

## Carnegie Mellon University

**To:** The Secretary, Department of Environmental Protection

**From:** Ashwin Kandath, Carnegie Mellon University

**Date:** 7<sup>th</sup> December 2023

**Subject:** RGGI in Pennsylvania: Advocacy for membership

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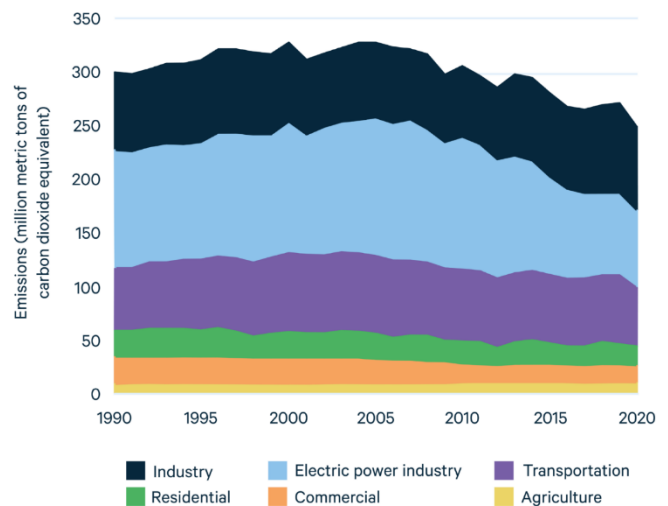
### Abstract

This policy memo outlines the potential impact of the Regional Greenhouse Gas Initiative (RGGI) on Pennsylvania's environmental and economic sectors. It emphasizes RGGI's successful track record in emissions reduction, economic growth, and electricity price stabilization among participating states. The memo underscores the critical need to advocate for RGGI's integration in Pennsylvania, highlighting its capacity to combat climate change, stimulate job creation, and bolster the economy. RGGI emerges as a promising model for sustainable development, aligning with Pennsylvania's goals for environmental responsibility and economic prosperity. The memo strongly urges the Secretary of DEP to support RGGI, emphasizing its pivotal role in shaping a cleaner, more prosperous future for the state and its residents within the policy landscape.

### In 2020, Pennsylvania was the 4<sup>th</sup> largest Greenhouse Gas emitting state in the US

Pennsylvania stands at the precipice of immediate climate peril, evident in its shifting climate dynamics and precipitation patterns. The looming specter of intensified heat waves, heavier rainfall, and drought looms large, posing imminent threats to public health, agriculture, and infrastructure. As a substantial contributor to greenhouse gas emissions, primarily from fossil fuel combustion and methane, the state grapples with the urgent need to address these environmental challenges. Figure 1 elicits the GHG emissions per economic sector, with primary sources of emissions in the state stemming from the industrial and electricity sectors<sup>1</sup>. Notably, in 2020, Pennsylvania ranked as the fourth-largest emitter of greenhouse gases in the United States<sup>2</sup>, which places Pennsylvania in a pivotal position, carrying both a distinctive opportunity and responsibility to take decisive action against climate change.

**Figure 1. Pennsylvania Greenhouse Gas Emissions, by Economic Sector, 1990–2020**



Source: US Environmental Protection Agency.

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<sup>1</sup> "The Prospects for Pennsylvania as a RGGI Member," *Kleinman Center for Energy Policy* (blog), accessed November 19, 2023, <https://kleinmanenergy.upenn.edu/research/publications/the-prospects-for-pennsylvania-as-a-rggi-member/>.

<sup>2</sup> Tony Dutzik, David Masur, and Ashleigh Deemer, "Pennsylvania's Dirty Dozen," *PennEnvironment Research & Policy Center*, May 9, 2023, <https://environmentamerica.org/pennsylvania/center/resources/pennsylvanias-dirty-dozen/>.

As a solution, joining the [Regional Greenhouse Gas Initiative](#) (RGGI) presents a robust trifecta of benefits for Pennsylvania: heightened economic performance, decreased CO2 emissions, and reduced electricity prices. Experience from other states in the initiative underscores a clear link between economic growth and emissions reduction. Additionally, RGGI membership could leverage mechanisms leading to lower electricity costs, offering significant consumer savings and fortifying Pennsylvania's economic strength.

### **In 2022, Gov. Wolf's decision for Pennsylvania to participate in the RGGI was faced with opposition and legal hurdles**

Under the leadership of the then Governor of Pennsylvania, Tom Wolf, the CO2 Budget Trading Program regulation was released in the Pennsylvania Bulletin on 23<sup>rd</sup> April 2022, marking the initiation of its participation in the (RGGI) as the latest state to join this regional [cap-and-trade](#) system<sup>3</sup>. The system is a cooperative effort among ten states to cap and reduce carbon dioxide emissions from fossil fuel-based power plants, requiring these facilities to purchase allowances for their annual emissions. Proceeds from auctions are then invested in clean energy and GHG reduction initiatives, fostering the strengthening of the energy economy in the region.

