

**THE RGGI: IMPERFECT AND INSUFFICIENT SOLUTIONS FOR CLIMATE  
CHANGE**

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## ***I. Introduction***

Carbon-pricing has been the darling child of moderate liberals seeking an unoffensive way to tackle climate change for the better part of the last 20 years. Since the first cap and trade program began in Europe circa 2005, the Democratic party has been in the presidency for 12 of 19 years, with 4 of those years coming with complete control of both houses of Congress<sup>1</sup>. Despite this, there has been no federal cap and trade program; the largest such program in the United States is the Regional Greenhouse Gas Initiative (“RGGI”). This paper offers a multi-faceted pragmatic critique of the RGGI. First, it evaluates the treaty-like legal framework, which, in order to work, requires the equivalent of ratification (though that may take any legal shape). Second, it looks at its potential from a two-pronged perspective: through concrete examples, the paper shows that the RGGI does not sufficiently incentivize change. Finally, this paper will evaluate the successes of the RGGI, which, to date, remains one of the more successful examples of a cap-and-trade program and what it can accomplish.

## ***II. Brief Description of the RGGI***

The RGGI is a (somewhat) legally binding agreement between multiple states across the east coast of the United States. There are currently 10 participating states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Virginia has pulled out of the RGGI as of January 2024<sup>2</sup>, and Pennsylvania has been prevented from participating in the RGGI by an injunction from its Supreme Court<sup>3</sup>. In order to join, each state must somehow pass into law a version of the RGGI’s model statute, instituting the overall caps determined by the RGGI as well as the marketplace for carbon credits<sup>4</sup>. Once a state is participating in the RGGI, it functions as a standard cap and trade program; the program sets a regional cap, a maximum level of carbon emissions, which it then divides into emission allowances, which polluters may trade for on the RGGI’s market if they wish to emit more than their allowance<sup>5</sup>. States are generally contracted to the RGGI for a set period of time which they may renew upon completion, but they are also free to leave the RGGI when the contracts are up, as Virginia has done as of 2024.

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<sup>1</sup> *Carbon Pricing 101*, UNION OF CONCERNED SCIENTISTS, <https://www.ucsusa.org/resources/carbon-pricing-101> (last updated Jan. 8, 2017)

<sup>2</sup> *Virginia Leaves the Regional Greenhouse Gas Initiative: What You Need to Know*, L. DOUGLAS WILDER SCHOOL OF GOVERNMENT AND PUBLIC AFFAIRS, <https://wilder.vcu.edu/news-and-events/news-articles/rggi-withdrawl-damian-pitt.html> (last updated Feb. 2, 2024)

<sup>3</sup> *Bowfin KeyCon Holdings, LLC v. Pa. Dep’t of Env’t Prot.*, 247 M.D. 2022, 2023 WL 7171547 (Pa. Commw. Ct. Nov. 1, 2023)

<sup>4</sup> *Elements of RGGI*, RGGI, INC., <https://www.rggi.org/program-overview-and-design/elements> (last visited May 2, 2024)

<sup>5</sup>*Id.*

The RGGI, in fact, resembles an international climate treaty along the lines of the Kyoto or Paris Accords, with one notable exception: it is legally binding, to an extent. These treaties' major weakness is, of course, their permeability. At any time, a major country may "leave" the treaty, and stop participating in the treaty's goals without any major consequences (as demonstrated by President Donald Trump pulling the United States out of the Paris Accords). As will be demonstrated in the next section, the RGGI shares this permeability issue. However, the other major issue with international treaties is that there is little to no recourse to address "silent participation." If, for instance, the United States were to remain in the Paris Accords and simply continue polluting, there is little the international community can do to address this short of just removing the country from the treaty<sup>6</sup>. The RGGI, however, requires itself to be enforced by state law, meaning that a participating state may be sued under the RGGI model statute<sup>7</sup>. Thus, while it is still easy for states to change their minds and leave the RGGI, any willing participants in the RGGI must abide by its rules by state law. In short, the RGGI is not just a vague commitment to addressing emissions; it is a legal system enforcing an emissions cap.

