images/email/acore_stimulus_overview.pdf.
396. *Id.*
397. *See* Patrick Sullivan et al., National Renewable Energy Laboratory, *Comparative Analysis of Three Proposed Federal Renewable Electricity Standards*, iv (2009), *available at* http://www.osti.gov/bridge.
398. *Id.* at iv.
399. EPA, *Renewable Portfolio Standards Fact Sheet* (Apr. 2009), *available at* http://www.epa.gov/chp/state-policy/renewable_fs.html.
400. For a discussion of similar legislative proposals, see Ari Natter, *Senate Chairman Considers Energy Efficiency Rules for Inclusion in Broader Energy Legislation*, World Climate Change Rep. (Apr. 22, 2009).
401. H.R. 2454, *supra* note 2, §101.
402. Waxman-Markey defines "retail electric suppliers" as electric utilities that sell at least 4 million Mwhs of electric energy to electric consumers for purposes other than resale during the previous calendar year. *Id.* §101(a)(19).
403. *Id.* §101(b).
404. *Id.* §101(d).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

electricity generated),[405] with the remainder coming from specified energy efficiency measures that can be counted toward the annual target.[406] Retail electric suppliers will need to meet the remainder of the target by demonstrating the total electricity savings achieved in comparison to "business as usual" projections.[407]

Under Waxman-Markey, retail electric suppliers would be eligible to receive federal renewable electricity credits based on the amount of energy generated from renewable electricity sources. Renewable electricity resources include wind, solar, geothermal, renewable biomass (including biogas and biofuels made wholly from renewable biomass), qualified hydropower, and marine and hydrokinetic renewable energy.[408] For each Mwh of energy generated from a renewable electricity source, a retail electric supplier will receive one federal renewable electricity credit.[409] Additionally, retail electric suppliers that generate renewable electricity from a "distributed renewable generation facility" will be eligible for three credits per Mwh.[410] A "distributed renewable generation facility" is a facility, no larger than two megawatts in capacity, that generates renewable electricity for one or more electricity consumers located at or near the site.[411] Earned federal renewable electricity credits may be bought, sold, traded, transferred, saved for a subsequent year, turned in for retirement,[412] or submitted as part of the annual compliance requirement.[413]

In addition to requiring retail electric suppliers to hold credits toward the annual combined target, Waxman-Markey would require retail electric suppliers to submit an annual report demonstrating annual electricity savings.[414] These savings would be measured by reductions in electricity consumption based on "business as usual" projections that have been achieved through specified savings measures.[415] Retail electric suppliers could use one of several different measures to achieve the required reductions in electricity consumption.[416] They could reduce consumption through customer facility savings, measured by end-use reductions in electricity consumption, or through improvements that reduce distribution system losses of electricity.[417] They could also use "combined heat and power systems" to reduce consumption by using the same energy source both for the generation of electrical and mechanical power and the production of steam or another form of useful thermal energy.[418] Additionally, fuel cell savings may be achieved by installation of a new fuel cell or upgrading an older fuel cell making it more efficient than other electricity.[419]

In lieu of meeting the annual compliance requirements, retail electric suppliers may make "alternative compliance payments" of $25 per each renewable electricity credit or Mwh of demonstrated savings that would otherwise be due.[420] Retail electric suppliers would make these payments directly to the state, and the state is to use them exclusively for implementing renewable energy-generating technologies or instituting cost-effective energy efficiency programs.[421] Retail electric suppliers that fail to meet the annual compliance requirements and do not make alternative compliance payments would be liable for civil penalties.[422]

Waxman-Markey would direct the development of regulations to implement and enforce the efficiency and renewable electricity standards with a mind toward maintaining the best practices of existing state programs and relying on already developed state tracking systems, as well as other preexisting administrative programs.[423] Additionally, states may continue to enforce any preexisting laws and develop new laws regarding efficiency and renewable electricity standards so long as no state law relieves a person of any requirement under the federal law.[424]

B. Creating Incentives for Carbon Capture and Sequestration

Waxman-Markey would attempt to boost investment of research and development of carbon capture and sequestration projects in several ways. It directs an interdepartmental strategy to create a regulatory climate to encourage development of these facilities. It funds a Carbon Storage Research Corporation to dispense grants to encourage development of these facilities. It incentivizes the development of such facilities by making owners and operators of carbon capture and sequestration projects eligible to receive emissions allowances.

