

# RGGI: Step Up Your Game and Incorporate More Renewable Energy

By Hari Narayan Khalsa\*

“It’s Global Warming, Stupid.”<sup>1</sup> So said the headline from Bloomberg Business Week’s Politics and Policy segment, days after catastrophic Hurricane Sandy ripped through the United States’ east coast.<sup>2</sup> Scientists around the world have agreed that global climate change presents a real, tangible threat to the global economy and safety of people worldwide.<sup>3</sup> Tiny, low-lying islands like Tuvalu, the Maldives, and Kiribati are disappearing at a rate of 5 mm per year, with residents facing abandonment of their homelands and the end of life as they know it.<sup>4</sup> Impending food shortages as a result of climate change are predicted to add 10–20% to the number of hungry people in the world by 2050.<sup>5</sup> Global GDP is decreasing at a rate of 1.6% per year because of the effects of climate change and will shrink at a rate of up to 3.2% annually by 2030 if climate change continues unchecked.<sup>6</sup>

This information has spurred many countries to adopt national carbon reduction goals through various regulatory schemes,<sup>7</sup> though the U.S. government has yet to enact carbon dioxide reduction legislation in response to the dire pre-

dictions of an unabated rise in global temperature.<sup>8</sup> Instead, states have started taking the lead. As of April 2014, thirty-one states and the District of Columbia have implemented state renewable portfolio standards to help limit their carbon dioxide (“CO<sub>2</sub>”) production.<sup>9</sup> Additionally, several multi-state regions have begun cooperative carbon reduction efforts through a cap-and-trade approach.<sup>10</sup> The Northeast pioneered such cooperative efforts through its implementation of the groundbreaking Regional Greenhouse Gas Initiative (“RGGI,” pronounced “Reggie”).<sup>11</sup> Comprised of nine states, RGGI is the first of its kind: an opt-in, regional cap-and-trade program that regulates power sector CO<sub>2</sub> emissions in each state, and sets mandatory statewide and regional CO<sub>2</sub> emissions limits.<sup>12</sup>

To understand why RGGI created waves in the policy sphere, first one must understand how a cap-and-trade system works. Cap and trade is a market-based policy approach to reducing pollution emissions.<sup>13</sup> First, within a specific geographic area a mandatory maximum pollution emission limit is set and lasts for an allotted period of time, called a compliance period; this limit forms the “cap.”<sup>14</sup> All sources regulated under the program are given authorization to emit a specific amount of pollution, which is reflected in a spe-

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\* Hari Narayan Khalsa is a 2014 J.D. graduate from The George Washington University Law School, where she was the Senior Articles Editor of the *George Washington Journal of Energy & Environmental Law*. She received her B.A. from Green Mountain College in 2008. She wishes to thank Mike Grandy for his laughter and encouragement, and dedicates this work to the memory of Rebecca Lyons, her beloved sister.

1. Paul M. Barrett, *It’s Global Warming, Stupid*, BLOOMBERG BUSINESSWEEK, Nov. 5, 2012, at 6, available at <http://www.businessweek.com/articles/2012-11-01/its-global-warming-stupid>.
2. *Id.*
3. LENNY BERNSTEIN ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT 46, 48–52 (Abdelkader Allali et al. eds., 2007).
4. Matt Siegel, *Vanishing Point*, SYDNEY MORNING HERALD (Aug. 11, 2012, 3:00 AM), <http://www.smh.com.au/lifestyle/vanishing-point-20120806-23op2.html>.
5. Robert Roy Britt, *Global Food Shortage Becomes Urgent as Planet Warms*, LIVESCIENCE.COM (June 5, 2011, 12:18 PM), <http://www.livescience.com/14447-global-food-shortage-urgent-climate-global-warming.html>.
6. Ehren Goossens, *Climate Change Reducing Global GDP by \$1.2 Trillion*, BLOOMBERG BUSINESSWEEK (Sept. 26, 2012), <http://www.businessweek.com/news/2012-09-26/climate-change-reducing-global-gdp-by-1-dot-6-percent-a-year-report-finds>.
7. See Bradley Motl, Comment, *Reconciling German Style Feed-In Tariffs With PURPA*, 28 WIS. INT’L L.J. 742, 749 (2011) (explaining that most of Europe and other Asian countries have enacted renewable energy incentive programs like the feed-in tariff).

8. See generally Ed Feo, *Federal Renewable Electric Standard Presents Challenges*, 88 ELECTRIC LIGHT & POWER 4 (July 2010), available at <http://www.elp.com/articles/print/volume-88/issue-4/sections/federal-renewable.html> (discussing the federal government’s failure to enact a federal renewable electric standard).
9. *Renewable and Alternative Energy Portfolio Standards*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, <http://www.c2es.org/us-states-regions/policy-maps/renewable-energy-standards> (last visited Apr. 6, 2014) (27 states have implemented a renewable portfolio standard, and four states have implemented an alternative energy portfolio standard).
10. LORI BIRD ET AL., NAT’L RENEWABLE ENERGY LAB., EVALUATING RENEWABLE PORTFOLIO STANDARDS AND CARBON CAP SCENARIOS IN THE U.S. ELECTRIC SECTOR 1 (2010).
11. *About the Regional Greenhouse Gas Initiative (RGGI)*, REGIONAL GREENHOUSE GAS INITIATIVE (Sept. 28, 2012), [http://rggi.org/docs/Documents/RGGI\\_Fact\\_Sheet\\_2012\\_09\\_28.pdf](http://rggi.org/docs/Documents/RGGI_Fact_Sheet_2012_09_28.pdf) (noting that the nine participating states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont).
12. *Id.*; *Program Overview*, REGIONAL GREENHOUSE GAS INITIATIVE (Sept. 28, 2012), <http://www.rrgi.org/design/overview>. RGGI is opt-in for each state, and then binding for the fossil fuel electric power generators that produce 25 MW of electricity or more within the participating states.
13. *Cap and Trade: Basic Information*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/captrade/basic-info.html> (last updated Apr. 9, 2009).
14. *Cap and Trade Essentials*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/captrade/documents/ctessentials.pdf> (last visited Mar. 23, 2013).

cific number of allowances given to them each compliance period.<sup>15</sup> For example, one allowance may represent 1 ton of pollutant. When a regulated source emits 1 ton of pollutant, they must hold one allowance to represent that emission. The total number of allowances distributed among all regulated sources cannot exceed the pollution cap.<sup>16</sup> At the end of the compliance period, all sources report their emissions and yield back their remaining allowances to the authorizing entity.<sup>17</sup> Allowance trading allows emission sources to create their own compliance strategies by deciding whether to pollute or mitigate their pollution levels, giving them flexibility while the market as a whole still achieves pollution reduction goals.<sup>18</sup> If these targeted producers exceed their allotted amount of emissions, they must purchase extra allowances from other producers who did not reach their limit.<sup>19</sup> As required by the signatories of RGGI, each regulated power plant must hold CO<sub>2</sub> allowances equal to its emissions to demonstrate compliance at the end of the compliance period.<sup>20</sup> Allowances can be traded in an auction forum, as is done in RGGI, where participating sources buy and sell unused allowances.<sup>21</sup> If necessary, the regional cap is lowered incrementally over time to decrease overall pollution levels until the ambient pollution concentration meets desired levels.<sup>22</sup> Cap-and-trade systems are most effective when they cover a large area and encompass many emitters, so in the absence of a national cap-and-trade scheme, regional efforts are the next best option.<sup>23</sup>

RGGI is the first regional cap-and-trade program in the United States, and though it received criticism from the coal and oil lobby, it began with huge success.<sup>24</sup> Unfortunately, the program started to flag only a year-and-a-half after it rocketed through the gates. In 2008 and 2009, natural gas

availability soared, and the economic downturn and unusually mild weather caused a reduction in energy use.<sup>25</sup> These factors all served to reduce overall emissions.<sup>26</sup> The reduction in emissions made the carbon cap nearly superfluous and undermined RGGI's existence as a carbon reduction tool.<sup>27</sup> However, RGGI's original Memorandum of Understanding called for a 2012 Review to assess the program's efficacy. So, in 2012 the participating states undertook this evaluation and determined that the program could continue to drive even greater CO<sub>2</sub> reductions (and avoid obsolescence) if the carbon cap was ratcheted down to match the current levels of CO<sub>2</sub> emissions.<sup>28</sup> Thus, in February of 2013, the participating states announced an amendment to the Model Rule: the cap would be reduced by 45%, from 160 million tons of CO<sub>2</sub> per year regionally to 91 million tons of CO<sub>2</sub> per year.<sup>29</sup> The first auction under the new cap was a great success; on March 7, 2014, allowances sold at a clearing price of \$4.00 per allowance, marking an all-time high.<sup>30</sup>

Not all changes springing from the 2012 Review were ideal, though. A new provision was included in the Model Rule for a "cost containment reserve" ("CCR"),<sup>31</sup> which is a bank of 5 to 10 million allowances each year to be released into the market if the price of carbon rises above a specific auction amount.<sup>32</sup> The CCR was included to provide some certainty to energy producers so that they may know that carbon auction prices should not significantly spike.<sup>33</sup> Also, the scope of the 2012 Review was too narrow in not addressing existing statewide renewable energy measures. Cap and trade, though a preferred policy mechanism for greenhouse gas reduction because of its market-based nature, is widely

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. *Cap and Trade: Basic Information*, *supra* note 13. For example, Region X can only release 30 tons of CO<sub>2</sub>, to be divided between Plant A and Plant B. Plant A is allowed 10 tons of carbon, but uses seven. Plant A can then sell three tons of carbon to Plant B, which is allowed 20 tons, but uses 23 tons.

20. Press Release, Reg'l Greenhouse Gas Initiative, 97% of RGGI Units Meet First Compliance Period Obligations (June 4, 2012), available at [http://rggi.org/docs/PR060412\\_Compliance.pdf](http://rggi.org/docs/PR060412_Compliance.pdf).

21. See *Fact Sheet: RGGI CO<sub>2</sub> Allowance Auctions*, REGIONAL GREENHOUSE GAS INITIATIVE (Sept. 28, 2012), [http://rggi.org/docs/RGGI\\_Auctions\\_in\\_Brief.pdf](http://rggi.org/docs/RGGI_Auctions_in_Brief.pdf).

22. See *About the Regional Greenhouse Gas Initiative (RGGI)*, *supra* note 11.

23. *Cap and Trade Essentials*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/captrade/documents/ctessentials.pdf> (last visited Mar. 23, 2013).

