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Should We Go Green for the Waxman-Markey Bill?

Nadine Etienne*

*Fordham University School of Law

NOTES

SHOULD WE GO GREEN FOR THE WAXMAN-MARKEY BILL?

*Nadine Etienne**

I. INTRODUCTION

> There will be two options marked: the easy way, or the hard way.... Flexible legislation... or direct regulation by the EPA. And the flexible and effective legislation that will drive both a domestic clean energy agenda and international climate success is the Waxman-Markey bill.[1]

Finally, Congress is addressing the need for serious clean-energy legislation. The warming of the planet is undeniable. The observed increase in global average temperatures since the mid-twentieth century is due to an increase in greenhouse gas ("GHG") concentrations.[2] GHGs are emitted as a result of the energy used by electricity.[3] While GHGs such as carbon dioxide ("CO_2")[4] are

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1. Julianne LaJeunesse, *Congress Has Two Choices on Addressing Climate Change Says Markey*, U.N.M. TALK NEWS SERVICE, Nov. 10, 2009 (quoting Rep. Markey), *available at* http://talkradionews.com/2009/11/congress-has-two-choices-on-addressing-climate-change-says-markey/.

2. *See* Michael B. Gerrard, *Introduction and Overview*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 5 (Michael Gerrard ed., 2007).

3. CHRIS WOLD ET AL., CLIMATE CHANGE AND THE LAW 70 (2009) ("[N]early 60 percent of global carbon-equivalent greenhouse gas emissions come from

necessary for life on Earth because the gases keep the planet's surface warmer than it otherwise would be, the concentrations of these gases are increasing the Earth's temperature significantly.[5] Two physical characteristics of GHGs are its fluidity and its cumulative impact.[6] Once GHG is emitted into the atmosphere it travels across the globe; thus, when CO_2 is emitted over New York, it has the same climate change[7] effect as if the CO_2 was emitted over Paris, France.[8] Secondly, unlike other pollutants, GHGs will circle the globe and accumulate for many decades to come.[9] The recorded and observed effects of climate change include the rise of the sea level, shrinking glaciers, and changes in the range and distribution of plants and animals.[10] There are many responses to combat climate change such as energy efficiency and reduction of GHG emissions.[11]

Energy conservation in the United States can be viewed on three fronts: (1) "green"[12] legislation passed at the federal, state, and local level, (2) private entities in voluntary "green" partnerships with governmental agencies, and (3) voluntary "green" partnerships between environmental organizations and private entities. However, the United States is still one of the largest sources of GHG emissions; and the country accounts for approximately seventy-nine percent of GHG emissions contributing to climate change.[13] This note argues

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energy use while another 30 percent comes from land-use conversion and agriculture.").

4. Gerrard, *supra* note 2, at 5. ("The most important greenhouse gas (GHG) is carbon dioxide. It is emitted in by far the greatest quantities").

5. CHRIS WOLD ET AL., *supra* note 3, at 1-2.

6. Gerrard, *supra* note 2, at 5-6.

7. "Climate change refers to the response of the planet to altered concentrations of carbon dioxide and other 'greenhouse gases' in the atmosphere." WOLD ET AL., *supra* note 3, at 1.

8. Gerrard, *supra* note 2, at 5-6.

9. *Id.* at 6.

10. WOLD ET AL., *supra* note 3, at 18-26.

11. *Id.* at 71.

12. "The EPA defines "green" power as electricity produced from solar, wind, biogas, biomass, and low-impact small hydroelectric sources." U.S. Env't Prot. Agency, Green Power Market: Green Power Defined, http://www.epa.gov/greenpower/gpmarket/index.htm (last visited Dec. 22, 2009).

13. *See* U.S. Env't Prot. Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Apr. 15, 2008), *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 466 (2009); *see also* John C. Dernbach, *U.S. Policy*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 67 (Michael Gerrard ed., 2007).

that despite the efforts of local communities and state governments, their unconnected actions cannot address a problem that requires a larger solution. Climate change needs to be addressed on a national level; therefore, on a policy level, the Waxman-Markey bill should be passed.

The Waxman-Markey bill, also known as American Clean Energy Leadership Act,[14] is one of many proposed legislations that addresses GHG emissions at the national level, and should be seriously considered. The passage of the Waxman-Markey bill in the House of Representatives ("House") was truly paramount, as Congress had never before enacted legislation that included firm GHG emission limits; although the EPA has pending regulations.[15]

When the House passed the Waxman-Markey bill, it underwent a series of debates because of the "cap-and-trade" regimes proposed.[16] Cap-and-trade is an emission trading program that limits the aggregate amount of GHGs.[17] The total emissions should equal the number of total permits allotted.[18] The program allows entities to enter permits into a market-based system, where pollution credits can be purchased and sold. Basically, the program requires businesses to reduce their GHG emissions by purchasing allowances for their emissions or purchasing credits to offset some of their GHG emissions.[19]

The scope of this note does not include the scientific debate about the causes of climate change; although there are skeptics.[20] This note examines the efforts of governmental agencies and private entities to

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14. *See* H.R. 2454, 111th Cong. (2009) (as passed by the House July 7, 2009).

15. John M. Broder, *Obama Goes to Copenhagen with Pledge of Emission Cuts*, NY TIMES, Nov. 26, 2009, at A1.

16. *See* David N. Taylor & Jay Timmons, *Millions of Jobs Would Vanish with Energy Bill*, THE PHILA. INQUIRER, Sept. 7, 2009, *available at* www.jobbankusa.com/.../millions_of_jobs_would_vanish_with_energy_bill.html.

17. WOLD ET AL., *supra* note 3, at 486; *see also* Tom Mounteer, *Comprehensive Federal Legislation to Regulate Greenhouse Gas*, 39 Env't L. Inst. 11068, 11072 (2009).

18. *See* Kevin Doran & Alaine Ginnochio, *United States Climate Policy: Using Market-Based Strategies to Achieve Greenhouse Gas Emission Reductions*, 3 ENVTL. & ENERGY L. & POL'Y J. 31, 39 (2008).

19. *Id.*

20. Reuven S. Avi-Yonah & David M. Uhlmann, *Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming than Cap and Trade*, 28 STAN. ENVTL. L.J. 3, 11 (2009).

reduce GHG emissions via command-and-control regulations and public-private partnerships, and analyzes the pros and cons of the Waxman-Markey bill. Part I analyzes the history of climate change law and the ongoing environmental initiatives on the private and governmental level. Part II analyzes the pros and cons of the Waxman-Markey bill, along with alternatives to the bill. Part III emphasizes the need for a cap-and-trade model coupled with suggestions to encourage the passage of the Waxman-Markey bill in the Senate.[21]

II. PART I

A. History of Climate Change Mitigation

GHG emission mitigation can be accomplished through a command-and-control approach, a market-based approach, or an incentive approach.[22] The debate over which of the above approaches is the best to reduce GHG emissions concentrations is both complicated and ongoing.[23] Due to the divergent interests of the international community, many proactive policies in the climate change regime have taken years to develop since the discovery of climate change in the 1980s.[24]

One of the most common ways to control GHG emissions is to adopt a command-and-control approach, which is an administrative mandate describing what a party can or cannot do.[25] Regulations can range from outright bans on the use or production of certain substances to a restriction on end-pipe emissions.[26] Most

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21. The Senate is not expected to hold a debate on the matter until next year. John M. Broder, *Obama Hobbled in Fight Against Global Warming*, NY TIMES, Nov. 15, 2009, *available at* http://www.nytimes.com/2009/11/16/science/earth/16climate.html.

22. WOLD ET AL., *supra* note 3, at 50-51.

23. Broder, *supra* note 15.

24. *See* Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 Yale J. Int'l L. 451, 458-49 (1993); *see also* John M. Broder & James Kanter, *China and U.S. Hit Strident Impasse at Climate Talks*, NY TIMES, Dec. 15, 2009, at A1, *available at* http://www.nytimes.com/2009/12/15/science/earth/15climate.html (discussing the discovery of the effects of climate change).

25. WOLD ET AL., *supra* note 3, at 55.

26. *Id.*

contemporaneous laws operate under the command-and-control approach.[27]

Another common method to reduce GHG emissions is through a market-based approach.[28] A popular market-based approach is the cap-and-trade regime, also known as emission trading.[29] Under the cap-and-trade model, the government establishes a maximum pollution limit ("cap") and allows parties to use markets to achieve the cap either by trading allowances or obtaining credits ("trade").[30] Accordingly, the polluters are free to use their allowances or purchase extra allowances from other polluters.[31] A facility that reduces its amount of GHG emissions below its allowance limit may sell the excess.[32] An emission trading program can be limited to a particular industry or expanded to include a variety of entities.[33] The Waxman-Markey bill will cover a variety of industries.[34]

The allowances provided to an entity tend to be below that entities baseline emissions.[35] To ensure compliance, polluters must report all of their GHG emissions to a regulatory body.[36] Furthermore, if an entity fails to comply with the market and emits emissions beyond its allowance limit, accounting for its purchased credits, fines can be imposed.[37] While cap-and-trade is a common form of emission trading, other forms of emission trading systems exist as well, such as a base-line credit system.[38] In a baseline credit program, there is no emission cap. Instead, entities are allowed to earn emission reduction

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27. *See, e.g.*, Clean Air Act, 42 U.S.C. §§ 7401-7671 (2000); *see also* WOLD ET AL., *supra* note 3, at 55.