However, the Pennsylvania Commonwealth Court decisions on 1<sup>st</sup> November 2023 challenging Pennsylvania's involvement in RGGI pose a critical juncture in the state's commitment to environmental sustainability and emission reduction<sup>4</sup>. These rulings demand a steadfast challenge, emphasizing the urgency of implementing RGGI to combat carbon emissions. As the matter advances to the state's highest court, it's imperative for the Secretary of the Department of Environmental Protection (DEP) to rally support for the implementation of RGGI in Pennsylvania. The Secretary's backing for RGGI's implementation aligns not only with Pennsylvania's environmental objectives but also underscores the imperative to prioritize collective efforts toward mitigating climate change for the well-being of current and future generations.

### **RGGI, based on the cap-and-trade model, has brought about economic growth and reduced pollution in the member states**

RGGI stands as the pioneering multi-state, market-driven strategy aimed at curbing carbon dioxide (CO2) emissions within the electric power sector. Operating across the Northeast and Mid-Atlantic regions, RGGI operates on a cap-and-trade framework, specifically targeting CO2 emissions from power plants generating 25 megawatts or more of electricity<sup>5</sup>. Commencing formally in 2009, the program underwent strengthening following a comprehensive review in 2012 and presently maintains a progressively stringent emissions cap slated through 2020. Various states, such as Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont, actively participate in RGGI.

The RGGI program establishes an annual cap on the combined CO2 emissions from the electric power sector across the region. This cap reduces by 2.5% each year from 2015 to 2020. To manage

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<sup>3</sup> "Pennsylvania Publishes ETS Regulation, Paving the Way to Join RGGI in July 2022," May 6, 2022, <https://icapcarbonaction.com/en/news/pennsylvania-publishes-ets-regulation-paving-way-join-rggi-july-2022>.

<sup>4</sup> Kate Huangpu, "PA Commonwealth Court Strikes down RGGI," Spotlight PA, November 1, 2023, <https://www.spotlightpa.org/news/2023/11/regional-greenhouse-gas-rggi-struck-down-pennsylvania-climate-change-fossil-energy/>.

<sup>5</sup> "The Regional Greenhouse Gas Initiative: A Fact Sheet" (Ceres, n.d.), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://www.ceres.org/sites/default/files/Fact%20Sheets%20or%20misc%20files/RGGI%20Fact%20Sheet.pdf>.

emissions, pollution permits known as 'allowances' are regularly auctioned to covered entities, primarily power plants<sup>6</sup>. Each allowance corresponds to one ton of CO<sub>2</sub>. RGGI, Inc., a nonprofit entity tasked with program management, conducts quarterly auctions where power plant owners submit confidential bids, determining the allowance prices for that auction. Stringent controls are in place to ensure the auctions' efficiency, allowing participants to trade or purchase allowances within a secondary market. The revenue generated from these auctions is allocated to the states following RGGI's guidelines. While the funds can be utilized for various state policy goals, a minimum of 25% of the proceeds must be directed toward consumer benefits or strategic energy purposes<sup>7</sup>. Since, other states show that economic growth and reduced emissions go hand in hand, Pennsylvania has the opportunity to boost its economy, cut CO<sub>2</sub> emissions, and lower electricity prices by joining the RGGI.

### **Participating in RGGI could reduce CO<sub>2</sub> emissions by 225 million tonnes in Pennsylvania**

RGGI stands as a model of success, showcasing significant emissions reduction and substantial investments in clean energy. The 11 participating states have experienced a remarkable 90% faster decline in fossil fuel emissions compared to other regions in the country. Between 2009 and 2014, these states achieved a remarkable 40% reduction in power sector emissions<sup>8</sup>. Notably, the existing participants have witnessed a 47% decrease in carbon dioxide emissions from the power sector over the past decade, leading to fewer health issues like asthma, respiratory illnesses, strokes, and heart attacks, resulting in fewer missed school or workdays and hospital visits<sup>9</sup>.

The adoption of RGGI in Pennsylvania is projected to result in a substantial decrease in CO<sub>2</sub> emissions, which is estimated between 97 and 225 million tons by 2030. Additionally, studies also suggest significant reductions in the emission of other harmful pollutants such as nitrogen oxides (~ 112,000 tons), Sulphur dioxide (~ 67,000 tons), and particulate matter. These reductions are particularly beneficial for vulnerable populations, including children and at-risk seniors in low-income and environmental justice communities, who often bear the brunt of poor air quality.<sup>10</sup>

### **RGGI is poised to elevate job creation and propel the state's GDP growth**

RGGI has demonstrated its economic prowess by generating a net positive economic value of \$4 billion. Upon joining, Pennsylvania stands poised to benefit significantly, with projections indicating the creation of 27,000 new jobs and a boost of nearly \$2 billion to the state's economy<sup>11</sup>. The distinctive success of RGGI lies in its divergence from national trends, showcasing accelerated economic growth (46.9%) simultaneous with steeper reductions in CO<sub>2</sub> emissions (46%) between 2008 and 2018. This stark contrast to non-regulated states (35.8% growth, 24% emission reduction) signals a departure from the conventional link between economic expansion and heightened

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<sup>6</sup> "The Regional Greenhouse Gas Initiative: A Fact Sheet."