24. See Press Release, Reg'l Greenhouse Gas Initiative, RGGI States' First CO<sub>2</sub> Auction Off to a Strong Start (Sept. 29, 2008), available at [http://rggi.org/docs/rggi\\_press\\_9\\_29\\_2008.pdf](http://rggi.org/docs/rggi_press_9_29_2008.pdf); see also Brian Nearing, *Group Linked to Billionaire Koch Brothers Seeks End to New York Role in Greenhouse Gas Curb*, TIMES UNION.COM (June 29, 2011), <http://www.timesunion.com/local/article/Group-linked-to-billionaire-Koch-brothers-seeks-1445005.php>; Mireya Navarro, *Challenge to New York's Carbon Trading Fails*, N.Y. TIMES GREEN BLOG (June 14, 2012), <http://green.blogs.nytimes.com/2012/06/14/challenge-to-carbon-trading-fails/>; Damien Shirley, *Koch Brothers Behind Push to End RGGI*, LEAGUE OF CONSERVATION VOTERS BLOG (June 6, 2011), <http://www.lcv.org/media/blog/koch-brothers-behind-push-to.html>; CASE STUDY: *Koch Front Groups Attack RGGI—The Northeast Regional Greenhouse Gas Initiative*, GREENPEACE USA, <http://www.greenpeace.org/usa/en/campaigns/global-warming-and-energy/polluterwatch/koch-industries/CASE-STUDY-Koch-Front-Groups-Attack-RGGI--the-Northeast-Regional-Greenhouse-Gas-Initiative/> (last visited Apr. 7, 2013).

25. See discussion *infra* Part I.A.

26. *Id.*

27. See *id.*

28. See JONATHAN L. RAMSEUR, CONG. RESEARCH SERV., R41836, THE RGGI: LESSONS LEARNED AND ISSUES FOR POLICYMAKERS 6 (2013); See also *RGGI States Propose Lowering Regional CO<sub>2</sub> Emissions Cap by 45 Percent*, GEO. CLIMATE CENTER (Feb. 8, 2013), <http://www.georgetownclimate.org/rggi-states-propose-lowering-regional-co2-emissions-cap-by-45-percent>; REG'L GREENHOUSE GAS INITIATIVE, SUMMARY OF RGGI MODEL RULE CHANGES (Feb. 2013), available at [http://www.rggi.org/docs/ProgramReview/\\_FinalProgram-ReviewMaterials/Model\\_Rule\\_Summary.pdf](http://www.rggi.org/docs/ProgramReview/_FinalProgram-ReviewMaterials/Model_Rule_Summary.pdf).

29. See *RGGI States Propose Lowering Regional CO<sub>2</sub> Emissions Cap by 45 Percent*, *supra* note 28. The Model Rule provides the model language for each Member State to utilize when implementing CO<sub>2</sub> budget trading programs in compliance with RGGI.

30. Press Release, Reg'l Greenhouse Gas Initiative, CO<sub>2</sub> Allowances Sold at \$4.00 at 23rd RGGI Auction (Mar. 7, 2014), available at [http://www.rggi.org/docs/Auctions/23/PR030714\\_Auction23.pdf](http://www.rggi.org/docs/Auctions/23/PR030714_Auction23.pdf). The tightening of the cap was met with approval from RGGI supporters across the country, since the existing cap was roundly criticized as a serious weakness of RGGI. See Josh Galperin, *The RGGI Emissions Cap: Is It Too Forgiving?*, YALE CENTER FOR ENVTL. L. & POL'Y BLOG (Apr. 1, 2011), available at <http://environment.yale.edu/envirocenter/the-rggi-emissions-cap-is-it-too-forgiving>; see generally Press Release, New England Clean Energy Council, NECEC Applauds New England Governors for Reducing RGGI Emissions Cap (Feb. 7, 2013), available at <http://www.cleaneenergycouncil.org/blog/2013/02/07/necec-applauds-new-england-governors-for-reducing-rggi-cap>; cf. Ric Werme, *What's Up With RGGI? Moving the Cap Down*, WATTS UP WITH THAT (Dec. 13, 2012), <http://wattsupwiththat.com/2012/12/13/whats-up-with-rggi-moving-the-cap-down/> (criticizing RGGI emissions caps).

31. See *RGGI States Propose Lowering Regional CO<sub>2</sub> Emissions Cap by 45 Percent*, *supra* note 28.

32. See *infra* Part I.A.

33. Telephone Interview with Joseph Fontaine, Trading Programs Manager, N.H. Dept of Envtl. Servs. (Feb. 22, 2013) (on file with author).

thought to be more effective when implemented in conjunction with other policy mechanisms like the Renewable Portfolio Standard (“RPS”).<sup>34</sup> When implemented together, cap and trade and RPS may decrease “leakages” (increased emissions in neighboring states) and spur progress on the similar policy objective of increasing renewable energy production.<sup>35</sup> At this point, RGGI states have not harmonized their RPS programs to work as a regional RPS.<sup>36</sup>

This Article will argue that the CCR, though included to protect energy suppliers from very high spikes in auction prices, was poorly implemented as a solution to potential future carbon price increases. In lieu of a properly designed CCR, the Model Rule should have been amended to include an investment of 25% of RGGI revenue into renewable energy measures in order to decrease traditional energy demand and keep carbon prices affordable for energy producers. Further, this Article will argue that the RGGI states should adopt a uniform RPS model to achieve maximum flexibility and efficiency in increasing renewable energy production.

Section I of this Article will discuss the initial success and subsequent failure of RGGI, outline the political challenges that confronted RGGI in 2011, and further explore RPS. Section II will expand on the current problem posed by the CCR measure and potential issues associated with disparate RPS requirements among neighboring states. Section III will propose, discuss, and analyze solutions. Section IV will briefly discuss the potential challenges to the proposed solutions.

## I. The RGGI Rollercoaster, Political Backlash, and the Renewable Portfolio Standard

RGGI sparked national interest when it became the first regional cap-and-trade program to reduce CO<sub>2</sub>.<sup>37</sup> However, though the program found initial success in 2008, several factors brought RGGI’s success to a grinding halt.<sup>38</sup> A few participating states began to lose their confidence in the

program,<sup>39</sup> and by 2011 the program stood on shaky legs at best. This section will discuss why and how these events played out and the steps RGGI states have taken to renew the program’s vitality. This section will also introduce the reader to the RPS, a policy measure adopted independently, with disparate expectations and regulations, by each RGGI state to increase renewable energy use.

### A. RGGI Success and Failure: Why RGGI Hit Rock Bottom and What Has Been Done to Bring It Back

RGGI started as a series of discussions in 2003 among the governors of nine states<sup>40</sup> to enter into a regional cap-and-trade program.<sup>41</sup> The program, they decided, would be at the forefront of the battle against climate change, designed to decrease CO<sub>2</sub> emissions from power plants in the Northeast and Mid-Atlantic United States.<sup>42</sup> The participants created and signed the Memorandum of Understanding (“MOU”), which laid out a series of proclamations that identified the signatories’ purposes for creating RGGI.<sup>43</sup> Among these reasons was the desire to establish themselves as world leaders in carbon emission control technologies, renewable energy supplies, and energy-efficient technologies.<sup>44</sup> Renewable energy use was a strong piece of the driving force of the agreement. In fact, the participating members included in the MOU an agreement that each state would allocate 25% of its allowances to a “consumer benefit or strategic energy purpose,”<sup>45</sup> including the use of allowances for the promotion of renewable energy technology.<sup>46</sup>

Five years after its inception in 2003, all nine states, plus Maryland, had signed the MOU, and in September of 2008 the first emissions auction was held.<sup>47</sup> As mentioned previously, the initial targets were made without knowledge of the looming changes in the economy and energy sector.<sup>48</sup> Power sector CO<sub>2</sub> emissions were capped at 165 million tons per year through 2014, which reflected average power sector emission levels from 2000–2004.<sup>49</sup> RGGI planned that the cap would then be reduced by 2.5% annually from 2015–

34. See generally UNION OF CONCERNED SCIENTISTS, A BETTER CLIMATE BILL ANALYSIS: RAISING EFFICIENCY AND RENEWABLE ELECTRICITY STANDARDS INCREASES CONSUMER BENEFITS (Feb. 2010), available at [http://www.ucsusa.org/clean\\_energy/smart-energy-solutions/strengthen-policy/a-better-climate-bill.html](http://www.ucsusa.org/clean_energy/smart-energy-solutions/strengthen-policy/a-better-climate-bill.html) (cap-and-trade combined with energy efficiency standards and a renewable electricity standard is the most effective way to reduce carbon emissions and increase benefits to consumers, the economy, and the environment); AM. COUNCIL FOR AN ENERGY EFFICIENT ECON. ET AL., A COMPREHENSIVE APPROACH TO SETTING CLEAN ENERGY STANDARDS FOR THE ELECTRICITY SECTOR (Apr. 2009), available at <http://aceee.org/files/pdf/fact-sheet/3Pillars.pdf> (showing that a “three pillars” approach—an energy efficiency standard, a renewable electricity standard, and an economywide carbon cap—achieves optimal cost, energy savings, and emissions reductions); BIRD ET AL., *supra* note 10, at 26 (adding an RPS to an emissions cap could drive renewable energy generation beyond what could be achieved by an emissions cap alone).

35. See *infra* Part III.B.; BIRD ET AL., *supra* note 10, at 26 (adding an RPS to an emissions cap could drive renewable energy generation beyond what could be achieved by an emissions cap alone).

36. Telephone Interview with Joseph Fontaine, Trading Programs Manager, New Hampshire Dept. of Envtl. Servs. (Jan. 28, 2013) (on file with author).

37. Jim Efstathiou Jr., *Air-Pollution Market Debut Tests Cap-and-Trade Model (Update1)*, BLOOMBERG NEWS (Sept. 23, 2008), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a7fmAZqdHrW0&refer=home>.

38. See *infra* Part I.A.

39. See *id.*

40. Program Design Archive, REGIONAL GREENHOUSE GAS INITIATIVE, <http://rggi.org/design/history> (last visited Mar. 24, 2013) (the nine states involved in initial discussions were Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont).

41. *Id.*

42. *Id.*

43. REG’L GREENHOUSE GAS INITIATIVE, MEMORANDUM OF UNDERSTANDING 1–2 (2005), available at [http://www.rrgi.org/docs/mou\\_final\\_12\\_20\\_05.pdf](http://www.rrgi.org/docs/mou_final_12_20_05.pdf).

44. *Id.* at 6 (looking also to the benefits of increased renewable energy supplies and energy efficiency to stem the impending disastrous effects of climate change, among other stated considerations).

45. *Id.*

46. *Id.* Also included as avenues for allowance investment were investments into energy efficiency, direct mitigation of electricity ratepayer impacts, and a reward system for the development of carbon emissions abatement technology with potential for significant carbon reduction. *Id.*

47. Press Release, Reg’l Greenhouse Gas Initiative, States Conduct First-in-the-Nation Auction of CO<sub>2</sub> Emission Allowances (Sept. 25, 2008), available at [http://www.rrgi.org/docs/rggi\\_press\\_9\\_25\\_2008.pdf](http://www.rrgi.org/docs/rggi_press_9_25_2008.pdf).