28. WOLD ET AL., *supra* note 3, at 56.

29. *See* Doran & Ginnochio, *supra* note 18, at 43; Mounteer, *supra* note 17, at11072; *see also* WOLD ET AL., *supra* note 3, at 57.

30. *See* T.H. Tietenberg, *Emissions Trading: Principles and Practice* 1 (2d ed. 2006), *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 466 (2009).

31. *Id.*

32. WOLD ET AL., *supra* note 3, at 57; *see also* Dennis Hirsch et al., *Emission Trading Practical Aspects*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 627 (Michael Gerrard ed., 2007).

33. Doran & Ginnochio, *supra* note 18, at 74.

34. Mounteer, *supra* note 17, at 11072.

35. *Id.*

36. *Id.*

37. *Id.*

38. Hirsch et al., *supra* note 32, at 629-30.

credits by reducing their emissions below a set baseline.[39] Entities are also allowed to transfer credits to other regulated parties.[40]

Some opponents prefer a carbon tax instead of a cap-and-trade model because taxes discourage unnecessary pollution and energy use.[41] Cap-and-trade systems accelerate the process of emissions reduction by using incentives.[42] While taxes raise revenues, cap-and-trade systems also raise revenues via the sale or auction of allowances.[43] Combining incentives with penalties helped rapidly remove lead from gasoline and reduce acid rain.[44] Taxes alone probably would not have been able to achieve these results, because no individual actor or organization would have received any tangible reward for changing its behavior.[45] Moreover, in this economy it is probably more advantageous to produce a carbon market versus a carbon tax.

GHG emissions can also be reduced through an incentive approach.[46] The incentive approach encourages the private sector to voluntarily reduce their emissions. For example, the government could increase incentives for voluntary GHG emissions reductions and technological innovations by providing tax credits and supportive programs to businesses.[47]

B. International Mitigation of GHG

One of the most significant progresses in the international commitment to address climate change was the 1992 United Nations Framework Convention on Climate Change ("UNFCCC").[48] Here, developed countries agreed to adopt policies and measures as a basic

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39. *Id.*

40. *Id.*

41. Gilbert E. Metcalf et al., *Analysis of US Greenhouse Gas Tax Proposals, National Bureau of Economic Research*, *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 64-65 (2009).

42. *Id.*

43. Doran & Ginnochio, *supra* note 18, at 41.

44. Joel Kurtzman, *The Low Carbon Diet*, 88 FOREIGN AFFAIRS 114, 119 (Sept/Oct 2008), *available at* http://www.kurtzmangroup.com/pdf/13_kurtzman_pp114_122b_Blues.pdf.

45. Metcalf et al., *supra* note 41, at 64-65.

46. *See, e.g.*, U.S. Env't Prot. Agency, *supra* note 12.

47. *Id.*

48. WOLD ET AL., *supra* note 3, at 139, 149.

framework to address climate change.[49] Unfortunately, up until this day, the UNFCCC still embodies the basic framework for an international response to climate change.[50]

At the UNFCCC, the European Community and many environmental groups in the United States advocated for a cap on GHG emissions levels by the year 2000.[51] However, the George H. W. Bush administration vigorously opposed this proposal.[52] The U.S. advocated for independent regulation as an alternative, further rejecting mandatory targets and timelines.[53] As a result, the proposed GHG emissions cap became a non-binding goal, allowing the U.S. to sign and ratify the treaty.[54] The UNFCCC can be criticized for providing a politically acceptable way of participation in GHG reduction by creating a non-binding commitment.[55]

However, the treaty also established the Conference of the Parties ("CoP").[56] Under CoP each party must meet to discuss all the steps taken and any relevant information pertaining to the treaty's objective, addressing climate change.[57] CoP became the primary forum for the negotiation of the GHG targets and timetables listed in the Kyoto Protocol.[58] The Kyoto Protocol established a mandatory cap-and–trade system for reducing GHG emissions from industrialized countries.[59]

Many industrialized countries accepted the Kyoto Protocol's mandatory cap on GHG emissions, and were openly willing to trade carbon emission credits among each other to lower their overall

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49. *See* Dernbach, *supra* note 13; *see also* WOLD ET AL., *supra* note 3, at 149.

50. WOLD ET AL., *supra* note 3, at 149.

51. *See* Dernbach, *supra* note 13, at 62; *see also* Donald M. Goldberg, *As the World Burns: Negotiating the Framework Convention on Climate Change*, 5 Geo. Int'l. Envtl. L Rev. 239, 247-48 (1993).

52. *See* Dernbach, *supra* note 13, at 61-62.

53. *Id.*

54. *See* Dernbach, *supra* note 13, at *62*-63; *see also* Goldberg, *supra* note 51 at 251-52.

55. *See* WOLD ET AL., *supra* note 3, at 184.

56. *See* Dernbach, *supra* note 13, at 63; *see also* United Nations Conference on Environment and Development: Framework Convention on Climate Change art. 12, July, 1992, 31 I.L.M. 849 [hereinafter UNFCCC].

57. UNFCCC, *supra* note 57.

58. *See* WOLD ET AL., *supra* note 3, at 183.

59. *Id.* at 189.

compliance costs.[60] Cap-and-trade programs are one of the best known existing forms in pushing for lower GHG emissions.[61] However, the George W. Bush administration repudiated the Kyoto Protocol.[62] The U.S. refused to ratify the Kyoto Protocol because manufacturers in nations like China and India did not face the same restrictions on their GHG emissions under the treaty that the U.S. would be forced to follow.[63]

The 2009 Copenhagen Summit underwent a deadlock, which ended with the developed countries reaching a non-binding accord on GHG emissions limits.[64] The main areas for discussion at the Copenhagen Summit included: targets to curb GHG emissions in developed countries; financial support for adaption to and mitigation of climate change for developing countries; and a carbon trading scheme to end the destruction of the world's forests by 2030.[65] However, China and the U.S. did not want to commit without the other setting a GHG emission reduction target.[66] The U.S. did not want to disadvantage itself economically by reducing its GHG emissions, while China took a similar stand.[67] A notable benefit of the Waxman-Markey bill is that it provides an incentive for other countries without a cap on CO_2 to limit their GHG emissions, by allowing the President to impose fees on carbon-intensive imports from nations that have not adopted their own GHG cap.[68]

C. Domestic Climate Change Law

Despite the United States' withdrawal from the Kyoto Protocol agreement in 2001, energy conservation occurred via other

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60. *See* WOLD ET AL., *supra* note 3, at 57; *see also* Kurtzman, *supra* note 44, at 114-22.

61. *See* WOLD ET AL., *supra* note 3, at 56.

62. *See* Dernbach, *supra* note 13, at 63.

63. *See id.*; *see also* James Kanter, *Danger Seen to Free Trade Seen in Climate Talks*, NY TIMES, Dec. 17, 2009, *available at* http://www.nytimes.com/2009/12/15/science/earth/15tariffs.html.

64. *Copenhagen Climate Summit Held to Ransom-Gordon Brown*, BBC News, http://news.bbc.co.uk/2/hi/uk_news/politics/8423831.stm (last updated Dec. 22, 2009).

65. *Id.*

66. Broder & Kanter, *supra* note 24.

67. *Id.*

68. *See* H.R. 2454, 111th Cong. (2009) (as passed by the House, July 7, 2009);

mechanisms such as "green" legislation, voluntary partnerships with governmental organizations, and non-governmental "green" partnerships with environmental organizations.[69] Since 1978, the U.S. enacted two statutes to address scientific research on climate change:[70] the National Climate Program Act[71] and the Global Change Research Act of 1990.[72] The National Climate Program Act was adopted fourteen years before the UNFCCC was ratified by the U.S.[73] The Act recognized the importance between the climate and human security.[74] The Act also created the National Climate Program Office in the Department of Commerce to assess the effects of climate change on the environment, energy supply and demand, agriculture, among other things.[75] The Global Change Research Act of 1990 developed and coordinated a comprehensive and integrated research program to "understand, assess, predict, and respond to human-induced and natural processes of global change."[76] In 2002, President George W. Bush combined the two statutes into U.S. Climate Change Science Program, to integrate both statutes' activities.[77]

1. Green Legislation

From 2007 through 2009, the U.S. Congress saw variations of comprehensive federal climate change legislation proposals.[78] Seven bills have been introduced in the 110th Congress, including a cap-and-trade system and a carbon tax.[79] Recently, in the Senate, there was the Climate Security Act of 2008, also known as the Lieberman-Warner, and the Waxman-Markey bill in the House.[80] The Lieberman-Warner bill was the first climate change bill to pass out of a congressional committee; however, senate Democratic leaders were

69. *See* Dernbach, *supra* note 13, at 63-65.
70. *Id.* at 75.
71. 15 U.S.C. §§ 2901-2908 (1978).
72. 15 U.S.C. §§ 2921, 2931-2938 (1990).
73. Dernbach, *supra* note 13, at 75.
74. *See id.*
75. *Id.*
76. *Id.* at 75-76.
77. *Id.* at 76.
78. Mounteer, *supra* note 17, at 11068.
79. Doran & Ginnochio, *supra* note 18, at 67.
80. *Id.*

unable to obtain the necessary amount of votes.[81] In 2003, the Climate Change Science Program issued the first comprehensive update of a national plan for climate change science since 1989.[82] The strategy focused on research conducted by thirteen U.S. government agencies, and was intended to guide the development and application of knowledge concerning climate change.[83]

