



ISSUE BRIEF: Q3 2020

WHAT RGGI COULD MEAN FOR PENNSYLVANIA'S CARBON EMISSIONS AND ENERGY ECONOMY



BUSINESS FORWARD
FOUNDATION

INTRODUCTION

Governor Wolf directed Pennsylvania's entry into the Regional Greenhouse Gas Initiative (RGGI) in October 2019.¹ The State's Department of Environmental Protection is completing its proposed implementation, after which RGGI will continue to move forward in the regulatory process.

Business Forward has organized hundreds of briefings on clean energy, climate change, and energy security. These briefings have included two secretaries of energy, two EPA administrators, dozens of U.S. senators and members of Congress, and hundreds of other officials. More than 47,000 business leaders have participated in our climate and clean energy programming, and they have seen their comments reflected in the Clean Power Plan, several state clean power rules, and the Paris Climate Agreement.

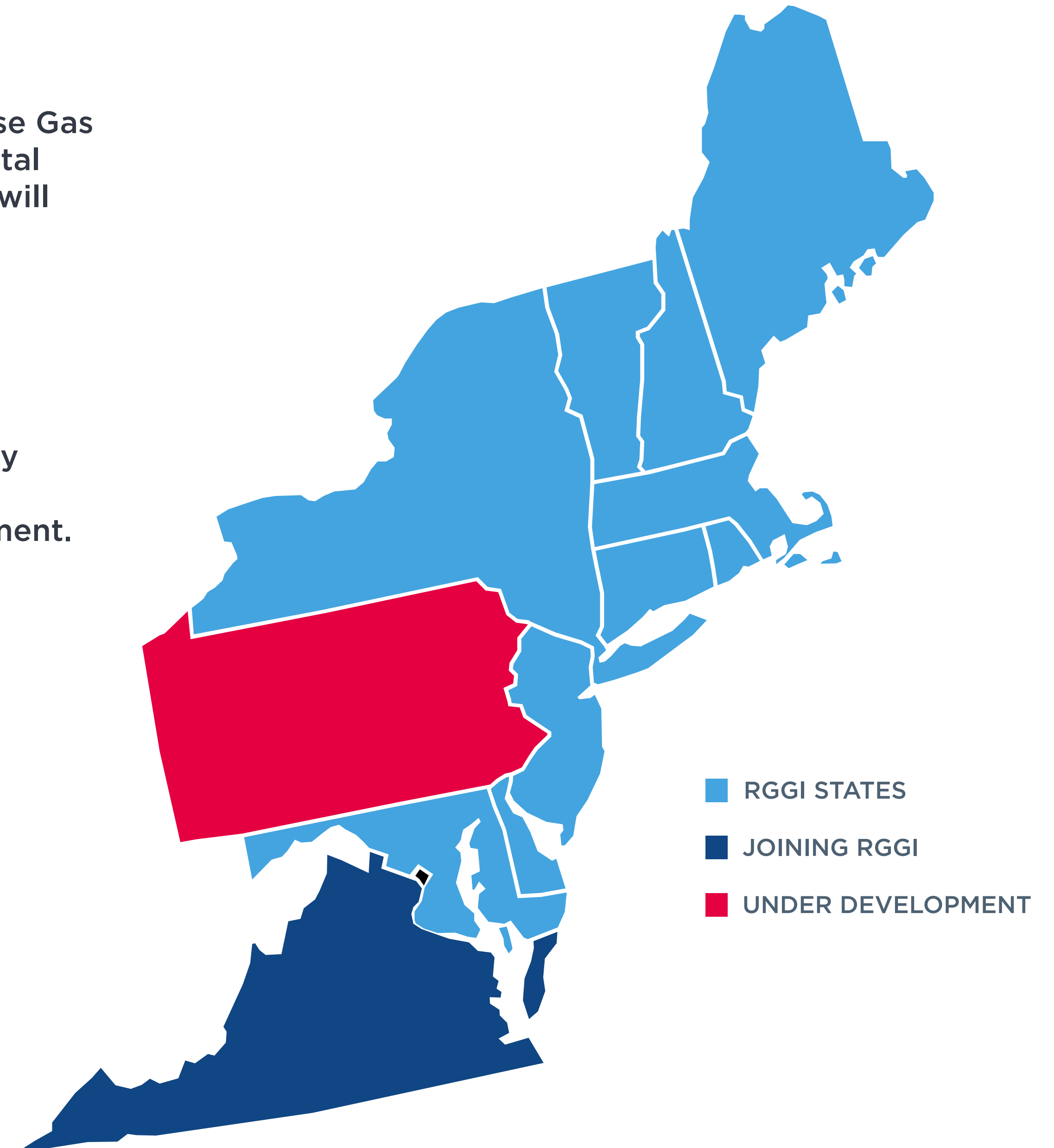
This report, which focuses on the impact joining RGGI could have on Pennsylvania's economy, is part of our programming on carbon pricing, cap and invest, and clean energy investment. It reflects our years of working with more than 6,600 business leaders, state and local officials, and Members of Congress across Pennsylvania.

