



August 16, 2021

Independent Regulatory Review Commission
333 Market Street, 14th Floor
Harrisburg, PA 17601
irrc@irrc.state.pa.us

VIA E-MAIL

**Re: Environmental Quality Board
Regulation No. 7-559: CO2 Budget Trading Program
IRRC Number 3274**

Dear Commissioners:

On behalf of the undersigned organizations, we respectfully submit the following comments to the Independent Regulatory Review Commission on Regulation #7-559 (CO2 Budget Trading Program), in response to claims made by the Pennsylvania House and Senate Environmental Resources and Energy Committees.

Regards,

Mark Szybist
Senior Attorney
Natural Resources Defense Council

The Rev. Mitchell C. Hescox
President/CEO
Evangelical Environmental Network

Rob Altenburg
Senior Director for Energy and Climate
Citizens for Pennsylvania's Future

David Masur
Executive Director
PennEnvironment

Robert M. Routh
Public Policy and Regulatory Attorney
Clean Air Council

Tom Schuster
Clean Energy Program Director
Sierra Club Pennsylvania Chapter

Summary of Comments

These comments respond to the objections raised by the Pennsylvania House and Senate Environmental Resources and Energy Committees (“Committees”) to the Environmental Quality Board’s CO2 Budget Trading Program regulation (“Program” or “final-form regulation”).¹ In short, those objections are unsubstantiated and unsupported by analysis, and they mischaracterize the intent, design, authority, and precedent of the statutes and institutions that serve as the custodians of the regulatory process, including the Regulatory Review Act (“RRA”), the Air Pollution Control Act (“APCA”), the Environmental Quality Board (“EQB”), and the Independent Regulatory Review Commission (“IRRC”).

In developing the Program, the Department of Environmental Protection (“DEP”) and EQB faithfully followed the procedural requirements of the RRA, and the DEP’s detailed Regulatory Analysis Form shows that the Program clearly meets all of the Act’s substantive criteria. In addition, all three of the DEP’s advisory committees, as well as the Environmental Justice Advisory Board voted to advance the final-form regulation forward to EQB in May 2021.

In response to these indications that the Program is in the public interest, the Committees make no recommendations for how the Program could be improved. Nor do they suggest any alternative approaches, regulatory or legislative, for reducing carbon pollution from the Commonwealth’s power plants. Indeed, the Committees do not acknowledge the need to reduce such pollution at all. Instead, they make a series of unsubstantiated and distorted claims that, taken together, amount to a categorical attack on Pennsylvania’s statutory rulemaking process and the Commonwealth’s ability to help mitigate climate change.

In summary, our responses to the Committees’ objections are as follows:

1. *“EQB’s authority is clear and substantial”* - The EQB’s authority to set limits on carbon pollution using an auction-based allowance mechanism is backed by the APCA and is supported by all relevant case law and precedent in Pennsylvania's courts and the U.S. Supreme Court.
2. *“RGGI auction proceeds amount to fees under the APCA”* - APCA provisions give DEP broad and flexible authority, and the Pennsylvania Supreme Court’s interpretation of the Environmental Rights Amendment (Article I, Section 27 of the Pennsylvania Constitution) demonstrates that the auction proceeds cannot be considered a tax.
3. *“Overwhelming turnout and public participation”* - The CO2 Budget Trading Program public comment period was one of the most robust public comment participation periods ever conducted. Further, the comment period was successfully completed during "record high daily COVID-19 cases and hospitalizations" and under an Executive Order for all

¹ See comments of the House Committee dated January 12 and July 29, 2021 and comments of the Senate Committee dated February 3, 2021. In its February 16, 2021 comments, the Commission summarized the Committees’ comments in eight bullets. We have organized our responses according to those bullets, which we label as Objections #1 - #8.

businesses to conduct operations remotely. The Executive Order was upheld by the Pennsylvania Supreme Court.