48. See *supra* Part I.

49. The RGGI CO<sub>2</sub> Cap, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rrgi.org/design/overview/cap> (last visited on Apr. 7, 2013).

2018, for a total reduction of 10% of 2003 levels by 2019.<sup>50</sup> At first glance, it appeared that these numbers would create a healthy market for allowance trading without imposing too costly a burden on regulated entities.<sup>51</sup> In fact, early allowance auctions were a huge success. In March of 2009, the price of an allowance was \$3.51 and the auction generated over \$117 million.<sup>52</sup> Unfortunately, by December of 2009 the allowance clearing price had dropped to \$2.05, and in September of 2010 it hit a low of \$1.86, with the auction generating only \$66.4 million.<sup>53</sup>

By 2008, the perfect storm of bottoming-out power demand and an over-abundance of natural gas had knocked RGGI off course. The first allowance auction was held at the start of the worst recession in the country since the Great Depression, and only a year before the United States hit the natural gas wave.<sup>54</sup> Total energy production dropped by 4% in the United States in 2008 and 2009 because of the economic crunch.<sup>55</sup> From 2005–2009, CO<sub>2</sub> emissions from electricity production in RGGI member states dropped by 33%.<sup>56</sup> Nearly 30% of the reduction was attributable to unusually mild weather<sup>57</sup> and the failing economy.<sup>58</sup> Another 43% resulted from fuel switching<sup>59</sup> and improved efficiency measures.<sup>60</sup> These numbers were indicative of a major shift in the U.S. energy economy at that time. In 2009, drillers opened up a wealth of gas reserves in the Marcellus Shale and industrial gas prices plummeted,<sup>61</sup> falling 42% from 2005–2009.<sup>62</sup> The natural gas boom was so monumental that the United States is now the largest producer of natural gas in the world,<sup>63</sup> and the U.S. Energy Information Administration (“EIA”) predicts that the United States will become a natural gas net exporter by 2016.<sup>64</sup> This market shift to natural gas from petroleum and coal undercut RGGI tremendously. In fact, 31% of the total CO<sub>2</sub> reduction from 2005–2009

stemmed from the increased use of cheap natural gas.<sup>65</sup> In 2010, the EIA released a report confirming that 2009 saw the largest drop in CO<sub>2</sub> emissions in sixty years,<sup>66</sup> and only a fraction of the reduction among RGGI member states was attributed to an increased use of renewable fuels.<sup>67</sup> By the beginning of 2013, the existing RGGI cap was well above the actual carbon emissions level: with the cap set at 165 million tons and the actual emissions around 91 million tons, the cap was roughly 45% too high.<sup>68</sup>

All of these factors brought the auction price of CO<sub>2</sub> allowances down continuously for two years until it reached the minimum allowable bid (“reserve price”) by mid-2010.<sup>69</sup> Until March of 2013, the clearing price had not risen significantly since mid-2010 and remained at rock-bottom through its 18th auction in December 2012.<sup>70</sup>

Fortunately for RGGI, there was a light at the end of the tunnel. The MOU provided for a Program Review at the end of 2012.<sup>71</sup> The results of this review were released in mid-February, 2013.<sup>72</sup> RGGI supporters around the country breathed a sigh of relief when the results were announced: the participating RGGI states would tighten the CO<sub>2</sub> emissions cap in 2014.<sup>73</sup> RGGI states decided to tighten the cap to meet actual CO<sub>2</sub> emissions.<sup>74</sup> This measure may have been the ticket for the revitalization and strengthening of RGGI. RGGI immediately saw an increase in allowance price,<sup>75</sup> when in March of 2013 the clearing price averaged higher than the reserve price for the first time since 2010.<sup>76</sup> Additionally, for the first time since June of 2011 every single available allowance was sold at auction, where there were twice as many bids as available allowances.<sup>77</sup> Previously, only

50. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 3.

51. *See, e.g.*, Efsthathiou, *supra* note 37.

52. *Auction Results*, REGIONAL GREENHOUSE GAS INITIATIVE, [http://www.rggi.org/market/co2\\_auctions/results](http://www.rggi.org/market/co2_auctions/results) (last visited Apr. 8, 2014).

53. *Id.*

54. *See* U.S. ENERGY INFO. ADMIN., U.S. CO<sub>2</sub> EMISSIONS IN 2009: A RETROSPECTIVE REVIEW 4, 7 (2010), *available at* [http://www.eia.gov/oiaf/environment/emissions/carbon/pdf/2009\\_co2\\_analysis.pdf](http://www.eia.gov/oiaf/environment/emissions/carbon/pdf/2009_co2_analysis.pdf).

55. U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2010 EXECUTIVE SUMMARY 1 (2010), *available at* <http://www.eia.gov/oiaf/aeo/pdf/execsummary.pdf>.

56. REG’L GREENHOUSE GAS INITIATIVE, RELATIVE EFFECTS OF VARIOUS FACTORS ON RGGI ELECTRICITY SECTOR CO<sub>2</sub> EMISSIONS: 2009 COMPARED TO 2005: DRAFT WHITE PAPER 3 (Nov. 2, 2010), *available at* [http://www.rggi.org/docs/Retrospective\\_Analysis\\_Draft\\_White\\_Paper.pdf](http://www.rggi.org/docs/Retrospective_Analysis_Draft_White_Paper.pdf).

57. *Id.* at 4, 8 (noting 24.2% of the emission reductions from 2005–2009 were due to mild weather).

58. *Id.* at 4, 11 (the depressed economy accounted for 4.4% of the emissions reductions, and 9% of the drop in electricity use over the full 2005–2009 period).

59. *Id.* at 16 (accounting for 31.2%).

60. *Id.* (accounting for 11.9%).

61. *Natural Gas Prices*, U.S. ENERGY INFO. ADMIN., [http://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_a\\_epg0\\_pin\\_dmcf\\_a.htm](http://www.eia.gov/dnav/ng/ng_pri_sum_a_epg0_pin_dmcf_a.htm) (last updated Jan. 31, 2014).

62. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 56, at 15.

63. INST. FOR ENERGY RESEARCH, HARD FACTS: AN ENERGY PRIMER 2 (2012), *available at* <http://instituteeforenergyresearch.org/hardfacts.pdf>.

64. INST. FOR ENERGY RESEARCH, BREAKING DOWN THE EIA 2012 ANNUAL ENERGY OUTLOOK 3-4 (Jan. 24, 2012), *available at* <http://www.instituteeforenergyresearch.org/2012/01/24/eia-2012-annual-energy-outlook/>.

65. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 56, at 16.

66. U.S. ENERGY INFO. ADMIN., U.S. CO<sub>2</sub> EMISSIONS IN 2009: A RETROSPECTIVE REVIEW 13 (May 5, 2010), *available at* <http://www.eia.gov/oiaf/environment/emissions/carbon/>.

67. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 56, at 18. The RGGI report accounts for the CO<sub>2</sub> decrease from 2005–2009, in which hydro and wind account for a roughly 6% decrease in CO<sub>2</sub>. *Id.*

68. Andrew Cuomo, Governor of N.Y., State of the State Address (Jan. 9, 2013), *available at* <https://www.governor.ny.gov/press/01092013-cuomo-agenda-2013> (calling for a tightened RGGI cap, citing current emissions levels as compared to the cap limit).

69. *Auction Results*, *supra* note 52.

70. *Id.*

71. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 10.

72. *2012 Program Review*, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org/design/program-review> (last visited Mar. 29, 2014).

73. *See, e.g.*, Judi Greenwald, Vice-President, Tech. & Commc’ns, *Statement on RGGI Tightening Emissions Cap*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS (Feb. 7, 2013), <http://www.c2es.org/newsroom/statements/greenwald-rggi-tightening-emissions-cap>;

*RGGI Right to Lower Carbon Cap*, SEACOASTONLINE.COM (Feb. 17, 2013, 2:00 AM), <http://www.seacoastonline.com/articles/20130217-OPINION-302170330>; Jan Ellen Spiegel, *Regional Greenhouse Gas Initiative Resets Pollution Cap*, THE CT MIRROR BLOG (Feb. 7, 2013, 5:39 PM), <http://www.ctmirror.org/blogs/regional-greenhouse-gas-initiative-resets-pollution-cap>.

74. *RGGI Releases Updated Model Rule, Tightening CO<sub>2</sub> Cap*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS (Feb. 2013), <http://www.c2es.org/us-states-regions/news/2013/rggi-releases-updated-model-rule-tightening-co2-cap>.

75. Press Release, Reg’l Greenhouse Gas Initiative, First U.S. Carbon Market Begins Sixth Year of CO<sub>2</sub> Auctions (Mar. 15, 2013), *available at* [http://www.rggi.org/docs/Auctions/19/PR031513\\_Auction19.pdf](http://www.rggi.org/docs/Auctions/19/PR031513_Auction19.pdf) (showing that the clearing price for allowances were \$0.82 above the reserve price).

76. *Auction Results*, *supra* note 52.

77. REG’L GREENHOUSE GAS INITIATIVE, MARKET MONITOR REPORT FOR AUCTION 19, at 3 (Mar. 15, 2013), *available at* <http://www.rggi.org/docs/Auction>

55-65% of the allowances had been selling at auction, clearing at the lowest price possible.<sup>78</sup> A year later, in March of 2014, the new cap proved successful when, at the first auction under the new cap, clearing prices rose to the highest clearing price yet at \$4.00 per allowance.<sup>79</sup>

However, the question remains as to whether a lower cap will be enough to meet RGGI's goals. The MOU Preamble states that RGGI participant states entered into this program in order to be leaders in the field of renewable energy supplies and energy efficiency technologies.<sup>80</sup> Yet, a single policy approach to CO<sub>2</sub> reductions and renewable energy sector growth may be less effective than a multipronged approach. In a study by the National Renewable Energy Laboratory, the greatest growth in renewable energy stems from a regional cap-and-trade program that sets a moderate cap combined with a RPS of 25%.<sup>81</sup> The RPS will be discussed shortly.