47,000

**BUSINESS LEADERS
PARTICIPATED IN OUR
CLIMATE & CLEAN
ENERGY PROGRAMMING**

6,600

**BUSINESS LEADERS
ACROSS
PENNSYLVANIA**



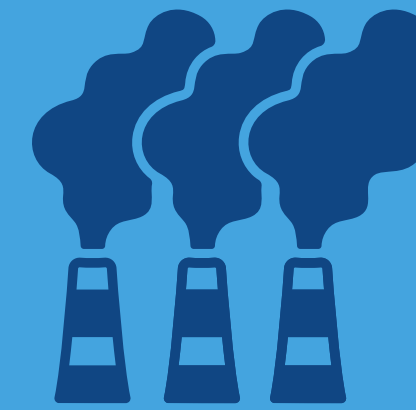
THE REGIONAL GREENHOUSE GAS INITIATIVE

1. **Cap and invest programs like RGGI require power plant owners to buy “allowances” to cover their plants’ carbon emissions, which encourages them to modernize their plants and consider other fuel choices.** Older, dirtier plants (which produce more carbon emissions) have to buy more allowances than newer, more efficient plants (which produce fewer emissions). Without this incentive, generators will keep running old, dirty plants, passing off their added health and climate costs to consumers.
2. **States invest the proceeds from selling allowances in energy efficiency, consumer assistance, renewable energy projects, and clean energy jobs.** These investments are used to lower power bills, create jobs, cut emissions, and clean the air. In its first decade, RGGI auctions generated \$3.2 billion in proceeds for participating states.²
3. **Each year, the number of allowances shrinks by about 3 percent, which encourages generators to keep investing in their plants and to use lower carbon fuels.** In this way, RGGI accelerates the energy transition away from coal that has been underway for 10 years.³
4. **The success of a cap and invest mechanism depends largely on how well it manages markets from state to state – and RGGI’s 10-year record is impressive.** RGGI has priced incentives wisely and provided participating states with flexibility in how each adapts RGGI rules for their own energy needs. Since RGGI began 10 years ago, it has helped reduce emissions by 47 percent.⁴
5. **RGGI does more than reduce emissions: it encourages investment that helps reduce electricity bills and generates billions in public health benefits.** Electricity bills in RGGI states have dropped while bills in other states have risen. In its first five years, RGGI generated \$5.7 billion in public health benefits.⁵
6. **Pennsylvania is an energy powerhouse, but many of its power plants are outdated, which is bad for public health and electricity bills.** Pennsylvania is the third-largest electricity-generating state in the country; it ranks 47th in air quality and 44th in public health funding.⁶ Joining RGGI would force Pennsylvania’s power plants to upgrade and clean up the air.

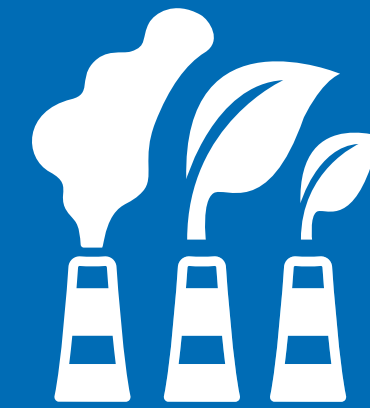
HOW RGGI'S CAP AND INVEST WORKS

1. Each year, power generators purchase allowances at auctions to cover their carbon emissions.
2. Plants that have invested in energy efficiency or switched to cleaner energy sources need fewer allowances, while generators operating old, dirtier plants need more allowances.
3. Market rewards efficiency and investment: generators can choose to keep paying more for allowances or invest more in their plants' efficiency.
4. RGGI reduces the total number of allowances by about 3% each year, so the cost of doing nothing keeps rising.
5. Emissions fall.
6. New power plant efficiencies offset potential cost to consumers.
7. States spend a portion of auction revenues on energy efficiency, renewable energy, and consumer assistance, which further offsets consumer costs.
8. States can also spend a portion of auction revenues on clean air projects, clean energy jobs, and electric vehicle infrastructure, which improve public health, save consumers more money, and create good jobs.

GENERATORS HAVE A CHOICE



**OPTION A:
KEEP POLLUTING AND
BUY ALLOWANCES**



**OPTION B:
INVEST IN UPGRADES AND FUEL
CHOICES WHICH REDUCE EMISSIONS**

OUTCOMES



**REDUCED
EMISSIONS**



**MORE STATE SPENDING
ON IMPROVEMENTS**

SUPPORT FROM THE BUSINESS COMMUNITY

From 2015 to 2017 alone, RGGI brought 14,500 new job-years to the Mid-Atlantic and Northeast.⁷ Businesses support RGGI because it will create good jobs, modernize Pennsylvania's energy infrastructure, save them money on energy use, and help develop new technologies.^{8,9}

BUSINESSES OPERATING IN PA ARE VOCAL ON BENEFITS

“ We are committed to reducing ghg emissions... and we commend governors in Northeast and Mid-Atlantic states for agreeing to double down to cut carbon emissions through the Regional Greenhouse Gas Initiative. ”

THORNTON TOMASETTI

“ RGGI allows multiple states to meet their commitments to reducing emissions and investing in clean energy, which enhances our ability to provide our clients with greater clean energy solutions. ”

JLL INC.