4. *“Regulation will have a strong, positive impact on the economy”* - RGGI has produced net economic benefits in current member states and net loss in none, and modeling projects similar benefits for Pennsylvania. Economic objections ignore the reality of Pennsylvania's energy market: coal-fired EGU closures have been and will continue to be accelerated by less expensive gas-fired EGUs which operate more cheaply.
5. *“CO2 is an ‘air pollutant’”* - the APCA, supported by the federal Clean Air Act (CAA) and decisions by the U.S. Supreme Court, clearly and unambiguously defines CO2 as an “air pollutant” subject to EQB regulation and concerns about leakage are a non sequitur.
6. *“Modeling is updated and accounts for leakage”* - Models are not foolproof predictors. DEP's models for the CO2 Budget Trading Program use real-world information and projections based on data we have now.
7. *“RGGI needed to complement federal action”* - The federal government has not taken action yet, however, as is the case with nearly all policies and regulations in a federalist democracy, when the federal government acts, state governments have a role, too. RGGI provides Pennsylvania the opportunity to determine its role. Further, federal statute - the CAA - provides a role for states and Pennsylvania exercises that role in the form of the APCA.
8. *“Benefits clearly outweigh costs, including during COVID-19”* - Historical data demonstrates economies in RGGI states grew more than non-RGGI states. Studies also show the program's air quality improvements led to public health benefits and cumulative emissions reductions.

Objection Responses

Objection 1.) *The EQB lacks statutory authority under the Air Pollution Control Act (“APCA”) (35 P.S. § 4001-4015) to promulgate the regulation.*

Response 1.) IRRC notes that commentators opposed to the regulation comment that EQB does not have the statutory authority to promulgate the rulemaking. Commentators state that CO₂ is not included in the definition of “air pollutant” under Section 3 of the APCA, that CO₂ is naturally occurring, not inimical to humans or animals and is necessary for human life, and that CO₂ was not considered a greenhouse gas under a federal court ruling regarding the CAA and the cited statutory authority for this rulemaking is the APCA.

Contrary to commentators’ arguments, the APCA provides clear statutory authority for EQB to promulgate the regulation. The APCA charges EQB and DEP with the responsibility for administering an “air pollution control program” in the Commonwealth. The powers delegated to EQB and DEP to regulate “air pollution” in Pennsylvania make clear that the agencies’ powers and duties include implementing the requirements of (1) the CAA and (2) the APCA, independent of the CAA requirements.² In other words, while EQB’s and DEP’s authority to regulate air pollution in Pennsylvania is informed by – and in some instances directed by – federal requirements imposed under the CAA, the APCA provides EQB and DEP separate authority to establish and enforce certain air pollution rules independent of the agencies’ responsibilities to implement the requirements of the CAA.

The APCA specifically authorizes EQB to “adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution . . . applicable to all air contamination sources regardless of whether such source is required to be under permit by this act.”³ The APCA defines “air pollution” as the “presence in the outdoor atmosphere of any form of contaminant, including, but not limited to, the discharging from stacks, chimneys, openings . . . processes or any other source of any smoke . . . fumes, oxides, gases, vapors . . . or any other matter in such place, manner or concentration inimical or which may be inimical to the public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.”⁴

² 35 P.S. § 4005(a)(8) specifically delegates to EQB the power and duty to adopt rules and regulations to implement the provisions of the CAA while 35 P.S. § 4005(a)(1) confers upon EQB the power and duty to adopt rules for the “prevention, control, reduction and abatement of air pollution . . . applicable to all air contamination sources regardless of whether such source is required to be under permit by this act.” *See also* 35 P.S. § 4004(1) which directs DEP to implement the provisions of the CAA while other provisions assign to DEP broader duties to implement and enforce the provisions of APCA, *see e.g.*, 35 P.S. § 4004(2), (18), (24), (27).

³ 35 P.S. § 4005(a)(1).

⁴ 35 P.S. § 4003 (emphasis added).