- *Waxman-Markey directs a Cabinet-level review of the legal and policy regime governing carbon capture and storage*. Amending portions of the CAA and the Safe Drinking Water Act (SDWA), the bill would implement a national strategy for development of carbon capture and sequestration facilities.[425] Within one year of enactment, the heads of various federal agencies including the Secretaries of the Interior and Energy, would be required to submit a report highlighting a strategy for addressing the legal, regulatory, and other barriers to commercial-scale deployment of carbon cap-

405. *Id.* §101(b).
406. *Id.* §101(f).
407. *Id.* §101(b).
408. *Id.* §101(a)(18).
409. *Id.* §101(e).
410. *Id.* §101(e).
411. *Id.* §101(a)(5).
412. Retiring a federal renewable electricity credit means to disqualify the credit from any subsequent use. *See id.* §101(a)(21).
413. *Id.* §101(e).
414. *Id.* §101(f).
415. *Id.* §101(a)(6), (f).
416. *Id.* §101(a)(6).
417. *Id.* §101(a)(4).
418. *Id.* §101(a)(1).
419. *Id.* §101(a)(10).
420. *Id.* §101(g).
421. *Id.* §101(g).
422. *Id.* §101(i).
423. *Id.* §101(c).
424. *Id.* §101(k); *see also* §102 (Clarifying State Authority to Adopt Renewable Energy Incentives). While many states have adopted either renewable electricity standards or goals, only a few have set targets more ambitious than those proposed by the Waxman-Markey Bill. *See* Union of Concerned Scientists, *Renewable Electricity Standards Toolkit* (2009), *available at* http://www.ucsusa.org/clean_energy/res/overviewtargets.html.
425. H.R. 2454, *supra* note 2, §111.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

ture and sequestration.[426] In addition to the development of a national strategy, Waxman-Markey addresses the need for regulations governing geological sequestration sites and geological storage.[427] This work would build upon EPA's proposed SDWA rulemaking for carbon sequestration.

- *Waxman-Markey would create a Carbon Storage Research Corporation to administer grants and other forms of financial assistance to incentivize development of carbon capture and storage facilities*. This is another instance of the bill's sponsors bringing supporters on board by borrowing from others' proposals. The portion of Waxman-Markey that creates the Carbon Storage Research Corporation incorporates Representative Boucher's proposed Carbon Capture and Storage Early Deployment Act,[428] which provided for the creation of a corporation to facilitate an increase in the commercial availability of carbon capture and storage technologies and methods.[429] This facilitation comes in the form of grants, contracts, and other forms of financial assistance.[430] The Carbon Storage Research Corporation is slated to be run by the Electric Power Research Institute (EPRI), a nonprofit that conducts research and development for the energy industry.[431] To fund its operations, the corporation would rely on assessments collected from ratepayers.[432] Assessments would be based on a percentage of all fossil fuel-based electricity delivered to retail consumers based on their relative carbon emission rates.[433] The assessments may either be increased or decreased in order to generate between $1.0 billion and $1.1 billion annually to fund the corporation.[434]