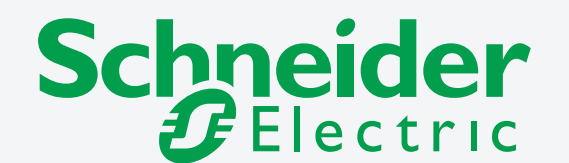
“ ...states don't have to choose between the economy or the environment. That's why Pennsylvania businesses and policymakers should feel confident that joining RGGI would help them lower emissions and still allow for economic growth. ”

BP AMERICA

“ Cutting carbon emissions and embracing clean energy is an economic imperative. Clear, market-based policies can help foster renewable energy and energy efficiency investments, grow our economy and keep our planet healthy. ”

MARS INC.

AND OTHERS HAVE EXPRESSED SUPPORT FOR CARBON PRICING POLICIES SUCH AS RGGI



General Mills



RGGI'S RECORD...

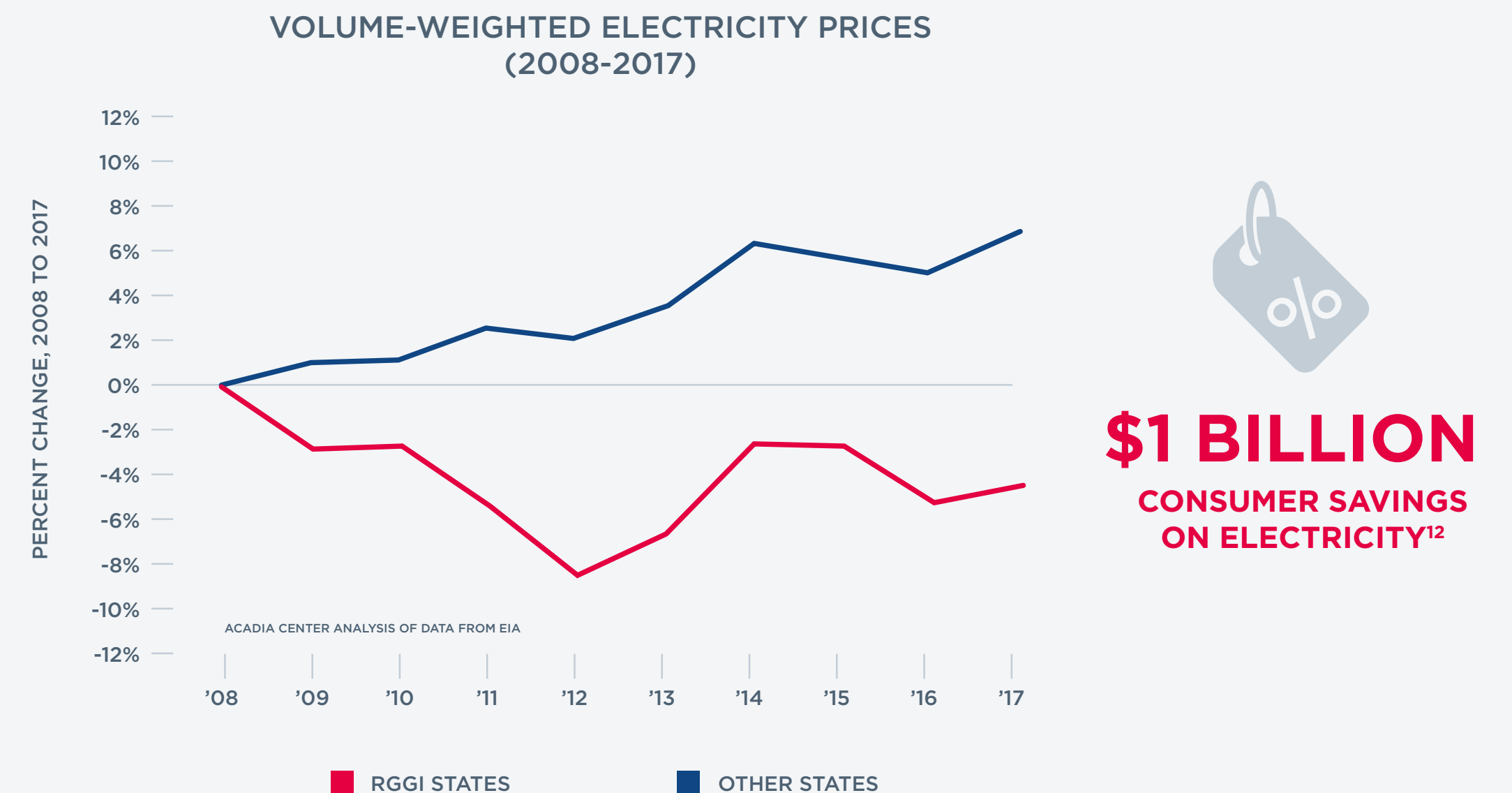
RGGI auctions have generated \$3.2 billion in proceeds for participating states, and states have invested the majority of these funds on energy efficiency, renewable energy, and electricity consumer assistance.