The U.S. Supreme Court has clearly established that greenhouse gases—including CO₂—are air pollutants as defined by the CAA and Pennsylvania courts have further established that CO₂ is an air pollutant subject to regulation under the APCA as it is injurious to humans, plant, or animal life, and property.⁵ EQB’s power and duty to control “air pollution” through the establishment of “maximum allowable emission rates” (e.g., rate-based standards) or “maximum quantities” (e.g., mass-based standards)⁶ of CO₂ from electric power plants⁷ is clearly contemplated by the APCA and within the scope of EQB’s authority under the statute. This broad grant of power to develop and administer the air pollution control program in the Commonwealth provides unambiguous statutory authority for EQB to enact the CO₂ emissions rules adopted in the regulation.

Objection 2.) *The proceeds generated through the auction procedures of the rulemaking and RGGI are not a fee under the APCA, but rather an illegal tax.*

Response 2.) IRRRC notes that commentators argue that Section 6.3(a) of the APCA only allows the EQB to establish fees to cover the costs of administering the air pollution control plan and that because the projected amount of fees collected through the auction mechanism and RGGI exceeds the costs of administering the program, the remaining proceeds would constitute an impermissible tax.

Contrary to commentators’ arguments in opposition, APCA provisions and Pennsylvania Commonwealth Court precedent clearly demonstrate that proceeds generated through the auction procedures of the regulation and RGGI are fees, not a tax. APCA provisions authorize the establishment of fees to support the air pollution control program and require that fees be deposited into the Clean Air Fund and used for the elimination of air pollution. Further, APCA delegates authority to EQB to establish rules governing the DEP’s use of the Clean Air Fund.

Pennsylvania courts have long distinguished taxes from “license fees” and determined that whereas taxes are “revenue-producing measures authorized under the taxing power of government,” license fees are “regulatory measures intended to cover the cost of administering a regulatory scheme authorized under the police power of government.”⁸ Pennsylvania courts have further found other types of fees are not taxes when fee monies are used to support programs that advance the purpose of the regulatory scheme, determining that when the “purpose is not to raise

⁵ See *Massachusetts v. EPA*, 549 U.S. 497 (2007); *Wolf v. Funk*, 144 A.3d 228, 250 (Pa. Cmwlth. 2016).

⁶ 35 P.S. § 4005(a)(1), (2).

⁷ 35 P.S. § 4003 defines “air contamination source” to include any “place, facility or equipment that emits an air contaminant.”

⁸ *City of Philadelphia v. Southeastern Pennsylvania Transp. Auth.*, 8 Pa. Cmwlth. 280, 303 A.2d 247, 251 (1973); *White v. Com. Medical Professional Liability*, 131 Pa. Cmwlth. 567, 571 (1990) (citing *City of Philadelphia v. Southeastern Pennsylvania Transp. Auth.*); see also *City of Wilkes-Barre v. Ebert* 22 Pa. Commonwealth Ct. 356, 349 A.2d 520 (1975) (holding that a purported license fee is in fact a tax when it is intended for general revenue purposes and no scheme of regulation or inspection is contemplated or put into effect in relation to the purported fee).

revenues for public purposes or to defray the necessary expenses of government” the fee is not a tax.⁹

And the U.S. Supreme Court has recognized the interest of a state to exact a “user fee” from those who avail themselves of government properties and services, so long as the charge is not unreasonable in amount for the privilege granted. In this case, the cost of a single CO2 allowance under RGGI is well below the social cost of carbon established by the federal government’s Interagency Working Group,¹⁰ so as a user fee for the privilege of depositing climate-disrupting pollution in the atmosphere, it is clearly not unreasonably high.

