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## A Carbon Tax with Reinvestment is WTO Compatible

Stephen Sewalk\*

\*University of Denver

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# A CARBON TAX WITH REINVESTMENT IS WTO COMPATIBLE

*Stephen Sewalk\**

## I. INTRODUCTION TO CLIMATE CHANGE

### *A. What Is Climate Change?*

Climate change,<sup>1</sup> according to the United Nations Convention, is “a change of climate which [is] attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”<sup>2</sup> Climate change occurs because of the increase of greenhouse gases (GHGs) in the atmosphere, gases that include carbon dioxide (CO<sub>2</sub>), ozone, nitrous oxide, halocarbons, methane, and other industrial gases.<sup>3</sup>

Scientists have concluded that in order to avoid the most damaging results from climate change and global warming, it is necessary to limit warming to two degrees Celsius over pre-industrial revolution temperatures.<sup>4</sup> Atmospheric levels of GHGs have increased almost forty percent from pre-industrial levels of 280 to 380 parts per

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\* Stephen Sewalk, Ph.D./J.D., is an Assistant Professor for the Burns School of Real Estate and Construction Management, Daniels College of Business, University of Denver. The author wishes to thank Ned Vanda for reviewing drafts of this paper and Katelin Knox for providing outstanding research assistance.

1. In this paper, the term climate change is used to refer to both changing weather patterns and global warming.

2. United Nations Framework Convention on Climate Change art. 1 ¶ 2, May 9, 1992, S. Treaty Doc No. 102-38, 1771 U.N.T.S. 164 [hereinafter UNFCCC].

3. LUDIVINE TAMIOTTI ET AL., U.N. ENV'T PROGRAMME & WORLD TRADE ORG., TRADE AND CLIMATE CHANGE 2-3 (2009).

4. Mike Young, *Two Degrees Warmer May Be Past the Tipping Point*, U. POST (Nov. 12, 2009, 6:06 AM), <http://universitypost.dk/article/two-degrees-warmer-may-be-past-tipping-point>.

million (ppm) as of 2011.<sup>5</sup> Over the past 650,000 years, atmospheric levels of GHGs have remained within the range of 180 ppm to 300 ppm.<sup>6</sup> This sustained increase is attributed to increasing man-made emissions. From 1970 to 2004, GHG emissions increased by seventy percent.<sup>7</sup> Present levels of emissions are not sustainable. The Potsdam Institute determined that the environment can manage up to 350 ppm, a level that has already been exceeded.<sup>8</sup> Even if emissions levels were to be reduced to the 2000-year levels and remain constant, the earth would still have a warming trend of 0.1 degree Celsius every ten years due to the slow feedback of the oceans.<sup>9</sup> Real reductions are needed, simply keeping emissions at current levels (387–400 ppm) would result in the globe warming by at least 2.8 degrees from the time of the industrial revolution until the end of the millenniums’ lifetimes.<sup>10</sup> Therefore, the primary concern is how to best respond to the current level of emissions and prevent the forecasted increase in emissions levels.<sup>11</sup>

### B. Cause of Climate Change

The majority of GHG emissions are caused by natural events; however, the environment in a delicate balancing process absorbs these emissions. The rapid increase in atmospheric levels of GHGs over the past one hundred years has been caused by rapidly increasing anthropogenic emissions, which are directly related to human activity, commonly referred to as “anthropogenic forcing.”<sup>12</sup> The two leading causes are deforestation and burning of fossil

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5. Brian C. Murray & Heather Hosterman, *Climate Change, Cap-and-Trade and the Outlook for U.S. Policy*, 34 N.C. J. INT’L L. & COM. REG. 699, 699 (2009). Ppms are measured in CO<sub>2</sub> equivalents. *Id.*

6. *Id.* at 700.

7. Terry Barker et al., *Summary for Policymakers*, in INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE 1, 3 (Bert Metz et al. eds., 2007), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf>.

8. Young, *supra* note 4, at 1.

9. Murray & Hosterman, *supra* note 5, at 702–03.

10. Young, *supra* note 4, at 1.

11. TAMIOTTI ET AL., *supra* note 3, at 2.

12. *Id.* at 3.

fuels,<sup>13</sup> which include fuels burned for transportation, manufacturing, electricity generation, and buildings, among others.<sup>14</sup> These are all causes that are directly related to human activities.

### *C. Commonly Accepted Consequences*

Uncontrolled rapid increases in GHG emissions create significant risk of adverse impacts on the environment potentially resulting in changes that cannot be reversed. Global climate change leads to snow caps and glaciers melting, sea levels rising, and changing weather patterns (resulting in flooding and draughts).<sup>15</sup> In the United Kingdom alone, as many as 490,000 properties are at risk of flooding due to rising sea levels, and the risk impacts all countries with ocean shorelines.<sup>16</sup> Climate change will impact infrastructure, agriculture, and lifestyle potentially leading to decreasing standards of living, especially in communities that have an economy sensitive to variations in climate.<sup>17</sup> This includes many of the developing countries that are primarily agriculture-based economies.

## II. BALANCING SUSTAINABILITY AND DEVELOPMENT

Given the grave consequences that climate change may cause, it is surprising that more has not been done to fight climate change. The global reluctance to implement climate controls stems from the tension between development and growth. World Trade Organization (WTO) rules, as addressed below, emphasize free trade over environmental sustainability and tend to take precedence over multilateral climate change agreements.<sup>18</sup> The tension is also found in objections raised by both developing and developed countries against agreements that reduce GHG emissions.

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13. *Id.*

14. Murray & Hosterman, *supra* note 5, at 700.

15. *Id.* at 702.

16. *Climate Change Explained*, ENV'T AGENCY, <http://www.environment-agency.gov.uk/homeandleisure/climatechange/31802.aspx> (last updated Jan. 16, 2014).

17. WORLD BANK, *WORLD DEVELOPMENT REPORT 2010: DEVELOPMENT AND CLIMATE CHANGE* 37 (2009).

18. Dominic A. Gentile, Note, *International Trade and the Environment: What Is the Role of the WTO?*, 20 *FORDHAM ENVTL. L. REV.* 197, 198–201 (2009).

### A. Carbon Leakage

There is a concern in developed countries that if they impose heavy restrictions on carbon emissions these restrictions will only apply to domestic producers and not imports, leading to carbon leakage. Carbon leakage occurs when a developed country threatens or puts into effect restrictions on carbon emissions (cap-and-trade, for example), and subsequently emission-dependent industries relocate to countries with no emissions restrictions.<sup>19</sup> There is anecdotal evidence that this has already occurred during the 1990s and 2000s. The Earth Summit in Rio de Janeiro, Brazil (1992) leading to the Kyoto Protocol called upon developed countries to reduce GHG emissions. Foreign direct investment (FDI) into developing countries with no emissions objectives or restrictions boomed following these announcements leading to rapidly rising emissions in developing countries. It appears that by developed countries promising to cap emissions, corporations (and individuals) concerned for their profits and production flooded developing countries with significant FDI. Setting up schemes like Kyoto and the EU-ETS, without including everyone, allowed developing countries to benefit (increasing FDI as polluting industries relocated) because of the failure to internalize (tax) emissions. This was very environmentally counter-productive as global emissions have soared.<sup>20</sup>

Due to this flood of FDI and China's omission to internalize emissions, China now blames one-third of its emissions on exports,<sup>21</sup> a situation clearly not anticipated by Kyoto. Even though the European Union and United States have minimized increases in their emissions levels since 2000 based on emissions intensities (Gross Domestic Product (GDP)/total GHG emissions) of imports versus

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19. Glen Peters, Norwegian Univ. of Sci. and Tech., Reassessing Carbon Leakage 3, Eleventh Annual Conference on Global Economic Analysis, "Future of Global Economy," Helsinki, Finland, June 12–14, 2008, <https://www.gtap.agecon.purdue.edu/resources/download/3751.pdf>.

20. John M. Truby, *Towards Overcoming the Conflict Between Environmental Tax Leakage and Border Tax Adjustment Concessions for Developing Countries*, 12 VT. J. ENVTL. L. 149, 157–58 (2010).

21. Duncan Clark, *West Blamed for Rapid Increase in China's CO<sub>2</sub>*, GUARDIAN, Feb. 22, 2009, <http://www.theguardian.com/environment/2009/feb/23/china-co2-emissions-climate>.

exports, total emissions, including imports, have skyrocketed.<sup>22</sup> Meanwhile, countries such as Brazil and Malaysia continue to contribute to global emissions by cutting down their forests.<sup>23</sup> It is these concerns that led U.S. Congressmen Henry Waxman and Edward Markey to propose a carbon tax on imports for countries that do not internalize the cost of emissions.<sup>24</sup> In addition, this is why the European Union attempted to impose a carbon tax on airlines flying into the European Union.<sup>25</sup> Developed countries, such as the United States and member countries of the European Union, are concerned that unless imports are included in emissions restrictions, many industries beneficial to their economies will relocate to avoid internalizing the cost of their emissions. This difference between Annex I and II countries convinced the United States to not sign the treaty, as the United States noted that developing countries, such as China, would not be subject to emissions limits, and U.S. industry would be unfairly burdened resulting in relocation to countries with no emissions limits.<sup>26</sup>

*B. Loss of Market Share with No Environmental Benefit*

Another argument against restrictions on carbon emissions is that one country imposing restrictions on emissions will only transfer the emissions from one country to another.<sup>27</sup> The relocation of factories

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22. This is primarily due to carbon leakage of industry moving from the United States, the European Union, and Japan to China. It is possible that Kyoto had the unintended result of increasing global emissions by moving production from low emission intensity countries to high emission intensity countries.

23. A carbon tax policy needs to take this into account, thereby discouraging Brazil and Malaysia from cutting down their forests.

24. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009).

25. LORAND BARTELS, THE INCLUSION OF AVIATION IN THE EU ETS: WTO LAW CONSIDERATIONS 8–10 (ITCSD Trade & Sustainable Energy Series, Issue Paper No. 6, 2012), <http://ictsd.org/downloads/2012/05/the-inclusion-of-aviation-in-the-eu-ets-wto-law-considerations.pdf>.

26. JANE A. LEGGETT ET AL., CONG. RES. SERV., CHINA'S GREENHOUSE GAS EMISSIONS AND MITIGATION POLICIES 25 (Sept. 10, 2008), <http://www.fas.org/sgp/crs/row/RL34659.pdf>.

27. LARRY PARKER & JOHN BLODGETT, CONG. RESEARCH SERV., R40100, "CARBON LEAKAGE" AND TRADE: ISSUES AND APPROACHES 3 (2008), <http://www.fas.org/sgp/crs/misc/R40100.pdf>.

and shuttering of domestic facilities would result in the developed country losing global market share and employment. More importantly, from a global perspective, most developed countries use energy more efficiently and tend to have low emissions intensity.<sup>28</sup> This can lead to moving production to less energy efficient economies resulting in greater emissions, or local industry becoming entrenched with older, less clean technology because the industry would rather operate inefficiently than expose itself to price volatility.<sup>29</sup>

Implementing restrictions on emissions in only one country or region may result in emission intensive industries moving to countries without a restriction, but developed countries often argue that imposing a unilateral restriction on emissions forces a complete transformation of an economy which has the potential of crippling it.<sup>30</sup> As a result, developed countries with high unemployment and a need to maintain their market share in emission intensive industries have become reluctant to unilaterally impose emission reduction programs since that would likely create a risk that the companies would move, severely harming the local economy.<sup>31</sup>

### C. Polluter Pays

Environmental taxes are justified by the “polluter pays” principle.<sup>32</sup> As defined in Principle 16 of the Rio Declaration on Environment and Development, the “polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.”<sup>33</sup> Developing countries note that

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28. Emissions intensity is the level of emissions per dollar of goods produced. For example, a \$5,000 product resulting in five tons of CO<sub>2</sub> emissions results in an emissions intensity of \$1,000 per ton of CO<sub>2</sub> emissions.

29. PARKER & BLODGETT, *supra* note 27, at 3.

30. DEP'T OF CLIMATE CHANGE, CARBON POLLUTION REDUCTION SCHEME GREEN PAPER 27 (2008), [http://www.dpac.tas.gov.au/\\_\\_data/assets/pdf\\_file/0004/162688/CPRS\\_Green\\_Paper\\_-\\_doc\\_No\\_1.pdf](http://www.dpac.tas.gov.au/__data/assets/pdf_file/0004/162688/CPRS_Green_Paper_-_doc_No_1.pdf).

31. ERIC A. POSNER & DAVID WEISBACH, CLIMATE CHANGE JUSTICE 69 (2012).

32. M. Benjamin Eichenberg, *Greenhouse Gas Regulation and Border Tax Adjustments: The Carrot and the Stick*, 3 GOLDEN GATE U. ENVTL. L.J. 283, 298 (2001).

33. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and*

they should not have to put restrictions on their emissions output because unrestricted emissions helped developed countries to develop their economies, and as a result of legacy emissions, the developed countries that previously polluted should be the ones to pay.

Developing countries are concerned an international agreement could lock them into a particular emissions level leading to perpetual inequality.<sup>34</sup> Developing countries also note that the majority of the emissions put into the atmosphere over the past few decades were because of developing countries, and therefore the developing countries should not be the ones to mitigate damage already caused.<sup>35</sup> Developing countries point to studies like one conducted for Congress, where experts found that the United States emitted 24.6% of the world total emissions, in second place, following China's 27.4% of total emissions.<sup>36</sup> Additionally, the developed countries such as the United States, Australia, and Canada rank in the top ten of per capita emissions where Indonesia, India, and China are ranked 123, 156, and 98.<sup>37</sup> However, China's emissions intensity is one of the highest in the world, and over three times the level of emissions intensity in the United States.<sup>38</sup>

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*Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I, Principle 16 (Aug. 12, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>.