- *Waxman-Markey would make owners and operators of carbon capture and sequestration projects eligible to receive emissions allowances*.[435] In order for an owner or operator of a project to be eligible for an emission allowance, the project must implement carbon capture and sequestration technology at a qualifying electric-generating unit or industrial source; geologically sequester CO_2 at a site that meets all applicable permitting and certification requirements for geological sequestration (or convert CO_2 to a form that will safely and permanently sequester the CO_2); and be located in the United States.[436] Distribution of emissions allowances will occur in two phases. Phase I will only apply to projects at the first six gigawatts of electric-generating units.[437] Phase II will apply once this threshold has been met.[438] Phase I distribution provides a bonus allowance of $90 for each ton of CO_2 captured and sequestered for units that capture and sequester 85% or more of CO_2 that would have otherwise been emitted.[439] It also provides a minimum payment of $50 per ton of CO_2 sequestered for a 50% reduction in CO_2 emissions.[440] Early adopters of carbon capture and sequestration technologies will receive an even greater allowance of $10 extra per ton for beginning operating at a 50% capture and sequestration rate prior to 2017.[441] Unless otherwise determined by EPA, the distribution of allowances during Phase II will occur through a reverse auction.[442] Bids will be based on the desired level of incentive for 10 years of storage.[443] Values will be determined on a sliding scale with the highest values reserved for the highest percentage of carbon captured.[444]

Waxman-Markey also seeks to amend the CAA to provide performance standards for new coal-fired plants. These new standards will apply to any plant where 30% or more of its fuel comes from coal or petroleum coke that received a permit after January 1, 2009.[445] Qualified plants receiving permits from January 2009 until 2020 must achieve a 50% reduction in annual emissions by 2025 at the latest, and plants permitted thereafter must achieve a 65% reduction in annual emissions.[446] These provisions also allow for existing plants to apply for bonus allowances based on retrofitting facilities to use carbon capture and sequestration to reduce emissions by 50-65% annually.[447]

C. Addressing GHG Emissions From Mobile Sources

While a lesser contributor to GHG emissions than stationary sources, the transportation sector has been the target of efforts to reduce emissions. Federal legislation could similarly attempt to address GHG emissions from that sector as well. Waxman-Markey, for example, proposes several programs focused on the development and implementation of clean transportation programs in order to reduce the amount of GHG emissions that are produced by traditional fuel-based motor vehicles. Waxman-Markey calls for the development of plug-in vehicle infrastructure, the expansion of electric

426. *Id.* §111(a).
427. *Id.* §112.
428. H.R. 6258, 110th Cong. (2008). *See* Posting of David Sassoon to Solve Climate, *Climate Bill Earmarks $500M for Clean Coal "Admin Expenses,"* http://www.solveclimate.com/blog/2009602/climate-bill-earmarks-500m-clean-coal-admin-expenses (June 2, 2009).
429. H.R. 2454, *supra* note 2, §114(b).
430. *Id.* §114(c).
431. For more information regarding the Electric Power Research Institute, see http://www.epri.com.
432. *Id.* §114(d).
433. The rate of assessment per kilowatt hour for coal is set at $0.00043, for natural gas it is set at $0.00022, and for oil it is set at $0.00032. *Id.*
434. *Id.* §114(d).
435. *Id.* §115(a).
436. *Id.* §115(b).
437. *Id.* §115(c).
438. *Id.* §115(d).
439. *Id.* §115(c).
440. *Id.*
441. *Id.*
442. *Id.* §115(d).
443. *Id.*
444. *Id.*
445. *Id.* §116(b).
446. *Id.*
447. *Id.*; *see also* Sarah Forbes, *Updated: Carbon Capture and Storage and the American Clean Energy and Security Act*, June 18, 2009, http://www.wri.org /stories/2009/06/updated-carbon-capture-and-storage-and-the-american-clean-energy-and-security-act.