### B. Political Backlash From a Failing Program

Trouble for RGGI began in 2011, when New Hampshire, New Jersey, and Delaware showed skepticism about its effectiveness before RGGI states lowered the cap. In May of 2011, New Jersey Governor Chris Christie announced that his state was withdrawing from the program.<sup>82</sup> In leaving RGGI, he cited the high emissions ceiling and the rock bottom carbon prices as illustrating that RGGI was a failure.<sup>83</sup> He explained that New Jersey was already below its emissions cap, not because of RGGI, but because of the natural market shift to natural gas from coal.<sup>84</sup> He went on to explain that since joining RGGI, New Jersey has passed many other laws that promote clean energy without RGGI's added burdens.<sup>85</sup> Finally, he asserted that even if they were to continue taxing in-state electricity plants, if the cap were to become too stringent there would be leakages through the outsourcing of affordable energy from non-RGGI Pennsylvania plants.<sup>86</sup>

New Hampshire showed similar skepticism in the early months of 2011, when the House Science, Technology and

Energy Committee overwhelmingly repealed the state's membership in RGGI.<sup>87</sup> Former State Speaker of the House William O'Brien endorsed the repeal on the grounds that because New Hampshire had dipped into its RGGI coffers to balance the state's budget, RGGI was essentially a stealth tax on citizens without the benefits of energy efficiency programs.<sup>88</sup> New Hampshire's participation in RGGI barely survived, owing to a veto of the repeal by Governor Lynch.<sup>89</sup> A year later, the House voted a second time to repeal the state's membership in RGGI,<sup>90</sup> but it failed once more when the Senate rewrote the bill to keep New Hampshire in the program, which the Governor allowed to become law.<sup>91</sup> Though the Senate kept the State in RGGI, it weakened the intended environmental benefits of RGGI by returning any revenue over \$1.00 per allowance to taxpayers as a rebate.<sup>92</sup> Previously, the State would only distribute RGGI revenue as a form of ratepayer relief when allowance auction prices rose to \$12.00.<sup>93</sup> The bill also contained a contingent repeal of New Hampshire's RGGI membership if two or more New England states withdrew from RGGI.<sup>94</sup>

The Delaware House Energy Committee showed opposition to RGGI in 2011 when it considered a bill that would terminate Delaware's participation in RGGI.<sup>95</sup> The reasons for this measure were nearly identical to those of New Jersey, but the measure was tabled.<sup>96</sup>

Despite this initial opposition to RGGI, things are once again beginning to look up. The November 2012 elections saw an increase in RGGI supporters in the New Hampshire House.<sup>97</sup> Although New Jersey Governor Christie vetoed the bill, the New Jersey Senate and Assembly passed S.B. No. 1322 in 2012 to rejoin RGGI.<sup>98</sup> Finally, there has been no further action against RGGI in Delaware. Support seems

tions/19/Auction\_19\_Market\_Monitor\_Report.pdf.

78. Telephone Interview with Joseph Fontaine, *supra* note 33; *see also, e.g.*, REG'L GREENHOUSE GAS INITIATIVE, MARKET MONITOR REPORT FOR AUCTION 18, at 5 Fig. 2, 8 (Dec. 7, 2012), [http://www.rggi.org/market/co2\\_auctions/results/auctions-1-18?id=220](http://www.rggi.org/market/co2_auctions/results/auctions-1-18?id=220).

79. Press Release, Reg'l Greenhouse Gas Initiative, *supra* note 30.

80. REG'L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 1.

81. BIRD ET AL., *supra* note 10, at 14.

82. Mireya Navarro, *Christie Pulls New Jersey From 10-State Climate Initiative*, N.Y. TIMES, May 26, 2011, at A20, *available at* [http://www.nytimes.com/2011/05/27/nyregion/christie-pulls-nj-from-greenhouse-gas-coalition.html?\\_r=1&ref=nyregion](http://www.nytimes.com/2011/05/27/nyregion/christie-pulls-nj-from-greenhouse-gas-coalition.html?_r=1&ref=nyregion); *see also* Press Release, State of N.J. Dep't of Env't. Prot., Weak RGGI Auction Results Confirm Regional Program Not the Path Forward for Combating Climate Change (Sept. 14, 2011), *available at* [http://www.nj.gov/dep/newsrel/2011/11\\_0115.htm](http://www.nj.gov/dep/newsrel/2011/11_0115.htm).

83. Chris Christie, Governor of N.J., Address at the Press Conference: New Jersey's Future Is Green (May 26, 2011), *available at* <http://www.nj.gov/governor/news/news/552011/approved/20110526a.html>.

84. *Id.*

85. *Id.* (specifically, Governor Christie said New Jersey had passed fourteen new laws since passing the law that allowed them to join RGGI).

86. *Id.* *See also* Pennsylvania: State Profile and Energy Estimates, U.S. ENERGY INFO. ADMIN., <http://www.eia.gov/state/?sid=pa> (last updated July 2012) (Pennsylvania is likely not a RGGI participant because almost half of its electricity comes from coal).

87. Bob Sanders, *House Panel Votes to Quit RGGI*, N.H. BUS. REV. (Feb. 16, 2011), <http://www.nhbr.com/February-11-2011/House-panel-votes-to-quit-RGGI/>.

88. *Id.*

89. Mark Hayward, *RGGI Cap Reduction Plan Criticized*, N.H. UNION LEADER (Feb. 7, 2013), <http://www.unionleader.com/article/20130207/NEWS06/130209176>.

90. *NH House Votes to Repeal Greenhouse Gas Law*, BOSTON.COM (Mar. 28, 2012), [http://www.boston.com/news/local/new\\_hampshire/articles/2012/03/28/nh\\_house\\_votes\\_to\\_repeal\\_greenhouse\\_gas\\_law/](http://www.boston.com/news/local/new_hampshire/articles/2012/03/28/nh_house_votes_to_repeal_greenhouse_gas_law/).

91. Ric Werme, *RGGI Watch: Repealing the Regional Greenhouse Gas Initiative*, WERME FAMILY HOME PAGE, <http://wermenh.com/rggiwatch/index.html> (last visited Mar. 29, 2014).

92. H.B. 1490-FN, 125-O:23 II, 2012 Leg. Sess. (N.H. 2012), *available at* <http://www.gencourt.state.nh.us/legislation/2012/HB1490.html>.

93. Telephone Interview with Joseph Fontaine, *supra* note 33.

94. H.B. 1490-FN, 281:17, 2012 Leg. Sess. (N.H. 2012), *available at* <http://www.gencourt.state.nh.us/legislation/2012/HB1490.html>.

95. Randal Chase, *Delaware Bill to Quit Regional Climate Pact Stalls*, BLOOMBERG BUSINESSWEEK (May 12, 2011, 10:01 AM), <http://www.businessweek.com/ap/financialnews/D9N5UG701.htm>.

96. H.B. 86, 146th Gen. Assemb. (Del. 2011), *available at* <http://legis.delaware.gov/lis/lis146.nsf/2bede841c6272c888025698400433a04/78bf3990eb5f7b218525785b007725d?OpenDocument&Highlight=0.regional.greenhouse>. The sponsors' reasons for drafting the bill to withdraw from RGGI included (1) having exceeded the pre-set RGGI carbon reduction goals, (2) energy costs high enough to drive employers from the state, (3) New Hampshire, Maine, and New Jersey's consideration of withdrawal, and (4) the nontransparent allocation of RGGI funds. *Id.*

97. Telephone Interview with Joseph Fontaine, *supra* note 33.

98. S.B. 1322, 215th Leg., Reg. Sess. (N.J. 2012), *available at* [http://www.njleg.state.nj.us/2012/Bills/S1500/1322\\_11.HTM](http://www.njleg.state.nj.us/2012/Bills/S1500/1322_11.HTM); *but see* Chris Christie, Gov. of N.J., Absolute Veto of S.B. 1322 (July 26, 2012), *available at* [http://www.njleg.state.nj.us/2012/Bills/S1500/1322\\_V1.PDF](http://www.njleg.state.nj.us/2012/Bills/S1500/1322_V1.PDF) (Governor Christie vetoed

to be stabilizing for the program. States must take further measures, though, to give the program its intended effect of lowering carbon emissions through a move toward renewable energy technologies and energy efficiency programs.

### C. *The RPS: How It Operates to Increase Renewable Energy, and Why It Should Be Harmonized to Function Regionally*

States should harmonize their RPS policies in order to create a regionally compatible and comprehensive carbon trading market. In order to understand why this proposition has merit, it is important to understand what an RPS is and its traditional weaknesses. RPS policies are designed to increase renewable energy generation. This is unlike cap-and-trade policies, which are designed to drive down CO<sub>2</sub> emissions. Currently, thirty-one states and the District of Columbia have implemented some form of an RPS.<sup>99</sup> Every RGGI state has an individual RPS, independent of RGGI.<sup>100</sup> An RPS is a mechanism for states to increase renewable energy generation through a market-based approach.<sup>101</sup> A mandatory RPS requires electric utilities and other retail electric providers to supply a specified minimum amount of energy from eligible renewable energy sources.<sup>102</sup> The goal of this mandatory minimum standard is to increase the commercial competitiveness of renewable energy.<sup>103</sup> RPS requirements vary greatly by states; some states require that 40% of their energy supply be derived from clean energy sources,<sup>104</sup> while others require 30%.<sup>105</sup> According to the U.S. Environmental Protection Agency (“EPA”), there are three ways electricity providers comply with an RPS<sup>106</sup>: (1) the supplier could run its own renewable energy production facility and sell the energy to consumers<sup>107</sup>; (2) the supplier could purchase Renewable Energy Credits (“REC”) from a separate renewable energy production facility<sup>108</sup>; or (3) the supplier could purchase “bundled” renewable electricity from a renewable electricity provider that fully meets the RPS requirement.<sup>109</sup>

The RPS scheme, like cap and trade, is market-based in that it allows for RECs to be traded or sold. If an electricity supplier has produced more renewable energy than it needs

to meet its RPS requirement, it can sell the extra energy to an electricity supplier that has not yet met its RPS requirement.<sup>110</sup> One REC is usually equal to 1 megawatt hour (“MWh”) of renewable electricity.<sup>111</sup> For example: State X’s RPS requires that all electricity providers must produce 5% of their electricity from wind power. Power Company A generates 8% of its electricity from wind power, but Power Company B only generates 2% of its electricity from wind. Power Company A has 100 extra RECs to sell (equal to 3% of its electricity load) because it produced 100 extra MWh of renewable electricity, which also equals 3% of Power Company B’s electricity load. So, Power Company A sells RECs equal to 3% of Power Company B’s electricity load to B to help B satisfy its RPS obligation.

In theory, the RPS is a straightforward way to encourage renewable energy production while giving electricity providers flexibility to find the most cost-efficient way of meeting their obligations. In practice, however, as the following sections will explain, there are problems that prevent RPSs from achieving optimal renewable energy integration.

## II. **Problems: The Cost Containment Reserve and Unmatched State Renewable Portfolio Standards**

After undergoing the 2012 Review, RGGI states agreed to the implementation of a CCR, which is a mechanism that guarantees low prices for allowances for RGGI auction participants.<sup>112</sup> Though this mechanism can be beneficial for preventing unexpectedly high and potentially disastrous prices, RGGI’s implementation of the CCR undercuts the purpose of cap-and-trade and severely limits RGGI’s effectiveness as a CO<sub>2</sub> reduction mechanism.<sup>113</sup>

Further, in the 2012 Review, RGGI states failed to consider the individualized and mismatched RPS programs implemented in each participating state.<sup>114</sup> While each state pursues its own uniquely tailored climate action plan, the RPS as a tool for renewable energy production is being underutilized because the states have not harmonized their RPS requirements and expectations.<sup>115</sup> The next section will examine the problems associated with both the CCR and the disharmonious RPS plans.

the bill after it passed both the Senate and Assembly, and the legislature did not override the veto).