34. WORLD BANK, *supra* note 17, at 253.

35. *Id.* at 44.

36. Stratford Douglas & Shuichiro Nishioka, *International Differences in Emissions Intensity and Emissions Content of Global Trade*, 99 J. DEV. ECON. 415, 417–18, 418 tbl.1 (2012).

37. PARKER & BLODGETT, *supra* note 27, at 14–15.

38. Emissions intensity is calculated by taking a nation's GDP and dividing by its GHG emissions. This provides a ratio of dollar of GDP produced per ton of GHG (CO<sub>2</sub> equivalent) emissions. For further elaboration, see Part VI *infra*. The implication being that a good produced in China and selling for a similar price as that of a good produced in the United States, the Chinese good has multiple times as much emissions associated with it compared to the U.S. produced good. If the goal is to reduce total emissions, then it will be necessary to take the source and how a good is produced into account.



## III. MULTILATERAL AGREEMENTS

Despite the slow progress the international community has made to create a comprehensive plan, the community does agree that global action is the best way to universally mitigate the foreseeable damages. This desire to have a unified plan is exemplified in an Australian study that stated: “[t]he first best solution to address the competitive concerns of EITE [Energy Intensive Trade Exposed] industries would be to develop a comprehensive global agreement under which all major emitters have binding carbon constraints.”<sup>39</sup> The international community’s desire to create a comprehensive plan was further reinforced by a study that found a failure to mitigate the environment may reverse economic growth, especially in countries whose economies are based in agriculture or other industries that do not easily adapt to climate changes.<sup>40</sup> However, despite a strong desire to have international cooperation, there has been little progress, which has resulted in two international agreements and one international promise that are stepping-stones to the world’s full potential.

*A. United Nations Framework Convention on Climate Change*

The first multinational agreement that addressed climate change was the United Nations Framework Convention on Climate Change (UNFCCC). Negotiations for the UNFCCC started in 1990 by the United Nations General Assembly.<sup>41</sup> It was then adopted in 1992 and entered into force in 1994,<sup>42</sup> and currently has 194 parties.<sup>43</sup> The UNFCCC was drafted and adopted in response to reports of rising

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39. DEP’T OF CLIMATE CHANGE, *supra* note 30, at 292.

40. WORLD BANK, *supra* note 17, at 39.

41. *Issues in the Negotiating Process: A Brief History of the Climate Change Process*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, <http://unfccc.int/cop7/issues/briefhistory.html> (last visited Jan. 21, 2014).

42. WORLD BANK, *supra* note 17, at 234.

43. *A Brief History of the UNFCCC and the Kyoto Protocol*, EARTH NEGOTIATIONS BULL., available at <http://ictsd.org/downloads/2010/05/iisd-brief-on-the-unfccc-process.pdf> (last visited Feb. 19, 2014).

carbon levels.<sup>44</sup> The ultimate objective of the UNFCCC was to stabilize GHG emissions and minimize the effect anthropogenic activities have on the climate; allowing for nature to absorb the excess GHG emissions.<sup>45</sup> The UNFCCC seeks to mitigate the climate change through the principle of common but differentiated responsibilities found in Article 3, which states: “Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change.”<sup>46</sup> Therefore, the UNFCCC seeks to have developed countries, or Annex I countries, do more to reduce their emissions than the Non-Annex I countries.

The underlying tone of the UNFCCC is to promote economic growth in an environmentally sustainable way through the principal of common but differentiated responsibility. However, when a tension between development and sustainability occurs, the UNFCCC puts free trade and economic growth above the environment, especially when the growth aids developing countries.<sup>47</sup> Specifically, the UNFCCC states that “[m]easures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”<sup>48</sup> As will be addressed later in context of the World Trade Organization (WTO) and the other multilateral agreements, this perspective limits the effectiveness of the document.

As the first multilateral framework to address climate change, the UNFCCC has promoted international conversation exemplified in the international and domestic rules and regulations promulgated in

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44. Marisa Martin, *Trade Law Implications of Restricting Participation in the European Union Emissions Trading Scheme*, 19 *GEO. INT’L ENVTL. L. REV.* 437, 440 (2007).

45. UNFCCC, *supra* note 2, art. 2.

46. *Id.* art. 3.

47. See Gary Clyde Hufbauer & Jisun Kim, *The World Trade Organization and Climate Change: Challenges and Options* 3 (Peterson Inst. for Int’l Econ., Working Paper No. 09-9, 2009).

48. See UNFCCC, *supra* note 2, art 3.5.

response.<sup>49</sup> The discourse sparked by the UNFCCC has further led to individual nations proposing a variety of unilateral responses.<sup>50</sup> Finally, this framework has become the reference for subsequent multilateral discussions.

The UNFCCC, however, has not been effective in creating action beyond discourse since it does not impose specific emission reduction requirements for individual countries.<sup>51</sup> The key contribution of the UNFCCC, which has led to specific reduction requirements in subsequent agreements, was dividing countries into Annex I and Non-Annex Countries and laying the foundation for the execution of the common but differentiated responsibility principle.<sup>52</sup> However, the UNFCCC does not go beyond the general principles that countries should have different responsibilities and all countries should seek to mitigate damages, promote scientific research in this area, and continue to engage in open dialogue. The UNFCCC provided the guidance and structure to the Conference of the Parties (COP) meetings by requiring quantitative data, such as updated inventories of greenhouse gas emissions, and requiring different measures of different countries based on ability and responsibility.<sup>53</sup> This has led to the creation of quantitative measures to help countries mitigate climate change.<sup>54</sup>

## B. Kyoto Protocol

### 1. Emission Reduction Requirements

In response to the COP meetings, the parties agreed for the COP's third session to adopt the Kyoto Protocol in 1997.<sup>55</sup> Furthering the

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49. Emma L. Tompkins & Helene Amundsen, *Perceptions of the Effectiveness of the United Nations Framework Convention on Climate Change in Advancing National Action on Climate Change*, 11 ENVTL. SCI. & POL'Y 1, 4 (2008).

50. *Id.* at 1.

51. *See generally* UNFCCC, *supra* note 2.

52. *Id.*

53. *Background Documents: Framework Convention*, MARY ROBINSON FOUND.—CLIMATE JUSTICE, <http://www.mrfcj.org/our-work/unfccc/background-documents.html> (last visited Mar. 10, 2014).

54. Martin, *supra* note 44, at 440.

55. John H. Knox, *The International Legal Framework for Addressing Climate Change*, 12 PENN ST. ENVTL. L. REV. 135, 138 (2004).

intent of the UNFCCC, the Kyoto Protocol required all parties that ratified it to take steps to reduce emissions, support education and research, and continue in dialogue.<sup>56</sup> Additionally, the principle of common but differentiated responsibility continues in the Kyoto Protocol since Non-Annex countries do not have a specified emission reduction target.<sup>57</sup> The only universal requirement is for all countries that ratify it to provide annual reports on how they are implementing the emissions reductions.<sup>58</sup>

The significant achievement in the Kyoto Protocol, which makes it more progressive than the UNFCCC, is the requirements to mitigate climate change, including the imposition of quantifiable emission restrictions on Annex I countries in order to promote sustainable development.<sup>59</sup> However, the drawback is that these restrictions are only imposed on Annex I countries (forty-one parties classified as industrialized (developed) countries and economies in transition (EITs)).<sup>60</sup> EITs are the former centrally planned economies of the Soviet Union (Russia and Eastern Europe).<sup>61</sup> The Kyoto Protocol seeks emission reductions for all Annex I countries and for transitioning countries to reduce “their overall emissions of such gases<sup>62</sup> by at least five percent below 1990 levels in the commitment period 2008 to 2012.”<sup>63</sup>

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56. WORLD BANK, *supra* note 17, at 234.

57. Knox, *supra* note 55, at 138; Eichenberg, *supra* note 32, at 301.

58. Knox, *supra* note 55, at 141.

59. Kyoto Protocol to the United National Framework Convention on Climate Change art. II, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add. 1, 37 I.L.M. 22 [hereinafter Kyoto Protocol].

60. Typically considered the developed countries such as the United Kingdom, Japan, etc.

61. Edgar L. Feige, *The Transition to a Market Economy in Russia: Property Rights, Mass Privatization and Stabilization*, in *A FOURTH WAY?: PRIVATIZATION, PROPERTY, AND THE EMERGENCE OF NEW MARKET ECONOMIES* 57 (Gregory S. Alexander & Grazyna Skapska eds., 1994).

62. The gases referred to include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Knox, *supra* note 55, at 138.

63. Kyoto Protocol, *supra* note 59, art. 3.

## 2. Flexibility Mechanisms

This emission reduction may be met either individually or jointly, as long as the “anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts.”<sup>64</sup> Due to this provision, Annex I countries had the ability to work together to reduce emissions. Additional encouragement of collaborative reductions is seen through the three flexibility mechanisms allowed by the Kyoto Protocol for the countries who have ratified the Protocol and are in good standing to reduce their emissions trading. Countries may reduce emissions collaboratively through emissions trading, joint implementation, and clean development.<sup>65</sup>

Emissions trading has been a controversial component of the Kyoto Protocol as it allows for countries to trade emissions in order to claim a reduction in their emissions, in addition to domestic reduction policies.<sup>66</sup> Emissions trading occurs when one country buys or sells excess emission credits from/to the other members.<sup>67</sup> The overarching purpose of emissions trading was to allow countries to reduce their emissions in a cost-effective manner, and it fulfilled this purpose in two ways. First, allowing the trading of emissions reduces emissions at the lowest cost (in theory) when countries trade, and second, allowing the trading resulted in the votes required to have the Kyoto Protocol adopted.<sup>68</sup> As an illustration of how influential and necessary this flexibility mechanism has become, the emissions permit-trading market is now valued at two trillion U.S. dollars.<sup>69</sup>

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64. Knox, *supra* note 55, at 138.

65. See *The Mechanisms under the Kyoto Protocol: Emissions Trading, the Clean Development Mechanism and Joint Implementation*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [https://unfccc.int/kyoto\\_protocol/mechanisms/items/1673.php](https://unfccc.int/kyoto_protocol/mechanisms/items/1673.php) (last visited Mar. 10, 2014).

66. Martin, *supra* note 44, at 442–43.

67. Ibibia L. Worika & Thomas Wälde, *Contractual Architecture for the Kyoto Protocol: From Soft and Hard Laws to Concrete Commitments*, 15 J. LAND USE & ENVTL. L. 489, 492 (2000).

68. Martin, *supra* note 44, at 442. Commentaries have suggested that without this provision, the Kyoto Protocol would not have been passed.

69. SARAI COSGROVE, THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE: 15TH CONFERENCE OF THE PARTIES—THE COPENHAGEN PROTOCOL 4 (Asia-Pac. Model United Nations Conf., Background Paper A, 2009).

The second method for countries to reduce their emissions is through joint implementation. Joint implementation allows a country to create a program that reduces emissions and gets emission credits that can then be sold to others.<sup>70</sup> The key component that differentiates joint implementation from the clean development mechanism addressed later is that joint implementation projects can only be used by countries with emissions limitations or reduction requirements.<sup>71</sup> Therefore, the emissions trading through joint implement may only be done between Annex I countries.<sup>72</sup>

The third mechanism that countries may use is the clean development mechanism (CDM).<sup>73</sup> CDM allows a country that is committed to reduce emissions under the Kyoto Protocol to create an emission-reduction project in a developing country either with the country directly or through firms and private actors.<sup>74</sup> CDM allows countries to give technological or financial advice to another country, typically a developing country, and receive emission credit for passing on clean energy technology and/or developing projects.<sup>75</sup> CDM's goal was to help developing countries reach sustainable development and reduce emissions.<sup>76</sup> Since CDM serves two beneficial purposes, it is likely the most successful of the three flexibility mechanisms,<sup>77</sup> but may not have actually reduced emissions. As is clearly seen, the three flexibility mechanisms are extremely beneficial in aiding countries to reduce their emissions.

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70. *The Clean Development Mechanism and Joint Implementation: Navigating the Kyoto Project-Based Mechanisms*, WORLD BANK, <http://einstitute.worldbank.org/ei/course/clean-development-mechanism-and-joint-implementation-navigating-kyoto-project-based-mechanism> (last visited Jan. 21, 2014) [hereinafter *The Clean Development Mechanism*].

71. *Id.*

72. Knox, *supra* note 55, at 140.

73. See *Clean Development Mechanism (CDM)*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [https://unfccc.int/kyoto\\_protocol/mechanisms/clean\\_development\\_mechanism/items/2718.php](https://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php) (last visited Mar. 10, 2014).

74. *The Clean Development Mechanism*, *supra* note 70.

75. Worika & Wälde, *supra* note 67, at 495.

76. *Id.* at 492.

77. *What is the Clean Development Mechanism (CDM)?*, GUARDIAN (July 26, 2011, 5:26 AM), <http://www.guardian.co.uk/environment/2011/jul/26/clean-development-mechanism>.

However, these flexibility mechanisms may be taken away if a country is not compliant with the Kyoto Protocol.