Although, Congress has not yet enacted a federal statute curbing GHG emissions, domestic energy laws and climate change are inextricably linked because of the reliance on and demand of fossil fuels.[84] The U.S. has aimed their energy laws towards studying the consequences of climate change; although, the initial purpose of these energy laws were to supply energy at a lower price and reduce the United States' dependence on oil.[85] For example, following the UNFCCC, the Energy Policy of Act of 1992 mandated an annual inventory report of the aggregate GHG emissions, and a report pertaining to the feasibility of sustaining GHGs.[86] The Act also required a strategy to be developed to increase the percentage of energy generated from renewable sources by seventy-five percent by the year 2005.[87]

In 2002, former President George W. Bush announced a new approach to the U.S. climate change policy despite the repudiation of the Kyoto Protocol.[88] The policy was a modification to Section 1605 (b) "Guidelines for Voluntary Reporting of Greenhouse Gas Emissions and Reductions, and Carbon Sequestration."[89] This policy

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81. *Id.*

82. *See, e.g.*, Justin Stolte, *The Energy Policy Act of 2005: The Path to Energy Autonomy*, 33 J. Legis 119, 127 (2006) (Energy Policy Act of 1992 aimed to reduce oil consumption via alternative fuel cars).

83. *See id.*

84. *See* Doran & Ginnochio, *supra* note 18, at 35.

85. Stotle, *supra* note 82, at 127 (Energy Policy Act of 1992 aimed to reduce oil consumption).

86. Dernbach, *supra* note 13, at 73.

87. Robert B. McKinstry Jr., *Laboratories for Local Solutions for Global Problems: State, Local, and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVT'L L. REV. 25, 21 (2004).

88. White House, *The US Global Climate Change Policy: A New Approach, Executive Summary* (Feb. 14, 2002), *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 480-81 (2009) [hereinafter White House, *Climate Policy*].

89. McKinstry, *supra* note 87, at 23.

set a voluntary target for the country and encouraged businesses to voluntarily report and reduce their GHG emissions.[90] The policy promoted a reduction in GHG emissions intensity,[91] rather than actual GHG emissions reductions.[92] This policy also promoted a number of strategies to improve renewable energy, carbon sequestration, and incentives to encourage businesses to reduce their emissions.[93]

Congress included a series of climate change measures in the Energy Policy Act of 2005.[94] The measures focused on improving information about GHG emissions reduction and new technologies.[95] Congress also created the Committee on Climate Change Technology. The law also called for an inventory of GHG intensity reducing technologies.[96] The Act called on the Secretary of State to indentify the largest GHG emitting countries and regularly report on energy usage and intensity,[97] and it also requires the Secretary of State to provide assistance to developing countries for projects to reduce GHG intensity.[98] The reduction of CO_2 cannot be done without reducing the energy sector's dependence on fossil fuels.[99]

Unfortunately, the policy led to an increase in actual GHG emissions because the George W. Bush administration target was based on intensity reduction and not actual reductions.[100] Therefore, the U.S. minimized the economic impact of GHG reductions by

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90. *Id.*

91. *See id* at 24 (noting the ratio of GHG to economic output in gross domestic product).

92. Pew Center on Global Climate Change, *Analysis of President Bush's Climate Change Plan* 1-3 (Feb. 2002), *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 483 (2009).

93. *Id.* at 481-82.

94. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, tit. XVI, 119 Stat. 594 (2005); *see also* DAVID WOOLEY & ELIZABETH MORSS, CLEAN AIR ACT HANDBOOK §10.18 (2009).

95. WOOLEY & MORSS, *supra* note 94, §10.18.

96. Energy Policy Act of 2005 tit. XVI; *see also* WOOLEY & MORSS, *supra* note 94, §10.18.

97. White House, *Climate Policy*, *supra* note 88 (describing "intensity" as the ratio of GHG to economic output in gross domestic product).

98. WOOLEY & MORSS, *supra* note 94, §10.18.

99. S. Pacala & R. Socolow, *Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies*. 305 Sci. 968, 969 (2004).

100. WOLD ET AL., *supra* note 3, at 485.

allowing emissions to rise and fall.[101] The Environmental Protection Agency ("EPA")[102] inventory reported that U.S. CO_2 emissions have risen by twenty percent from 1990 to 2004.[103] The rise in GHG emissions during the Bush administrations indicates that a stronger regulation is needed to effectively address climate change.

In 2007, the U.S. Supreme Court reached one of its most significant decisions in environmental law by expanding the EPA's reach for command-and-control regulation.[104] In *Massachusetts v. EPA*, the Court ruled that the Clean Air Act includes the regulation of GHG pollution.[105] In 2009, the EPA formally declared carbon dioxide and five other heat-trapping gases to be pollutants that endangered public health and welfare, propelling the process of regulating GHG under the Clean Air Act.[106] According to Lisa Jackson, EPA Administrator, the EPA's decision placed the U.S. on a path to finding practical solutions to climate change, and ensured businesses' and investors' certainty in investments geared toward clean-energy technology.[107]

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101. *See id.*

102. Under the Global Climate Protection Act of 1987, the EPA was given the responsibility of conducting GHG inventories as stated in the UNFCC. *See* Dernbach, *supra* note 13, at 72.

103. *See* U.S. Env't Prot. Agency, Greenhouse Gas Emissions, http://www.epa.gov/climatechange/emissions/index.html (last visited Dec. 27, 2009).

104. Lisa Jackson, U.S. Env't Prot. Agency Administrator, Remarks of Endangerment Findings of Greenhouse Gas (Dec. 7, 2009), *available at* http://www.epa.gov/newsroom/index.htm (follow "Speeches" hyperlink; then follow "Administrator Lisa P. Jackson, Remarks on the Endangerment Finding on Greenhouse Gases, As Prepared" hyperlink).

105. Massachusetts. v. EPA, 549 U.S. 497 (2007).

106. John Broder, *E.P.A. Clears Way for Greenhouse Gas Rules*, N.Y. TIMES, Apr. 18, 2009, at A15, *available at* http://www.nytimes.com/2009/04/18/science/earth/18endanger.html (noting that the Bush administration officials suppressed the EPA's work and took no action towards GHG regulation; this changed in 2009 with the Obama administration).

107. Jim Efstathiou Jr. & Daniel Whitten, *EPA's Carbon Decision Gives Obama Copenhagen Tool*, BLOOMBERG, Dec. 8, 2009, *available at* http://www.bloomberg.com/apps/news.

2. Voluntary Green Partnership with Governmental Agencies

Voluntary partnerships with government organizations, also known as public-private partnerships[108] are another mode of reducing GHG emissions. Companies and government policymakers have various motivations for pursuing voluntary actions to mitigate climate change.[109] Since the 1980s, companies have been reacting to the growing concerns about their environmental performance.[110] For example, companies would publish information about environmental good deeds to improve its environmental image.[111] In 1992, the Clinton administration created several voluntary programs to increase energy efficiency and GHG emissions mitigation in the private sector; the George W. Bush administration also followed suit.[112] In the beginning of the twenty-first century, federal voluntary efforts fell into three categories: (1) efforts to enhance the U.S. Department of Energy's ("DOE") GHG emissions reporting scheme, (2) encouragement of industries to engage in "Climate VISION" to reduce their GHG emissions intensity, and (3) challenging individual companies to reduce their GHG emissions via new and existing federal voluntary programs.

The DOE targeted corporations, governments and other organizations with its voluntary GHG emissions registry, which was authorized under Section 1605 of the 1992 Energy Policy Act.[113] The Voluntary Reporting of GHG Program was a way for organizations or individuals to record and reduce their GHG emissions.[114] Climate VISION, a public-private partnership also assisted businesses, but in the reduction of GHG emissions

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108. Victor B. Flatt, *Act Locally, Affect Globally: How Changing Social Norms to Influence the Private Sector Shows a Path to Using Local Government to Control Environmental Harms*, 35 B.C. ENVTL. AFF. L. REV. 455, 457 (A public-private partnership is collaboration "between government actors and the regulated parties, local government may be able to effectively advance environmental protection.")

109. Tom Kerr, *Voluntary Climate Change Efforts*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 591 (Michael Gerrard ed., 2007).

110. *Id.*

111. *Id.*

112. *Id.* at 601.

113. *Id* at 602.

114. *Id.*

intensity.[115] The industries that joined Climate VISION represent a broad range of industries such as transportations, oil, and gas production.[116] However, the most popular voluntary effort was the ENERGY STAR program.[117] The program was a joint effort by the DOE and EPA to reduce GHG emissions through energy efficient products and practices.[118] Since 1992, the program has provided energy efficient products for businesses and everyday consumers.[119] There are more than 8,000 ENERGY STAR partnerships in place, and the ENERGY STAR label is recognized by approximately sixty percent of the American public.[120]

The EPA also targeted corporations with its voluntary program, "The Green Power Partnership."[121] Media corporations, such as Time Warner, Inc., are collaborating with the federal government, by participating in voluntary programs, which offer expert advice and technical support to assist the procurement of "green" power.[122] Time Warner Cable has also begun a program to track its GHG emissions, and in 2007, the company sponsored a carbon-neutral party following the Grammy Awards.[123]

Several states in the same regional energy systems have also joined together to reduce GHG emissions.[124] As of June 2006, twenty-eight states have completed some form of action plan to identify cost effective approaches in reducing GHG emissions.[125] Regional GHG emissions reduction programs were the creation of the pro-competition policies driving the Federal Energy Regulatory

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115. Kerr, *supra* note 109, at 604.