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

vehicle manufacturing and usage, investment in clean vehicles, the promotion of alternative fuel-compatible vehicles, and a reduction in diesel fuel emissions.[448]

- *Waxman-Markey would increase incentives for production and development of electric vehicles and supporting infrastructure and provide incentives for investment in non-petroleum-based fuels*.[449] The bill calls for state regulatory authorities and non-regulated utilities to develop a plan to support the use of plug-in electric-drive vehicles.[450] Infrastructure plans for plug-in electric-drive vehicles should include provisions that create charging infrastructure that is compatible, to the extent possible, with products of all auto manufacturers. Additionally, plans should include provisions for cost recovery and integration of smart grid systems.[451]
- *Waxman-Markey would require the Secretary of Energy to develop a program to increase the use of plug-in electric-drive vehicles and their use as part of the electricity grid in multiple regions throughout the United States*.[452] The purpose of developing a large-scale vehicle-electrification program is to demonstrate the feasibility of a less petroleum-dependent transportation system, to improve performance and reliability of electricity-distribution systems, and to research best practices for implementing vehicle electrification in different regions.[453] States may apply for financial assistance in furthering plug-in electricity vehicle use and integration of plug-in electric vehicles with the electricity grid.[454]
- *Waxman-Markey would create a vehicle manufacturing assistance program for automobile manufacturers to receive financial assistance to manufacture plug-in electric-drive vehicles*. Financial assistance may also be provided for the reconstruction and retooling of facilities that manufacture plug-in electric vehicles and batteries for plug-in vehicles.[455] In distributing financial assistance to automobile manufacturers, preference will be given to proposals that are most likely to be successful and are located in high-need markets.[456]
- *Waxman-Markey would make emissions allowances available for investment in clean vehicles including the manufacturing of plug-in electric-drive vehicles and deployment of advanced-technology vehicles*.[457] Emission allowances for plug-in electric-drive vehicles will consist of one-fourth of the emission allowances allocated by the CAA for clean vehicle technology.[458] Emission allowances for large-scale vehicle electrification will consist of one-eighth of the allotted clean-vehicle emissions allowances and the remaining one-eighth will be reserved for plug-in electric-drive vehicle manufacturing.[459] Preference shall be given to applications sponsored by one or more automobile manufacturers. If any clean-vehicle technology emissions allowances remain after distribution for plug-in electric-drive manufacturing or large-scale vehicle electrification, then the remainder will be distributed to any other qualifying advanced-technology vehicles. Preference will be given to projects that save the maximum number of gallons of fuel.[460]
- *Waxman-Markey authorizes regulations that may require light-duty automobile manufacturers to produce a minimum percentage of fuel choice-enabling vehicles*.[461] A manufacturer may qualify for an exemption from the minimum requirements if "unavoidable events not under the control of the manufacturer prevent the manufacturer of such automobile from meeting its required production volume of fuel choice-enabling automobiles."[462]

Additional efforts by the Waxman-Markey Bill to promote cleaner transportation include providing additional credits to fleets that convert existing vehicles to make them capable of operating on alternative fuel.[463] The bill would also require Congress to submit a report on natural gas vehicle emissions reductions and calls for an amendment to the Diesel Emission Reduction Act extending authorization for state grants for diesel emission-reduction programs from 2011 until 2016.[464]

D. *"Smart Grid" Advancement and Transmission Planning*

As energy needs increase, the risks associated with dependence on an antiquated electricity grid have spurred policymakers to push for the expansion of smart grid technology.[465] Smart grid technology uses digital technology to deliver electricity from suppliers to consumers and has been heralded as an effective way to increase the distribution of renewable electricity, lower electricity costs, and increase the reliability of electricity grids.[466] Smart grid advancements will provide mechanisms for using electricity when it is available at a reduced cost, as opposed to at peak times when