### 3. Impact of the Kyoto Protocol

The impact of the Kyoto Protocol is there in rhetoric, but is not as apparent when looking at the global state of the climate and continuously rising emissions. The Kyoto Protocol has not been as influential as it could have been in part because two of the world's leading polluters, Australia and the United States, did not sign it.<sup>78</sup> The rationale for the United States and Australia's refusal to ratify it is that it is a flawed document<sup>79</sup> in that developing countries, including China and India, do not have a requirement to reduce emissions.<sup>80</sup> However, the absence of the United States alone means that the global emissions base level is missing thirty-six percent of the emitted GHG in 1990, which is the year off of which the reduction requirements of the Protocol is based.<sup>81</sup> As such, the emissions reductions can only be as good as the amount of countries participating in the Kyoto Protocol.

### 4. Enforcement of Kyoto Protocol

Additionally, the influence of the Protocol has not reached full potential because of the lack of enforcement for violators. Despite the seemingly hardline approach presented, the implementation of the Protocol emission reduction has not been overly successful for two reasons. Enforcement is challenging because Article 3.1 of the Protocol does not state how the countries should meet their commitments; and the three flexibility mechanisms make enforcement of the Kyoto Protocol difficult.<sup>82</sup> Without clear guidance on how to meet the requirements, and the availability of mechanisms

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78. *Status of Ratification of the Kyoto Protocol*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/kyoto\\_protocol/status\\_of\\_ratification/items/2613.php](http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php) (last visited Feb. 18, 2014).

79. *PBS Newshour: Kyoto Fallout* (PBS television broadcast Feb. 16, 2005), transcript available at [http://www.pbs.org/newshour/bb/environment/jan-june05/kyoto\\_2-16.html](http://www.pbs.org/newshour/bb/environment/jan-june05/kyoto_2-16.html).

80. *Id.*

81. Knox, *supra* note 55, at 142.

82. *Id.* at 139.

that help to avoid hard reduction choices, Annex I countries compliance becomes subjective and Non-Annex I countries compliance results in only self-accountability.

Enforcement is also minimal due to the lack of legal authority the member parties have against one another. In response, the countries have drafted an enforcement procedure to create legitimacy in enforcement through an expert panel and through an enforcement procedure. The process ensures that penalties are not imposed without due process. The first preliminary safeguard to protect against non-compliance is the expert panel created to assess the countries' compliance, which is given as a report to the Secretariat and circulated among the parties.<sup>83</sup> The information gathered by the expert panel can then be reviewed and addressed at the upcoming COP meeting.<sup>84</sup>

In addition to the expert panel, which provides an accounting of the countries activities, Article 18 states that the parties shall come up with "appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance."<sup>85</sup> Parties agreed to implement a two-branch procedure to ensure compliance: a facilitative branch and an enforcement branch.<sup>86</sup> The facilitative branch provides technical and financial advice, and the enforcement branch can make a declaration of non-compliance and impose sanctions to prevent non-compliant countries from using flexibility mechanisms if it does not reform.<sup>87</sup>

Finally, if the compliance branch cannot compel a party to comply with the emissions reductions, Article 19 of the Kyoto Protocol states that parties may bring disputes under Article 14 of the UNFCCC,<sup>88</sup> which states that parties may choose to arbitrate disputes through either negotiation or litigation.<sup>89</sup> The only concrete requirement under Article 14 is that countries must submit to the International

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83. Kyoto Protocol, *supra* note 59, art. 8.3.

84. *Id.*

85. *Id.* art. 18.

86. Sandrine Maljean-Dubois, *An Outlook for the Non-Compliance Mechanism of the Kyoto Protocol on Climate Change*, 2 *AMSTERDAM L. F.*, no.2, 2010, at 77, available at <http://ojs.ubvu.vu.nl/alf/article/view/133/255>.

87. *Id.*

88. Knox, *supra* note 55, at 142.

89. UNFCCC, *supra* note 2, art. 14.



Court of Justice's jurisdiction.<sup>90</sup> As such, when looking at the whole of the Kyoto Protocol, enforcing compliance is difficult since the autonomy of the countries is supreme, especially since countries may legally withdraw from Kyoto at any point as will be illustrated later in the paper.<sup>91</sup>

### C. Comparison between UNFCCC and Kyoto

Kyoto clearly follows the UNFCCC in prioritizing economic growth above sustainability, as illustrated in the statement that "Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade . . . and economic impacts on other Parties."<sup>92</sup> Therefore, countries are still limited to implementing emission reduction measures that are guaranteed not to harm global trade, even if the climate change may not be effectively mitigated as a consequence.

Another similarity between the UNFCCC and Kyoto is the continuation of the principle of common but differentiated responsibilities.<sup>93</sup> Emission reduction levels are determined by the country's emissions level in 1990 for developed countries, whereas transitional countries may have a base year of 1988 or 1989.<sup>94</sup> The difference in emission reduction and base years creates a range of restrictions—requiring the United States, if it had ratified Kyoto, to reduce emissions by thirty percent, compared to New Zealand, which is not required to reduce emissions at all, and Former Soviet Union (FSU) countries, including Russia, that were allotted significant

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90. *Id.*

91. Canada became the first country that had ratified the Kyoto Protocol to withdraw because it would have faced "crippling fines." *Canada to Withdraw from Kyoto Protocol*, BBC (Dec. 13, 2011, 7:01 AM), <http://www.bbc.co.uk/news/world-us-canada-16151310>.

92. Kyoto Protocol, *supra* note 59, art. 2.3.

93. See Jeffrey McGee & Ros Taplin, *The Asia-Pacific Partnership on Clean Development and Climate: A Retreat from the Principle of Common but Differentiated Responsibilities?*, 5 MCGILL INT'L J. SUSTAINABLE DEV. L. & POL'Y 11 (2009).

94. Knox, *supra* note 55, at 139.

quantities of “hot air” to trade.<sup>95</sup> This “hot air” was created by the dissolution of the Soviet Union and resulting economic collapse, leading to significant reductions in emissions. The FSU countries were allowed to maintain the old quotas and therefore the illusion that they had significant credits to trade.

The key difference between the two agreements is the quantifiable emission reduction requirements that Kyoto presents, compared to the conceptual approach found in the UNFCCC. Although this is a significant difference between the two agreements, the emission reduction requirements are less influential due to the ability of countries to leave the Kyoto if the sanctions are too high, as seen through Canada’s actions. However, despite the softened impact of Kyoto, it has been a step towards reaching the goals of reducing GHGs.

#### *D. Agreements after Kyoto: Durban Platform*

Kyoto’s original commitment period to reduce emissions was set to end in 2012.<sup>96</sup> Because of this, the majority of the recent international focus has been on how to continue to implement emission reduction requirements on member countries now that the commitment period has ended. The most recent measure to continue the international cooperation is the Durban Platform. The Durban Platform, created during COP 17, led to two significant steps toward continuing the Kyoto Protocol.<sup>97</sup> During the Durban Platform, the parties stated that they would adopt a universal legal document on climate change no later than 2015.<sup>98</sup> The drafting of the document will be done through the creation of an ad hoc working group. This group issued their first report in July of 2012, which stated that the officials were elected and

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95. *Appendix I: Quantified Economy-Wide Emissions Targets for 2020*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/meetings/copenhagen\\_dec\\_2009/items/5264.php](http://unfccc.int/meetings/copenhagen_dec_2009/items/5264.php) (last visited Jan 19, 2012).

96. Kyoto Protocol, *supra* note 59, art. 3.1.

97. Soledad Aguilar et al., *Summary of the Durban Climate Change Conference: 28 November–11 December 2011*, 12 EARTH NEGOTIATIONS BULL., no. 534 (Dec. 13, 2011), at 1, <http://www.iisd.ca/download/pdf/enb12534e.pdf>.

98. *Durban Conference Delivers Breakthrough in International Community’s Response to Climate Change*, UNITED NATIONS, <http://www.un.org/wcm/content/site/climatechange/pages/gateway/the-negotiations/Durban> (last visited Jan. 22, 2014).

break-out groups were created.<sup>99</sup> Nothing further on the record has been done in the drafting of the next international agreement, creating a presumption that the agreement may not be complete within the deadline.

The second part of the Durban Platform is the agreement to prolong the Kyoto commitments for a second term as a patch to continue international emission reduction for the next few years.<sup>100</sup> The second commitment period will last from 2013 to 2017, with countries submitting target proposals in the beginning of 2013.<sup>101</sup> Although the international community decided to extend Kyoto to a second commitment, no requirement exists for countries to either ratify or continue into the second phase. Therefore, not only will the United States continue to abstain from the protocol, Canada, Japan, and Russia have all stated that they will not join the second commitment period.<sup>102</sup> As China, India, and Brazil were never included under Kyoto, the result is that several of the world's largest emitters will therefore not be subject to any sort of emissions reductions.

### *E. Effectiveness of the Multilateral Agreements*

When analyzing the totality of the multilateral documents and the impact each one brings, the effectiveness in reducing carbon emissions becomes unclear. Clearly, the UNFCCC and subsequent documents have increased the general knowledge about climate change and created new regulations, both internationally as well as domestically. Additionally, multilateral agreements are commonly accepted and the international pressure of the documents has

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99. *Id.*

100. Brian Gordon, *The UNFCCC's Durban Platform Explained*, HOLMAN FENWICK WILLAN (2012), <http://www.hfw.com/The-UNFCCC> (last visited Feb. 19, 2014).

101. *Policy Brief: Australia and the Future of the Kyoto Protocol*, CLIMATE INST., [http://www.climateinstitute.org.au/verve/\\_resources/tci\\_kyotoprotocol\\_policybrief\\_mar2012\\_file.pdf](http://www.climateinstitute.org.au/verve/_resources/tci_kyotoprotocol_policybrief_mar2012_file.pdf) (last visited Jan. 22, 2014).

102. *Kyoto Deal Loses Four Big Nations*, SYDNEY MORNING HERALD, May 29, 2011, <http://www.smh.com.au/environment/climate-change/kyoto-deal-loses-four-big-nations-20110528-1f9dk.html>.

provided “an additional incentive to act domestically to reduce greenhouse gas emissions.”<sup>103</sup>

However, despite the increase in dialogue that has stemmed from the multilateral agreements, none of the agreements have enforcement powers that make other countries accountable for their actions.<sup>104</sup> The multilateral agreements have been a stepping-stone, but many countries have moved towards unilateral actions because they can impose quantifiable standards on themselves.

#### IV. JUSTIFICATION FOR UNILATERAL ACTION

Due to the questionable effectiveness of the multilateral agreements, as well as the pressure to continue emissions reductions past what the agreements have originally stipulated, many countries have started to move towards unilateral action. As an example, the European Union has implemented a European Union Emissions Trading Scheme, which operates as a cap-and-trade system, for the twenty-eight European Union states in addition to Iceland, Norway, and Liechtenstein.<sup>105</sup> This paper will now address the two unilateral actions most commonly proposed in the United States, a cap-and-trade program and a carbon tax, before addressing the innovative Carbon Tax with Reinvestment (CTR) as a border tax adjustment and is the third and superior option.<sup>106</sup>

Unilateral action is rationalized through the need for national authorities to encourage the internalization of environmental costs, especially since market forces and private actors will not willingly reduce their profitability to adjust for environmental costs.<sup>107</sup> Unilateral actions internalize GHG emissions, which are a negative externality that create adverse effects on third parties.<sup>108</sup>

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103. Tompkins & Amundsen, *supra* note 49, at 4.

104. See UNFCCC, *supra* note 2, art. 14.

105. *The EU Emissions Trading System (EU ETS)*, EUR. COMMISSION, [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm) (last updated Feb. 11, 2014). Cap-and-trade will be addressed further on in the paper in depth.

106. See generally Stephen Sewalk, *Carbon Tax with Reinvestment Trumps Cap-and-Trade*, 30 *PACE ENVTL. L. REV.* 580 (2013).

107. See Eichenberg, *supra* note 32, at 298.

108. *Negative Externalities*, ECON. ONLINE, [http://www.economicsonline.co.uk/Market\\_failures/Externalities.html](http://www.economicsonline.co.uk/Market_failures/Externalities.html) (last visited Jan. 23, 2014).

When examining all of the goods and services offered in the marketplace, the fair market value should be higher when considering externality costs of emissions on others and future generations.<sup>109</sup> The purpose of a carbon tax and, to a lesser extent, a cap-and-trade program is to take into account these negative externalities and increase the price of the good or service to account for this negative external cost. In so doing, goods or service costs are placed on the individual purchasing the item, and, because the cost is higher, they may then consume less or switch to other products or services that are less expensive (and that have a smaller impact on the environment). When nations impose a unilateral measure, they are internalizing an externality into the price of goods and services, resulting in a price that includes its true cost to society.<sup>110</sup>

Understanding the justification for a tax allows individuals to think about both the benefits and drawbacks of imposing a unilateral action. Given the limited reach multilateral agreements have in affecting dramatic change, two primary domestic policies have been proposed to reduce emissions within the borders of a nation. Both have benefits and drawbacks, and neither are the most efficient mechanism for reducing emissions from both an effectiveness and legal perspective.

## V. WORLD TRADE ORGANIZATION REGULATIONS

Unilateral action may be more efficient, but it must ensure compliance with the World Trade Organization (WTO) rules and regulations, specifically the General Agreement on Tariffs and Trade (GATT) to be accepted in an international forum. The purpose of the WTO is “to help trade flow as freely as possible—so long as there are no undesirable side-effects” on a global level.<sup>111</sup> The fundamental principle of the WTO is to ensure trade neutrality by encouraging

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109. Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENVTL. L. REV. 499, 501 (2009).