1. REDUCED EMISSIONS



2. LOWER BILLS

Updated plants are more cost-efficient. From 2008 through 2017, wholesale electricity prices in RGGI states fell by 5.7 percent, while other states have seen prices increase by 8.6 percent. Consumers in RGGI states saved more than \$1 billion on electricity.¹¹



...RGGI'S RECORD CONTINUED

3. PUBLIC HEALTH AND PRODUCTIVITY

IN ITS FIRST FIVE YEARS,
EMISSIONS REDUCTIONS
DRIVEN BY RGGI RESULTED IN:

\$5.7B

HEALTH COST
REDUCTIONS¹³



BY CLEANING THE
ELECTRICITY MARKET AND
IMPROVING AIR QUALITY,
RGGI HELPED AVOID:

200
HOSPITAL VISITS

500
PREMATURE ADULT DEATHS

9000
ASTHMA ATTACKS

43,000
LOST WORK DAYS¹⁴

4. ECONOMIC GROWTH

FROM 2008 TO 2019
RGGI STATE
ECONOMIES GREW BY:

+47%
GDP

(31 percent faster than
the rest of the country)¹⁵



ECONOMISTS ESTIMATE
RGGI CREATED:

\$4 BILLION

IN NET POSITIVE
ECONOMIC VALUE

44,000

JOB-YEARS
OF EMPLOYMENT¹⁶

IMPACT ON PA POWER AND CONSUMER RATES

RGGI would raise roughly \$320 million in 2022 and \$318 million in 2023.¹⁷ By 2030, revenues could total \$2.4 billion or more.¹⁸