116. *Id.* at 603.

117. *See id.* at 606.

118. *Id.* at 605.

119. *Id.* at 605-06.

120. *Id.*

121. U.S. Env't Prot. Agency, *supra* note 12.

122. Time Warner is among the 40 Fortune 500 companies taking part in the EPA's volunteer partnership program. *See* Grace Wong, *America's Largest Firms Go Green*, CNN MONEY.COM, Dec. 4, 2006, http://money.cnn.com/2006/12/04/news/companies/green_challenge/index.htm.

123. Natural Resources Defense Council (NRDC), Green Business: Green Business Guides, http://www.nrdc.org/enterprise/greeningadvisor/wbg-initiatives.asp (last visited Dec. 22, 2009).

124. Eleanor Stein, *Regional Initiatives to Reduce Greenhouse Gas Emissions*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 315 (Michael Gerrard ed. 2007).

125. *Id.*

Commission ("FERC") in the 1980s and 1990s; providing the mechanisms for state-based or regional energy policies.[126] Nearly half of the states in the U.S. participate in one of these regional programs.[127] The regional programs for GHG emissions include: the Northeast Regional GHG Initiative (RGGI), the New England Governors/Eastern Canadian Premiers' Climate Action Plan, Powering the Plains, the Western Governors' Association Clean and Diversified Initiative ("Western Governors' Association"), the West Coast Governors Global Warming Initiative, and the Southwest Climate Change Initiative.[128]

Regional programs have established GHG emissions inventories and reduction programs for their region.[129] RGGI is the closest any regional program has come to establishing a mandatory GHG emissions reduction statute.[130] RGGI requires its signatories to have legislative approval of the RGGI cap-and-trade program.[131] RGGI allocates allowances to cover an industry's current emissions.[132] In addition to the allowances, the industry can reduce its carbon footprint by the use of offset credits.[133]

Numerous municipalities have also joined the climate change forefront.[134] For example, when the Kyoto Protocol went into effect, so did the U.S. Mayors Climate Change Agreement.[135] The U.S. Conference of Mayors adopted an agreement to reduce GHG emissions in their respective municipalities by seven percent.[136] Signatories include the nation's largest cities such as New York and smaller communities such as Keene, New Hampshire.[137] The 2006

126. *Id.*

127. WOLD ET AL., *supra* note 3, at 836.

128. Stein, *supra* note 124, at 316 ("Several states participate in more than one initiative.").

129. *Id.*

130. *Id.*

131. *Id.*

132. *Id.*

133. *Id.* at 324.

134. J. Kevin Healy, *Local Initiatives*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 430 (Michael Gerrard ed. 2007).

135. *Id.* at 430.

136. *Id.* at 430.

137. *Petition to the Inter-American Commission on Human Rights Seeking Relief Rrom Violations Resulting From Global Warming Caused By Acts and Omissions of the United States*, *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 432 (2009).

agreement also called for the federal and state governments to enact policies to reduce GHG emission levels, and requested Congress to adopt a cap-and-trade program with clear time limits.[138]

Another example of local actions to mitigate climate change is seen in Portland, Oregon. To reduce GHG emissions Portland increased its bicycle ridership, and adopted an energy policy.[139] The local community explored the dangers of climate change and created an informal network to address it.[140]

3. Private Initiatives to Reduce GHG

Companies have voluntarily reduced their carbon footprint and invested in climate-friendly technologies as a major strategic business opportunity.[141] Responding to climate change can reduce a company's energy cost.[142] The motivating reasons for the private sector to reduce GHG emissions are as diverse as the private sector itself.[143] The private sector environmental response reflects a wide range of diversity; some private organizations partner with established environmental organizations, while others partner with grassroots organizations.[144]

For instance, the entertainment and sports industries have taken proactive efforts to reduce GHG emissions voluntarily with established environmental organizations such as the Natural Resources Defense Council ("NRDC").[145] For the past two years, the Oscars collaborated with NRDC to reduce the Oscars' ecological

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138. *Id.* at 431.

139. Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 Chi. J. Int'l L. 409, 416-17 (2008). Unfortunately, due to increase in its population Portland may not meet its 2010 emission goals. *Id.* at 416.

140. *Id.*

141. WOLD, ET AL., *supra* note 3, at 879.

142. *Id.* ("Dow Chemical, for example, reportedly saved an estimated $4 billion between 1994 to 2005.").

143. *Id.* at 879.

144. *Id.*

145. NRDC is a not for profit environmental action group. Natural Res. Def. Council, About NRDC: Who We Are, http://www.nrdc.org/about/who_we_are.asp (last visited Dec. 23, 2009).

carbon footprint.[146] Investments into renewable wind and solar energy projects allowed for the offset of GHG emissions at the Oscar telecast, the pre-show red carpet event, and the Governor's Ball.[147] In professional sports, the Philadelphia Eagles ("Eagles") were one of the first teams in U.S. to reduce their environmental impact.[148] In 2004, the Eagles approached the NRDC for assistance in further improving the Eagles' environmental profile with regards to the team's stadium, training facilities, and offices.[149] Today, the Eagles obtain one hundred percent of their energy from renewable wind resources.[150]

The climate change movement is also visible in grassroots organizations, such as Step It Up. The environmental organization transformed April 24, 2007, into the Step It Up National Day of Climate Action, which resulted in communities coming together in more than 1,400 areas to hold up banners that said, " Step It Up, Congress: Cut Carbon eighty percent by 2050."[151] In all fifty states, people rallied to pressure Congress to take action on legislation that would reduce GHG emissions.[152] Step It Up 2007 National Day of Climate Change has been described as the largest day of protest on climate change in the nation's history.[153]

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146. Carbon footprint is the total set of greenhouse gas emissions caused by an individual, event, or organization. Carbon Trust, What is a Carbon Footprint, http://www.carbontrust.co.uk/solutions/CarbonFootprinting/what_is_a_carbon_footprint.htm (last visited June 5, 2010); *see also* Natural Res. Def. Council, Environmental Achievements of 80th Annual Academy Awards, http://www.nrdc.org/greenthis/oscars/achievements_08.pdf (last visited Dec. 23, 2009) (describing Oscars and NRDC "green" partnership).

147. NRDC, *supra* note 123.

148. NRDC, Green Business: Green Business Eagles http://www.nrdc.org/greenbusiness/guides/sports/eagles.asp (last visited Dec. 22, 2009).

149. *Id.*

150. *Id.*

151. *See* Step It Up 2007, *Our Story*, http://stepitup2007.org/article (last visited Dec. 22, 2009).

152. *See id.*

153. Interview with Bill McKibben, Environmentalist and Founder of "Step It Up," in Middlebury, Vt. (July 2007) *available at* http://www.abroadview.org/green/mckibben.htm (last visited Dec. 22, 2009).

The organization Step It Up branched off into the international environmental organization 350.org.[154] 350.org is an international campaign dedicated to building a movement to unite GHG emissions reduction globally.[155] The number 350 represents the GHG emissions part per million ("ppm") that the earth needs to avoid the detrimental effects of climate change.[156] The last time the Earth had a 350 ppm of CO_2 was in 1989.[157] This year, the amount of CO_2 pushed GHG emission levels to approximately 390 ppm.[158] *National Aeronautics and Space Administration's (*NASA) James Hansen, one of the earliest scientists to warn about climate change, and Rajendra Pachauri, the head of the Intergovernmental Panel on Climate Change ("IPCC")[159] have said 350 is the only safe level of CO_2 in the air.[160]

D. Waxman-Markey Bill: Moving on to a Cap-and-Trade Model

The Waxman-Markey bill was sponsored by Representatives Henry Waxman (D-Calif.) and Edward Markey (D-Mass.).[161] As of August 2009, the Waxman-Markey bill has only passed in the House and not in the Senate.[162] If passed, the bill will mandate a seventeen percent reduction in GHG emissions by 2020 and approximately eighty-three percent by 2050 from the 2005 levels, via a cap-and-

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154. 350.org, Our Team's History, http://www.350.org/story (last visited Dec. 22, 2009).

155. *Id.*

156. Seth Borenstein, *Push for 350: Contradictions and Carbon Levels*, USNEWS.COM, Dec. 13, 2009, http://www.usnews.com/news/energy/articles/2009/12/13/the-push-for-350-contradictions-and-carbon-levels.html.

157. *Id.*

158. *Id.* (stating that when scientists started measuring carbon dioxide in 1958 it was 315 ppm).

159. *See* Intergovernmental Panel on Climate Change, Organization, http://www.ipcc.ch/organization/organization.htm ("The IPCC is a scientific body. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters. Thousands of scientists from all over the world contribute to the work of the IPCC on a voluntary basis.") (last visited Dec. 24, 2009).