### ***III. Flimsy Legal Framework Limits the RGGI's Scope***

The basis for entry into the RGGI is simple. The state wishing to join must adopt a law in line with the model statute<sup>8</sup>. However, this adoption can occur through any legal means<sup>9</sup>. This means that while some states have joined through statutes passed by the legislature, others have joined via executive regulation<sup>10</sup>. There are two major and unfixable problems with the structure of the RGGI, which both stem from the political divides plaguing the United States.

The first of these problems is the ease with which States may leave the RGGI. The simple fact of American politics in their current iteration is that Republican politicians will not support even the most basic policies for reducing carbon emissions. Notably, when faced with a carbon pricing program sure to pass, Oregon Republicans literally fled the state to deny the majority a quorum for passing its legislature<sup>11</sup>. Thus, in order to pass the RGGI statute legislatively, a State must have a Democrat majority in its house and senate, as well as a Democrat governor. States such as Maine and Connecticut have avoided this by watering down the language of the statute or using executive regulation to enact the law respectively<sup>12</sup>. However, should a state ever swing Republican, those Republicans are more than free to pull the state right out of the RGGI. When

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<sup>6</sup> Kathryn Tso & Michael Mehling, *How Are Countries Held Accountable Under the Paris Agreement?*, MIT CLIMATE PORTAL (Mar. 8, 2021), <https://climate.mit.edu/ask-mit/how-are-countries-held-accountable-under-paris-agreement>

<sup>7</sup> *Elements of RGGI, supra*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> CONN. AGENCIES REGS. § 22a-174-31 (2019)

<sup>11</sup> Leah C. Stokes & Matto Mildemberger, *The Trouble with Carbon Pricing*, BOSTON REVIEW (Sept. 24, 2020), <https://www.bostonreview.net/articles/trouble-carbon-pricing/>

<sup>12</sup> *State Statutes and Regulations*, RGGI, INC., <https://www.rggi.org/program-overview-and-design/state-regulations> (last visited May 2, 2024)

Virginia, a perennial swing state, elected Republican Glenn Youngkin governor, he successfully pulled the state right back out of the RGGI<sup>13</sup>. Moreover, even states with the requisite Democrat majority must worry about a conservative judiciary. Pennsylvania’s RGGI statute is currently the subject of *Bowfin Keycon Holding, LLC v. Pa. Dep’t of Env’t Prot*<sup>14</sup>. This case is ongoing, but until it is resolved, Pennsylvania is under a temporary injunction preventing it from participating in the RGGI<sup>15</sup>. The most recent development in the case was a Commonwealth Court voiding the RGGI regulation<sup>16</sup>. In short, the only way a state could ensure the permanence of its participation in the RGGI is to have a permanent liberal majority in every house of its government. While this is the case in the near future for much of New England, it is not the case nearly anywhere else in the country.

The second problem with the structure of the RGGI stems from the first one. In order for a carbon pricing program to be effective in this country, it must be nationwide. The RGGI is only ten states as of now, and polluters who are not interested in participating in a cap-and-trade program may simply move their polluting elsewhere. Moreover, states that do not participate in the RGGI may supply energy without paying for states that do participate, a concept known as “leakage.”<sup>17</sup> There is some disagreement about how much leakage occurs within the RGGI, but it certainly does exist<sup>18</sup>. Regardless of how much leakage exists or does not, the simple fact is that a ten-state cap and trade program is woefully inadequate. Nonetheless, the RGGI has likely grown as much as it could. Republican-dominated states will never join such an organization (as evidenced by Oregonian Republicans), and moderate swing states cannot be counted on to remain in such an organization (as evidenced by Virginian Republicans). Moreover, many of the states with the highest carbon emissions per capita (Wyoming, North Dakota, Texas) are Republican-dominated (a “coincidence” best left for a different paper)<sup>19</sup>. As long as those states will not willingly participate in the RGGI or a program like it, the RGGI remains a half-measure.

The simple fact is that the RGGI is hindered by the fact that each state government must voluntarily participate in it. Any serious cap and trade program that wants to meaningfully reduce emissions must be a federal one.