448. *Id.* §§121-130.
449. *Id.* §121.
450. *Id.* §121(a).
451. *Id.* §121(a).
452. *Id.*
453. *Id.* §122(b).
454. *Id.* §122(c).
455. *Id.* §123(b).
456. *Id.* §123(d).
457. *Id.* §124(a).
458. *Id.* §124(c). The Waxman-Markey Bill seeks to amend portions of the CAA to include distribution allowances for clean vehicle technology. *Id.* §321.
459. *Id.* §124(c).
460. *Id.* §124(c).
461. Fuel choice-enabling vehicles include automobiles that are warranted to operate on gasoline, E85, M85, or biodiesel. E85 is a fuel combination of ethanol and gasoline, and M85 is a fuel combination of methanol and gasoline. *Id.* §127(b).
462. *Id.* §127(b).
463. *Id.* §130.
464. *Id.* §§128, 130.
465. U.S. DOE, *The Smart Grid: An Introduction* 2, *available at* http://www.oe.energy.gov/DocumentsandMedia/DOE_SG_Book_Single_Pages(1).pdf [hereinafter DOE, *Grid*].
466. Lynn Garner, *Obama Team Pushes Smart Grid Technology in White House Meeting With Business Executives*, World Climate Change Rep. (May 18, 2009).

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

it is more expensive.[467] Smart grids can also incorporate the use of electricity from renewable sources such as wind and solar power.[468]

One drawback to the deployment of smart grid technology arises from security concerns. A smart grid is potentially more prone to cyber and electromagnetic pulse (EMP) attacks. FERC has already been adopting policy to accelerate the development of smart grid technology to address concerns by cybersecurity experts that the smart grid may be vulnerable to cyber attacks from hackers.[469] In July 2009, FERC issued its Policy Statement on Smart Grid Policy, which "sets priorities to guide industry in development of smart grid standards for achieving interoperability and functionality of smart grid systems and devices."[470] Among other things, FERC adopts as a priority the early development of smart grid standards to "ensure cybersecurity of the grid."[471] FERC's policy will take effect 60 days after its publication in the *Federal Register*.[472]

To advance smart grid development, Waxman-Markey would require electricity suppliers, or state regulators of electricity suppliers, to set peak demand reduction goals for suppliers that have a baseline that exceeds 250 megawatts.[473] These reductions will be reached through aggressive deployment of smart grid and peak demand reduction technologies.[474] Baseline determinations will take into account the number of customers served, weather conditions, general economic conditions, and other appropriate factors external to peak demand management.[475] The peak demand reduction goals must provide for a reduction in peak demand by a minimum percentage from the applicable baseline to a lower peak demand during 2012.[476] This minimum percentage must be increased by 2015 and both of these minimums shall constitute the maximum reductions that are realistically feasible through implementation of smart grid and peak demand-reduction technologies.[477] Potential options for reducing peak demand include direct reduction of megawatts used in peak demand periods through increased efficiency in transmission or use of a smart grid. A variety of indirect measures may also be used, such as implementation of demand-response programs, dynamic peak management control, or use of solar electric-generation during solar radiation and heat-producing periods.[478] These provisions still reserve to states the authority to regulate peak demand management, demand-response, distributed energy storage, use of distributed generation, and the regulation of electricity suppliers.[479]

Waxman-Markey contains several measures for incentivizing the use of smart grid products. The bill directs the Secretary of Energy to assess and analyze the potential for integrating smart grid technologies into products reviewed for potential designation as Energy Star products.[480] Additionally, the Federal Trade Commission will create a rule allowing for the addition of a smart grid designation on any ENERGY GUIDE label for products that feature smart grid capabilities where use of the smart grid capability could reduce the cost of the product's operation.[481] Waxman-Markey authorizes DOE and EPA to include information on smart grid technology, practices, and benefits as part of the Energy Efficiency Public Information Initiative.[482] It also expands the Energy Efficient Appliance Rebate Program to include rebates for smart appliances—efficient appliances with smart grid features and capabilities.[483]

In order to facilitate the development of more efficient regional electricity grids, Waxman-Markey addresses the need for improvements in transmission planning. The transmission planning provisions in Waxman-Markey aim to reform the regional planning process by modernizing the electric grid and providing new transmission lines to carry electricity generated from renewable sources.[484] In order to facilitate the use of regional electric grids to reduce GHG emissions, the bill charges FERC with the responsibility of developing national electricity grid-planning principles to be applied in ongoing and future transmission planning involving the interstate transmission of electricity.[485] This will require communication and coordination among regional planning entities to harmonize regional electric grid-planning between jurisdictions.[486] The transmission planning provisions of Waxman-Markey aim to improve the regional transmission planning processes by incorporating the federal policy outlined in the bill.[487] FERC will be responsible for facilitating communication, coordination, and planning efforts among different regions.[488]