99. *Renewable and Alternative Energy Portfolio Standards*, *supra* note 9.

100. *Id.* (counting four states’ alternative portfolio standards as RPS, although these standards are more expansive).

101. *Renewable Portfolio Standards*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/agstar/tools/funding/renewable.html> (last visited Apr. 7, 2013).

102. *Id.*; see also *Today in Energy*, U.S. ENERGY INFO. ADMIN. (Feb. 3, 2012), <http://www.eia.gov/todayinenergy/detail.cfm?id=4850> (seven states have enacted nonbinding RPS “goals”).

103. *Renewable Portfolio Standards*, *supra* note 101.

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.* (“A REC is a tradable right to claim the environmental and other attributes associated with 1 megawatt-hour of renewable electricity from a specific generation facility.”).

109. *Id.* (explaining that bundled renewable electricity is purchasing electricity from a renewable facility inclusive of all renewable attributes—the electricity is sold as a package with the REC).

110. *Today in Energy*, *supra* note 102.

111. CHONGWON CHAR & SCOTT ABRAMSON, ROCKEFELLER CTR., DARTMOUTH COLLEGE, *RENEWABLE PORTFOLIO STANDARDS IN ENERGY POLICY 8* (Mar. 13, 2006), available at [http://rockefeller.dartmouth.edu/library/RPS\\_NH.pdf](http://rockefeller.dartmouth.edu/library/RPS_NH.pdf).

112. See REG’L GREENHOUSE GAS INITIATIVE, *supra* note 28, at 1.

113. See, e.g., Steven Ferrey, *Auctioning the Building Blocks of Life: Carbon Auction, the Law, and Global Warming*, 23 NOTRE DAME J.L. ETHICS & PUB. POL’Y 317, 328–31 (2009).

114. See, e.g., Steven Ferrey, *Alternative Energy in a Spaghetti Western: Clint Eastwood Confronts State Renewable Energy Policy*, 32 UTAH ENVTL. L. REV. 279, 303–04 (2012).

115. *Climate Change Action Plans*, U.S. ENVTL. PROTECTION AGENCY (Feb. 15, 2014, 5:05 PM), <http://epa.gov/statelocalclimate/state/state-examples/action-plans.html>.

**A. The Cost Containment Reserve Is Set Too Low: Increased Renewable Energy Investment Is a Better Method for Keeping Auction Prices Reasonable**

In 2012, RGGI signatories completed the 2012 Review to assess the strengths and weaknesses of the CO<sub>2</sub> Budget Trading Programs.<sup>116</sup> At the conclusion of this review and after generating comments from regulated entities and other interested parties, the participating states included a provision for a CCR in the Updated Model Rule.<sup>117</sup> A CCR is a “fixed quantity of allowances, in addition to the cap, that would be held in reserve, and are only to be made available for sale if allowance prices . . . exceed predefined price levels.”<sup>118</sup> The predefined trigger prices are \$4.00 per allowance in 2014, \$8.00 in 2016, and \$10.00 in 2017, then adjusted upward by 2.5% each year thereafter.<sup>119</sup> In March of 2014, RGGI held the first auction since the cap was adjusted to 91 million tons; the price of carbon hit \$4.00 exactly. This triggered the CCR measure, and 5 million allowances were released into the market.<sup>120</sup> This means that the cap, reset to 91 million tons starting in 2014, effectively became a 96 million-ton cap in 2014. After 2014, the CCR reserve amount of allowances will increase to 10 million additional allowances per year.<sup>121</sup> This means that the 2015 cap, which will be reduced by 2.5% from 2014 to an 89 million-ton cap,<sup>122</sup> will become a 99 million ton-cap if the price of allowances reaches \$6.00 at any point in 2015.

Allowing the cap to increase is directly contradictory to the foremost purpose of RGGI, which is to stabilize CO<sub>2</sub> emissions of RGGI participating states at current levels and gradually decrease emissions by 2.5% each year until total emissions reach 78 million tons in 2020.<sup>123</sup> In 2014, at the very first auction under the new cap, allowances were sold at \$4.00.<sup>124</sup> Modeling results show that the CCR trigger price

will likely be hit again in late 2015, and in 2020.<sup>125</sup> This would increase total permitted emissions by 25 million tons in the next six years, chipping away at the intended environmental and economic benefits of a tightened emissions cap.<sup>126</sup>

Proponents of well-designed CCR mechanisms assert that the CCR is a flexibility mechanism that functions to “enhance the predictability and functionality of the allowance market by keeping allowance prices within an optimal range.”<sup>127</sup> In creating a CCR, proponents stress that RGGI is constraining price volatility and preserving the environmental integrity of the program.<sup>128</sup> Indeed, Senator John Kerry’s 2010 discussion draft bill, the American Power Act, incorporated a CCR to control market volatility in a proposed national cap-and-trade system.<sup>129</sup> California’s Global Warming Solutions Act, which implements a statewide cap-and-trade program, includes a tiered CCR measure as well.<sup>130</sup> For participating entities complying with a cap-and-trade emissions limit, the CCR is a welcome “cost-effective buffer to sharp, short-term fluctuations in emissions levels.”<sup>131</sup> However, The American Power Act set its CCR trigger at \$25 per allowance, and the California cap-and-trade program sets its CCR trigger at \$40 per allowance—nowhere close to RGGI’s \$4.00 trigger.<sup>132</sup>

Many RGGI stakeholders oppose the new CCR, citing its low price as a major flaw in RGGI’s updated Model Rule.<sup>133</sup> First, though the \$4.00 CCR controls price fluctuations, it does not promote environmental gains because each extra allowance released causes environmental harm.<sup>134</sup> Critics assert that there is no “sound policy basis for unacceptably low cost containment reserve (CCR) trigger prices.”<sup>135</sup> Critics stress that CCR prices so low as to trigger in the very first auction would cast doubt over the new RGGI parameters if observers thought that reaching a trigger price was an unacceptable outcome of the new cap.<sup>136</sup> Additionally, these stakeholders point to the CCR’s low trigger price as a barrier to both the incorporation of RGGI into likely future federal

116. *Regional Greenhouse Gas Initiative Program Review*, REGIONAL GREENHOUSE GAS INITIATIVE, [http://www.rggi.org/design/program\\_review](http://www.rggi.org/design/program_review) (last visited Apr. 14, 2014). The Budget Trading Programs are statewide regulations (based on RGGI’s Model Rule), adopted to implement RGGI and meet RGGI’s carbon reduction goals. The Programs regulate the carbon emissions released by electricity generator with capacity to produce 25 MW of electricity or more.

117. See REG’L GREENHOUSE GAS INITIATIVE, *supra* note 28, at 3.

118. *Id.*

119. *Id.*

120. Press Release, Reg’l Greenhouse Gas Initiative, *supra* note 30.

121. *Id.*

122. *Id.* But see Reg’l Greenhouse Gas Initiative, Stakeholder Webinar: Program Review, at slides 8, 19–20 (Feb. 11, 2013), [available at http://rggi.org/docs/ProgramReview/February11/13\\_02\\_11\\_Webinar%20Presentation\\_updated.pdf](http://rggi.org/docs/ProgramReview/February11/13_02_11_Webinar%20Presentation_updated.pdf). The cap is set for 91 million tons in 2014 and decreases by 2.5% each year after; however, grossly overallocated emissions from the first and second control periods (2009–2011 and 2012–2013, respectively) created a total bank of 109 million unused allowances that RGGI states decided would be used in the next seven years; during that time that the actual cap will be set 7 million tons less than the regional CO<sub>2</sub> budget in 2014 and 17 million tons less in every subsequent year through 2020. However, because compliance entities will be able to use their large banks of allowances, the outcome will be that emissions between 2014 and 2020 remain at around 91 million tons per year. So, despite RGGI’s goal of 2.5% reductions every year from 2014 through 2020, the failure of RGGI to retire old allowances after the 2012 review will lead to zero further reductions between 2014 and 2020 unless regulated entities voluntarily retire some of their banked allowances. This problem has serious implications for the stated goals in the MOU, but is not within the scope of this Article. See *id.*

123. *Id.* at slide 8.

124. *Supra* Part I.A.

125. REG’L GREENHOUSE GAS INITIATIVE, RGGI IPM ANALYSIS: AMENDED MODEL RULE (Feb. 8, 2013), [available at http://rggi.org/docs/ProgramReview/February11/13\\_02\\_11\\_IPM.pdf](http://rggi.org/docs/ProgramReview/February11/13_02_11_IPM.pdf).

126. See REG’L GREENHOUSE GAS INITIATIVE, *supra* note 28, at 3.

127. ENV’T NE. ET AL., COMMENTS ON FLEXIBILITY MECHANISMS 1, 3 (Feb. 10, 2012), [available at http://rggi.org/docs/ProgramReview/StakeholderComments/SC021012\\_ENE.pdf](http://rggi.org/docs/ProgramReview/StakeholderComments/SC021012_ENE.pdf).

128. Letter from Robert Teetz, Vice President of Envtl. Servs., Nat’l Grid, to Nicole Singh, Acting Exec. Dir., Reg’l Greenhouse Gas Initiative (Jan. 23, 2013), [available at http://www.rggi.org/docs/ProgramReview/StakeholderComments/January/National\\_Grid.pdf](http://www.rggi.org/docs/ProgramReview/StakeholderComments/January/National_Grid.pdf).

129. American Power Act, 111th Con. §726(b)(3) (2009) (discussion draft).

130. CAL. CODE REGS. tit. 17, §95913(c)(3) (2012), [available at http://www.arb.ca.gov/cc/capandtrade/september\\_2012\\_regulation.pdf](http://www.arb.ca.gov/cc/capandtrade/september_2012_regulation.pdf).

131. ENV’T NE. ET AL., *supra* note 127, at 5 (National Grid Stakeholder Comments).

132. American Power Act, 111th Con. §726(b)(3) (2009) (discussion draft); CAL. CODE REGS. tit. 17, §95913(c)(3) (2012), [available at http://www.arb.ca.gov/cc/capandtrade/september\\_2012\\_regulation.pdf](http://www.arb.ca.gov/cc/capandtrade/september_2012_regulation.pdf).

133. See *infra* notes 134–35, 137–39.

134. REG’L GREENHOUSE GAS INITIATIVE, MARYLAND ENVIRONMENTAL GROUP STAKEHOLDER COMMENTS ON PROGRAM REVIEW OF RGGI (Dec. 2012), [available at http://rggi.org/docs/ProgramReview/StakeholderComments/November/Maryland%20Stakeholders%20-%20Joint%20Comments.pdf](http://rggi.org/docs/ProgramReview/StakeholderComments/November/Maryland%20Stakeholders%20-%20Joint%20Comments.pdf).