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<sup>13</sup>Sarah Rankin, *Virginia Regulators Advance Youngkin Plan to Leave Climate Initiative He Calls Ineffective*, ASSOCIATED PRESS (June 7, 2023, 6:13 PM), <https://apnews.com/article/virginia-rggi-greenhouse-gas-initiative-climate-change-e34f1c03806bc35d97adb6bf4bfbf917>

<sup>14</sup>*Bowfin KeyCon Holdings, LLC v. Pa. Dep’t of Env’t Prot.*, 2023 WL 7171547

<sup>15</sup>*Id.*

<sup>16</sup>*Id.*

<sup>17</sup>Ivy Main, *Yes, RGGI Works*, VIRGINIA MERCURY (Mar. 29, 2023, 0:09 AM), <https://viriniamercury.com/2023/03/29/yes-rggi-works/>

<sup>18</sup>*Id.*

<sup>19</sup>*Energy-Related Carbon Dioxide Emissions Per Capita in the United States in 2021, by State*, STATISTA (July 2023), <https://www.statista.com/statistics/489494/major-us-state-energy-related-carbon-dioxide-emissions-per-capita>

#### IV. *The RGGI Does Not Incentivize Meaningful Changes*

The RGGI is a market-based solution to the problem of high carbon emissions. Its purpose is to slowly make it more and more expensive for polluters to maintain their level of carbon emissions. These polluters are, by and large, private and profit-motivated companies. Thus, the RGGI motivates these companies to find the cheapest way to avoid emissions. In the case of the RGGI states, this has been natural gas.

States within the RGGI have, by and large, not made the switch to acquiring their energy via renewable sources (e.g. wind, solar). Connecticut does not acquire any of its power from renewable sources, although its natural gas consumption has risen since it joined the RGGI<sup>20</sup>. Natural gas has risen in Maine<sup>21</sup>, Vermont<sup>22</sup>, and Massachusetts<sup>23</sup> as well. Much scholarship has been done on the environmental impact of natural gas consumption, but the general gist of it is thus: natural gas causes fewer emissions than coal, but not by much, while the process for extracting it is horrible for the environment<sup>24</sup>. This process is called “fracking,” and it requires drilling deep into the earth’s crust before using specific chemicals injected at high pressure to widen cracks in the crust<sup>25</sup>. During this process, some of the natural gas (methane) will leak through the cracks and into the atmosphere<sup>26</sup>, known as methane leakage. Since methane is so much more potent a pollutant than carbon dioxide, even as little as 5-10 percent leakage can effectively neutralize the emission reduction from using natural gas in the first place<sup>27</sup>. Beyond that, the process is extremely disruptive to local ecosystems, and causes material damage to the health of the people who live near it, including cancer and asthma<sup>28</sup>. Essentially, while natural gas appears to create fewer emissions than coal when it comes to generation of electricity, it is debatable whether or not it actually does when production emissions are factored in. Combine that with the other environmental effects of fracking, and it is difficult to argue that switching the world’s energy infrastructure to natural gas is much of an improvement at all.

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<sup>20</sup> *Connecticut: State Profile and Energy Estimates*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/state/?sid=CT> (last visited May 2, 2024).

<sup>21</sup> *Maine: State Profile and Energy Estimates*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/state/?sid=ME> (last visited May 2, 2024).

<sup>22</sup> *Vermont: State Profile and Energy Estimates*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/state/?sid=VT> (last visited May 2, 2024).

<sup>23</sup> *Massachusetts: State Profile and Energy Estimates*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/state/?sid=MA> (last visited May 2, 2024).