160. *Id.*

161. *See* H.R. 2454, 111th Cong. (2009) (as passed by the House July 7, 2009); *see also* Mounteer, *supra* note 17, at 11068.

162. *See* H.R. 2454; *see also* Taylor & Timmons, *supra* note 16.

trade system.[163] Under the cap-and trade model, the buyer of the allowances is paying for the right to pollute, while the seller of allowances is rewarded for efficient emission reductions.[164] The emissions cap will begin in 2010, if the bill is passed in the Senate.[165] The bill will also impose a three percent GHG reduction by 2012 and the reductions will gradually increase until 2050.[166] The U.S. will be moving forward in GHG emissions reductions if the bill is passed.

III. PART II

A. Waxman-Markey Bill: Pros And Cons

Despite the cap restrictions, the bill is more than just cap-and-trade legislation; it includes renewable energy standards, sitting of electric transmission lines, green building mandates, and other provisions.[167] The bill also protects the competitiveness of energy industries by providing free permits/allowances (approximately eighty percent) to emit a certain amount of GHG emissions.[168] Industries prefer free allowances over an auction because it keeps the cost of energy low.[169] The bill also provides government rebates to industries that are heavily exposed to global trade; to protect global competitiveness.[170]

Furthermore, Section 431 of Waxman-Markey provides cash payments to reimburse low-income households and minimize the impact of rising energy costs.[171] The cost of the GHG emission cap would most likely be placed on the consumer by the polluting businesses; the Congressional Budget Office ("CBO") estimated that consumer prices will cost the middle class less than five percent of its annual after tax income from a fifteen percent cut in emissions.[172]

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163. H.R. 2454 §311; *see also* Jonas Monast, *Climate Change and Financial Markets: Regulating the Trade Side of Cap and Trade*, 40 ENVTL L. REP. NEWS & ANALYSIS, 100051,10051 (2010).

164. Mounteer, *supra* note 17, at 11072.

165. Id. at 11074.

166. Id.

167. H.R. 2454.

168. Mounteer, *supra* note 17, at 11075.

169. *Id.* at 11075.

170. *Id.* at 11071.

171. H.R. 2454, 111th Cong. §431 (2009) (as passed by the House July 7, 2009).

172. Mounteer, *supra* note 17, at 11070, 11076.

While the proposed cap-and-trade regulation is the most controversial part of the Waxman-Markey bill, there are several sections of the bill that are also highly controversial.[173] Left-wing opponents disapprove of the bill's method of credit allocation.[174] The bill proposes to give eighty-five percent pollution credits in the beginning of the program and provides offsets, which could lead to an evasion of compliance.[175] For instance, regulated companies would be allowed to purchase carbon offsets to meet a portion of their required emission reductions—meaning the companies could fund clean-energy projects elsewhere instead of cutting their own GHG emissions locally.[176] Offsets are activities undertaken directly or indirectly by an emitter to counteract the environmental damage caused by releasing GHGs.[177] Offsets are likely to be created via agricultural activities or forestry lands.[178] The alternative to free allocation of credits is an auction approach, where price is based on what the market will bear, since the industries are auctioning for credits to release emissions.[179] Therefore, one ton of carbon released by an oil refinery in New Jersey could be offset by a reforestation program in the Brazilian Amazon Rainforest, so long as it conformed to the rules laid out in the legislation. The government regulators would need to verify that the offset taken by industries are legitimate and not a sham, to avoid abuse.[180]

In theory, the bill relies on the market to find the most efficient alternatives, but in practice, the bill's subsidies, regulations, and exemptions have the potential to skew the outcome in costly ways.[181] For example, the biggest concessions in the bill went to utility companies, who wanted assurances that they could continue to

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173. *Id.* at 11069.

174. *Id.* at 11079.

175. H.R. 2454 §115.

176. Monast, *supra* note 163, at 10052.

177. David S. May, *Conservation Easements in the Ecosystem Services Age*, 24 NAT. RESOURCES & ENV'T 56 (2010).

178. *Id.*

179. Mounteer, *supra* note 17, at 11076.

180. Doran & Ginnochio, *supra* note 18, at 80 (arguing that offsets should be real, quantifiable, and an excess to any regulatory requirement).

181. Mounteer, *supra* note 17, at 11070 (Democrats fear their districts will not be able to meet the standards set forth by the bill.).

operate without incurring new costs.[182] Under the bill, businesses would receive billions of dollars worth of free pollution permits, in addition to the billions allotted for work on carbon-dioxide capturing technologies to help meet future GHG reduction targets.[183] The drafters of the bill had to make compromises to get the bill passed in the House.[184]

The majority of Republicans in Congress oppose the bill because they view it as way to place the United States into an "era of economic stagnation and global decline."[185] Specifically, the bill is viewed as an "untested and complex multi-trillion dollar cap-and-trade program," where the number of jobs lost would far exceed any "green" jobs created.[186] Furthermore, the bill will place a large burden on the taxpayer, and place U.S. companies at a competitive disadvantage with foreign competitors in China, India, and other developing countries because of the increased energy costs that would be placed on energy-intensive industries.[187] However, the net cost to the average American household in 2020, the year the mandate would go in effect, would be less than fifty cents a day according to the CBO and the EPA.[188] On the other hand, opponents to the bill found that the cost per day was much steeper.[189] There is only one atmosphere; therefore, future harm to the environment should be avoided, especially when energy cost will be only a few cents more.

B. Theory: Tragedy of the Commons

The atmosphere can be considered a global common, in which everyone shares the atmosphere and there is no concept of private property.[190] According to Garrett Hardin, the overuse of a commons

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182. John Broder, *Adding Something for Everyone, House Leaders Gained a Climate Bill*, NY TIMES, July 1, 2009, at A20.

183. *Id.*

184. *Id.*

185. House Energy and Commerce Republicans, Fact Sheets: Waxman-Markley Global Warming Fact Sheet, June 23, 2009, http://republicans.energycommerce.house.gov/news/PRArticle.aspx?NewsID=713.

186. *Id.*; *see also* Mounteer, *supra* note 17, at 11070.

187. House Energy and Commerce Republicans, *supra* note 185.

188. Mounteer, *supra* note 17, at 11070.

189. *Id.*

190. WOLD ET AL., *supra* note 3, at 52.

could lead to a long-term deterioration.[191] Everyone contributes some form of GHG emissions to the atmosphere.[192] When there is a finite set of unrestricted resources, stakeholders overexploit the resources to their advantage, until the point of depletion is reached, thereby creating the "tragedy of the commons."[193] This paradox is a way to understand the ongoing problem with climate change, where there is an unrestricted resource, in this case the atmosphere, and polluters continue to emit GHGs, ignoring the harmful effects their actions will have on future generations. From another perspective, this can be seen as a reverse tragedy of the commons because here stakeholders are emitting harmful GHGs into the commons rather than overusing them.[194] The implication is that primary objective of the stakeholders is wealth maximization and the markets failure to establish limits leads to the commons' destruction.[195] Three ways the tragedy of the commons can be avoided are through (1) administrative mandate ("command-and-control"), (2) voluntary partnerships ("actions by non-governmental groups"), and (3) privatization ("cap-and-trade").[196]

1. Administrative Mandate (Command-and-Control)

If the Waxman-Markey bill is not passed, command-and-control regulation via the EPA could be an alternative option to avoid the "tragedy of the commons."[197] As mentioned earlier, in the landmark case *Massachusetts. v. EPA*, the Court held that the EPA has jurisdiction to regulate GHG emissions under the Clean Air Act, granting it a power of command-and-control regulation.[198] The Supreme Court found that the Clean Air Act was broad enough to incorporate carbon dioxide under its definition of "air pollutants."[199]

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191. Garrett Hardin, *The Tragedy of the Commons*, *in* MANAGING THE COMMONS 20 (1977).

192. WOLD ET AL., *supra* note 3, at 52.

193. Hardin, *supra* note 191, at 20.

194. Id. at 21-22 (describing pollution as a "reverse tragedy of the commons").

195. WOLD ET AL., *supra* note 3, at 52.

196. *See generally* Hardin *supra* note 191, at 22 (encouraging the use of laws that make it more expensive to pollute to maintain the commons).

197. Borenstein, *supra* note 156.

198. Massachusetts. v. EPA, 549 U.S. 497 (2007).

199. *Id.*

Therefore, regulation of GHG emissions under the Clean Air Act is an option.

One of the advantages of traditional regulations such as command-and-control is its history of successful implementation.[200] A government could place an administrative mandate on what an entity can and cannot do on the commons. For example, the Corporate Average Fuel Efficiency Standard ("CAFE") in which Congress set a fuel efficiency requirement for passenger vehicle producers.[201] Car manufacturers have the discretion to produce some cars above the CAFE standard for fuel efficiency so long as the manufacturer produces enough fuel efficient cars to comply the CAFE standard.[202] The command-and-control model mandates restrictions.[203]

However, social policy is often difficult to change via legislation when it is going against a status quo, routine GHG emissions. Therefore, if the Senate is not prepared to accept an environmental policy change that will efficiently reduce GHG emission, supporters of the Waxman-Markey bill could turn to the EPA (the executive branch), for regulation of GHG emissions under the Clean Air Act.[204] Similarly, the environmental group, 350.org, recently petitioned the EPA to implement a national GHG emission limit under the Clean Air Act.[205] Probably, in light of the EPA's recent published finding that GHG emissions threatened public health, setting the stage for a series of rules that would regulate GHG emissions.[206]

Command-and-control regulations are not perfect.[207] Economists have criticized command-and-control regulations for being both

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200. WOLD ET AL., *supra* note 3, at 55.