135. REG’L GREENHOUSE GAS INITIATIVE, VARIOUS ENVIRONMENTAL GROUPS STAKEHOLDER COMMENTS ON PROGRAM REVIEW OF RGGI 2 (Jan. 17, 2013), [available at http://rggi.org/docs/ProgramReview/StakeholderComments/January/Environmental\\_Organizations\\_-\\_Joint\\_Comments.pdf](http://rggi.org/docs/ProgramReview/StakeholderComments/January/Environmental_Organizations_-_Joint_Comments.pdf).

136. Press Release, Reg’l Greenhouse Gas Initiative, *supra* note 120, at 2.

programs, and to the expansion of the RGGI trading region to include more outside states. Further, they claim that these prices could create a barrier to RGGI's possible integration with other regional trading programs like the Western Climate Initiative, a regional cap-and-trade program in the Northwest.<sup>137</sup> Critics also point out that by creating a trading range of allowance prices between a \$2.00 floor price and a \$4.00 CCR price, the market is incapable of determining the price of allowances, deadening what could otherwise be an active trading market.<sup>138</sup> Finally, these stakeholder opponents point to EPA's current value of greenhouse gas emission reductions at \$10 per ton as a reasonable assessment of where RGGI's initial price on carbon should be.<sup>139</sup>

Though the CCR is in theory an effective flexibility mechanism for cap-and-trade systems, RGGI has implemented a CCR that creates greater environmental harm, casts doubt over the adequacy of RGGI's new measures, insulates RGGI from other regional or future natural trading schemes, and encumbers the RGGI market itself. Rather than operating RGGI under the threat of a CCR allowance dump, the RGGI states should instead control price volatility through increased investment in renewable energy projects, which will be discussed later.

## B. Different States, Different RPS Requirements, Less Room for Growth

Though a majority of states have RPS policies, there are potential problems that could prevent RPSs in adjoining states from achieving optimal renewable energy integration. The first of these is the problem of reduced fungibility of RECs among states, and the second is the problem of cross-border leakage. Currently, RGGI is functioning alongside individual state RPS programs, as all RGGI participants have committed to their own RPSs.<sup>140</sup>

### I. Low RPS Requirements May Increase Costs Without Stimulating Maximum Clean Energy Development

Though each state is committed to increasing renewable energy production, most RGGI states have RPS requirements lower than 25% through 2020.<sup>141</sup> Two studies, one by

the Massachusetts Institute of Technology ("MIT") and one by the National Renewable Energy Laboratory ("NREL"), demonstrate how a cap-and-trade system combined with various RPS levels affect renewable energy production and cost, and reveal how a low RPS requirement may have unintended consequences. According to the NREL study, combining a cap-and-trade system with an RPS generates more renewable energy growth than a cap-and-trade system or an RPS alone.<sup>142</sup> The MIT study further shows that this combination also generates lower electricity costs than a cap-and-trade-only scenario.<sup>143</sup> However, from the two studies, it looks possible that a cap with a low RPS of 15% leads to higher costs and *less* renewable energy growth than a cap-and-trade system with no RPS at all.<sup>144</sup> It is thus possible that the RGGI states' weak RPSs are simply causing an increase in energy prices without having a notable difference in CO<sub>2</sub> emissions. Further, the NREL study shows that a cap plus an RPS of 25% increases renewable energy production and decreases electricity cost *more* than a cap plus either a 15% RPS or a 20% RPS.<sup>145</sup> The following sections will therefore argue that a cap plus a 25% RPS is the best course for RGGI states to take to increase renewable energy production.

## 2. Variations in State RPS Policies Creates an Illiquid REC Market

A further problem with varied state-level RPS policies is lack of harmonization. RPS policies differ, sometimes quite dramatically.<sup>146</sup> These variations reflect policy concerns of each state and can lead to differing requirements for REC-eligible renewable energy sources, which may result in limited eligibility for out-of-state generators in order to favor local resources and industries.<sup>147</sup> This exclusion results in less economic efficiency for regulated entities because they may not be able to purchase RECs from competitive out-of-state sources or build generators in the most cost-effective regions with the highest alternative energy production potential (*e.g.*, the sunniest or windiest areas).<sup>148</sup> Additionally, in a smaller

2017; New Hampshire: 23.8% by 2025; Vermont: renewable energy growth equal to incremental load growth; or, 25% by 2025; New York: 30% by 2015; Massachusetts: 15% by 2020; Rhode Island: 16% by 2019; Connecticut: 27% by 2020; Delaware: 25% by 2025; Maryland: 20% by 2022).

142. BIRD ET AL., *supra* note 10, at 12, figure 6.

143. JENNIFER F. MORRIS ET AL., MIT JOINT PROGRAM ON THE SCI. AND POLICY OF GLOBAL CHANGE, COMBINING A RENEWABLE PORTFOLIO STANDARD WITH A CAP-AND-TRADE POLICY: A GENERAL EQUILIBRIUM ANALYSIS 12 (July 2010).

144. *Id.* at 13; BIRD ET AL., *supra* note 10, at 30. The NREL study would suggest that a cap-only scenario creates more renewable energy growth than a cap plus 15% RPS standard, whereas the MIT study shows that a cap plus a 20% RPS standard generates more renewable energy than a cap-only scenario. Because the MIT study does not examine a 15% RPS, it does not discount NREL's finding that 15% RPS is damaging to renewable energy growth, though it finds that an RPS only 5% higher is beneficial.

145. BIRD ET AL., *supra* note 10 at 4, 14, figures 2 and 8, table 6 (respectively).

146. CTR. FOR ENERGY ECON., BUREAU OF ECON. GEOLOGY, UNIV. OF TEX. AT AUSTIN, HARMONIZATION OF RENEWABLE ENERGY CREDIT (REC) MARKETS ACROSS THE U.S. 6, 11 (Nov. 2009) (policies can differ in their renewable purchase goals, regulated entities, eligibility of renewable technologies, treatment of out-of-state generators, among others).

147. *Id.*

148. *Id.* at 12.

137. REG'L GREENHOUSE GAS INITIATIVE, COMMENTS BY EXELON CORPORATION ON DESIGN ELEMENTS FOR RGGI 2012 PROGRAM REVIEW 5 (Dec. 10, 2012), available at <http://www.rggi.org/docs/ProgramReview/StakeholderComments/November/Exelon.PDF>; History, W. CLIMATE INITIATIVE, <http://www.westernclimateinitiative.org/history> (last visited Mar. 24, 2013) (describing the Western Climate Initiative partnership as consisting of seven U.S. states and four Canadian provinces: Arizona, California, New Mexico, Oregon, Washington, Montana, Utah, British Columbia, Manitoba, Ontario, and Quebec).

138. REG'L GREENHOUSE GAS INITIATIVE, COMMENTS BY EXELON CORPORATION, *supra* note 137, at 5.

139. *Id.* at 6.

140. EDWARD A. HOLT, CESA STATE RPS POLICY REPORT: INCREASING COORDINATION AND UNIFORMITY AMONG STATE RENEWABLE PORTFOLIO STANDARDS I (Dec. 2008).

141. BIRD ET AL., *supra* note 10, at 20; see *Renewable and Alternative Energy Portfolio Standards*, *supra* note 9 (showing RPS requirements for each of the participating RGGI states: Maine: increase new renewable energy capacity by 10% by

market there are fewer buyers and sellers, which also leads to less competition and higher prices for consumers.<sup>149</sup>

### 3. Different RPS Standards Could Result in Cross-Border Leakage

The final issue with state-level RPS systems is the problem of cross-border leakage. Leakage occurs differently under different policy structures. Under a cap-and-trade policy, leakage occurs when a state's energy policy increases the price of electricity and distributors react by purchasing energy from cheaper, out-of-state producers who are allowed higher emissions.<sup>150</sup> Under an RPS policy, however, leakage is when a state's RPS requirement does not result in true decarbonization.<sup>151</sup> This occurs when the state does not reduce its production of carbon-intensive traditional energy by the amount of renewable electricity newly produced in the state to satisfy the RPS, and the state instead sells the excess carbon-intensive electricity to out-of-state energy suppliers at a lower cost.<sup>152</sup> The RPS is designed to replace a portion of fossil fuel-based energy with renewable energy, reducing the total amount of fossil fuels used in energy production in that state. However, despite a state's increased production of renewable energy, the state still has the previous capacity for fossil fuel production. The RPS does not prevent a neighboring state from purchasing the excess fossil fuel energy at what is now a cheaper price. Thus, though the RPS may increase renewable electricity use, it does not necessarily decrease carbon emissions because of the problems with leakage.

In short, leakage occurs when states with an RPS sell excess carbon-intensive energy to surrounding states without an RPS or with a lower RPS,<sup>153</sup> and conversely, when states with an emissions cap purchase electricity at a lower rate from outside states without an emissions cap.<sup>154</sup> Both forms of leakage frustrate the goal of carbon-limiting policies, which is to facilitate a net decrease in greenhouse gas emissions.<sup>155</sup> State RPS programs have no out-of-state accountability measures<sup>156</sup> because they are not part of a regional RPS program that monitors whether they actually decarbonize, and they

have no federal measures to comply with.<sup>157</sup> Thus, leakage caused by disparate RPS standards among RGGI states may be cause for more immediate concern than leakage caused by the RGGI emissions cap simply because RGGI states are not bound by accountability measures when it comes to their RPS measures.

Currently, leakage caused by the cap-and-trade system is a serious potential concern for RGGI states, though RGGI's depressed allowance prices have prevented its occurrence so far.<sup>158</sup> The concern about leakage caused by the implementation of RPS policies is not as widespread. It should be an area of greater concern, though, because RGGI states currently have highly variable RPS goals and some RPS deadlines are fast approaching.<sup>159</sup> RGGI member states should regionalize their RPS requirements soon to prevent future cross-border leakage; otherwise, they negate the benefits and thwart the goals of the programs.

### III. Solutions: Let the RGGI Market Determine the Price of Carbon and Harmonize Statewide RPS Standards

Though there are serious problems with the current CCR measure and disparate RPS state programs, the solutions are within reach. In addressing the CCR, there are two ways to protect against price volatility without stifling the active CO<sub>2</sub> market that RGGI seeks to create: (1) increase the trigger price of the CCR, or (2) scrap the CCR and reassign 25% of all auction proceeds to renewable energy projects. These options will be discussed in the next section. Further, in improving RPS performance for all RGGI states and preventing leakages between states, the next section will recommend that RGGI amend its MOU to include a harmonization of goals and terms for each state to implement. In effect, this would create an opt-in regional RPS.

#### A. Increase the Price or Scrap the CCR and Reassign Twenty-Five Percent of Auction Proceeds From "Consumer Benefit Programs" to Strictly "Renewable Energy Programs"

The newly-added CCR has received sharp criticism from skeptical stakeholders in RGGI.<sup>160</sup> Though the CCR is a valuable tool in ensuring market stability, placing a trigger amount at \$4.00 per allowance in 2014 and \$6.00 in 2015 undermines the efforts of the cap-and-trade program to (1) create a lower-carbon society, (2) allow the market to play

149. *Id.* at 12.