<sup>24</sup> *Natural Gas Explained: Natural Gas and the Environment*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/energyexplained/natural-gas/natural-gas-and-the-environment.php> (last updated Apr. 16, 2024)

<sup>25</sup> *How Hydraulic Fracturing Works*, NATIONAL GEOGRAPHIC, <https://education.nationalgeographic.org/resource/how-hydraulic-fracturing-works/> (last visited May 2, 2024)

<sup>26</sup> *Fracking*, CENTER FOR BIOLOGICAL DIVERSITY, <https://www.biologicaldiversity.org/campaigns/fracking/> (last visited May 2, 2024)

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

RGGI advocates will argue that while cap-and-trade programs incentivize natural gas production in the short term, the continuous reduction of the cap will eventually make natural gas too expensive, forcing states to find their energy through even more environmentally friendly sources. This argument falls flat for two reasons. First, a state cannot instantaneously change to renewable energy; it needs ample time to build up infrastructure in order to make a seamless swap. The RGGI cannot incentivize long-term renewable infrastructure projects, because those projects are not immediately profitable. The market will always seek the most immediately profitable solution to a problem, and natural gas is that profitable solution. The second reason is the more obvious one: the world needs drastic action now to prevent future climate disaster. The United Nations “State of the Global Climate” report for 2023 notes that greenhouse gas emissions, surface temperature, and sea level rise all exceeded record highs for the year<sup>29</sup>. Any emissions released now will stay in the atmosphere for potentially hundreds of years<sup>30</sup>. The planet cannot afford to wait for the cap to lower enough to influence the energy market towards renewable energy.

There is another major problem that programs like the RGGI cannot address by themselves is the inherent inequity in emissions reduction. A study published in 2022 found that RGGI states had not meaningfully reduced emissions for environmental justice communities (“EJCs”)<sup>31</sup>. EJC has a slightly different definition from state to state, but generally an EJC is a community comprised of a majority of either people of color or people living at or around the federal poverty line. Connecticut law, for example, defines EJCs as “defined census block groups where 30% of the population is living below 200% of the federal poverty level<sup>32</sup>. While it is true that the RGGI has reduced greenhouse gas emissions in the member states<sup>33</sup>, the percentage of people of color that live within 6.2 miles of a power plant is actually up to 23.5 percent higher than the percent of white people who live within that same distance<sup>34</sup>. Moreover, the percentage of people living in poverty that live within five miles of a power plant is up to 15.3 percent higher than the percent of those not living in poverty<sup>35</sup>. The study focused not only on pure carbon emissions, which affect the entire world when they disseminate into this atmosphere, but also on emissions of sulfur

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<sup>29</sup> *State of the Global Climate 2023*, WORLD METEOROLOGICAL ORGANIZATION (Mar. 19, 2024), <https://wmo.int/publication-series/state-of-global-climate-2023>

<sup>30</sup> *Climate Change Indicators: Greenhouse Gases*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, <https://www.epa.gov/climate-indicators/greenhouse-gases> (last updated Apr. 9, 2024)

<sup>31</sup> Juan Declet-Barreto & Andrew A. Rosenberg, *Environmental Justice and Power Plant Emissions in the Regional Greenhouse Gas Initiative States*, PLOS ONE (July 20, 2022), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0271026>

<sup>32</sup> *Learn More About Environmental Justice Communities*, CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION, <https://portal.ct.gov/deep/environmental-justice/05-learn-more-about-environmental-justice-communities> (last visited May 2, 2024)

<sup>33</sup> Brian C. Murray & Peter T. Maniloff, *Why Have Greenhouse Emissions in RGGI States Declined? An Econometric Attribution to Economic, Energy Market, and Policy Factors*, NICHOLAS INSTITUTE FOR ENERGY, ENVIRONMENT AND SUSTAINABILITY (Aug. 2015), <https://nicholasinstitute.duke.edu/content/why-have-greenhouse-emissions-rggi-states-declined-econometric-attribution-economic-energy>