201. *See id.*

202. *Id.* at 716.

203. *Id.*

204. *See supra* text accompany footnotes 197-199.

205. Robin Bravender, *Groups Petition EPA to Set Greenhouse Gas Limits Under Clean Air Act*, NY TIMES, December 2, 2009, http://www.nytimes.com/gwire/2009/12/02/02greenwire-groups-petition-epa-to-set-greenhouse-gas-limi-40485.html [hereinafter Bravender, *Groups Petition*]; *see also* Robin Bravender, *EPA's Greenhouse Gases Notice Sets Stage for Regulation Writing*, NY TIMES, Dec. 15, 2009, http://www.nytimes.com/gwire/2009/12/15/15greenwire-epas-greenhouse-gases-notice-sets-stage-for-re-56845.html [hereinafter Bravender, *EPA's Greenhouse Gases*] (EPA signals they will oppose implementing a national GHG limit).

206. Bravender, *EPA's Greenhouse Gases*, supra note 205.

207. WOLD ET AL., *supra* note 3, at 55.

inefficient and inflexible.[208] Economists have also argued that the command-and-control model discourages innovation since the regulated party has already installed the necessary technology to meet the appropriate standard.[209] An industry would not receive any tangible reward for changing its behavior.[210] Therefore there is no incentive to further reduce pollution.[211]

Another flaw in the command-and-control model is that polluters must comply with the same standard emission reduction approaches, regardless of whether they could reduce their emissions at a lower cost another way.[212] Therefore, the model discourages the creation of superior environmental technologies.[213] Despite its flaws, most pollution control laws are based on the command-and-control model.[214]

2. Voluntary Partnerships & Local Community Efforts

Voluntary commitments can take many forms, including voluntary "green" partnerships with environmental organizations, GHG reduction programs, GHG trading programs, and GHG registries.[215] The private sector voluntarily reduces emissions for a variety of reasons ranging from advertising to saving on energy costs.[216] For instance, three big energy utility companies: Pacific Gas & Electric Company, PNM (an electricity power company), and Exelon, have left the U.S. Chamber of Commerce[217] for its lack of environmental

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208. *Id.*

209. *Id.*; *see also* Jonathan R. Macey & Henry Butler, *Federalism and the Environment*, *in* THE COMMON LAW AND THE ENVIRONMENT: RETHINKING THE STATUTORY BASIS FOR MODERN ENVIRONMENTAL LAW 161 (Roger E. Meiners & Andrews P. Morriss eds., 2000) ("Thirty years of intensive federal regulations of environmental risks have demonstrated the setbacks of a centralized environmental policy.").

210. Kurtzman *supra* note 44, at 1; *see also* Macey & Butler, *supra* note 209, at 161.

211. WOLD ET AL., *supra* note 3, at 55.

212. *Id.*

213. *Id.*

214. *Id.*

215. *Id.* at 887.

216. WOLD ET AL., *supra* note 3, at 879.

217. The US Chamber of Commerce lobbies for American businesses and has opposed cap-and-trade. *See Enter the EPA: Regulating Greenhouse Gases*, THE ECONOMIST, Oct. 3, 2009, at 38, *available at*

support for the bill.[218] Unfortunately, only 8.4 percent of the one thousand largest U.S. companies retain environmental policies that address GHG emissions.[219]

Elinor Ostrom, author of *Governing the Common*, stated that a governmental regulatory body is not the only way to prevent and monitor threats to the commons.[220] Instead, local communities and grassroots organizations can form self-regulating and self-governing bodies that can manage the commons.[221] Ostrom uses the example of an inshore fishery, where the local fishers assigned fishing posts and a monitoring system to regulate an unrestricted resource and reduce the local problems.[222] However, the Ostrom theory is inapplicable here because governmental involvement is needed. The atmosphere is a global common to which everyone contributes some form of GHG emissions.[223] GHG emissions differ from other pollutants because of their cumulative effect.[224] A national mandatory regulation that collaborates with the international community's GHG emission reduction objectives should be instilled to prevent the "tragedy of the commons" or a patchwork of emission reduction.[225] Legislation enforcing climate change limits would be more effective than local governance since climate change is not a local or regional problem, it's a global issue.[226]

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http://www.economist.com/world/unitedstates/displaystory.cfm?story_id=14569458.

218. *Id.*

219. Georg Kell, *Businessmen, the Planet Needs You*, NY TIMES, Dec. 12, 2009, *available at* http://www.nytimes.com/2009/12/12/opinion/12iht-edkell.html.

220. *See* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTION FOR COLLECTIVE ACTION, 14-15 (1990) (arguing that privatization is not the only way).

221. *See generally id.* at 19-21.

222. *Id.*

223. *See* Johnathan Adler, *Hothouse Flowers: The Vices And Virtues of Climate Federalism*, 17 TEMP. POL. & CIV. RTS. L. REV. 443, 448 (2008).

224. *See* Gerrard, *supra* note 2, at 5.

225. *See* Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397, 466 (2008).

226. *See generally* Adler, *supra* note 223, at 448 (advocating for nationally government involvement because climate change is a global issue).

3. Cap-and-Trade and Protecting the Commons

In the case of pollution and climate change, the cap-and-trade approach would be a better approach to curb the "tragedy of the commons." People would take care of property when they own it, instead of leaving the property open to the public as an unregulated resource.[227] Under the cap-and-trade model, businesses have the incentive to reduce GHG emissions to obtain revenue by selling permits to larger GHG emitting industries. Generally, economists and regulators have relied on estimates of the cost of various technological options to construct the cost estimates ("the cap") of trading programs.[228] Meaning the market costs of the technologies, which regulators believe utility companies would have to rely on to meet their set cap limits, are taken into account to access the limits to be used in cap-and-trade programs.[229]

Emission trading encourages innovation because emission reduction is required in order to sell credit.[230] Companies may invest in GHG reduction technologies to take advantage of this market. Emission trading provides a cost-effective approach because it allows polluters the flexibility to reduce their own emissions or to purchase emissions reductions from another facility.[231] The cap-and-trade system will most likely receive more support than its counter-parts (command-and-control and voluntary "green" partnership) because of its flexibility and capacity to enforce change.[232] Cap-and-trade programs are considered economically efficient.[233] Based on EPA's estimates, the future value of carbon emissions permits as proposed in the House energy bill will be roughly $60 billion a year in 2012 and it will increase to $113 billion in 2025.[234] Notably, voluntary partnerships can continue to work with voluntary partnerships incentivized by the government because the program is permissive and not a mandate.

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227. Hardin, *supra* note 191, at 18-19.

228. *See generally* David Drisen, *Capping Carbon*, 40 Envtl. L. 1, 21, 30 (2010) (describing the typical way a cap is set in a cap-and-trade program).

229. *Id.*

230. David M. Driesen, *Free Lunch or Cheap Fix?: The Emmissions Trading Idea and the Climate Change Convention*, 26 B.C. ENVTL. AFFAIRS L. REV. 1, 42.

231. *Id.*

232. WOLD ET AL., *supra* note 3, at 56.

233. Doran & Ginnochio, *supra* note 18, at 33.

234. *See* Kurtzman, *supra* note 44, at 122.

Unfortunately, the benefits of an emission trading system are also its disadvantages. Since emission trading programs are dependent on market variables, the price of an allowance will fluctuate.[235] Market imperfections may arise. The European system of cap-and-trade has seen large fluctuations due to the recent recession in European manufacturing.[236] The recession rendered the cost of carbon emissions low.[237] Optimal environmental results will be unattainable because polluters will take advantage of a low carbon market, purchasing carbon credits to enable greater GHG emissions.[238] Despite the potential disadvantages of the cap-and-trade approach the Waxman-Markey bill should be passed to curb the omnipresent effects of climate change. The market is a powerful tool for allocating capital and for effective social change; despite its current reputation in the global economic crisis.[239]

Cap-and-trade programs are not new or untested in the U.S.[240] During the 1980's, the cap-and-trade approach was applied to the emission of sulfur dioxide (acid rain).[241] Under the Clean Air Act Amendments of 1990, the EPA was able to place a national cap on emissions of sulfur dioxide while allowing polluters to trade permits among themselves.[242] Using the 1980 emissions levels as the baseline, the program aimed to cut emissions of sulfur dioxide in half by 2010.[243] The emissions targets were achieved three years ahead of schedule.[244] The removal of GHG emissions differs from the removal of acid rain pollution because CO_2 is a byproduct of the economy, and its polluters are numerous.[245] Additionally, GHG is fundamental to the Earth's ecosystem, and has a cumulative effect over time.[246]

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235. Ben Stein, *The Dangers of 'Cap and Trade,'* N.Y. TIMES, Feb. 21, 2009, available at http://www.nytimes.com/2009/02/22/business/22every.htm.