110. Robert H. Frank, *Heads, You Win. Tails, You Win, Too.*, N.Y. TIMES, Jan. 5, 2013, <http://www.nytimes.com/2013/01/06/business/pigovian-taxes-may-offer-economic-hope.html>.

111. *What Is the World Trade Organization?*, WORLD TRADE ORG., [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/fact1\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact1_e.htm) (last visited Jan. 22, 2014).

free-market principles, regardless of the possibility that the free trade principles may impede a country's action to protect the environment.<sup>112</sup> Any unilateral action needs to be drafted in a manner that encourages free trade while mitigating climate change, given that the WTO was created to foster free trade, not to promote a cleaner environment, and will therefore not give much deference to environmental proposals that could harm free trade.<sup>113</sup>

Conservation and environmental issues had no role in the creation of GATT in 1947, as its goal was free trade, and this primary purpose of trade was carried forward into the WTO regime.<sup>114</sup> The WTO did acknowledge in the Marrakesh Agreement the importance of sustainable development as well as free trade.<sup>115</sup> However, despite the acknowledgment, the WTO mitigates damage by seeking to increase the world's standard of living, rendering the harm caused by climate change to be compensated by improved standard of livings.<sup>116</sup> Consequently, despite the statement that the WTO will recognize the need to ensure environmental sustainability, there are still numerous legal requirements a unilateral action must comply with that heavily favor free trade.

#### *A. Most Favored Nation*

In Article I of GATT, the WTO promotes free trade through the most favored nation clause.<sup>117</sup> The Article states that any charge or

112. Eichenberg, *supra* note 32, at 306.

113. Hufbauer & Kim, *supra* note 47, at 1.

114. See generally Tilman Santarius et al., *Balancing Trade and Environment: An Ecological Reform of the WTO as a Challenge in Sustainable Global Governance*, WUPPERTAL INST. FOR CLIMATE, ENV'T, ENERGY (2004), [http://www.wupperinst.org/globalisierung/pdf\\_global/balancing\\_trade.pdf](http://www.wupperinst.org/globalisierung/pdf_global/balancing_trade.pdf).

115. *Id.* at 2. The Marrakesh Agreement states: "The Parties to this Agreement, [r]ecognizing that their relations . . . should be conducted with a view to raising standards of living . . . in accordance with the objective of sustainable development, seeking both to protect and preserve the environment . . . ." Marrakesh Agreement Establishing the World Trade Organization pmbl., Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement]. The Marrakesh Agreement later goes on to establish the Committee on Trade and Environment, which carries out technical work.

116. Eichenberg, *supra* note 32, at 306–07.

117. General Agreement on Tariffs and Trade art. 1.1, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

payment for an import or export granted by one contracting party “shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.”<sup>118</sup> This is one of the fundamental components of the agreement. GATT requires countries to adopt this provision on a multilateral basis, meaning that as countries ratify GATT, all countries will be put on an equal basis rather than a unilateral basis, thereby ensuring that discrimination is less likely to occur.<sup>119</sup> For purposes of this paper, all like products must be treated the same by a country, irrespective of where it was produced.<sup>120</sup>

This provision is meant to prevent any discrimination between different countries for two reasons. First GATT wanted to ensure that it was not legal to discriminate against another country; secondly, discrimination tends to distort economic and market forces.<sup>121</sup> Therefore, this is a fundamental rule to requiring strict adherence. For purposes of this paper, as will be discussed below with each proposed unilateral action, countries must be cognizant of not being able to discriminate against another country, even if the unilateral action would fit within one of the exceptions.

### B. National Treatment

The second provision in GATT requires parties to comply with unilateral actions in ensuring national treatment on internal taxation and regulation. Article III states that “products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable [sic] than that accorded to like products of national origin . . . .”<sup>122</sup> No tax that is in excess of those imposed either directly or indirectly to domestic like product will be allowed under this Article.<sup>123</sup>

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118. *Id.*

119. Paul Missios & Halis Murat Yildiz, *The Role of MFN Under Asymmetries in Environmental Standards*, 93 *ECON. LETTERS* 297, 302 (2006).

120. Eichenberg, *supra* note 32, at 304.

121. Henrik Horn & Petros C. Mavroidis, *Economic and Legal Aspects of the Most-Favored-Nation Clause*, 17 *EUR. J. POL. ECON.* 233, 234 (2001).

122. GATT, *supra* note 117, art. 3.4.

123. *WTO Analytical Index: General Agreement on Tariffs and Trade 1994*, WORLD TRADE ORG., [http://www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/gatt1994\\_02\\_e.htm](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_02_e.htm) (last visited Jan. 14, 2014).

The purpose of Article III is to avoid protectionist measures imposed by countries.<sup>124</sup> Clearly, this aligns with the WTO's purpose of promoting free trade, and is favorably looked upon as reasonable—a country cannot unilaterally impose a tax on emissions coming in from another higher emitting country. Article III does speak to unilateral measures that apply only to the country imposing the tax, but in light of the aforementioned discussion on economic viability concerns from Annex I countries, the imposition of solely an internal tax, which does not touch imports, is extremely unlikely.<sup>125</sup>

Article 3.2 does address the possibility of a tax that is imposed on both internal and imported goods and services,<sup>126</sup> meaning that Article 3.2 allows an internal tax to be imposed on imports if it satisfies the following requirements.<sup>127</sup> Inferring from the language that “products . . . of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes . . . in excess of those applied, directly or indirectly, to like domestic products,”<sup>128</sup> a country can impose a tax on imports. The key in complying with Article III is that a unilateral action will not be deemed to be protectionist if the internal tax is applied to both domestic and foreign like goods and services that are imported.

Article 3.4 further imposes a restriction on the inability to treat a foreign product differently than a domestic product after clearing customs.<sup>129</sup> This Article is meant to ensure that protectionist measures do not occur once the product is within a country, and free market economic principles can continue when goods are within a nation's borders. Therefore, once a good has cleared customs, it cannot have special restrictions placed on its movement or price in reaching a consumer.

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124. *Id.*

125. *Id.*

126. GATT, *supra* note 117, art. 3.2.

127. Christian Pitschas, *GATT/WTO Rules for Border Tax Adjustment and the Proposed European Directive Introducing a Tax on Carbon Dioxide Emissions and Energy*, 24 GA. J. INT'L & COMP. L. 479, 486 (1995).

128. GATT, *supra* note 117, art. 3.2.

129. John H. Jackson, *National Treatment Obligations and Non-Tariff Barriers*, 10 MICH J. INT'L L. 207, 211 (1989).



This Article becomes a valuable restriction because countries may not arbitrarily discriminate against another country's goods and services, even if it is believed that the other country is not doing its "fair share" to reduce emissions. While beneficial to world trade, this limits the ability to create accountability between the different countries and encourage other countries to reduce their emissions. However, GATT does allow for a charge or tax that is equal to an internal tax to be imposed on imported products.<sup>130</sup> This is a beneficial tool for countries to use when there is a desire to impose a tax on carbon emissions. The ability to impose a tax that is equivalent to an internal tax is critical to the concept of a carbon tax that reinvests revenues. This will be addressed later in this paper.

### C. Article XX

The last WTO provision is a concession given to countries to help them justify an environmental act. Article XX of GATT states that as long as measures are "relating to the conservation of exhaustible natural resources" and are not imposed in an arbitrary or unjustified manner equivalent to a disguised restriction on international trade, they may be allowed.<sup>131</sup> One key expansion in this exception is that a country can now impose internal restrictions that apply to natural resources located outside its jurisdiction.<sup>132</sup> For purposes of this paper, this means that the United States may impose a restriction on GHG emissions that are emitted outside the United States and still comply with GATT. Article XX has been broadened in past cases, as illustrated above, but has also been construed extremely narrowly in many circumstances.<sup>133</sup> In order to qualify under this exception, a multi-faceted two-pronged test must be met. Therefore, for an environmental act to qualify under Article XX, the measure must satisfy both the chapeau of the Article and the applicable exception.<sup>134</sup>

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130. *Id.* at 214.

131. GATT, *supra* note 117, art. 20(g).

132. Gentile, *supra* note 18, at 208.

133. PETER VAN DEN BOSSCHE & WERNER ZDOUC, *THE LAW AND POLICY OF THE WORLD TRADE ORGANIZATION: TEXT, CASES AND MATERIALS* 618 (2006).

134. Brett Grosko, Note, *Just When Is It that a Unilateral Trade Ban Satisfies the GATT?: The WTO Shrimp and Shrimp Products Case*, 5 ENVTL. L. 817, 828 (1999).

### 1. Fit within the Framework of the Exception

The first step is to ensure that the proposed unilateral action fits within one of the exceptions. First, the measure must either be necessary to conserve natural resources or protect the environment.<sup>135</sup> This step does not look at the reasoning of the law, but rather seeks to ensure that the law addresses<sup>136</sup> the correct exception; in this paper, it would be preserving an exhaustible natural resource.<sup>137</sup> By doing so, the WTO no longer analyzes the justifiability of the provisions, but merely limits the analysis to whether the law reasonably meets one of the exceptions.<sup>138</sup> Once the law meets the exception, it must then additionally fulfill the chapeau requirements.

### 2. Chapeau Requirement

The chapeau seeks to ensure that free trade is still protected, even if the environment may impose some limitations. The chapeau states that any unilateral proposal must not be imposed in a way that is “arbitrary or unjustifiable discrimination . . . or a disguised restriction on international trade.”<sup>139</sup> The intention of the chapeau is to ensure that the enumerated exceptions cannot be abused and that free trade principles are still promoted, while recognizing the need to protect climate change.<sup>140</sup>

### 3. Comprehensive Application

These protections ensure that a law meets the requisite requirements and is therefore determined to not be arbitrary or discriminatory. In order to comply under sub-section g, a law must be made “in conjunction with restrictions on domestic production or

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135. Gentile, *supra* note 18, at 203.

136. Padideh Ala'i, *Free Trade or Sustainable Development?: An Analysis of the WTO Appellate Body's Shift to a More Balanced Approach to Trade Liberalization*, 14 *AM. U. INT'L L. REV.* 1129, 1158 (1999).

137. In this paper, the exception will always be sub-paragraph g: “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.” GATT, *supra* note 117, art. 20(g).

138. Gentile, *supra* note 18, at 203.

139. GATT, *supra* note 117, art. 20.

140. Gentile, *supra* note 18, at 210.

consumption.”<sup>141</sup> This links back to Article III, which allows a tax to be imposed on foreign imports as long as it does not exceed an internal tax. The rationale relates to the fundamental principles of the WTO, i.e., promoting international trade and prohibiting protectionism. As long as a measure imposes the burden on both the country implementing the policy and foreign countries, the WTO does not appear to be as concerned with a tax.<sup>142</sup>

#### 4. Universal Communication

Concurrent with the overarching policy, the WTO will apply a more exhaustive look at unilateral actions under Article XX when imposed unilaterally and without multilateral discussions.<sup>143</sup> This has never been explicitly stated in an analysis of Article XX by the WTO or in the chapeau itself.<sup>144</sup> Although the WTO Appellate Body’s appears to avoid explicitly stating their requirement, in a court case challenging the Endangered Species Act, the Appellate Body identified why multilateral negotiations are required prior to the imposition of a good faith unilateral action in order to be acceptable to the WTO.<sup>145</sup>

First, the Appellate Body explained that undertaking serious negotiations with some countries, but not others, may be unjustifiably discriminatory.<sup>146</sup> Secondly, failure to undertake serious negotiations with affected parties may point to the discriminatory effects as a disguised restriction on free trade, and as unjustifiable discrimination.<sup>147</sup> Therefore, a country seeking to impose a unilateral action should engage in conversations with all parties that may be affected by the proposal as a safeguard.

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141. GATT, *supra* note 117, art. 20(g).

142. *See generally* Ala’i, *supra* note 136.

143. *See generally* Gentile, *supra* note 18.

144. *Id.* at 214.

145. *See* APPELLATE BODY REPORT, UNITED STATES—IMPORT PROHIBITION OF CERTAIN SHRIMP AND SHRIMP PRODUCTS, WT/DS58/AB/RW (Oct. 22, 2001), [http://www.wto.org/english/tratop\\_e/dispu\\_e/58abr\\_w\\_e.pdf](http://www.wto.org/english/tratop_e/dispu_e/58abr_w_e.pdf).

146. Robert Howse, *The Appellate Body Rulings in the Shrimp/Turtle Case: A New Legal Baseline for the Trade and Environment Debate*, 27 COLUM. J. ENVTL. L. 491, 507 (2002).

147. *Id.*

The need for negotiations, however, is an area for which the Appellate Body of the WTO has continually adjusted its position. For example, although there is a strong presumption that a country needs to engage in negotiation before engaging in unilateral action, the appellate court has found that there is “no duty to ‘consult’ or ‘negotiate’ with respect to measures taken” when imposing a unilateral action.<sup>148</sup> For the remainder of this paper, it is important to bear in mind that for a unilateral proposal to comply with the WTO Article XX, the country should engage in serious negotiations before imposing a unilateral action in order to be safe. Clearly, Article XX makes a good safety net when imposing a unilateral action that seeks to preserve exhaustible natural resources, but the best option is to ensure compliance with the other GATT regulations in order for the unilateral action to be effective.

## VI. UNILATERAL PROPOSALS

The following proposals are the most commonly accepted and introduced methods for curtailing GHG emissions through unilateral action. The first two proposals addressed, cap-and-trade and carbon taxes, have been suggested through a variety of forums. The third is an innovative new proposal using a carbon tax that creates emissions certainty while being in legal compliance with the WTO.