<sup>34</sup> Declet-Barreto & Rosenberg, *supra*

<sup>35</sup> *Id.*

dioxide and nitrogen oxide, which only affect localities<sup>36</sup>. These chemicals cause harmful health effects which, of course, are primarily affecting these EJCs<sup>37</sup>. This is a major problem which the RGGI fails to address; aggregate emissions reductions are good, but in order to remedy the harm being done to these impoverished communities and communities of racial minorities (tragically often the same communities), targeted emissions reduction is necessary. The RGGI is a tacit admission that no government, whether it be local, state, or federal, can simply snap its collective fingers and eliminate all pollution tomorrow; the world needs power to operate, and the infrastructure for pollution-free power takes time to build. The RGGI is an effort to slowly scale down emissions and pollution over time. It should go without saying, however, that impoverished people and people of color should not be forced to bear the brunt of the emissions over this time. The RGGI gives its member states a quick and effective talking point (reduced aggregate emissions), allowing them to breeze over the very real discrimination still occurring in their states. This is not a problem that can be solved by the market. Indeed, the RGGI by its very nature incentivizes energy companies to pollute as cheaply as possible, and low property values in these communities (due to centuries of discrimination best left to a separate paper) makes them the cheapest places to pollute. The only way to effectively address this issue is through targeted regulations protecting EJCs, in tandem with the RGGI. Without those regulations, the RGGI is actively making environmental discrimination worse, even if it does reduce emissions in the aggregate.

As this paper will discuss later, there is a place in the fight against climate change for carbon pricing, and specifically for cap-and-trade programs; ideally, a cap-and-trade program should be used in tandem with strong regulations on the proportion of energy within the state that must be renewable. Thus, the cap-and-trade program can help ease the economic damage of switching away from coal and natural gas, while renewable energy requirements speed up the process of the switch. However, cap-and-trade programs cannot be the solution in its entirety. The RGGI shouts its success from the rooftops<sup>38</sup>, and is widely praised by environmental watchdogs and news outlets alike<sup>39</sup>. Again, as will be discussed later, it has worked to reduce emissions to some capacity. But there is ample evidence that programs such as the RGGI, even on a federal or global level, are not enough to lead the fight against climate change. Despite widespread carbon pricing programs in Europe, and the smaller ones that already exist in the United States (California

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<sup>36</sup> Ashley Seifert Nunes, *New Study Affirms Environmental Justice Communities in RGGI States Don't Equitably Benefit from Emissions Reductions*, UNION OF CONCERNED SCIENTISTS (July 20, 2022), <https://www.ucsusa.org/about/news/new-study-affirms-environmental-justice-communities-rggi-states-dont-equitably-benefit>

<sup>37</sup> *Id.*

<sup>38</sup> *Factsheet*, RGGI, INC., [https://www.rggi.org/sites/default/files/Uploads/Fact%20Sheets/RGGI\\_101\\_Factsheet.pdf](https://www.rggi.org/sites/default/files/Uploads/Fact%20Sheets/RGGI_101_Factsheet.pdf) (last updated Jan., 2024).

<sup>39</sup> Bruce Ho, *The Regional Greenhouse Gas Initiative Is a Model for the Nation*, NRDC (July 14, 2021), <https://www.nrdc.org/resources/regional-greenhouse-gas-initiative-model-nation>, *Everything You Need to Know About RGGI*, SOUTHERN ENVIRONMENTAL LAW CENTER, <https://www.southernenvironment.org/topic/regional-greenhouse-gas-initiative/> (last visited May 2, 2024)



and the RGGI), the United Nations has made it clear that the climate crisis continues to worsen<sup>40</sup>. Despite this, many American policymakers seem to think that carbon pricing is a fine place to stop. The Biden administration lauded its Inflation Reduction Act, claiming “With the stroke of his pen, the President redefined American leadership in confronting the existential threat of the climate crisis and set forth a new era of American innovation and ingenuity to lower consumer costs and drive the global clean energy economy forward<sup>41</sup>.” While President Biden’s Act contains many admirable efforts to fund clean energy, and its commitments to reduce emissions to 52% of 2005 levels by 2030 and net zero by 2050 are great, it contains no real avenue with which to accomplish this. It does not authorize the EPA to make enforceable caps on carbon emissions on a year-to-year basis<sup>42</sup>. President Biden’s “redefined American leadership” seems to be, for the most part, throwing money at renewable energy, setting deadlines, and hoping someone else regulates more strongly to meet those deadlines in the future. In short, the current federal government did not even make it as far as cap-and-trade.