150. RGGI EMISSIONS LEAKAGE MULTI-STATE STAFF WORKING GROUP TO THE RGGI AGENCY HEADS, FINAL REPORT: POTENTIAL EMISSIONS LEAKAGE AND THE REGIONAL GREENHOUSE GAS INITIATIVE (RGGI) 1 (Mar. 2008) [hereinafter RGGI EMISSIONS LEAKAGE]. Leakage occurring under a cap and trade mechanism is somewhat reverse to leakages that occur under an RPS scheme. In theory, RGGI states would experience leakage because RGGI increases the cost of carbon-intensive energy production for RGGI state electricity providers, who must purchase allowances equal to their excess carbon emissions. Rather than pay the increased cost of producing energy, those in-state providers would resort to the purchase of cheaper dirty energy from power plants in neighboring non-RGGI states. Realistically, this has not yet been a problem because RGGI has not imposed any significant cost burden. *Id.*

151. *Id.* Decarbonization is the net reduction in carbon emissions.

152. *Supra* Part I.C.

153. Sanya Carley, *The Era of State Energy Policy Innovation: A Review of Policy Instruments*, 28 REV. POL'Y RES. 265, 278 (May 2011).

154. RGGI EMISSIONS LEAKAGE, *supra* note 150, at 1.

155. *Id.*

156. *Id.* (this is unlike RGGI, which monitors leakage, creates provisions to reduce leakage, and reports on potential leakage problems).

157. Carley, *supra* note 153, at 273 ("Until states adopt consistent and coordinated regulations, or the national government adopts a federal RPS, state-level free-riding will likely continue.").

158. ANDREW G. KINDLE ET AL., RENSSLAER POLYTECHNIC INST., AN EMPIRICAL TEST FOR INTER-STATE CARBON-DIOXIDE EMISSIONS LEAKAGE RESULTING FROM THE REGIONAL GREENHOUSE GAS INITIATIVE 11 (Nov. 6, 2012), available at [http://www.usaee.org/usaee2012/submissions/Presentations/Kindle\\_USAEE\\_2012\\_RGGI\\_Presentation.pdf](http://www.usaee.org/usaee2012/submissions/Presentations/Kindle_USAEE_2012_RGGI_Presentation.pdf).

159. *Renewable and Alternative Energy Portfolio Standards*, *supra* note 9. New York's RPS standard is 30% by 2015.

160. See *supra* Part II.A.

a role in setting the appropriate price of carbon, and (3) create a competitive market that encourages energy efficiency and renewable energy—two of the primary reasons for creating the RGGI partnership.<sup>161</sup> As a solution, this Article first proposes that RGGI increase the CCR trigger price to match what the federal government has established as the social cost of carbon (“SCC”).

The SCC is an estimate of the monetized damages caused by increases in carbon emissions each year and was established in a thorough study conducted by twelve U.S. government agencies, including the EPA, the Department of Energy, the Council on Environmental Quality, and others in accordance with Executive Order 12866 in 2010.<sup>162</sup> The SCC includes “changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services,” among other factors.<sup>163</sup> Currently, the SCC is estimated to be at least \$11.00 per ton of carbon.<sup>164</sup> This is the lowest estimate of the SCC; the central estimate is set at \$37 per ton. RGGI did not perform an SCC analysis, though it did other economic modeling prior to setting the CCR price.<sup>165</sup>

Setting the CCR at \$11.00 per ton would only increase the current 2015 CCR by \$5.00, but that increase would allow market to play a role in price-setting. Further, it would bring allowances to a price level that reflects the lowest estimated cost of carbon emissions imposed on society, and creates a greater incentive for energy suppliers to invest in renewable energy sooner. Understandably, RGGI participating states may not want to create an undue burden on energy suppliers or ratepayers. In setting the CCR price at the federally determined SCC, though, RGGI may rely on other provisions in the MOU, like the 25% allocation of funds to a “consumer benefit or strategic energy purpose,” to help defray the cost differential between the current 2015 CCR trigger of \$6.00 and a trigger of \$11.00.

If RGGI chooses not to increase its CCR price, it should simply remove the CCR provision from the Updated Model Rule. This solution, as well as increasing the CCR price,

presents the question of how RGGI would control potentially volatile market prices. To address this concern, RGGI participating states should amend the MOU to reserve 25% of allowance revenue for renewable energy projects and purposes specifically.

In amending the MOU, RGGI would effectively draw out and make actionable the desire to promote renewable energy technologies. By 2008, the 10 participating states in RGGI had signed on to the MOU<sup>166</sup> and passed state laws to implement RGGI’s Model Rule, which was drafted and designed by the signatory states to provide “a regulatory framework for the development of individual state regulatory and/or statutory proposals.”<sup>167</sup> The MOU states

[E]ach Signatory State agrees that 25% of the allowances will be allocated for a consumer benefit or strategic energy purpose. Consumer benefit or strategic energy purposes include the use of the allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewable or non-carbon-emitting energy technologies, to stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and/or to fund administration of this Program . . . .<sup>168</sup>

In practice, from 2008–2010 participating states invested nearly 51% of RGGI revenue into energy efficiency projects.<sup>169</sup> However, only 5% of RGGI proceeds have been invested in renewable energy projects.<sup>170</sup> The United States will never reach zero demand for electricity. Thus, states also need to be investing in renewable generation to meet our continued energy demand in the future. As RGGI points out in its 2011 report “Regional Investment of RGGI CO<sub>2</sub> Allowance Proceeds, 2011,” investing in renewable energy “contribute[s] to lowering wholesale electricity prices by effectively lowering the demand for electricity at the wholesale level. As demand for electricity decreases, the most expensive power plants run less often, driving prices down for all consumers in the long run.”<sup>171</sup> Thus, RGGI should amend its MOU to increase the amount of revenue that is allocated to renewable energy programs.

In five-and-a-half years, RGGI has generated over \$1.6 billion in revenue for participating states.<sup>172</sup> On average, that is approximately \$302 million per year.<sup>173</sup> One-quarter of

161. See generally *id.*

162. See INTERAGENCY WORKING GROUP ON SOC. COST OF CARBON, UNITED STATES GOVERNMENT TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 at 2-4, 33 (Feb. 2010), available at <http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf>.

163. *Id.*

164. INTERAGENCY WORKING GROUP ON SOC. COST OF CARBON, TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 at 3, 18 (May 2013), available at [http://www.whitehouse.gov/sites/default/files/omb/inforeg/social\\_cost\\_of\\_carbon\\_for\\_ria\\_2013\\_update.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf). In 2015, the SCC will be \$11 per ton of CO<sub>2</sub> at a 5% discount rate, rising to \$12 in 2016. The discount rate is “intended to reflect society’s marginal rate of substitution between consumption in different time periods.” The Intergency Working Group set four different estimates of the SCC: the SCC average at a 5% discount rate, the second and third at 3% and 2.5% discount rates, and the fourth as an estimate at the 95th percentile of the 3% discount rate to account for worse-than-expected impacts from temperature changes. The SCC at 3% is the central value and is set at \$37 per ton in 2015. The SCC at 2.5% discount rate is \$57 in 2015, and the 95th percentile of 3% is \$109 per ton in 2015. The 5% discount rate represents the possibility that climate changes are positively correlated with market returns. *Id.* at 23.

165. See *Regional Greenhouse Gas Initiative Program Review*, *supra* note 116.

166. *Regional Greenhouse Gas Initiative Program Design Archive*, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org/design/history> (last visited Apr. 7, 2013).

167. *Id.*

168. REG’L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 6.

169. REG’L GREENHOUSE GAS INITIATIVE, INVESTMENT OF PROCEEDS FROM RGGI CO<sub>2</sub> ALLOWANCES 12 (Feb. 2011), available at [http://www.rggi.org/docs/Investment\\_of\\_RGGI-Allowance\\_Proceeds.pdf](http://www.rggi.org/docs/Investment_of_RGGI-Allowance_Proceeds.pdf).

170. REG’L GREENHOUSE GAS INITIATIVE, REGIONAL INVESTMENT OF RGGI CO<sub>2</sub> ALLOWANCE PROCEEDS, 2011, EXECUTIVE SUMMARY 3 (Nov. 2012), available at [http://www.rggi.org/docs/Documents/2011-Investment-Report\\_ES.pdf](http://www.rggi.org/docs/Documents/2011-Investment-Report_ES.pdf).

171. *Id.* at 12.

172. Press Release, Reg’l Greenhouse Gas Initiative, RGGI Auction Sells 19.7 Million CO<sub>2</sub> Allowances at \$1.93 (Dec. 7, 2012), available at [http://rggi.org/docs/Auctions/18/PR120712\\_Auction18.pdf](http://rggi.org/docs/Auctions/18/PR120712_Auction18.pdf) (cumulative proceeds derived from 18 auctions from 2008 through the end of 2012) (last visited Apr. 7, 2013).

173. With allowance prices on the rise, this average will likely increase in the upcoming years.

that revenue, if it were dedicated to clean energy projects, would mean almost \$76 million toward clean energy projects each year, which would be at least an additional 34.5 MW per year and as much as 58.4 MW per year,<sup>174</sup> enough energy to power at least 12,075 households and as many as 20,440 households in the first year and potentially as many as 102,200 homes by year five.<sup>175</sup> This reduction in carbon-intensive energy demand would help reduce volatility each year (through reducing demand for fossil fuel electricity), thereby making the elimination or increase of the CCR trigger a reasonable possibility.

### B. Create Regional RPSs of Twenty-Five Percent by 2020

Despite the initially over-allocated cap, RGGI achieved a drop in greenhouse gas emissions of 45% below the emissions limit set for the first three years of the program<sup>176</sup> in large part because of increased access to natural gas.<sup>177</sup> However, scholars recognize that even if all coal were converted to natural gas tomorrow, the United States would still not come close to the internationally-accepted level of reduction necessary to prevent the worst effects of climate change.<sup>178</sup> Thus, natural gas is not the solution the country needs to mitigate the effects of climate change.

Instead, the United States must move toward renewable energy sources. The NREL study (referred to earlier) found that under a cap-and-trade system, increased use of natural gas is a normal and predictable byproduct of reducing carbon emissions in the first 10 years of operation.<sup>179</sup> As such, it may be an effective transition energy source because it quickly decreases the amount of coal burned for electricity.<sup>180</sup> However, without an RPS requirement, the MIT study found that natural gas will remain the most dominant source of energy

through 2050, and renewable energy generation will remain at a paltry 3% through 2050.<sup>181</sup> On the other hand, the study showed that under both a cap and an RPS, renewable energy generation rose to 40% of all generation by 2050.<sup>182</sup> Moreover, NREL found that a 25% cap would have the greatest positive effect on participating states. Thus, RGGI states should amend the MOU and sign into law an agreement to set a harmonized renewable portfolio standard of 25% by 2020.