### A. *Cap-and-Trade*

#### 1. What Is a Cap-and-Trade Program?

A cap-and-trade program is a market regulation mechanism for reducing carbon emissions, and is created through a government-regulated program.<sup>149</sup> The typical program consists of two parts: a cap on the amount of emissions that can be produced, and the ability for entities to trade their emission credits if they need more emissions or want to profit from their excess credits.<sup>150</sup> It is considered a

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148. Gentile, *supra* note 18, at 216.

149. Miles Young, *Beautifying the Ugly Step-Sister: Designing an Effective Cap-and-Trade Program to Reduce Greenhouse Gas Emissions*, 2009 BYU L. REV. 1379, 1395 (2009).

150. Yvonne Gross, *Kyoto, Congress, or Bust: The Constitutional Invalidity of State CO<sub>2</sub> Cap-and-Trade Programs*, 28 T. JEFFERSON L. REV. 205, 207 (2005).

market-based mechanism because GHG emission producers have an incentive to reduce their emissions more quickly and then sell their credits in order to maximize their gains.<sup>151</sup>

This method enables polluters who know that they will exceed their emission credits to purchase additional credits from low emitters at a market-traded price. Therefore, cap-and-trade increases the incentive to minimize the amount of emissions produced, but also does not have to impose penalties since the market will regulate when an emission producer is unable to afford purchasing additional emission credits. Through this system, emission producers have an incentive to improve technology.<sup>152</sup> The disadvantage is that the technological advances may not happen, leading to either expanded emissions or shutting down the economy. Alternatively, the allocation of credits may exceed actual emissions resulting in a price collapse, as experienced both with the sulfur market for acid rain<sup>153</sup> and with the European Union Emissions Trading Scheme (EU-ETS).<sup>154</sup>

## 2. Cap-and-Trade's Compliance with the WTO

Most cap-and-trade programs focus on domestic measures and domestic GHG emitters. However, any effective cap-and-trade program will need to include imported emissions; otherwise, carbon leakage<sup>155</sup> will occur unchecked. Due to this concern, all three of the U.S. proposed bills<sup>156</sup> have attempted to address the international legal requirements through including an international allowance pool

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151. Young, *supra* note 149, at 1395.

152. *Id.* at 1399.

153. Mark Peters, *Changes Choke Cap-and-Trade Market*, WALL ST. J. (July 12, 2010, 12:01 AM), available at <http://online.wsj.com/news/articles/SB10001424052748704258604575360821005676554>.

154. *ETS, RIP?: The Failure to Reform Europe's Carbon Market Will Reverberate around the World*, ECONOMIST, Apr. 20, 2013, available at <http://www.economist.com/news/finance-and-economics/21576388-failure-reform-europes-carbon-market-will-reverberate-round-world-ets>.

155. Carbon leakage is the term assigned to industry moving from one nation to another to avoid carbon limits, thereby bypassing a cap-and-trade system that does not include imports or contain a Border Tax Adjustment (BTA).

156. See Bingaman-Specter Bill, S. 1766, 110th Cong. (2007); Lieberman-Warner Bill, S. 2191, 110th Cong. (2007); Manager's Amendment to the Lieberman-Warner Bill, S. 3036, 110th Cong. (2007).

provision.<sup>157</sup> The proposed bills require an international emitter to either purchase an allowance from this international pool, or produce some sort of other evidence that they have an allowance.<sup>158</sup> If an allowance is required to be purchased from a pool, the bills must then determine whether the international allowances would be a separate pool or part of the domestic allowances.<sup>159</sup>

As none of those legislative efforts has resulted in law, this part of the regulations is still under negotiation and development, leading to a variety of different outcomes in determining whether they comply with WTO regulations. First, if the international pool is different from the domestic pool, then the international pool must have a similar set of procedures as the domestic allowances procedure. To be in compliance with GATT Article 3.2, the international pool charge cannot be in excess of the charge imposed on domestic emissions.<sup>160</sup> In essence, this simply requires both domestic and international allowances to be purchased at the same price.

The more difficult provision for the cap-and-trade program to comply with is that the international allowances may not receive less favorable treatment than those of national origin.<sup>161</sup> This means international allowances should be as easy to acquire as domestic allowances. This creates a tension in either making all allowances extremely easy to get, leaving the cap-and-trade program less effective, or having a stringent cap-and-trade program with few allowances and potentially shocking the global economic system. While a proposal for how to resolve that tension is beyond the scope of this paper, the author proposes that a possible workable method is to redesign cap-and-trade to be based on emissions intensity.<sup>162</sup>

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157. KENNETH R. RICHARDS & STEPHANIE HAYES RICHARDS, *THE EVOLUTION AND ANATOMY OF RECENT CLIMATE CHANGE BILLS IN THE U.S. SENATE: CRITIQUE AND RECOMMENDATIONS* 99 (2009), available at <http://ssrn.com/abstract=1368903>.

158. *Id.*

159. *Id.*

160. GATT, *supra* note 117, art. 3.2.

161. *Id.* art. 3.4.

162. If cap-and-trade was based on emissions intensity, it would potentially be possible to accumulate all domestic and imported emissions on all goods and services and require end users to purchase emission permits to acquire goods and services.

Finally, the cap-and-trade program may be able to qualify under Article XX exceptions for seeking to preserve an exhaustible natural resource.<sup>163</sup> Although a cap-and-trade program will likely fall under the auspices of Article XX (g), the United States must be able to demonstrate that the bill is not a disguised restriction on trade.<sup>164</sup> This may be difficult since the international allowances will likely have something that differentiates them in a way that can be construed as arbitrary discrimination. Furthermore, since the cap-and-trade program allows domestic companies to continue production and potentially profit from the system, the WTO will seek to ensure that the United States is not subtly aiding domestic companies. A cap-and-trade program passed into law needs to comply with GATT.

### 3. Advantages of a Cap-and-Trade Program

#### *a. Flexibility of the Cap-and-Trade*

First, the cap-and-trade program provides flexibility in its implementation. The government is free to decide how it is implemented. For example, the scope of the program may vary, from emissions resulting from one GHG or from all GHG emissions.<sup>165</sup> Furthermore, the government can decide to regulate emissions upstream, regulating energy sources, or downstream by potentially regulating consumers, or anywhere in between.<sup>166</sup>

Additionally, the government may decide how to initially structure the program to minimize the shock emitters' face by either auctioning only a portion of the emissions or handing out emission credits for free. Typically, initial allowances are given out after an assessment of the industry.<sup>167</sup> These allowances are given out for free or for minimal cost, as a way for the government to help the industry absorb the shock of the program, and the price of the allowance may gradually increase.

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163. *Id.* art. 20(g).

164. *Id.*

165. Richards & Richards, *supra* note 157, at 30.

166. *Id.*

167. A. DENNY ELLERMAN ET AL., EMISSIONS TRADING IN THE U.S.: EXPERIENCE, LESSONS, AND CONSIDERATIONS FOR GREENHOUSE GASES 4 (Pew Ctr. on Global Climate Change, 2003), [http://www.e2es.org/docUploads/emissions\\_trading.pdf](http://www.e2es.org/docUploads/emissions_trading.pdf).

Another option for the government is to gradually take away emission requirements in order to provide a dual incentive where allowance holders want to maximize the immediate market incentive as well and keep the market incentive going when the allowances are reduced. Once the allowances have been initially distributed, then the trading may occur between the parties, since the cap-and-trade's purpose is to reduce overall emissions irrespective of the specific parties that reduce their emissions.<sup>168</sup>

*b. Political Platform*

Another advantage of the cap-and-trade program is that it is a good political platform on which to stand. Americans are tax adverse, and therefore any mention of an additional tax is a difficult proposal for a politician. However, cap-and-trade programs can be proposed on the platform that the allowances will be auctioned off to emitters, and therefore the program will only raise revenue for the government.<sup>169</sup> Second, politicians can point to the already successfully implemented sulfur cap-and-trade program, as will be described below.

*c. Quantity Certainty*

The primary advantage of the cap-and-trade scheme is supposed to be that the level of emissions is known as a certainty. This, in theory, facilitates the debate on how to reduce emissions to avoid catastrophic climate change, thereby ensuring that no excess emissions are allowed to be produced. However, as noted immediately below, given the uncertainty in forecasting emissions, it may be the case that cap-and-trade does not produce the certainty expected.

#### 4. Disadvantages of a Cap-and-Trade Program

Despite the many advantages stated, especially by politicians, the cap-and-trade program has numerous drawbacks. First, the statement that the allowances of a cap-and-trade program will be auctioned off

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168. *Id.*

169. GILBERT E. METCALF ET AL., ANALYSIS OF U.S. GREENHOUSE GAS TAX PROPOSALS 3 (2008), [http://globalchange.mit.edu/files/document/MITJPSPGC\\_Rpt160.pdf](http://globalchange.mit.edu/files/document/MITJPSPGC_Rpt160.pdf).



to raise revenue is often at least partially false. The most common method for initially implementing a cap-and-trade program is to give at least some portion of the allowances out free of charge. Therefore, the government either raises little or no revenue. Second, there can be extreme price volatility in the implementation of the program, especially when industries are worried about shortages and those worries affect the emissions trading market.<sup>170</sup>

Arguably, the biggest domestic disadvantage, however, is the cost of administration. Implementing a cap-and-trade program means answering questions, such as how many allowances should be provided, should allowances be distributed, what type of certification program should be in place, how should allowance reductions occur in the future, what the business plan should be for those decisions, and how long should the allowances should last.<sup>171</sup> Those worries are only with how to implement the program. After implementation, additional questions arise as to how to enforce the program, what sanctions should apply, market regulation, and how revenue is spent.<sup>172</sup>

Finally, one of the hurdles that any cap-and-trade program must overcome is the question of compliance with the WTO regulations in GATT. Although Article XX is a viable option for any cap-and-trade program, the United States would have difficulty in overcoming the still stringent arbitrary discrimination question, as examined above. Therefore, for the reasons provided above, a cap-and-trade program is likely not the most effective proposal, both from an efficiency perspective and a legal perspective.

## 5. Examples of Cap-and-Trade Programs

### *a. Acid Rain Program*

The United States implemented a cap-and-trade program to fight acid rain. The objective was to reduce emissions of sulfur dioxide,

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170. Michael J. Waggoner, *The House Erred: A Carbon Tax Is Better than Cap and Trade*, 124 TAX NOTES 1257 (2009).

171. Young, *supra* note 149, at 1400.

172. Gary Bryner, *Reducing Greenhouse Gases through Carbon Market*, 85 DENV. U. L. REV. 961, 969 (2008).

which causes sulfur rain.<sup>173</sup> For this program, the Environmental Protection Agency (EPA) both issued and auctioned off allowances.<sup>174</sup> Because of this program, sulfur dioxide emissions were forty-one percent lower in 2002 than in 1980.<sup>175</sup> Despite the success claimed, however, the program did not fix everything. Research shows that acid rain continues to affect lakes and streams, and some argue that the initial cap set by the program was too small.<sup>176</sup> Additionally, since trading opened for the scheme, prices volatility has been much higher than stock volatility, reducing the efficiency of this policy instrument.<sup>177</sup> The implementation of this program illustrates that while it is possible to implement a cap-and-trade program and to manage it successfully, unless continued to be carefully managed, it can fail with resulting price volatility and questionable progress towards reducing real emissions.

And fail it did. Once a successful market, it suddenly began to fail when the EPA decided to expand the market with the introduction of the Clean Air Interstate Rule (CAIR) to regulate fine particulate emissions associated with sulfur dioxide released from power plants in 2005.<sup>178</sup> In order to successfully meet the EPA's requirements for sulfur dioxide and reduce emissions in the past, utilities switched from Eastern coal (anthracite, high sulfur, high heat content) to Western coal (bituminous, low sulfur, low heat content). Using technological advances in energy production and the resulting shale

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173. Sam Napolitano et al., *The U.S. Acid Rain Program: Key Insights from the Design, Operation, and Assessment of a Cap-and-Trade Program*, *ELECTRICITY J.*, Aug.-Sept. 2007, at 47, 48.

174. *Id.* at 49.

175. CLEAN AIR MARKET PROGRAMS, U.S. ENVTL. PROT. AGENCY, CAP AND TRADE: ACID RAIN PROGRAM RESULTS 1, <http://www.epa.gov/capandtrade/documents/ctresults.pdf> (last visited Jan. 24, 2014).

176. Bryner, *supra* note 172, at 971.

177. See Samuel Fankhauser et al., *Combining Multiple Climate Policy Instruments: How Not to Do It, Climate Change Economics* (Ctr. for Climate Change Econ. and Policy & Grantham Research Inst. on Climate Change & the Env't, Working Paper No. 38, 2010), [http://www.lse.ac.uk/GranthamInstitute/publications/WorkingPapers/Papers/WPapers30-39/WP38\\_UK-carbon-tax.pdf](http://www.lse.ac.uk/GranthamInstitute/publications/WorkingPapers/Papers/WPapers30-39/WP38_UK-carbon-tax.pdf); Waggoner, *supra* note 170.