The federal courts have not been much help. The current Supreme Court has made its stance on climate issues clear with *Sackett v. EPA*<sup>43</sup>. Justice Samuel Alito authored an opinion in *Sackett* which flew in the face of precedent, changing the definition of “waters of the United States” in the Clean Water Act to exclude more than 50% of American wetlands from EPA regulation<sup>44</sup>. More relevant to the issue at hand is the Tenth Circuit’s 2014 ruling in *WildEarth Guardians v. United States EPA*<sup>45</sup>. In *WildEarth*,<sup>46</sup> a conglomerate of three states, one county, and one city instituted a very small cap-and-trade program in order to limit sulfur dioxide emissions in the region in compliance with the Clean Air Act<sup>47</sup>. This program was approved by the EPA as an alternative to its “BART” regulation scheme<sup>48</sup>. Multiple environmental interest groups filed the lawsuit claiming that the EPA should not have approved the cap-and-trade program<sup>49</sup>. The court held that the program was satisfactory as a BART replacement under the regulatory framework<sup>50</sup>. This was despite the fact that the program was voluntary, and the actual emissions from the program were higher than the actual emissions from BART participants, even though both were below the presumptive emissions rate set out in the BART framework<sup>51</sup>. This case should not be overstated;

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<sup>40</sup> *Climate Plans Remain Insufficient: More Ambitious Action Needed Now*, UNITED NATIONS CLIMATE CHANGE (Oct. 26, 2022), <https://unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now>

<sup>41</sup> *Inflation Reduction Act Guidebook*, THE WHITE HOUSE, <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/> (last updated Sept. 21, 2023)

<sup>42</sup> Inflation Reduction Act, H.R. H.R.5376, 117th Cong. (2022)

<sup>43</sup> *Sackett v. EPA*, 598 U.S. 651 (2023) (known as *Sackett II*). For more on the Sacketts’ litigation saga see, e.g., Dana Neacsu, *The Ersatz of the Plain-Meaning Rule of Statutory Construction in Sackett v. EPA (II)*, DUQ. L. REV. (forthcoming 2024), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4665123](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4665123).

<sup>44</sup> *Sackett v. EPA*, 598 U.S. 651 (2023).

<sup>45</sup> *WildEarth Guardians v. U.S. Env’tl. Prot. Agency*, 759 F.3d 1064 (9th Cir. 2014).

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

it is really just a Circuit Court reading a very specific EPA regulation. However, the case should not be understated either. It is clear that there is a legal framework for accepting alternative cap-and-trade programs to satisfy federal emissions regulations. It is not a logical leap to get to the Supreme Court ruling that a voluntary cap-and-trade program such as the RGGI is a reasonable interpretation of federal emissions regulation on a larger scale. As has already been discussed, cap-and-trade programs, no matter how effective, are simply not enough to effectively tackle the climate crisis. The fact that many policymakers and members of the judiciary seem to think so is worrisome.

## V. *The RGGI is a Model of Peak Success for Cap-and-Trade Programs*

Until this point, this paper has been extraordinarily critical of the RGGI, and cap-and-trade programs in general. Without undercutting or downplaying those critiques, it is worth noting that the RGGI has been largely successful. It is undeniable that the fight against climate change requires massive overhauls of how the world gets its energy. The Kyoto and Paris accords both acknowledge the real and looming threat of climate disaster, and the necessary magnitude of the world's response. It is easy to look at small, incremental change with disdain; "we all know that it is not enough, so what is the point of doing it at all?" That cynical worldview is extremely unhelpful. Any reduction in emissions is a good thing, no matter how small. Moreover, the success of small-scale programs such as the RGGI set the table for larger reforms, showing skeptics that such reforms are possible without "ruining everything." With that in mind, let's evaluate the success of the RGGI.

The RGGI has encouraged its member states to switch to renewable energy to some degree, even if it is not nearly to the degree required to effectively fight climate change. Renewable energy use in RGGI states has roughly doubled, from about five percent to ten percent<sup>52</sup>. Moreover, the RGGI has strongly discouraged coal use in its member states. Coal use in RGGI states is way down, even at zero in states such as Massachusetts<sup>53</sup>. Overall, coal use has plummeted from roughly 22 percent to 7 percent of RGGI states' power usage<sup>54</sup>.