E. Building Efficiency Programs

Another significant non-cap-and-trade provision of Waxman-Markey is the building energy efficiency program. Within this program, there are several subsidiary programs that aim to increase building efficiency in a variety of different manners. These programs include the creation of efficiency targets in building codes, retrofitting programs,

467. U.S. DOE, *Grid, supra* note 465, at 14.
468. *Id.* at 21.
469. Jeanne Meserve, "*Smart Grid" May Be Vulnerable to Hackers*, CNN.com (Mar. 21, 2009).
470. FERC News Release, FERC Adopts Policy to Accelerate Development of Smart Grid, *available at* http://www.ferc.gov/news/news-releases/2009/2009-3/07-16-09-E-3.asp (July 16, 2009) [hereinafter FERC, *News Release*]; *see also Smart Grid Policy*, 128 FERC ¶ 61060 (2009) [hereinafter FERC, *Policy*].
471. FERC, *News Release*, *supra* note 470.
472. FERC, *Policy*, *supra* note 470.
473. H.R. 2454, *supra* note 2, §144.
474. *Id.*
475. *Id.* §144(b).
476. *Id.* §144(c).
477. *Id.*
478. *Id.* §144(d).
479. *Id.* §144(e).
480. *Id.* §142.
481. *Id.* §143.
482. *Id.* §145.
483. *Id.* §146.
484. *Id.* §151.
485. *Id.*
486. *Id.*
487. U.S. House of Representatives, *Section-by-Section on Discussion Draft of "The American Clean Energy and Security Act of 2009"* 3, *available at* http://energycommerce.house.gov/Press_111/20090331/acesa_sectionsummary.pdf [hereinafter *Section-by-Section*].
488. *Id.*

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

rebate programs, grant programs, labeling programs, and tree-planting programs.

- *Efficient Building Codes*. Waxman-Markey will institute a variety of targets for creating greater energy efficiency in building codes.[489] The energy efficiency target for the national building code aims to improve the building energy performance national average by reducing energy use by 30% relative to a comparable building constructed at the baseline code requirements.[490] In 2014 for residential buildings, and 2015 for commercial buildings, the target would increase to a 50% reduction in energy use relative to the baseline code.[491] In 2017 and 2018 for residential and commercial buildings respectively, and every 3 years until 2030, the target will increase by another 5%.[492] These percentages may be increased or decreased if the Secretary of Energy determines a different percentage to be the maximum reduction in energy use that can be achieved through a building code that is both life-cycle cost-justified and technically feasible.[493] Additionally, the bill proposes that states improve the efficiency standards of their own codes in order to meet or exceed the targets provided for in the new national energy efficiency building code.[494] If a state does not develop its own code, it will be required to adopt the national energy efficiency building code. Under these provisions, the Secretary of Energy will have the authority to include cool roofs standards, to support state and local adoption of new codes though support of training and funding for code enforcement, and to establish codes directly if code-setting organizations fail to do so.[495]

- *Retrofit for Energy and Environmental Performance Program.* Building off preexisting federal housing programs, Waxman-Markey would implement the Retrofit for Energy and Environmental Performance (REEP) program.[496] This program would be designed to facilitate the retrofitting of commercial and residential buildings across the United States to achieve energy efficiency improvements, water use improvements, and improvements to other unsustainable building designs.[497] Waxman-Markey grants the Secretary of Energy authority to provide funding directly to states for cost-effective retrofits, and increase funding for higher levels of efficiency achievement.[498] Special considerations are made for the preservation of historic buildings.[499]