AN ENERGY POWERHOUSE, BUT PA'S POWER PLANTS ARE OUTDATED

#2

IN NATURAL GAS PRODUCTION

#3

IN COAL PRODUCTION

#3

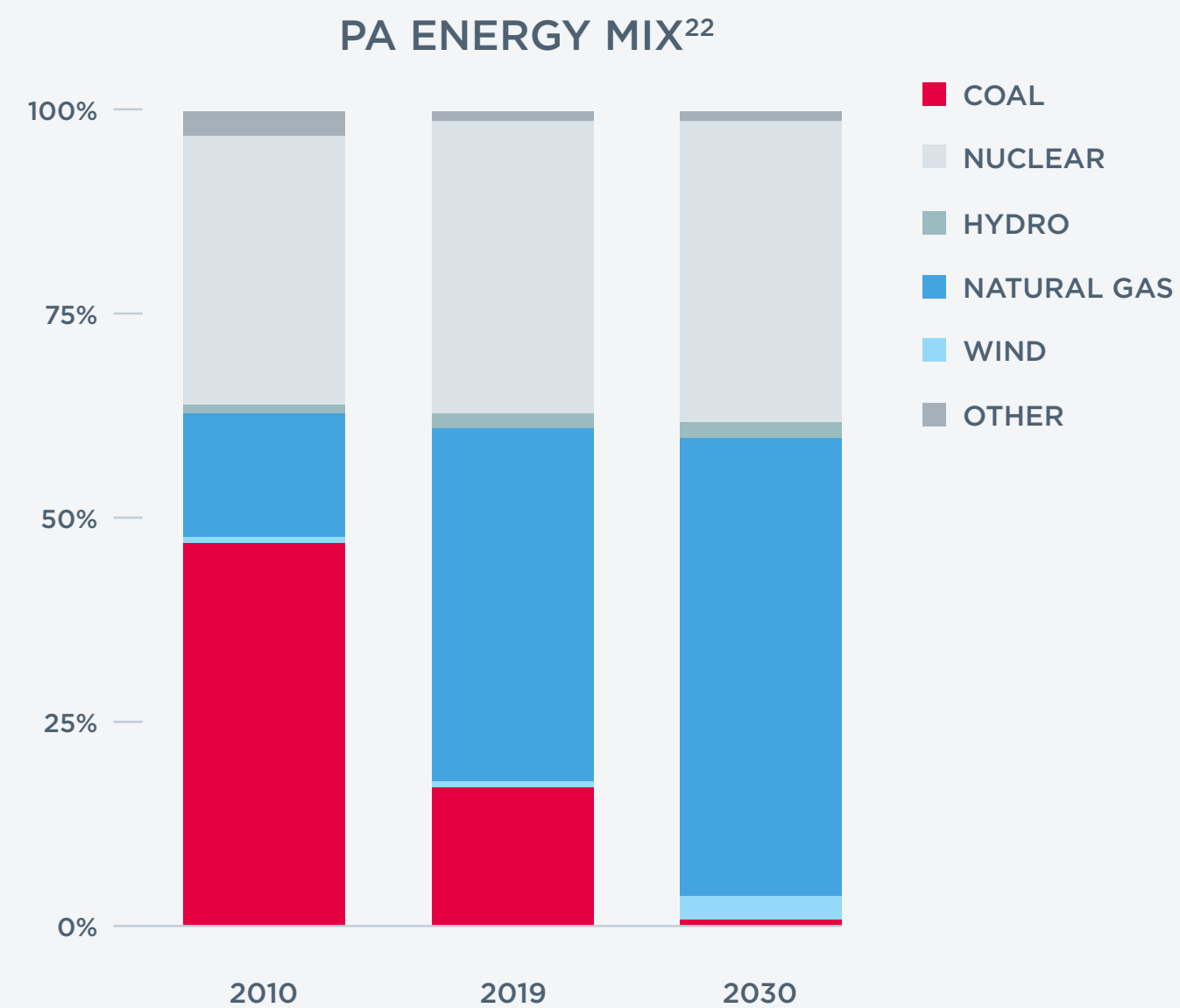
LARGEST ELECTRICITY-GENERATING STATE¹⁹

#47

IN AIR QUALITY²⁰

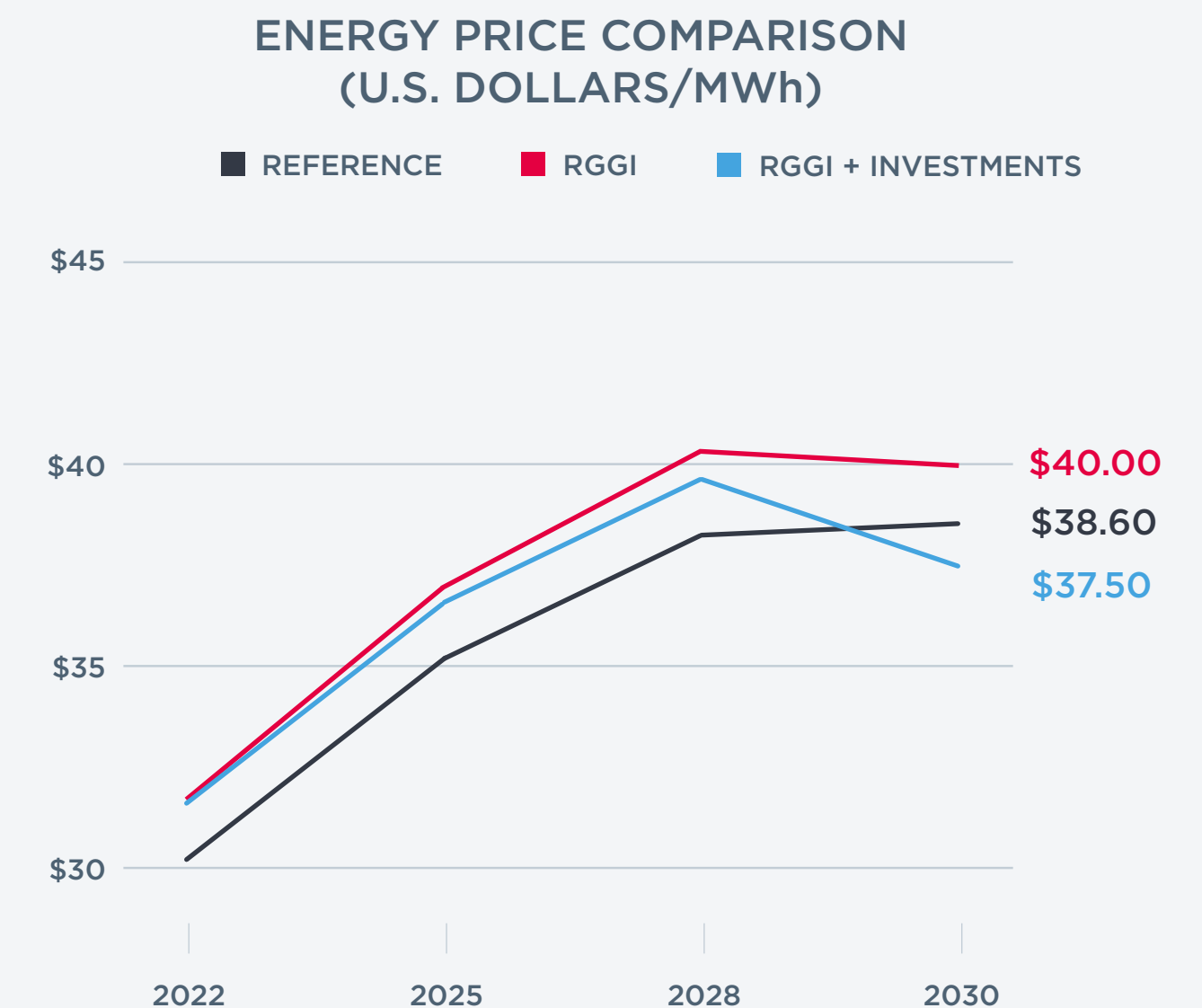
RGGI ACCELERATES PA'S INEVITABLE TRANSITION FROM COAL

Without RGGI, Pennsylvania's net coal generation will decline 80 percent by 2030, due to market forces.²¹ RGGI would collect proceeds from that transition, which could help provide retraining and new opportunities for workers.