236. *Id.*

237. *Id.*

238. *Id.*

239. Kurtzman, *supra* note 44, at 114.

240. Doran & Ginnochio, *supra* note 18, at 42.

241. *Id.*

242. Kurtzman, *supra* note 44, at 116.

243. *Id.*

244. *Id.*

245. Doran & Ginnochio, *supra* note 18, at 42.

246. *See* Kurtzman, *supra* note 44, at 117; *see also* Gerrard, *supra* note 2.

The cap-and-trade model was also successfully applied to the abatement of lead in gasoline.[247] Five years after the cap-and-trade program implementation, nearly all leaded gasoline was eliminated in the United States.[248] The lead-abatement program turned out to be cheaper and more efficient than predicted.[249] In California, the state launched RECLAIM ("Regional Clean Air Initiatives Market"), an emission trading program. Similarly, the program targeted sulfur dioxide and nitrogen oxides. By 2003, the program reduced emissions in nitrogen dioxide by seventy percent and sulfur dioxide by sixty percent.[250]

The political reality of the situation is that the environmental policy selected will not be a drastic measure, as it would hurt an already depressed economy.[251] Emissions of GHG are a result of economic growth.[252] According to the National Association of Manufacturers, the emission reductions presented in the Waxman-Markey bill are projected to result in the loss of approximately two million jobs by 2030.[253] However, Point Carbon, a carbon-market research firm, has released a study that found that the effects the Waxman-Markey bill would produce major carbon-emitting businesses, despite increase cost to other businesses.[254] Nevertheless, countries tend to be risk-adverse, preferring to avoid creating immediate harms rather than deterring future harms—unless everyone else is doing it.[255] Also,

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247. *See* Kurtzman, *supra* note 44, at 115.

248. *Id.* at 116.

249. *Id.*

250. Dominic A. Gentile, *International Trade and the Environment: What is the Role of the WTO?*, 20 FORDHAM ENVTL. L. REV. 197, 220 (2008).

251. The National Association of Manufacturers released a study that found that the Waxman-Markey bill could reduce economic growth by 2.4 percent and cost 2 million jobs by 2030. *See* Jim Snyder, *Climate Bill Could Cost 2 Million Jobs*,THE HILL, http://thehill.com/business-a-lobbying/54737-climate-bill-could-cost-2-million-jobs.

252. Prue Taylor, *The Business of Climate Change: What's Ethics Got to Do with It?*, 20 Pac. McGeorge Global Bus. & Dev. L.J. 161, 166 (2007) (declaring that even modest economic growth will increase GHG).

253. Snyder, *supra* note 251.

254. *Cap and Trade is Pretty Cheap*, THE ECONOMIST, Nov. 3, 2009, *available at* http://www.economist.com/blogs/democracyinamerica/2009/11/capandtrade_is_pretty_cheap.

255. *See* Broder & Kanter, *supra* note 24 (arguing that the U.S. does not want to make any GHG reductions commits unless China followed suit).

there is already the hindrance of emerging economies such as China and India, who are following carbon-intensive paths.[256] International participation is necessary to have any impact on climate change.[257]

C. *Voluntary Partnership and Command-and-Control Regulation are Not the Answer*

1. State Efforts

One could argue that climate change policies are more manageable on the state level, because states arguably are more capable to cater to their specific needs.[258] While, voluntary regional trading programs such as RGGI and the Western Governs' Association have been successful in obtaining several participating states; these programs are still limited by their voluntary approach.[259] Many of the heavy GHG emitting states, with the most copious GHG emitting businesses, are not involved in a regional trading program.[260] Collective actions in regional programs cannot substitute for a national plan because of problems with leakage.[261] Leakage is occurs when participating states import electricity from outside the regional trading program, typically from a neighboring state.[262] Currently, this is a significant problem facing RGGI.[263] Estimates for RGGI have shown leakage rates as high as sixty to ninety percent.[264] The alarming rates are due to electricity importation and the incentive for

256. *See* Kurtzman, *supra* note 44, at 117; *see also* Doran & Ginnochio, *supra* note 18, at 81(finding that emissions from developing countries are growing).

257. *See* Cary Coglianese & Jocelyn D'Ambrosio, *Policymaking Under Pressure: The Perils of Incremental Responses to Climate Change*, 40 CONN. L. REV. 1411, 1426 (2008).

258. Doran & Ginnochio, *supra* note 18, at 54-55.

259. Stein, *supra* note 124, at 316.

260. *Id.* at 318; *see also* Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39, 78 (2007) (noting that most states have not set reduction goals.).

261. Stein, *supra* note 124, at 319; *see also* Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. Rev. 1961, 1975-76 (2007).

262. Stein, *supra* note 124, at 319.

263. Sovacool, *supra* note 225, at 465-66.

264. *Id.*

power plants to sell their now increased output in RGGI's high-price electricity markets.[265]

Also, regional programs may produce varying degrees of GHG emission reductions or carbon prices.[266] State regulations may have significant inconsistencies based on difference in localities wealth or group interest.[267] Moreover, state-by-state reductions do not reduce ambient levels of GHG emissions.[268] A federal cap-and-trade program would expand the jurisdiction of the cap-and-trade market and include the states that decided not to volunteer, to avoid leakage.[269] The Waxman-Markey bill would preempt the ongoing state programs.[270] Nevertheless, uniformity and a joint GHG reduction are needed to lower the GHG emission levels.[271]

2. Rise in Litigation Cost Could Occur Under Command-and-Control

Another unintended consequence of the command-and-control approach is a spur of litigation.[272] Litigation is detrimental to the goals of environmental regulation because it creates a framework in which those who are regulated can formulate arguments against the regulations.[273] President Obama and EPA Administrator, Lisa Jackson, have stated that they "prefer" that Congress address climate change rather than have the EPA tackle it through command-and-control regulation, which could be subject to several lawsuits.[274]

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265. *Id.*

266. *See id.* at 400.

267. *See id.*

268. *Id.* at 469.

269. *See* Coglianese & D'Ambrosio, *supra* note 257, at 1426; *see also* Mounteer, *supra note* 17, at 11089.

270. U.S. CONST. art. I, § 10, cl. 3 ("No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State, or Foreign Power."); *id.* art. VI, cl. 2 ("This Constitution, and the Laws of the United States . . . shall be the Supreme Law of the Land."); *see also* Sovacool, *supra* note 225, at 469-70.

271. *See* Coglianese & D'Ambrosio, *supra* note 257, at 1426.

272. Theresa Zhang, *The Place of Command and Control Paradigm in US Environmental Policy*, WORLD STUDENT COMMUNITY SUSTAINABLE DEVELOPMENT ("WSCSD"), Nov. 17, 2003, http://wscsd.org/2003/11/17/the-place-of-the-command-and-control-paradigm-in-us-environmental-policy//.

273. *Id.*

274. Broder, *supra* note 106.

Industries should be spending their resources by investing it in the development of new innovative technologies, not in lawsuits to avoid compliance with the EPA's regulations.[275]

The cap-and–trade model has more political feasibility. Local and state actions are likely to be more costly and less effective than a national measure.[276] As for the command-and-control approach, the Clean Air Act does not include the mechanisms to ensure that GHG emission reductions are cost-effective.[277] The EPA has signaled that they will oppose the request from environmental organizations to impose an administrative mandate pertaining to a national GHG emissions limit under the Clean Air Act.[278] As previously mentioned, the lack of governmental involvement in managing the global common on an international scale could develop into a tragedy of the commons because GHG polluters will continue to emit GHG.[279] The U.S. not only needs to reduce its own GHG emissions, but it must also join the international community in their efforts to jointly reduce GHG emissions. The U.S. has been lagging behind other developed countries in GHG emissions reduction due to its failure to ratify the Kyoto Protocol.[280] The Waxman-Markey bill would allow the United States' to ameliorate its past decision.

IV. PART III

A. Moving Forward: Waxman-Markey Bill is the First Step

Despite U.S. efforts to reduce GHG emissions via the Waxman-Markey bill, these reductions alone will not prevent the adverse effects of climate change.[281] Internationally, everyone must reduce GHG emissions because of climate change's global effect.[282] According to NASA, the year 2005, was the warmest year in over a century.[283] GHG emissions contribute to global climate change no

275. Zhang, *supra* note 272.

276. *See* Robert W. Hahn, *Climate Policy: Separating Fact from Fantasy*, 33 HARV. ENVTL. L. REV. 557, 579 (2009).

277. *See id.*

278. *Id.*

279. *See supra* Part II.B.

280. *See* Hahn, *supra* note 276, at 571.

281. *See id.* at 558, 579.

282. *See* WOLD ET AL., *supra* note 3, at 127.

283. Gerrard, *supra* note 2, at 3.

matter where in the planet it is admitted.[284] Without a firm commitment from the U.S., the harmful effects of climate change will continue, and other nations may be reluctant to reduce their own GHG emissions because of the United States' apathy.[285] The passage of the Waxman-Markey bill would prove the seriousness and commitment of the U.S. in GHG emissions reduction.