By amending the MOU to harmonize RPS policies, all RGGI states would be subject to uniform RPS requirements. The value of RECs would thus become more predictable and projects would become easier to finance and more cost-effective.<sup>183</sup> Currently, all RGGI states have independent RPS requirements.<sup>184</sup> With disparate requirements, market fragmentation and leakage among the states undermine the goals of RGGI by hampering the creation of renewable energy and stalling decarbonization.<sup>185</sup> However, with a regionalized rather than a state-based approach, the RPS could meet its most basic goal of reducing the production of CO<sub>2</sub> while also increasing the production of clean energy.

Though RGGI has not documented a problem with leakage yet,<sup>186</sup> the differences in state renewable portfolios may be great enough to create conditions conducive to state free-riding. For instance, New York has an RPS goal of 30% by 2015.<sup>187</sup> A nearby RGGI state, Maryland, has an RPS goal of 20% by 2022.<sup>188</sup> This means that in 2015, New York will potentially have as much as 30% of its traditional electricity load available to sell at low prices to states with less stringent standards. Maryland will only be obligated to supply less than 20% of its electricity from renewable sources,<sup>189</sup> giving it at least 10% more capacity for carbon-intensive fuel consumption than New York. Maryland energy suppliers will thus have the capacity to buy the excess electricity from New York at extremely low prices, and will then be able to sell any extra carbon-intensive energy they produce at low prices to

174. *How Much do Wind Turbines Cost?*, WINDUSTRY, <http://www.windustry.org/resources/how-much-do-wind-turbines-cost> (last visited Apr. 9, 2014) (using the available price of wind turbine cost and production capacity. "The costs for a utility scale wind turbine in 2012 range from about \$1.3 million to \$2.2 million per MW of nameplate capacity installed." Thus, most 2 MW wind turbines cost between \$3-4 million to install, though there are significant economies of scale and costs for turbines are trending downward).

175. This calculation assumes a 30% capacity factor for renewable energy projects. One megawatt of wind energy can power 350 homes in New England. These figures were calculated using cumulative addition, 1x + 2x + 3x, etc., for the number of years calculated. *What Is a Megawatt?*, COMMODITIES NOW, <http://www.commodities-now.com/reports/power-and-energy/2136-what-is-a-megawatt.html> (last visited Feb. 17, 2014).

176. Press Release, Reg'l Greenhouse Gas Initiative, RGGI States Propose Lowering Regional CO<sub>2</sub> Emissions Cap 45%, Implementing a More Flexible Cost-Control Mechanism (Feb. 7, 2013), available at [http://rggi.org/docs/PressReleases/PR130207\\_ModelRule.pdf](http://rggi.org/docs/PressReleases/PR130207_ModelRule.pdf) (last visited February 17, 2014).

177. See *supra* PART I.A.; REG'L GREENHOUSE GAS INITIATIVE, *supra* note 56, at 7.

178. Jonathan H. Adler, *Eyes on a Climate Prize: Rewarding Energy Innovation to Achieve Climate Stabilization*, 35 HARV. ENVTL. L. REV. 1, 7-8 ("[R]eplacing all coal burning in the United States with natural gas through 2020 would only reduce carbon dioxide emissions by 16%."); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, RENEWABLE ENERGY SOURCES AND CLIMATE CHANGE MITIGATION 34 (Edenhofer et al., Cambridge Univ. Press 2012) (climate scientists across the globe have stated that the worst effects of climate change can only be avoided through a 50-85% decrease from 2000 levels of CO<sub>2</sub> emissions by 2050 and a reduction in CO<sub>2</sub> emissions beginning in 2015).

179. BIRD ET AL., *supra* note 10, at 7.

180. *Id.* at 11, fig. 5.

181. MORRIS ET AL., *supra* note 143, at 13-14. This estimate uses an RPS of 20% for all years from 2020-2050. It bears repeating that the MIT study indicated that the cost of carbon *decreases* under a cap-and-trade policy combined with an RPS of at least 20%, as opposed to a cap-and-trade system alone. This scenario avoids imposing high costs on society. See *id.* at 13-14.

182. BIRD ET AL., *supra* note 10, at 14, 26.

183. CTR. FOR ENERGY ECON., *supra* note 146, at 12.

184. *Today in Energy*, *supra* note 102.

185. REG'L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 1-2. The Signatory States stated in the MOU that they wished to become world leaders in renewable energy supply, increase the amount of secure and reliable energy sources within the signatory states, and control CO<sub>2</sub> emissions. Limiting market fungibility on RECs and creating a system that encourages carbon leakage are contrary to those stated purposes. *Id.*

186. Telephone Interview with Joseph Fontaine, *supra* note 36.

187. *New York: Alternative Energy Portfolio Standard*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, [http://www.dsireusa.org/incentives/incentive.cfm?Incentive\\_Code=NY03R&re=0&ce=0](http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY03R&re=0&ce=0) (last visited Apr. 7, 2013).

188. *Maryland: Renewable Energy Portfolio Standard*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, [http://www.dsireusa.org/incentives/incentive.cfm?Incentive\\_Code=MD05R&re=0&ce=0](http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MD05R&re=0&ce=0) (last visited June 23, 2014).

189. Mass. Dept of Energy Res., Energy and Environmental Affairs, *RPS and APS Program Summaries (2013)*, MASS.GOV, <http://www.mass.gov/eca/energy-utilities-clean-tech/renewable-energy/rps-aps/rps-and-aps-program-summaries.html> (last visited Mar. 29, 2014).

neighboring non-RGGI states like New Jersey or Pennsylvania without reaching the RGGI cap. Though RGGI carbon limits are not exceeded, the decarbonization intended by New York's RPS is not accomplished. Thus, the policy mechanisms in place within RGGI must inhibit the ability of RGGI states to dump low-cost, carbon-intensive electricity into neighboring RGGI states. Instead, they should encourage growth of renewable energy through a competitive and large REC trading market.

Harmonization of RPS programs would also increase the economic efficiency of state-based RPS markets.<sup>190</sup> Broadening the RGGI RPS market would require a harmonization of acceptable renewable generation sources among states (like requiring every RGGI state to accept landfill gas or biomass as a primary renewable energy source), as well as the synchronization of pricing and value for each REC.<sup>191</sup> When the REC commodity is fully fungible, overall ratepayer costs decrease because it allows more buyers and sellers to enter the market, and therefore increases competition.<sup>192</sup> Thus, harmonization of state RPS requirements is an important step in spurring increased renewable energy throughout the RGGI states.

#### IV. Challenge: Political Will

Political support for RGGI has wavered among some RGGI states, and may continue to be an obstacle to the solutions proposed in this Article. New Jersey pulled out of RGGI altogether, and New Hampshire repeatedly attempted to withdraw.<sup>193</sup> However, political support has stabilized since the November 2012 elections. New Hampshire's current Governor supports RGGI<sup>194</sup> and New Jersey's Congress is working to rejoin RGGI since Governor Christie pulled New Jersey out of the program.<sup>195</sup>

Nevertheless, it is unclear that support for a regional RPS could pass muster after such a shaky start to the RGGI program, especially because several of the RGGI states have such low existing RPS standards.<sup>196</sup> Additionally, regional RPS policy options that "could have the strongest impact on creating larger, more competitive [REC] markets" are difficult to accomplish because they may run counter to state public policy goals.<sup>197</sup>

On the other hand, there are small, easy steps for state leaders to take to begin the harmonization process, including the coordination of REC rules and standardization of customer-sited generation protocols.<sup>198</sup> Further, several states

already have RPS requirements greater than 25%.<sup>199</sup> These RGGI states may be influential in urging the RGGI states with lower RPS requirements to boost their standards and harmonize their rules in order to increase competition and decrease overall costs, thereby unburdening their residents.

There may be political resistance to eliminating or increasing the new CCR measures. The measure protects electricity providers from high allowance costs, which also protects consumers from price increases.<sup>200</sup> However, if there is a beneficial and effective alternative for the low CCR, like a 25% set-aside of RGGI funds for renewable energy projects, state legislatures may prefer an alternative that promotes forward progress rather than a highly restricted price control strategy that undercuts the effectiveness of RGGI. Though states would have less flexibility to allocate their auction revenue, the idea should be pursued prior to continuation of the CCR measure.

The regional RPS concept should be explored throughout 2014. The CCR allowances are sold out for the year, and in 2015, 10 million new CCR allowances will be available. The proposed changes should be implemented before this flood of new allowances. As of yet, there is no commitment period past 2018, the last year of the agreed-upon regional cap.<sup>201</sup> The proposed changes should thus be implemented as soon as possible.

#### V. Conclusion

RGGI started with lofty goals. RGGI signatory states wanted RGGI to vault them into the global stage as leaders for developing carbon emission control technologies, renewable energy supplies, and energy-efficient technologies. RGGI was designed to reduce greenhouse gas emissions, reduce reliance on fossil fuels, and prevent the worst effects of climate change. In order to be effective in achieving its goals, however, RGGI must initiate a regional agreement that encourages an increase in renewable energy production. The best way to do this is to amend the MOU to include a regionally harmonized RPS of 25%. Harmonization of state RPS requirements is important for expanding the regional REC market and preventing leakages among RGGI states. Additionally, RGGI should amend the MOU to require that 25% of its aggregate revenue shall be allocated to renewable energy projects each year to stabilize price fluctuations and replace the new and highly restrictive CCR mechanism. If the CCR is not replaced it should be reset at a higher level to allow the market to determine the price of allowances. In this way, it would not undermine the effectiveness of the cap, and it would still protect electricity providers from unreasonably high costs. With these measures in place, RGGI can continue to break the mold as a leader in the battle against climate change.

190. HOLT, *supra* note 140, at i.

191. Telephone Interview with Joseph Fontaine, *supra* note 33.

192. HOLT, *supra* note 140, at 3.

193. *Supra* notes 81–93.

194. See Press Release, N.H. Governor Maggie Hassan, Governor Hassan Statement on Signing HB 306 and HB 630 (July 16, 2013), available at <http://www.governor.nh.gov/media/news/2013/pr-2013-07-16-hb-306-hb-630.htm>; Telephone Interview with Joe Fontaine, *supra* note 33.

195. See S.B. 1322, 215th Leg., Reg. Sess., §2 (N.J. 2012), available at [http://www.njleg.state.nj.us/2012/Bills/S1500/1322\\_I1.HTM](http://www.njleg.state.nj.us/2012/Bills/S1500/1322_I1.HTM) (clarifying legislative intent to mandate participation in RGGI).

196. See *Renewable and Alternative Energy Portfolio Standards*, *supra* note 9.

197. HOLT, *supra* note 140, at ii.

198. *Id.* at ii (Executive Summary).

199. See *Renewable and Alternative Energy Portfolio Standards*, *supra* note 9.

200. *Supra* Part II.A.

201. REG'L GREENHOUSE GAS INITIATIVE, *supra* note 43, at 10.