<sup>7</sup> "The Regional Greenhouse Gas Initiative: A Fact Sheet."

<sup>8</sup> "Everything You Need to Know about RGGI," Southern Environmental Law Center, accessed November 24, 2023, <https://www.southernenvironment.org/topic/regional-greenhouse-gas-initiative/>.

<sup>9</sup> "Everything You Need to Know about RGGI."

<sup>10</sup> "Regional Greenhouse Gas Initiative," accessed November 12, 2023, <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>.

<sup>11</sup> "The Regional Greenhouse Gas Initiative Is a Model for the Nation," July 14, 2021, <https://www.nrdc.org/resources/regional-greenhouse-gas-initiative-model-nation>.

emissions<sup>12</sup>. RGGI's impact presents a paradigm shift, demonstrating that economic growth need not be tethered to increased emissions, thus paving the way for sustainable economic progress while curbing environmental impact.

Implementing RGGI in Pennsylvania could catalyse a surge in energy job creation, nurturing a robust green energy sector and fostering sustained economic growth. The state's potential to drive job expansion and financial well-being aligns with the anticipated economic upturn through RGGI integration. Prior evidence showcasing the pre-pandemic outpacing of job growth in renewable energy and energy efficiency sectors, largely fuelled by smaller businesses, highlights the fertile ground for increased job opportunities. With around 80% of green energy jobs rooted in trades, construction, and manufacturing<sup>13</sup>, coupled with consistently higher hourly wages compared to parallel roles, RGGI implementation stands poised to significantly amplify job creation and elevate Pennsylvania's position in the energy sector.

### **Reduction in energy prices, as an outcome, will lead to increased disposable income and wellbeing**

The data from the region where RGGI has been implemented underscores a compelling narrative regarding electricity prices. Notably, since RGGI's implementation, retail electricity prices have exhibited a downward trend, marking a 5.7% decrease from 2008 to 2017<sup>14</sup>. This decrease in prices contradicts concerns that climate-focused policies could elevate electricity costs. Moreover, RGGI's contribution to this price stability is challenging to isolate but appears linked to investments in energy efficiency funded by the program. The evidence suggests that RGGI states have outperformed the rest of the country in electricity price trends, as the region's prices have dropped while the rest of the nation experienced an 8.6% increase over the same period<sup>15</sup>. This outcome reflects positively on RGGI's capacity to foster cost stability while achieving environmental objectives.

Expanding this model to Pennsylvania could similarly result in favorable outcomes, challenging the perception that climate initiatives might elevate electricity prices and diminish competitiveness. By leveraging RGGI's experience, Pennsylvania could potentially witness stabilized or even reduced electricity costs, counteracting fears of economic strain due to climate policies. This could create an environment conducive to economic growth, and increased disposable income (cumulative increase of \$3.7 billion by 2050<sup>16</sup>), simultaneously addressing environmental concerns without compromising the state's competitiveness in the electricity market.

### **Conclusion**

The substantial benefits demonstrated by RGGI in emissions reduction, economic growth, and stabilized electricity prices across participating states strongly suggest that RGGI should be advocated

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<sup>12</sup> "The Regional Greenhouse Gas Initiative 10 Years in Review" (Acadia Center, October 2022), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://acadiacenter.wpenginepowered.com/wp-content/uploads/2019/09/Acadia-Center\_RGGI\_10-Years-in-Review\_2019\_101122\_update\_R2.pdf.

<sup>13</sup> By Anna Shipp, "Joining RGGI Is Critical for PA's Economic Recovery, Local Businesses, Resilient Infrastructure, and Public Health," Beaver County Times, accessed November 12, 2023, <https://www.timesonline.com/story/opinion/2021/04/22/op-ed-why-pennsylvania-should-join-regional-greenhouse-gas-initiative/7301119002/>.

<sup>14</sup> "The Regional Greenhouse Gas Initiative Is a Model for the Nation," July 14, 2021, <https://www.nrdc.org/resources/regional-greenhouse-gas-initiative-model-nation>.

<sup>15</sup> "The Regional Greenhouse Gas Initiative Is a Model for the Nation," July 14, 2021.

<sup>16</sup> "Regional Greenhouse Gas Initiative."

for and supported by the Secretary of DEP in Pennsylvania. The evidence unequivocally showcases RGGI's potential to drive environmental progress, create jobs, and bolster the economy without imposing undue strain on electricity costs. Embracing RGGI aligns with Pennsylvania's goals for sustainable development, offering a pathway that balances economic prosperity with environmental responsibility. Advocating for RGGI's integration stands as a crucial step toward securing a cleaner, more prosperous future for the state and its residents.

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