The RGGI has materially reduced emissions. While it is difficult to single out which programs caused what amount of emissions reduction, Murray and Maniloff estimated in 2015 that

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<sup>52</sup> *The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress*, CONGRESSIONAL RESEARCH SERVICE, [https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://crsreports.congress.gov/product/pdf/R/R41836/14&ved=2ahUKEwigqvnK2PCFAxW7j4kEHUzMDZUQFnoECBUQAQ&usg=AOvVawOtRxc0\\_0IFQ0pR9V3oORq](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://crsreports.congress.gov/product/pdf/R/R41836/14&ved=2ahUKEwigqvnK2PCFAxW7j4kEHUzMDZUQFnoECBUQAQ&usg=AOvVawOtRxc0_0IFQ0pR9V3oORq) (last updated May 16, 2017)

<sup>53</sup> *Massachusetts: State Profile and Energy Estimates*, *supra*

<sup>54</sup> *The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress*, *supra*

emissions in RGGI member states would have been 24 percent higher<sup>55</sup> (this does not include any states which joined after 2015, especially Virginia and Pennsylvania). Emissions in RGGI states are dropping at an insane 90% faster rate than emissions in the United States as a whole<sup>56</sup> (although this is more of an indictment of inaction elsewhere). Indeed, emissions in the United States are going down as a whole<sup>57</sup>. It is foolish to not recognize the RGGI's contribution to this, however slight. However, the most important boon the RGGI has provided is the knowledge that it is not enough. The Supreme Court of Massachusetts said as much in *New England Power Generators Association, Inc. v. Department of Environmental Protection*<sup>58</sup>. In *New England Power*, the court specifically held that the RGGI did not satisfy Massachusetts' statutory requirements to reduce emissions<sup>59</sup>. Here is a legal precedent for federal emissions regulations. The Massachusetts Supreme Court evaluated the RGGI after more than a decade of participation, and determined that it was not the be-all-end-all of emissions reductions. This is the power a program like the RGGI can have. It has worked to help reduce emissions, and has also worked to inform policymakers and the people that more regulations are required to reduce emissions at the necessary rate.

It is important to note, however, that these modest emissions numbers could be much higher if the RGGI were to set the prices effectively. Multiple economists have described the RGGI's prices as ridiculously low, especially when compared to other carbon pricing programs throughout the world<sup>60</sup>. The RGGI's actual price for a ton of carbon has never passed \$7.50, compared to an average of approximately \$30 across multiple European programs<sup>61</sup>. As described in Section III, it is likely that political issues within the program would prevent it from ever increasing its prices to those levels, but if this was the effect the RGGI is capable of when hamstrung by low prices, the effect a federally administered carbon pricing program with tough prices is exciting to imagine.

The RGGI's emission reduction has had multiple positive effects on the health of the citizens of the member states. Cases of asthma in children are have dropped noticeably due to cleaner air, as well as multiple other common children's health conditions<sup>62</sup>. Since those children who would have had health conditions no longer need medical care to treat them, RGGI member states and even non-participating neighbors have saved between \$191 million and \$350 million in medical costs<sup>63</sup>. With some basic extrapolation, one could see how a similarly structured

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<sup>55</sup> Murray & Maniloff, *supra*

<sup>56</sup> *Everything You Need to Know About RGGI*, *supra*

<sup>57</sup> *U.S. Emissions*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, <https://www.c2es.org/content/u-s-emissions/> (last visited May 2, 2024)

<sup>58</sup> *New Eng. Power Generators Ass'n v. Dep't of Env't Prot.*, 105 N.E.3d 1156 (Mass. 2018).