178. *Clean Air Interstate Rule (CAIR)*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/cair> (last updated Mar. 20, 2013).

gale,<sup>179</sup> utilities further reduced emissions by switching energy sources from coal to natural gas. Concerned about older coal plants producing electricity, the EPA introduced a new policy in 2011; the Cross-State Air Pollution Rule (CSAPR).<sup>180</sup> This changed the number of allowances surrendered for each ton of sulfur dioxide emission and resulted in successful court challenges.<sup>181</sup> As a result of CSAPR, switching energy sources and severely limiting allowance trading collapsed the market.<sup>182</sup> See Figure 1 for the price history of sulfur dioxide emission allowance prices. From a peak of over \$1,600 a ton in 2010, the market traded under three dollars per ton in 2013.<sup>183</sup>

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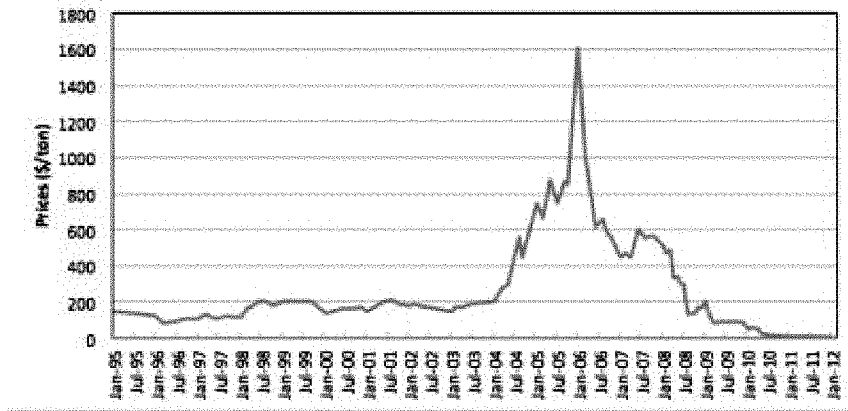
179. *Natural Gas Resources: Hearing Before the Comm. on Energy and Natural Res.*, 113th Cong. (2013), available at <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg80132/html/CHRG-113shrg80132.htm>.

180. *Interstate Air Pollution Transport*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/airtransport> (last updated Jan. 9, 2014).

181. Matthew L. Wald, *Court Blocks E.P.A. Rule on Cross-State Pollution*, N.Y. TIMES, Aug. 21, 2012, available at [http://www.nytimes.com/2012/08/22/science/earth/appeals-court-strikes-down-epa-rule-on-cross-state-pollution.html?\\_r=0](http://www.nytimes.com/2012/08/22/science/earth/appeals-court-strikes-down-epa-rule-on-cross-state-pollution.html?_r=0); Richard Schmalensee & Robert N. Stavins, *The SO<sub>2</sub> Allowance Trading System: The Ironic History of a Grand Policy Experiment* (MIT Ctr. for Energy and Envtl. Policy Research, Working Paper No. 2012-012, 2012), <http://web.mit.edu/ceepr/www/publications/workingpapers/2012-012.pdf>.

182. Gary D. Libecap, *The Cap-and-Trade Bust*, DEFINING IDEAS (Apr. 10, 2013), available at <http://www.hoover.org/publications/defining-ideas/article/144216>.

183. Mark Peters, *Changes Choke Cap-and-Trade Market*, WALL ST. J., July 12, 2010, available at <http://online.wsj.com/article/SB10001424052748704258604575360821005676554.html>.

Figure 1: Sulfur Dioxide Emissions Allowance Prices<sup>184</sup>

#### b. *EU-ETS System*

To comply with the Kyoto Protocol and reduce GHG emissions, the European Union launched the EU-ETS. The implementation occurred in conjunction with the acceptance of the Kyoto Protocol and had two phases.<sup>185</sup> Many of the allowances were given freely at implementation, and some were auctioned off.<sup>186</sup> The scope of the ETS was limited to the European Union countries to help satisfy the Kyoto reduction requirements, and was limited to carbon emissions emitted domestically.<sup>187</sup> The EU-ETS scheme is compulsory, covers all twenty-seven European Union countries (EU-27), is structured to reduce emissions by 1.74% annually, and covers more than 11,000 power stations and industrial plants, as shown in Figure 2.

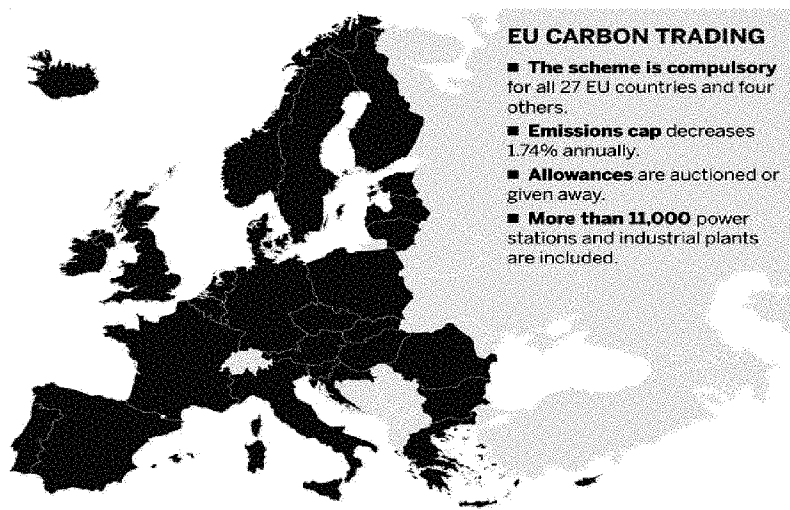
184. Gary D. Libecap, *The Cap-and-Trade Bust*, *DEFINING IDEAS* (Apr. 10, 2013), <http://www.hoover.org/publications/defining-ideas/article/144216>.

185. RAYMOND KOPP, RES. FOR THE FUTURE, AN OVERVIEW OF THE EUROPEAN UNION EMISSIONS TRADING SCHEME 1 (2007), [http://www.rff.org/rff/Documents/RFF-CTst\\_07-Kopp.pdf](http://www.rff.org/rff/Documents/RFF-CTst_07-Kopp.pdf).

186. *Id.*

187. *Id.*

Figure 2: EU-27/EU-ETS Carbon Trading Participating Region<sup>188</sup>



Having limited carbon emissions to domestic emissions, in order for the EU-27 to quickly pass the legislation and create a marketplace, the European Union's limited scope rule was missing important provisions. An earlier draft included the "Future Allowance Import Requirement" which intended to impose a border tax adjustment (BTA) on emissions from countries that did not have a comparable credit or were not reducing emissions to comply with Kyoto.<sup>189</sup> However, that provision did not make it into the final draft, and therefore, the final version did not address imports. Even with significant regulations in place, the EU-ETS did not fall under international scrutiny until recently when the scope of the program was broadened to affect other countries.

The EU-ETS program became controversial when the Aviation Directive was included in the scheme in January 2012, requiring all

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188. Alex Scott, *EU Carbon Emissions Trading Scheme in Freefall*, CHEMICAL & ENGINEERING NEWS, Feb. 18, 2013, at 16, 16–20, available at <http://cen.acs.org/articles/91/i7/EU-Carbon-Emissions-Trading-Scheme.html>.

189. HARRO VAN ASSELT, ADAPTATION AND MITIGATION STRATEGIES: SUPPORTING EUROPEAN CLIMATE POLICY 66 (Vrije Universiteit Amsterdam, Project No. 018476-GOCE) (2009).

airlines, irrespective of country of origin, to purchase allowances if they fly into, out of, or through the European Union.<sup>190</sup> The allowance requirement brought the ETS into the forefront of the international community, as well as the question of whether the ETS now complies with the WTO. While this question is outside of this paper's scope, a quick word will be applicable for further discussion. One of the key questions will be if there is de facto discrimination on products imported from outside the European Union.<sup>191</sup> Although the allowance will be imposed on all parties, it will be key to determine whether or not European Union parties are benefited and therefore non-compliant with Article III of GATT.

To avoid a trade spat with the United States and China, the European Union has put the aviation scheme on hold for one year.<sup>192</sup> However, their cap-and-trade EU-ETS program did not plan for the severe recession and continuing malaise of the European economy. This has resulted in carbon prices falling as economies fail to grow, as shown in Figure 3. The commission postponed releasing 900 million tons of emission allowances to stop the market from completely collapsing.<sup>193</sup> However, excess emission allowances by 2020 could total over two billion tons.

Figure 3: EU-ETS Carbon Price in Freefall<sup>194</sup>



190. BARTELS, *supra* note 25, at 3.

191. *Id.* at 11–12.

192. *EU Puts Airline Carbon Tax on Hold for a Year*, EU BUSINESS (Mar. 21, 2013, 2:36 PM), available at <http://www.eubusiness.com/news-eu/aviation-climate.n8h>.

193. Scott, *supra* note 188.

194. *Id.*

Clearly, even the cap-and-trade programs already implemented have issues complying with the WTO. Not only do cap-and-trade programs fall short of reaching the optimal solution, as was promised from programs like the Acid Rain cap-and-trade program, but allowances may not conform to WTO regulations, as seen in the EU-ETS Aviation Directive. Given the complexity and difficulty in implementing a cap-and-trade program, other proposals, as illustrated below, will achieve the reduction of carbon emissions more effectively and have a stronger legal basis.

### *B. Border Tax Adjustments*

The following proposals are BTAs as compared to the cap-and-trade allowance, which is considered to be a market mechanism. A BTA is defined by the Organization for Economic Cooperation and Development “as any fiscal measures which put into effect, in whole or in part, the destination principle (i.e. which enable . . . imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of similar domestic products).”<sup>195</sup> Additionally, according to Article 3.2, BTAs are explicitly allowed as long as the tax on the imported goods does not exceed a tax on a like domestic product.<sup>196</sup>

### *C. Carbon Tax*

The second common proposal for a unilateral action is a carbon tax. As illustrated below, a carbon tax is compliant with WTO rules, but is not the most economical method to reduce GHG emissions. Furthermore, given reluctance in accepting the carbon tax if a tax is going to be imposed, the tax should be more encompassing so additional political disputes do not need to occur later. However, compared to the cap-and-trade program, the carbon tax is the better of the two and a good second option because of the ease of implementation, transparency, effectiveness, and legality.

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195. Eichenberg, *supra* note 32, at 312 n.151.

196. Valentina Durán Medina & Rodrigo Polanco Lazo, *A Legal View on Border Tax Adjustments and Climate Change: A Latin American Perspective*, SUSTAINABLE DEV. L. & POL’Y, Fall 2010, at 29, 31 (2011).

## 1. What Is a Carbon Tax?

A carbon tax has primarily been structured as a tax on energy, that is, carbon based fuels that emit GHG.<sup>197</sup> Effectively, a carbon tax only taxes emissions from burning fossil fuels.<sup>198</sup> The intention of the tax is to internalize the externality so common emission producers pay the true market cost. Currently, carbon taxes others have proposed are only applied on fossil fuels, and not on all GHG emissions.<sup>199</sup> This tax is imposed on any imported fossil fuels. Any imports taxed need to be taxed at the same rate as the internal tax rate. This tax is imposed upstream, or imposed at the time the fossil fuel is extracted.<sup>200</sup>

The typical revenue structure of carbon tax proposals is to be revenue neutral.<sup>201</sup> First, the tax may be structured to decrease the need to raise revenue in other ways, for example, by decreasing the income tax rate.<sup>202</sup> This would be one monetary incentive for consumers to implement the tax. Another method that may be used to create a revenue neutral tax is to have the tax be reimbursed to those consumers hardest hit by the tax.<sup>203</sup> Determining which method is the most efficient is outside of the scope of this paper, however, if a carbon tax is to be put into place, this issue would need to be addressed.

## 2. Advantages of a Carbon Tax

Some of the advantages of a carbon tax include a set price for carbon leading to price certainty, which results in simplicity and easily understanding the tax and allows the tax to be put in place quickly, decreases the likelihood of fraud.<sup>204</sup> Another significant advantage of a carbon tax over a cap-and-trade program is that the

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197. Young, *supra* note 149, at 1391.

198. Michael J. Zimmer, *Carbon Tax: Ready for Prime Time?*, *SUSTAINABLE DEV. L. & POL'Y*, Winter 2008, at 67, 67 (2008).

199. Young, *supra* note 149, at 1392.

200. *Introduction*, CARBON TAX CTR., <http://www.carbontax.org/introduction> (last updated Sept. 17, 2013).

201. See Metcalf & Weisbach, *supra* note 109, at 499.

202. *Id.* at 515.

203. *Id.*

204. Bryner, *supra* note 172, at 968.



carbon tax would encourage a reduction in usage of carbon and direct the market towards more renewable (clean) energy.<sup>205</sup> The carbon tax would bring about price stability, as the industry would know (in advance) what the tax rate would be, and therefore would consider the tax in making business decisions.<sup>206</sup> This would create more certain and stable markets, resulting in consistent action to reduce emissions rather than price volatility, leading to uncertainty and volatile market responses as seen in the current cap-and-trade program of the European Union.<sup>207</sup>

Another advantage is that the tax would encourage companies to continue to invest in new technologies.<sup>208</sup> With a carbon tax, companies always have a monetary incentive to consider alternative sources of energy compared to their current use of fossil fuels. Additionally, the carbon tax also incentivizes consumers to request and purchase lower emission products so the tax liability passed on to them is reduced.<sup>209</sup> Having the tax be transparently imposed and passed on to the consumer will compel the reduction of fossil fuel usage to the forefront of the political discussion. The transparency also limits the possibility that companies will address the program outside of the consumer's purview.

Finally, a carbon tax, once accepted, may be easily imposed. Congress and the Internal Revenue Service (IRS) would draft the tax code, and after the initial legislation, the IRS would be able to adjust the rate through legislation as the market responds. This would allow the shock of the tax to be minimal before the tax rate increases to encourage emission reductions. Furthermore, as a government instituted and regulated action, the IRS would be able to monitor the tax and ensure compliance in the same way it ensures income tax compliance with the infrastructure that is already in place.