WHOLESALE RATES SEE MODEST INCREASE OVER BUSINESS AS USUAL

Without investments, wholesale rates under RGGI would be just \$1.40/MWh greater than the reference case in 2030 - and only a portion of that would be felt by retail customers. Including investments, RGGI actually leads to lower rates.²³



IMPACT ON PA CLEAN AIR, PUBLIC HEALTH, AND CARBON EMISSIONS

PA RANKS POORLY ON AIR QUALITY

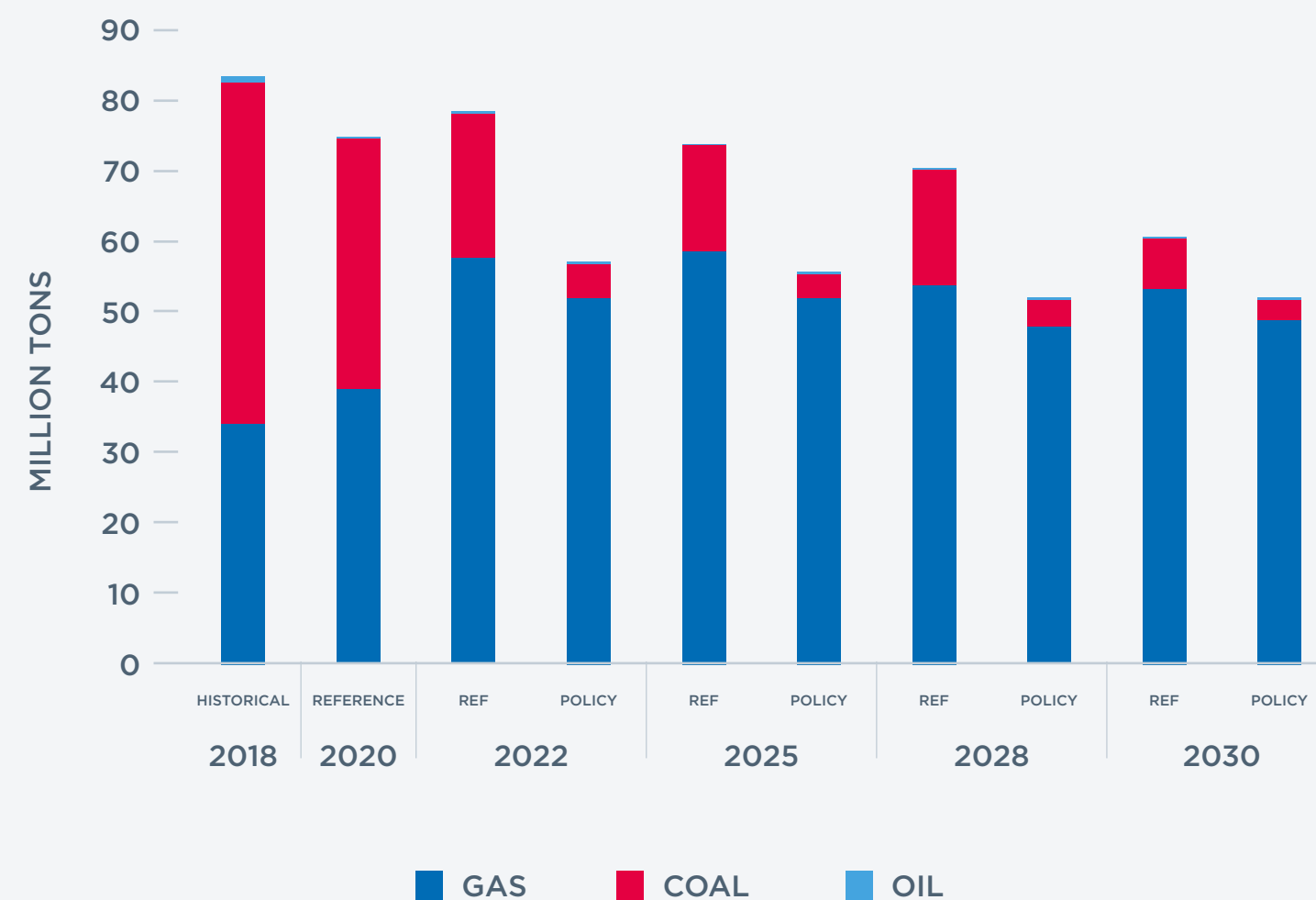
Currently, Pennsylvania ranks:

#47
IN AIR QUALITY

#44
IN PUBLIC HEALTH
FUNDING²⁴

RGGI ACCELERATES TRANSITION TO CLEANER PLANTS

PA EMISSIONS BY TYPE²⁵
(without RGGI vs. with RGGI)



RGGI PROCEEDS FUND CLEAN AIR PROJECTS

RGGI would raise roughly \$320 million in 2022 and \$318 million in 2023, totalling \$2.4 billion by 2030.²⁶

Pennsylvania would design its own investment strategy, aiming to both reduce air pollution and drive economic activity.