<sup>59</sup> *Id.*

<sup>60</sup> Rachel McDevitt, *RGGI, Behind the Rhetoric: What We Know About the Regional Greenhouse Gas Initiative*, STATE IMPACT PENNSYLVANIA, <https://stateimpact.npr.org/pennsylvania/2020/09/14/rggi-behind-the-rhetoric-what-we-know-about-the-regional-greenhouse-gas-initiative/> (last updated Sept. 15, 2020)

<sup>61</sup> *Id.*

<sup>62</sup> Frederica Perera, David Cooley, Alique Berberian, David Mills & Patrick Kinney, *Co-Benefits to Children's Health of the U.S. Regional Greenhouse Gas Initiative*, 128(7) ENV'T HEALTH PERSP.S 077006-1 (2020)

<sup>63</sup> *Id.*

nationwide cap-and-trade program could not only materially improve the health of all children, but also save the people of this country billions of dollars in medical expenses. It should be noted, however, that as it stands, it is mostly middle-class white children reaping these health benefits<sup>64</sup>, and the only way to ensure the benefits' equitable distribution is through targeted regulation towards ECJs.

Finally, the only harm a program like the RGGI does is economic harm to large energy companies. There is an argument to be made that, even if one does not believe that the world is in need of saving, the economic benefits of emissions reductions outweigh these costs. The profit lost by these energy companies could be made back in a nationwide program through saved medical costs; beyond that, investment in renewable energy (as this paper has suggested and strongly endorses) will return massive economic benefits for the United States, far exceeding the economic benefits that fossil fuel companies currently provide<sup>65</sup>. Indeed, the carbon market itself generates large profits for the member states, which Pennsylvania is notably missing out on during its ongoing legal battle to join the program<sup>66</sup>. Finally, if the consistent rise in global temperature can be slowed, countless natural disasters (forest fires, floods, hurricanes, tornadoes) will be prevented, saving this country even more money in the future<sup>67</sup>. The reason why a government exists is because what is often necessary for the overall economic health of a state is long-term investment and thinking; this is antithetical to the corporate capitalist profit model, which demands constant increases in shareholder profit every quarter. It is abundantly clear that emissions-reduction, which a cap-and-trade program can do, however inefficiently, is economically beneficial for the United States, independently of any impending apocalyptic doom.

## VI. Conclusion

The RGGI is an example of what cap-and-trade programs are capable of, for better and for worse. It has reduced emissions, as these programs can do. It has also proven that these programs are woefully inadequate by themselves as solutions to the ongoing climate crisis. The fact of the matter is that the climate crisis will not be solved through massaging the energy market; energy companies are simply not capable, in a capitalist system, of solving the climate crisis. They are too

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<sup>64</sup> Deplet-Barreto & Rosenberg, *supra*

<sup>65</sup> *Dollars from Sense: The Economic Benefits of Renewable Energy*, NATIONAL RENEWABLE ENERGY LABORATORY (Sept. 1997), [https://www.nrel.gov/docs/legosti/fy97/20505.pdf&ved=2ahUKEwjX8OeXyeqFAxXwEFkFHSMDDB64QFnoECBIQAQ&usg=AOvVaw0TDKiZNwGqsn5behIUpE\\_X](https://www.nrel.gov/docs/legosti/fy97/20505.pdf&ved=2ahUKEwjX8OeXyeqFAxXwEFkFHSMDDB64QFnoECBIQAQ&usg=AOvVaw0TDKiZNwGqsn5behIUpE_X)

<sup>66</sup> Cassie Miller, *Legal Challenges to RGGI Are Keeping Millions in Carbon Allowances from Flowing to Pennsylvania*, CITY AND STATE PENNSYLVANIA (Oct. 7, 2022), <https://www.cityandstatepa.com/policy/2022/10/legal-challenges-rggi-are-keeping-millions-carbon-allowances-flowing-pennsylvania/378203/>

<sup>67</sup> *How Can Climate Change Affect Natural Disasters*, USGS, <https://www.usgs.gov/faqs/how-can-climate-change-affect-natural-disasters> (last visited May 2, 2024)

entrenched in the fossil fuel market, there is too much money to be made from pollution, and profit is a short-term motivator stronger than any long-term motivator; even the end of the world. Unfortunately for the climate, the world economy is, for the most part, a capitalist system. As such, market-based solutions can and should be involved in a broader climate change scheme, and the RGGI is an excellent example of such a program. But the RGGI cannot be the driving force. The driving force must be strong, enforceable, federal regulations designed to drastically reduce emissions. The RGGI is not enough.