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205. Zimmer, *supra* note 198, at 67.

206. Waggoner, *supra* note 170, at 1257.

207. *Id.* at 1260.

208. Young, *supra* note 149, at 1392.

209. *Id.*

### 3. Disadvantages of a Carbon Tax

The greatest disadvantage, which is also an advantage, is the transparency of the tax.<sup>210</sup> Americans dislike paying taxes and, as mentioned above, imposing a tax is one of the best ways to ruin a politician's chances of being elected.<sup>211</sup> The advantages that the tax may bring might not be considered because Americans may stop listening after the word "tax" is used. Another disadvantage of the carbon tax is that the tax stops at emission-intensive fuels.<sup>212</sup> The tax is not imposed on goods or services. This is another serious limitation of the tax, which the CTR will alleviate. Therefore, politicians may need to ask for the American population to pay a tax twice if the limited tax is not sufficient to mitigate climate change.

The carbon tax is also a unilateral mechanism that is used on a multilateral issue<sup>213</sup> and has increased the propensity for carbon leakage. An industry is more likely to relocate to an "emission haven" if one country is internalizing the externalities and another country does not also adjust its industry to make the cost of the good or service accurately reflect the fair market value.<sup>214</sup> However, when an industry is importing fuel, it will still be taxed at the internal tax rate. But since the tax is imposed upstream, an emission-intensive industry, such as the concrete industry, can move to the emission haven and be more productive if there is a unilateral carbon tax imposed in the United States. Therefore, the United States may lose significant market share when imposing the tax in heavy emitting industries.

### 4. Compliance with WTO

Traditionally, the proposals call for the carbon tax to be imposed on energy, which is included in all goods and services. This leads to

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210. *Id.* at 1394.

211. Jonathan Mann, *Why Americans Hate Paying Taxes*, CNN (Dec. 17, 2010, 12:18 PM), <http://www.cnn.com/2010/US/12/17/jonathan.mann.us.taxes/index.html>.

212. Zimmer, *supra* note 198, at 67.

213. Jon M. Truby, *Towards Overcoming the Conflict Between Environmental Tax Leakage and Border Tax Adjustment Concessions for Developing Countries*, 12 VT. J. ENVTL. L. 149, 151 (2010).

214. *Id.* at 152–54.

WTO regulation analysis that is straightforward. As long as the tax rate applies equally to each like product, for example a separate tax on coal, oil, and gas, irrespective of where the fossil fuel originated from, it will satisfy the most favored nation principle. Additionally, the carbon tax must be imposed both internally and for foreign products. Assuming that the tax is structured in such a way as to be uniformly enforced, it will then satisfy the national treatment principle. Given the ability for a carbon tax to clearly satisfy both the most favored nation and national treatment principles, it does not need to use the Article XX chapeau, but will also likely be determined to be imposed uniformly and not a hidden restriction on trade.

The carbon tax is a good first step in a unilateral climate change mitigation effort. It does not, however, address the full problem. First, the carbon tax only addresses upstream fossil fuels. Therefore, GHGs emitted overseas from burning fossil fuels are not addressed, and this could result in carbon leakage. Furthermore, the carbon tax only applies to goods, not to services. Therefore, although the carbon tax will legally satisfy the WTO regulations, it is not the most efficient unilateral action to mitigate climate change.

#### *D. Carbon Tax with Reinvestment*

##### 1. What Is a CTR?

A CTR is a carbon tax wherein the funds raised from the tax are reinvested into clean energy sources, thereby forcing emissions downward by removing high-carbon emitted power plants and replacing them with low-carbon emitted power plants.<sup>215</sup>

A CTR is imposed on all goods and services within the United States, as well as those that cross its domestic and international borders. The rationale behind imposing the tax on both goods and services is that a state's or country's citizens should be responsible for the energy and pollution choices made by the state or country. By allocating emissions using emission intensity, it then becomes everyone's problem to solve the emissions dilemma by internalizing the cost of all emissions in every good and service produced. This also makes the calculations very simple, as emissions intensity is

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215. Sewalk, *supra* note 106, at 609–10.

essentially GDP divided by Total GHG emissions. This structure allocates the burden to conserve and reduce emissions to all producers and consumers.

Every activity, purchase, and consumption involves emissions. Emissions are released from our buildings<sup>216</sup> (residential, commercial, industrial), from our transportation between buildings, from our industry, and through the movement of goods and services. Therefore, all goods and services should be taxed to encourage everyone to reduce emissions. The CTR is calculated in a manner that allows it to be both compliant and effective at reducing emissions both domestically and with imports. Additionally, the CTR includes a reinvestment mechanism (addressed later), which will be devoted exclusively to the promotion of clean energy resources.

## 2. How the CTR Is Structured

The CTR is structured as a carbon valued added tax (VAT). A VAT is a tax “levied on sales of goods and services” and is usually imposed as a flat rate.<sup>217</sup> A VAT tax can be implemented either through the destination or the origin principle.<sup>218</sup> The origin principle is when the product is taxed at the border where the good is produced before being exported.<sup>219</sup> A destination based VAT means that each country taxes its own consumption, or it will tax the imports.<sup>220</sup>

The CTR will be imposed based on the destination principle for two predominate reasons: first it is more efficient, and second the tax will be more effective. Using the destination principle will ensure that the product is taxed downstream, and therefore the total emissions inputs will be taxed. Since the single VAT will tax the total emission inputs, it will affect the externalities that come into the

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216. TAMIOTTI ET AL., *supra* note 3, at 27.

217. Christopher Deal, Note & Comment, *The GATT and VAT: Whether VAT Exporters Enjoy a Tax Advantage Under the GATT*, 17 *LOY. L.A. INT’L & COMP. L.J.* 649, 650 (1995).

218. See Katherine Baer et al., *A Destination VAT for CIS Trade*, MOCT-MOST, Sept. 1996, at 87 (1996).

219. *Id.*

220. Jesus E. S. Oliveira, *Economic Effects of Origin and Destination Principle for Value-Added Taxes* 17 (2001), <http://www.gwu.edu/~ibi/minerva/spring2001/jesus.oliveira.pdf>.

United States completely instead of only affecting a portion of the externalities, making the tax more efficient.

Second, the destination principle will not require asking other countries to impose a tax since the entire value of the product will be taxed at the border, instead of only a portion of the product, to achieve the same result. If the VAT was an origin-based tax, then the United States would need all of the other countries to impose a CTR so all GHG emissions are taxed, thereby internalizing all externalities. Although it would be much more efficient if every country adopted a CTR, it may take a while for universal implementation to occur, and therefore, for now, the destination principle is superior.

### 3. How the CTR Is Imposed

The CTR is applied at the point of production, or when a good or service (goods)<sup>221</sup> crosses a border. Therefore, the internal tax will be calculated in the same method as a tax on imports, whether the good crosses state borders or the U.S. border. The tax rate will be calculated by looking at emissions intensity, and therefore will look at all forms of emissions. The tax rate is calculated by first taking the total GDP of a country<sup>222</sup> and dividing the GDP by the tons of GHG emissions emitted in that country.<sup>223</sup> This will be the emissions intensity of the country, which will affect the next stage in the calculation. Table 1 shows emissions intensity for several developed countries.

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221. To simplify our discussion of the CTR, the term “goods” will also include any services that are imported.

222. For purposes of this section, “Country” also includes U.S. states.

223. Although the tax is called a carbon tax, it is all encompassing in that it will take the total GHG emissions including carbon dioxide, methane, nitrous oxide, hydroflourocarbons, per fluorocarbons, and sulfur hexafluoride to internalize the externality on all harmful GHG emissions.

Table 1: Example of Emissions Intensity by Country<sup>224</sup>

<b>Country</b>	<b>GDP (Trillions of Yr 2000 US \$)</b>	<b>GHG Emissions (Metric tons of CO<sub>2</sub>)</b>	<b>Emissions Intensity (\$ of GDP / Ton of CO<sub>2</sub>)</b>
<b>Germany</b>	\$3,284.47	936,544,000	\$3,507.01
<b>United Kingdom</b>	\$2256.26	594,021,000	\$3798.28
<b>Japan</b>	\$5495.38	1,257,982,000	\$4368.41
<b>United States</b>	\$14,419.40	6,802,225,000	\$2,119.81

With the emissions intensity, it is then possible to apply the appropriate level of carbon tax to calculate the actual carbon tax. Like the traditional VAT, the assumption is that exports (from a state or country) will be tax free with the importing state or country applying the tax. However, domestically-consumed goods are taxed at the state or country level of tax. Continuing the table calculated above, the following tax rates will be imposed. As seen in Table 2, a good costing \$500,000 is taxed based on the emissions intensity of where it was produced.

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224. *World Bank Data: World Development Indicators*, WORLD BANK, <http://data.worldbank.org> (last visited Jan. 24, 2014); *Greenhouse Gas (GHGs) Emissions Without Land Use, Land-Use Change and Forestry (LULUCF)*, U.N. DATA, <http://data.un.org/Data.aspx?d=GHG&f=seriesID%3aGHG> (last updated Dec. 10, 2010).

Table 2: CTR Applied to \$500k of “Goods” by Country of Origin<sup>225</sup>

Country	Emissions Intensity (\$ of GDP / Ton of CO <sub>2</sub> )	Cost of Good Imported	Tons of GHG Embedded in “Goods”	Carbon Tax / Ton of CO <sub>2</sub>	Tax Imposed
<b>Germany</b>	\$3,507.01	\$500,000	142.57	\$5.00	\$712.86
<b>United Kingdom</b>	\$3798.28	\$500,000	131.64	\$5.00	\$658.20
<b>Japan</b>	\$4368.41	\$500,000	114.46	\$5.00	\$572.29
<b>United States</b>	\$2,119.81	\$500,000	235.87	\$5.00	\$1,179.35

The emissions intensity is calculated for every state and country and applied either domestically or, if exported, when the good crosses a border to reach its final destination. Therefore, if a good is destined for Colorado, it will be taxed in Colorado. Colorado will receive the revenue from the goods imported into its border domestically, and the federal government will receive the tax when a foreign good is imported into the United States. The tax rate is calculated by using the exporting country’s emissions intensity. This will therefore encourage states and countries to use more clean energy. For example, France’s nuclear energy that has a low emission output will have a low emissions tax rate. Any goods imported from a foreign country will be taxed at the U.S. border, and the federal government will receive that revenue to reinvest. Goods that are received domestically will be taxed in the importing state, which will receive that revenue.

Finally, the transportation of the goods will also be taxed. The fuel used to ship products to the United States will be taxed from the country that the imports came from. Additionally, transport trucks used across the United States will also have their fuel taxed as part of

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225. *World Bank Data*, *supra* note 224. The larger the emissions intensity, the more energy efficient the economy.

the cost of the imports. This is an area that has been largely unspoken about when mitigating climate change, and one of the key areas that may be used to reduce GHGs.

#### 4. What Is the Tax Rate?

The tax rate will vary from year to year and will start out low in order to allow the market to respond.<sup>226</sup> Therefore, during the first year of implementation, the tax rate will be five dollars per ton of emissions. As the years progress, as funds are reinvested into clean energy sources, and as industry and consumers have time to respond, the tax rate will increase to fifty dollars per ton of CO<sub>2</sub> emissions. The following table uses the same data as above and demonstrates the effect of different tax rates.

Table 3: Increasing CTR Rate over Time (United States Example)<sup>227</sup>

	<b>Carbon Tax Applied</b>	<b>Embedded GHG (tons)</b>	<b>Tax Imposed</b>	<b>Effective Tax Rate</b>
<b>Year 1</b>	\$5	235.87	\$1,179.35	0.24%
<b>Year 2</b>	\$10	235.87	\$2,358.71	0.47%
<b>Year 3</b>	\$15	235.87	\$3,538.06	0.71%
<b>Year 4</b>	\$20	235.87	\$4,717.41	0.94%
<b>Year 5</b>	\$25	235.87	\$5,896.76	1.18%
<b>Year 6</b>	\$30	235.87	\$7,076.12	1.42%
<b>Year 7</b>	\$35	235.87	\$8,255.47	1.65%
<b>Year 8</b>	\$40	235.87	\$9,434.82	1.89%
<b>Year 9</b>	\$45	235.87	\$10,614.18	2.12%
<b>Year 10</b>	\$50	235.87	\$11,793.53	2.36%

The rationale behind the increasing tax rate is twofold. First, the initial low tax rate will help the economy absorb the shock of the

226. Sewalk, *supra* note 106, at 613.

227. Author has applied the increasing CTR to \$500,000 of U.S. “goods.” This example assumes constant emissions levels. In fact, emission levels decline.



rate. Second, the increase in the tax rate will coincide with a decrease in revenue. The intention of the tax is to have emissions decrease at a greater rate than the tax increases. This allows the total revenue to eventually decrease as clean energy is constructed and deployed in the countries adopting the CTR. It should be noted that this results in significant direct (construction), indirect (materials, supplies), and induced job creation. Through the gradual increase in the rate, both of those objectives will be fulfilled.

### 5. Why the CTR Will Work

The CTR will work well for a variety of reasons. First, the tax is simple to understand and apply. Emissions data and GDP are already collected for countries and states, and therefore the tax will not require additional research. Also, the tax does not require multiple steps at this point since it would be the only tax of its kind—so as of this point, double taxation is not a concern. If other countries were to create a similar tax, negotiations would need to take place to ensure that double taxation does not occur, but the European VAT can provide clear guidance on that issue.<sup>228</sup> This however, is only an issue after other countries decide they want to implement a similar tax.