- *Rebate for Manufactured Homes*. Under Waxman-Markey, qualifying low-income families may be eligible for a $7,500 rebate toward the purchase of a new Energy Star-rated manufactured home.[500] In order to be eligible, the family must live in a manufactured home built before 1976 and have a total family income of no more than 200% of the federal poverty level.[501] If a state has a similar preexisting program, it may use the allowance value provided by these provisions toward its own program, so long as it does not distribute rebates in excess of $7,500.[502]

- *Building Energy Performance Labeling*. Waxman-Markey would establish a building energy performance labeling program for residential and commercial buildings in order to build knowledge about building energy performance and efforts to reduce energy consumption.[503] Upon development of a benchmark for building energy performance, the Secretary of Energy will have the authority to issue building energy performance labels to buildings that demonstrate a specified level of reduced energy consumption from the baseline.[504] By passing its own legislation, a state may also be eligible to use emission allowances allocated through State Energy and Environment Development (SEED) accounts to implement the program.[505] Currently $80 million per year from 2010 until 2020 is appropriated to fund the development and implementation of this labeling program.[506]

- *Tree Planting*. The Secretary of Energy will be authorized, under the Waxman-Markey Bill, to provide financial and technical assistance to retail power providers in order to assist with the development of new or the maintenance of preexisting tree-planting programs.[507] Tree-planting programs are being encouraged due to the numerous benefits trees provide by reducing the harmful effects of GHG emissions and helping to reduce energy consumption.[508] Retail power providers that have entered into agreements with nonprofit tree-planting organizations will be eligible to receive a grant from the Secretary of Energy if their proposed tree-planting program meets the specified requirements of the bill.[509] These requirements consider the benefits provided to affected residents, the ability of the trees to provide shade protection or wind protection, and whether the trees are being planted in the optimal location to provide the greatest energy benefits with the least disruption to public infrastructure.[510]

489. H.R. 2454, *supra* note 2, §201.
490. *Id.* §201(a).
491. The baseline code for residential buildings is the 2006 International Energy Conservation Code, and for commercial buildings the baseline code is the ASHRAE Standard 90.1-2004. *Id.* §201(a)(6).
492. *Id.* §201(a).
493. *Id.*
494. *Id.*
495. *Section-by-Section*, *supra* note 487, at 4.
496. H.R. 2454, *supra* note 2, §202.
497. *Id.* §202.
498. *Section-by-Section*, *supra* note 487, at 4.
499. *Id.*
500. H.R. 2454, *supra* note 2, §203.
501. *Id.* §203(c).
502. *Id.*
503. *Id.* §204.
504. *Id.*
505. *Id.* §204(h).
506. *Id.* §204(l).
507. *Id.* §205.
508. *Id.*
509. *Id.*
510. *Id.*

Copyright © 2009 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, http://www.eli.org, 1-800-433-5120.

- *Grants for Local Building Code Enforcement Departments*. Waxman-Markey would authorize the creation of a grant program for qualified local building code enforcement departments. Local building code enforcement departments may be eligible for grants up to $1 million if it is determined that the local building code enforcement department is in need of financial assistance, it would benefit the jurisdiction to have an adequately funded building code enforcement department, and the department has demonstrated its ability to work cooperatively with other local code enforcement offices, health departments, and prosecutorial agencies. Unless waived by the Secretary of Housing and Urban Development, local building code enforcement departments are required to provide matching funds of a certain percentage based on the population of the area it serves.

- *Solar Power*. Waxman-Markey's building efficiency provisions also promote the use of solar power. In addition to making amendments to the Housing and Community Development Act of 1974 to revise the requirements for building permits regarding solar energy systems, Waxman-Markey calls for the prohibition of homeowner associations, private covenants, contract provisions, or lease provisions from restricting an owner or lessee's ability to install, construct, maintain, or use a solar energy system on residential property.[511]

511. *Id.* §§208-209.