Given the structure of the APCA and the standards that govern the Clean Air Fund, it is clear that the RGGI proceeds constitute a user fee or a license fee, rather than a tax. The APCA provisions that created the Clean Air Fund and govern the operation of the fund, require all fees be deposited therein and be administered by DEP for use in the “elimination of air pollution.”¹¹ The APCA further provides that DEP may establish separate accounts within the Clean Air Fund to implement the requirements of APCA and the CAA;¹² and while DEP administers the Clean Air Fund, APCA requires EQB to adopt rules to govern DEP’s management and use of the fund.¹³ EQB’s current rules governing DEP’s management and use of the fund provide a non-exclusive list of activities, projects, and other costs for which DEP may invest Clean Air Fund monies. The EQB rules also provide that “the full and normal range of activities of [DEP] shall be considered to contribute to the elimination of air pollution.”¹⁴

Together, the provisions of the APCA and the EQB rules implementing the APCA provide DEP with broad powers to control air pollution,¹⁵ including the power to prepare and develop a comprehensive plan to “control new and existing air pollution and air contamination”¹⁶ and to do “any and all other acts and things” not inconsistent with APCA, which DEP deems “necessary or proper for the effective enforcement” of APCA.¹⁷ The “full and normal range of activities” of

⁹ See *White v. Com. Medical Professional Liability*, 571 A.2d 9, 131 Pa. Cmwlth. 567 (1990) (hereinafter “*White*”).

¹⁰ Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under Executive Order 13990. Table ES-1, available at: https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.

¹¹ 35 P.S. § 4009.2(a).

¹² 35 P.S. § 4009.2(a).

¹³ 35 P.S. § 4009.2(a).

¹⁴ 25 Pa. Code § 143.1(b).

¹⁵ 35 P.S. § 4004.

¹⁶ 35 P.S. § 4004(18) (providing DEP with the power and duty to “[p]repare and develop a general comprehensive plan for the control and abatement of existing air pollution and air contamination and for the abatement, control and prevention of any new air pollution and air contamination, recognizing varying requirements for the different areas of the Commonwealth, and to submit a comprehensive plan to the board for its consideration and approval”).

¹⁷ 35 P.S. § 4004(27).

DEP is broad, and subject to change over time as DEP determines it is necessary to implement the air pollution control program and eliminate air pollution.

As described in the regulation, the auction proceeds made available to DEP will be deposited into a subaccount in the Clean Air Fund to be invested in programs and projects that would further eliminate air pollution in the Commonwealth. Such investments are squarely part of the cost of implementing and administering the air pollution control program as contemplated by the APCA and EQB's existing rules governing the use of the Clean Air Fund monies. In other words, the purpose of the regulatory scheme is "not to raise revenues for public purposes or to defray the necessary expenses of government" but instead for the discrete purpose of administering the air pollution control program authorized under the APCA. The auction proceeds are therefore not a "tax" as suggested by some commentators, but instead a user fee or license fee authorized by EQB as part of the air pollution control program enacted to advance the elimination of air pollution in the Commonwealth.

Pennsylvania Supreme Court cases interpreting the Environmental Rights Amendment further demonstrate that the auction proceeds cannot be considered a tax. In *Pa. Env'tl. Def. Found. v. Commonwealth*, 640 Pa. 55, 161 A.3d 911 (2017), the Court declared that parts of a statute allowing the General Assembly to deposit proceeds from the sale of oil and gas leases into the general fund for use in "non-trust purposes" violated the Environmental Rights Amendment. The Supreme Court found "the phrase 'for the benefit of all of the people' may not be read in isolation and does not confer upon the Commonwealth a right to spend proceeds [from the sale of trust assets] on general budgetary items."¹⁸ The Court's interpretation of the Environmental Rights Amendment is instructive in the context of the instant regulation because it precludes the possibility that the auction proceeds could somehow be construed as a tax.