Analysis from July 2020 by Pennsylvania's Department of Environmental Protection estimates²⁷ that by 2030, RGGI could:

AVOID

639
DEATHS

45,000
ASTHMA ATTACKS

1,000
CASES OF CHILDHOOD
BRONCHITIS

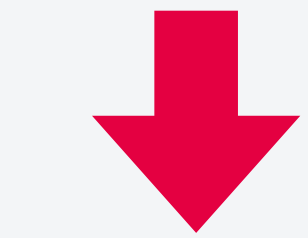
CREATE

27,000
JOBS

\$1.9B
IN GROSS STATE PRODUCT

\$6B
IN HEALTH BENEFITS FROM
REDUCED POLLUTANTS

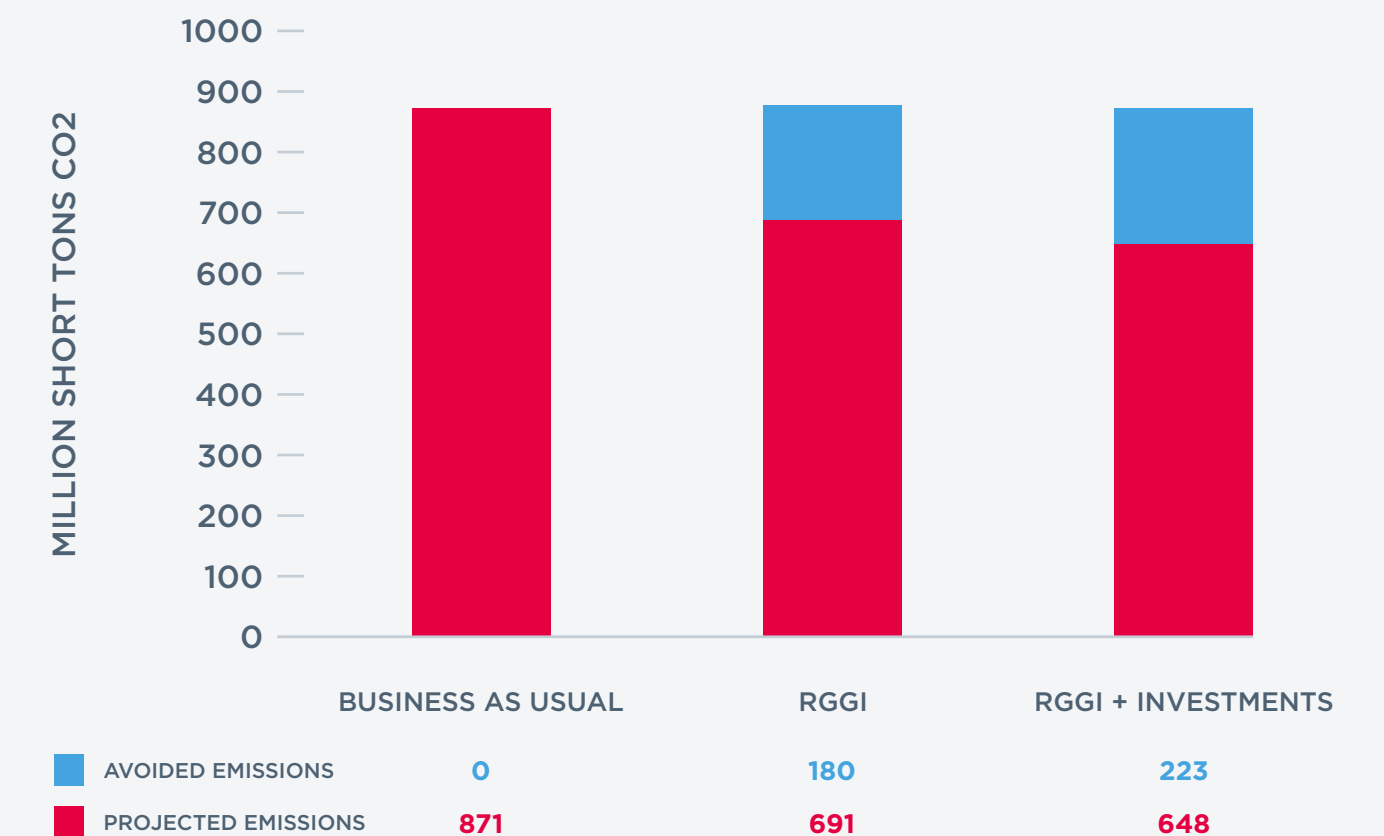
RGGI AVOIDS MORE THAN 220 MILLION TONS OF CARBON EMISSIONS BY 2030



26%

**REDUCTION IN EMISSIONS
(2022-2030)²⁸**

PA AVOIDED EMISSIONS THROUGH 2030



REFERENCES

1. Governor Tom Wolf. “Governor Wolf Takes Executive Action to Combat Climate Change, Carbon Emissions.” October 3, 2019. <https://www.governor.pa.gov/newsroom/governor-wolf-takes-executive-action-to-combat-climate-change-carbon-emissions/>
2. Acadia Center. “The Regional Greenhouse Gas Initiative: Ten Years in Review.” September 17, 2019. <https://acadiacenter.org/document/the-regional-greenhouse-gas-initiative-ten-years-in-review/>
3. Air Quality Technical Advisory Committee. Draft Proposed Rulemaking. Pennsylvania Department of Environmental Protection. May 7, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
4. Acadia Center. “The Regional Greenhouse Gas Initiative: Ten Years in Review.” September 17, 2019. <https://acadiacenter.org/document/the-regional-greenhouse-gas-initiative-ten-years-in-review/>
5. Manion, Michelle, Claire Zarakas, Stefanie Wnuck, Jacqueline Haskell, Anna Belova, David Cooley, Jonathan Dorn, Marissa Hoer, and Lisa Mayo. “Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative.” Abt Associates. January 11, 2017. <https://www.abtassociates.com/insights/publications/report/analysis-of-the-public-health-impacts-of-the-regional-greenhouse-gas>
6. America’s Health Rankings. “Pennsylvania Summary 2019.” United Health Foundation. Accessed June 10, 2020. <https://www.americashealthrankings.org/explore/annual/measure/air/state/PA>
7. Hibbard, Paul J., Susan F. Tierney, Pavel G. Darling, & Sarah Cullinan. “The Economic Impacts of The Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States.” Analysis Group. April 17, 2018. https://www.analysisgroup.com/globalassets/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf
8. Hess, David E. “Major Businesses, Higher Ed Institutions Write To Members of House, Senate Urging Pennsylvania to Accelerate Transition To A Low-Carbon Economy.” PA Environment Digest Blog. November 26, 2019. <http://paenvironmentdaily.blogspot.com/2019/11/major-businesses-higher-ed-institutions.html>
9. Ceres Policy Network. BICEP: Business for Innovative Climate and Energy Policy. <https://www.ceres.org/networks/ceres-policy-network>
10. Acadia Center. “The Regional Greenhouse Gas Initiative: Ten Years in Review.” September 17, 2019. <https://acadiacenter.org/document/the-regional-greenhouse-gas-initiative-ten-years-in-review/>
11. Ibid.