B. Suggestions for Waxman-Markey

Although the Waxman-Markey bill is weaker than what the IPCC intended, it beats the alternative, no federal legislation, and should be passed.[286] The IPCC's figures suggest that the developed world should aim to reduce GHG emissions by twenty-five to forty percent below 1990 levels by 2020.[287] It is unlikely that a stronger bill will pass through Congress.[288] According to Representative Lindsey Graham (R-S.C.), a person does not need to be a scientist to observe the effects of climate change, but to get the bill passed by the majority, the bill cannot harm the economy.[289] Climate change is a hard political problem.[290] The cap-and-trade approach is viewed as a large energy tax harmful to the economy, especially at a time with the nation's high unemployment rate.[291] Although, many elements of the Waxman-Markey bill go beyond cap-and-trade, the following are suggestions that may help the passage of the Waxman-Markey bill.

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284. *Id.*

285. *See generally* Broder, *supra* note 21 (describing the need for the U.S. to make firmer commitments in order to set an example for other nations).

286. *Closing the Gaps*, THE ECONOMIST Dec. 5, 2009 *available at* http://www.economist.com/specialreports/displaystory.cfm?story_id=14994828 (last visited Dec. 2009).

287. *Id.*

288. *Id.*

289. Rachel Weiner, *Lindsey Graham Rebuke Republicans: "The Green Economy is Coming"*, HUFFINGTON POST Nov. 04, 2009, http://www.huffingtonpost.com/2009/11/04/lindsey-graham-rebukes-fe_n_346119.html

290. *Getting Warmer*, THE ECONOMIST, Dec. 3, 2009 *available at* http://www.economist.com/opinion/displaystory.cfm?story_id=14994872.

291. Richard Cowan & Michael Szabo, *House Republicans Warn Obama about Climate Steps*, REUTERS, Dec. 18, 2009, http://www.reuters.com/article/idUSTRE5BH3R520091218.

1. Auctioning of GHG Permits

GHG emissions permits should be auctioned instead of given out freely, and the revenue from their auction should be allocated evenly back to the taxpayers. Permits are valuable assets.[292] It is a misconception that companies will be harmed if emission allowances are not given freely.[293] The European carbon market has been criticized for freely distributing permits, when the profits of their sale are ranging as high as €18 billion.[294] Free allowances can create an inequitable outcome by industries receiving valuable assets for free, and pass the cost of a GHG emission cap to the electricity users.[295] The polluters should pay for their emission of carbon, not the taxpayer.[296]

Currently, about twenty percent of the pollution permits will be sold by the federal government in the program's initial years.[297] Under the bill, a percentage of the revenue will go to moderate and low-income homes, but a percentage also goes to technology research, prevention of international deforestation, and assistance in the U.S. transition away from fossil fuel.[298] The drafters compromised by agreeing to give the majority of the permits for free versus auctioning permits.[299] President Obama originally advocated for one hundred percent auction.[300] One benefit of free allocation of permits is its ability to help build support for programs since the legislators decides who gets what amount.[301] However, the auctioning of the permits will help generate more revenue and allot to the highest bidder the true emissions value.[302] In the RGGI cap-and-trade market, approximately $360 million has been raised through the

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292. Metcalf et al., *supra* note 41, at 65.

293. Doran & Ginnochio, *supra* note 188, at 81.

294. Andy Stone, *A Winner in New Climate Legislation*, FORBES, June 24, 2009, *available at* http://www.forbes.com/2009/06/24/climate-carbon-cap-and-trade-business-energy-carbon.html.

295. Metcalf et al., *supra* note 41, at 64-65.

296. Mounteer, *supra* note 17, at 11076.

297. WOOLEY & MORSS, *supra* note 94, §10.18.

298. *Id.; see also* H.R. 2454, 111th Cong. §421 (2009) (as passed by the House July 7, 2009).

299. WOOLEY & MORSS, *supra* note 94, §10.18.

300. *Id.*

301. Metcalf et al., *supra* note 41, at 64-65.

302. Stone, *supra* note 294.

auctioning of carbon allowances in ten northeastern states.[303] Additionally, the CBO estimates that auctions will generate more than $279.9 billion gross revenue.[304]

2. More Talks with China and India

Further negotiations and partnerships with China, India and other major GHG emitting countries is also an option.[305] Members of Congress made it abundantly clear to the Obama administration that they would not approve any treaty that did not include a firm GHG emission reduction promise from major developing countries, particularly China and India.[306] Granted, this is one of the goals of the CoP meetings.[307] Further talks are needed to get the large and small emitting GHG emission countries on board. Today's GHG emissions from developing countries are large, growing, and adding to climate change.[308]

China surpassed the U.S. two years ago as the largest emitter of GHGs.[309] The Chinese propose to reduce carbon intensity by 2020 or the amount of CO_2 emitted per unit of economic output by forty to forty-five percent with 2005 levels as a baseline; however, emissions would still increase even though the GHG emission rate would slow down.[310] This proposal falls short of what many in Europe and other nations had hoped.[311]

As previously mentioned, climate change is a global issue and the adverse effects are inevitable if large GHG emissions are ongoing, despite the efforts across the world.[312] China has resisted demands from both American and European negotiators to adopt strong binding limits on its GHG emissions.[313] China contended that

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303. *Id.*

304. Mounteer, *supra* note 17, at 11079.

305. *See* Doran & Ginnochio, *supra* note 18, at 81.

306. Edward Wong & Keith Radsher, *China Joins US in Pledge of Hard Targets on Emissions*, NY TIMES, Nov. 26, 2009, *available at* http://www.nytimes.com/2009/11/27/science/earth/27climate.html.

307. *Id.*

308. Doran & Ginnochio, *supra* note 188, at 81.

309. *See* Wong & Radsher, *supra* note 306.

310. *See id.*

311. *See id.*

312. *See supra* Part II.D.1.

313. *See* Wong & Radsher, *supra* note 306.

environmental concerns must be balanced with economic growth and that developed countries must first demonstrate a significant commitment to reducing their own GHG emissions.[314] However, more intermediate talks may sway China to come to a compromise. The next meeting should occur before for the next CoP summit.

3. Increase Incentive during Wait for 2012

The benefit of strong and early action toward climate change outweighs the cost.[315] Pro-active efforts should be implemented to further spark the private sectors investment in climate change reduction during the time before 2012, when the cap–and-trade program will be in effect. Businesses that voluntarily start reducing their GHG emissions prior to the start date should be rewarded with tax incentive to further encourage GHG reductions during the period before the cap-and-trade program goes into effect. These incentives could serve as a supplement to the ongoing regional cap-and-trade programs such as RGGI.

4. Improve Transportation Options to Increase Public Transportation & Clarify "Green" Jobs Definition

Currently, the Waxman-Markey bill supports more fuel efficient cars, but the bill does not mention improvements in public transportation.[316] Section 123 of the Waxman-Markey requires the Secretary of Energy to "establish a program to provide financial assistance to automobile manufacturers to facilitate the manufacture of plug-in electric drive vehicles."[317] Investments in improved transportation have the potential to decrease the number of GHG emissions from the use of vehicles.[318] Most cities do not have adequate transportation, and highways tend to receive more federal funding.[319] Funding should be used to incentivize public transportation to lower the number of GHG emissions from the use of

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314. *See id.*

315. Nicholas Stern, *The Stern Review: The Economic of Climate Change* (2006), *in* WOLD ET AL., CLIMATE CHANGE AND THE LAW 82 (2009).

316. H.R. 2454, 111th Cong. §121 (2009) (as passed by the House July 7, 2009).

317. *Id.* §123.

318. WOLD ET AL., *supra* note 3, at 737.

319. *Id.*

vehicles. An increase in public transportation may even create more "green" jobs.

The Waxman-Markey bill should elaborate more on what "green" jobs means, to provide more specificity.[320] The definition of "green" jobs varies.[321] For example, the U.S. Conference of Mayors report counted current nuclear power generation jobs as "green" "jobs but not future jobs in nuclear power. In contrast, a United Nations Environment Programmed[322] report defined "green" jobs to exclude all nuclear power and recycling jobs.[323] The different definitions of "green" jobs represent a fundamental confusion, obscuring the argument about the economic benefits of "green" jobs.[324]

V. CONCLUSION

Climate change is inherently an international and collective issue; therefore, all countries must jointly reduce their GHG emissions. Global carbon-dioxide emissions have grown by twenty-five percent since the Kyoto Protocol was adopted in 1997.[325] This is partly because potential participants rejected the internationally binding commitments.[326] The Waxman-Markey bill provides a mechanism of getting the U.S. to join the efforts of other countries. The cap-and-trade approach will ensure that emission targets are met while simultaneously creating market incentives and innovation in

320. H.R. 2454, 111th Cong. §421(2009) (as passed by the House July 7, 2009) (Authorizes the Secretary of Education to award grants to eligible partnerships to develop programs of study "that are focused on emerging careers and jobs in clean energy, renewable energy, energy efficiency, climate change mitigation, and climate change adaptation.").

321. WOLD ET AL. *supra* note 3, at 899.

322. The United Nations Environment Programme is part of the United Nations, and it "provide[s] leadership and encourage[s] partnership in caring for the environment." United Nations Environment Programme, About UNEP: The Organization, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=43 (last visited Feb. 6, 2010).

323. Andrew P. Morriss et al., *Green Job Myths*, 16 Mo. ENVTL. L. POL'Y REV. 326, 346-47 (2009).

324. *Id* at 355.

325. *See Avoiding a Crash at Copenhagen*, THE ECONOMIST, Sept. 24, 2009, *available at* http://www.economist.com/opinion/displaystory.cfm?story_id=14506350.

326. *Id.*