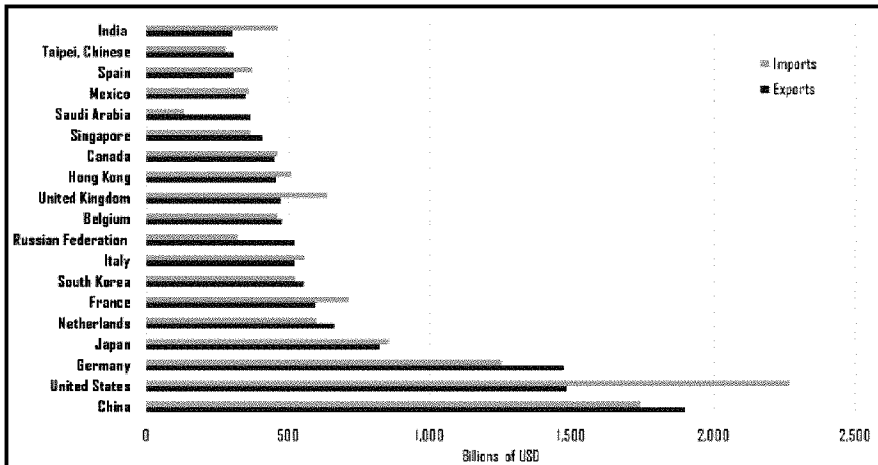
An important reason why the United States should adopt this structure is that the United States is a very important country when it comes to imports, not just emissions, as a percentage of global trade. The United States is responsible for over fourteen percent of total global imports, \$2.25 trillion, and is the number one import market in the world as seen in Figure 4. Two key points: 1) this percentage increases once the European Union is combined and/or trade between the United States is taken into account, and 2) a significant share of China's exports and imports are "value added," meaning parts are produced in other countries, shipped to China to take advantage of cheap labor (and cheap environmental costs), and re-exported. Should the United States adopt this tax structure, the rest of the world would have a tremendous incentive to adopt a similar structure to minimize the tax on their goods so as to remain competitive in the world's largest market. This strong effect will also be seen internally, in that U.S. states with high emission outputs will also have an

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228. See Baer et al., *supra* note 218, at 6.

incentive to reduce their emissions in order to efficiently sell their goods to the United States.

Figure 4: Imports and Exports by Country<sup>229</sup>



## 6. Reinvestment

### a. Domestic Reinvestment

One unique aspect of the CTR is the reinvestment. All revenue collected from the tax will be used to reinvest in clean energy. For domestic purposes, the tax collected within the state will be used within its borders for clean energy. For example, if California collects \$1 billion from the CTR, California will use that revenue to invest in building clean power plants that will reduce its total GHG emissions over time. Guidelines will need to be established to determine what will be considered to be proper reinvestment of the revenue, but those guidelines will be intuitive.

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229. *Trade Growth to Slow in 2012 After Strong Declaration in 2011*, WORLD TRADE ORG. (Apr. 12, 2012), [http://www.wto.org/english/news\\_e/pres12\\_e/pr658\\_e.htm](http://www.wto.org/english/news_e/pres12_e/pr658_e.htm); *World Bank Data*, *supra* note 224.

### *b. Foreign Reinvestment*

Revenue collected on foreign imports by the federal government will be reinvested in clean power plants to reduce emissions in the highest emitting states first.<sup>230</sup> The money may also be invested in clean and safe power plant technology, but the best incentive to develop clean power is in purchasing it in very large quantities. Creating a significant market for clean power would allow the United States to consider disseminating this clean energy technology to foreign countries as a good faith effort to reduce overall GHG emissions and as a way for the United States to reinvest in the world. As the program continues and the tax rate increases, a portion of the revenue could be reinvested in foreign countries to reduce emissions. This reinvestment program will also have guidelines developed for who may receive the money, and shall be given in such a way as to both reward low emitting countries and also help high emitting countries reduce their emissions.

## 7. Compliance with the WTO

### *a. Rationale for the Structure*

A flat carbon tax that is imposed uniformly on total emissions without calculating emissions intensity may be subject to the most favored nation principle.<sup>231</sup> Although the tax is a single rate for all countries, each country emits different types of GHG. For example, GHG emissions in 2010 came predominately from three sources, all fossil fuels.<sup>232</sup> Additionally, different countries use different sources to produce energy, which results in different emission intensities. For example, seventy-five percent of France's energy comes from

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230. Note that author is working on further research to propose that a portion of monies collected on imported goods (and services) could also be used to fund the Copenhagen Accord, where developed countries promised \$100 billion a year to developing countries to mitigate climate change.

231. See GATT, *supra* note 117, art. 1.

232. Forty-three percent of emissions were from coal, thirty-six percent were from oil, and twenty percent were from gas. INT'L ENERGY AGENCY, CO<sub>2</sub> EMISSIONS FROM FUEL COMBUSTION: HIGHLIGHTS 19 (2012), <http://www.iea.org/co2highlights/co2highlights.pdf>.

nuclear energy<sup>233</sup> whereas China produces sixty-nine percent of its energy through coal.<sup>234</sup>

Different countries may therefore be able to argue that the energy inputs from different sources are not like inputs, and through imposing a uniform tax rate on every type of emissions, it is favoring certain nations over others since the emissions come from different make-ups.<sup>235</sup> Treating all different types of energy resources equally will result in discrimination and a violation of Article I of GATT. This is because the tax is calculated by looking at the amount of GDP per ton of emissions, resulting in an emissions intensity of GDP per ton of CO<sub>2</sub> equivalent; essentially an input.

To avoid discriminating by source, this is solved by the United States adopting a fifty U.S. State + Territory + D.C. individual CTR rates. Meaning, each U.S. state will have its own carbon (value added) tax structure. In this manner, U.S. states replicate the majority of the world's countries in terms of emissions intensity as seen in Table 4.

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233. *Nuclear Power in France*, WORLD NUCLEAR ASS'N, <http://www.world-nuclear.org/info/inf40.html> (last updated Jan. 2014).

234. *China*, U.S. ENERGY INFO. ADMIN., <http://www.eia.gov/countries/cab.cfm?fips=CH> (last updated Feb. 4, 2014).

235. See Eric Phillips, Note, *World Trade and the Environment: The CAFE Case*, 17 MICH. J. INT'L L. 827, 842 (1996).

Table 4: Emissions Intensity, Comparing U.S. States vs. Select Countries <sup>236</sup>

<b>Emissions Intensities: U.S. States vs. Select Countries</b>			
<b>\$ of GDP per Ton of CO<sub>2</sub> Emissions</b>			
Alabama	\$892.86	India	\$448.43
California	\$3,703.70	Japan	\$3,448.28
		France	\$4,000.00
Washington	\$2,941.18	United Kingdom	\$3,571.43
Colorado	\$1,886.79	Euro Area	\$2,500.00
		United States	\$2,040.82
Texas	\$1,250.00	Australia	\$1,298.70
Wyoming	\$305.81	China	\$312.50

As Table 4 indicates, Wyoming and Alabama have similar emissions intensity as India and China, while Texas has an emissions intensity similar to Australia, and California's emissions intensity is on par with Japan and France. The CTR would raise the needed revenues to replace existing high emission power plants in the United States, while also encouraging the adoption of the CTR around the world in order for other countries to remain competitive in the United States (and global) marketplace.

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236. Table 4 represents emissions intensities using the 2005 comprehensive data set. Current Dollar GDP and emissions data for U.S. states are provided by the Bureau of Economic Analysis (BEA) and the World Recourses Institute's Climate Analysis Indicator Tool (CAIT), respectively. BUREAU OF ECON. ANALYSIS, U.S. DEP'T OF COMMERCE, <http://www.bea.gov> (last updated Mar. 7, 2014); Greg Fuhs, *A New, One-Stop Shop for Greenhouse Gas Emissions Data*, WORLD RES. INST. (July 10, 2013), <http://www.wri.org/blog/new-one-stop-shop-greenhouse-gas-emissions-data>. GDP for countries is taken from World Bank data, *World Bank Data*, *supra* note 224.

*b. Most Favored Nation*

Since the CTR takes the emissions intensity as a whole for each individual country, the emission inputs become like products. Therefore, the tax rate based on total GHG emissions per GDP will be imposed uniformly so each country will be subject to the same tax rate. This is the rationale behind calculating each country and state tax rate individually. Through calculating the emissions intensity of one country, irrespective of how the energy comes to the country, it is taking total emissions per country in every instance. Therefore, the tax is measuring the total emission intensity input per gross domestic product, making the tax rate apply to like products.

By applying the tax rate to U.S. states and territories, as well as considering countries to be their own territory and calculating the emissions intensity by using dollar of GDP per ton of GHG emissions, this tax will not favor one country (or state or territory) over another. Yes, clean energy countries (and states) will have a lower total tax applied to their goods, but it is a result of the calculation, not through discriminatory factors. Furthermore, the countries that have the highest taxes will also receive some benefit from the tax through the reinvestment clause, where taxes will be devoted to aiding countries develop clean energy. Therefore, the tax is fairly imposed on all countries and states, without any form of discrimination.

*c. National Treatment*

Article 3.2 refers only to indirect taxes.<sup>237</sup> An indirect tax is a tax on a product and precludes direct taxes, such as a tax on income.<sup>238</sup> The tax must be applied on goods or services. Further, GHG emissions are considered to be an input of a product and therefore may be taxable as part of the final product.<sup>239</sup> This principle was

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237. Pitschas, *supra* note 127, at 485.

238. *Id.*

239. Inputs for a product include raw materials, transportation, energy, and labor. Any raw materials need to be mined, transported, and processed, which creates emissions. Energy inputs also create emissions. Additionally, labor creates emissions for two reasons: 1) labor consumes items that have emissions and 2) labor needs transportation to the work site to create products (goods or services).

solidified in Superfund, where the GATT Dispute Panel stated that a tax on input is an eligible BTA.<sup>240</sup> Superfund addressed whether or not a chemical that was used in the production of a good was an allowable input that could be taxed, and the panel stated that a chemical input could indeed be taxed.<sup>241</sup> Presumably, the rationale was that the input may be allowed since the chemical was essential to creating the final product, just like GHG emissions are necessary to the output of a final good or service. Therefore, a GHG emissions tax is likely to be considered an allowable BTA. In addition, VATs are compliant with the WTO. So structuring the CTR in a VAT format further ensures its success.

The tax is imposed whenever a good passes into its intended final destination. The tax is applied if a good is imported from California into Ohio, or if it is imported from Australia into New York. The only difference between a foreign import and a state import is which entity will receive the revenue. The tax rate will be calculated, imposed, and collected in the same manner. The uniformity of the tax rate is part of the simplicity, which consequently makes the tax transparent and compliant with the national treatment provisions of Article III.<sup>242</sup>

#### *d. Chapeau*

Clearly, the tax may also be argued under the chapeau exceptions. As the tax stands however, it complies with all of the WTO regulations on its own. The chapeau therefore only bolsters the argument that the tax complies with all regulation. Clearly, the tax is seeking to protect an exhaustible natural resource by seeking to mitigate climate change,<sup>243</sup> and it is also applied in a non-discriminatory manner that is not a disguise to restrict trade. If the tax were to be imposed on total emissions of a country, and not the emissions intensity, it may have been arguably arbitrary and

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See WORLD TRADE ORG., ANALYTICAL INDEX OF THE GATT 226 (1995), [http://www.wto.org/english/res\\_e/booksp\\_e/gatt\\_ai\\_e/art6\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/gatt_ai_e/art6_e.pdf).

240. Pitschas, *supra* note 127, at 491.

241. See generally Report of the Panel, GATT, *United States—Taxes on Petroleum and Certain Imported Substances*, BISD, L/6175 ¶ 2.3 (1987).

242. GATT, *supra* note 117, art. 3.

243. *Id.* art. 20(g).

discriminatory. The dispute panel would also more thoroughly scrutinize the tax if it would raise revenue that could later mitigate other taxes within the U.S. borders. Therefore, the tax should be determined to comply with both Article I and Article III of GATT, as well as the Article XX exception.

## VII. CONCLUSION

Climate change is a significant problem that society must address in the upcoming years. However, through looking at the history of the issue, it is apparent that multilateral agreements often fall short in creating quantifiable restrictions and making a practical difference. Therefore, countries must look to unilateral actions to address the issue. These unilateral actions must be able to function within the international framework however, and therefore must be compliant with WTO regulations. The CTR is a forward-looking option that not only complies with WTO regulations, but also will affect how the world looks at GHG emissions. The CTR changes common perspectives regarding how to solve climate change by demonstrating that not only is it affordable, but it can be done in an efficient and effective manner.

Furthermore, a CTR can significantly reduce emissions by proactively building new clean power plants and reducing the supply of total GHG emissions. A CTR will also encourage other countries to adopt it, much like the VAT (where rates vary from three to twenty-two percent), which was initially adopted by Denmark in 1967,<sup>244</sup> quickly followed by other countries in the European Union, and later adopted by over 150 countries.<sup>245</sup> The other countries will do so to reduce their total GHG footprint in order to remain competitive in international markets.

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244. Gilbert A. Metcalf, *Value-Added Taxation: A Tax Whose Time Has Come?*, 9 J. ECON. PERSPECTIVES 121 (1995).

245. *Global Indirect Tax Rates*, DELOITTE, <http://www2.deloitte.com/global/en/pages/tax/solutions/global-indirect-tax-rates.html> (last visited Mar. 10, 2014).