12. “RGGI in Pennsylvania: Opportunities to Grow Pennsylvania’s Clean Energy Economy.” KEEA, Ceres, E2, & Sustainable Pittsburgh. February 28, 2020. <https://sustainablepghrestaurants.org/site/event/rggi-in-pennsylvania-opportunities-to-grow-pennsylvanias-clean-energy-economy/>
13. Manion, Michelle, Claire Zarakas, Stefanie Wnuck, Jacqueline Haskell, Anna Belova, David Cooley, Jonathan Dorn, Marissa Hoer, and Lisa Mayo. “Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative.” Abt Associates. January 11, 2017. <https://www.abtassociates.com/insights/publications/report/analysis-of-the-public-health-impacts-of-the-regional-greenhouse-gas>
14. Ibid.
15. Acadia Center. “The Regional Greenhouse Gas Initiative: Ten Years in Review.” September 17, 2019. <https://acadiacenter.org/document/the-regional-greenhouse-gas-initiative-ten-years-in-review/>
16. Ibid.
17. Air Quality Technical Advisory Committee. Draft Proposed Rulemaking. Pennsylvania Department of Environmental Protection. May 7, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
18. Ibid.
19. Energy Information Administration. Pennsylvania State Energy Profile. Accessed June 10, 2020. <https://www.eia.gov/state/print.php?sid=PA>
20. America’s Health Rankings. “Pennsylvania Summary 2019.” United Health Foundation. Accessed June 10, 2020. <https://www.americashealthrankings.org/explore/annual/measure/air/state/PA>
21. Air Quality Technical Advisory Committee and Citizen’s Advisory Council. IPM Modeling Results Discussion Reference Case and RGGI Policy Scenario. Pennsylvania Department of Environmental Protection. April 23, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
22. Special Joint Informational Meeting: Carbon Dioxide Budget Trading Program. Reference Case Results & Policy Case Results. Pennsylvania Department of Environmental Protection. April 23, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
23. Ibid.
24. America’s Health Rankings. “Pennsylvania Summary 2019.” United Health Foundation. Accessed June 10, 2020. <https://www.americashealthrankings.org/explore/annual/measure/air/state/PA>
25. Air Quality Technical Advisory Committee and Citizen’s Advisory Council. IPM Modeling Results Discussion Reference Case and RGGI Policy Scenario. Pennsylvania Department of Environmental Protection. April 23, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
26. Air Quality Technical Advisory Committee. Draft Proposed Rulemaking. Pennsylvania Department of Environmental Protection. May 7, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>
27. “Capping Carbon Pollution Would Save Hundreds of Lives and Billions of Dollars.” Pennsylvania Department of Environmental Protection. July 8, 2020. https://www.media.pa.gov/Pages/DEP_details.aspx?newsid=1338
28. Air Quality Technical Advisory Committee. Draft Proposed Rulemaking. Pennsylvania Department of Environmental Protection. May 7, 2020. <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>

INFO@BUSINESSFWD.ORG

BUSINESSFWD.ORG

1155 CONNECTICUT AVENUE NW
SUITE 1000
WASHINGTON, D.C. 20036

202.861.1270