Under the instant regulation, power plants are required to purchase allowances for the emission of CO₂ pollution. This emission allowance purchase constitutes the payment of a fee for the purchase of a unit of clean air that is removed from the public trust. The Supreme Court's interpretation of the Environmental Rights Amendment holds that the revenue from the sale of a public trust asset must "remain in the trust and must be devoted to the conservation and maintenance of our public natural resources, consistent with the plain language of Section 27" and cannot be appropriated by the General Assembly for other purposes.¹⁹ This constitutional bar against appropriating auction proceeds deposited into the Clean Air Fund further demonstrates that the proceeds are not a tax because they cannot be used for public purposes or to defray the necessary expenses of government, as contemplated by Pennsylvania courts when distinguishing a permissible agency action in establishing a permissible fee, as opposed to an impermissible tax.

¹⁸ *Pa. Env'tl. Def. Found. v. Commonwealth*, 640 Pa. 55, 94, 161 A.3d 911, 934 (2017).

¹⁹ *Id.* at 936.

Objection 3.) *The Department of Environmental Protection (DEP) violated the APCA's mandate for public hearings to be held in impacted communities. Included with this objection is a concern that citizens without internet access or broadband capability were excluded from participating in the virtual hearings that were held.*

Response 3.) Because this rulemaking process took place in the midst of a global pandemic, the Department of Environmental Protection (DEP) elected to conduct the required public hearings virtually via the internet and telephone rather than conduct meetings in person. This process was unquestionably successful with 32 hours of testimony from 449 individuals being taken across ten virtual public hearings. In addition, 14,038 written comments were received during the public comment period. Despite the success of these hearings, several members of the legislature have complained that the meetings were not held in person in “regions impacted by the regulation.”²⁰

While the Commonwealth Documents Law leaves the decision to hold a public hearing to the promulgating agency,²¹ the Air Pollution Control Act (APCA) says that “where it becomes necessary to adopt rules and regulations for the control, abatement, prevention or reduction of air pollution for any area of the Commonwealth which encompasses more than one region or parts of more than one region, public hearings shall be held in the area concerned.”²² The virtual public hearings satisfied that requirement as they were easily accessible by everyone in the Commonwealth. However, this conclusion does not even need to be reached in this specific case because of COVID-related orders in effect at the time of the hearings.

The Governor has the unambiguous authority to “[s]uspend the provisions of any regulatory statute prescribing the procedures for conduct of Commonwealth business, or the orders, rules or regulations of any Commonwealth agency, if strict compliance with the provisions of any statute, order, rule or regulation would in any way prevent, hinder or delay necessary action in coping with the emergency.”²³ On November 27, 2020, the Governor issued an order finding, in part, that Pennsylvania was facing “record high daily COVID-19 cases and hospitalizations” and “immediate action [was] required to mitigate the imminent spread of the disease.” To address this emergency, he further ordered that “[u]nless impossible, all businesses must conduct their operations remotely, through individual teleworking of their employees in the jurisdiction or jurisdictions in which they do business.”²⁴ This order remained in effect during the time period

²⁰ Letter from the PA House Environmental Resources and Energy Committee (Jan. 12, 2021).

²¹ Section 202 of the Commonwealth Documents Law, Act of Jul. 31, 1968, P.L. 769.

²² Section 7(a) of the Air Pollution Control Act, Act of January 8, 1960, P.L. 2119, *as amended*

²³ 35 Pa.C.S. § 7301(f)(1).

²⁴ Order of the Governor for Mitigation, Enforcement, and Immunity Protections, § 1(A.) (November 27, 2020).

for which the public hearings were scheduled. As adopting a virtual public hearing format was not impossible under the Governor’s order—it was, therefore, required.

During a state of emergency, virtual public hearings are a reasonable substitute for in-person hearings. This is substantiated by the fact that IRRC and the General Assembly held virtual hearings and meetings during the COVID-19 emergency.

The Pennsylvania Supreme Court addressed the issue of virtual meetings in regard to the Sunshine Act when it held that members of a decision-making agency participating in a public meeting via telephone were sufficient to establish a quorum. In doing so, the Court noted that members participating via telephone could “hear the comments of and speak to all those present at the meeting and all those present at the meeting are able to hear the comments of and speak to such absent members contemporaneously.” This, the Court found, clearly satisfied the purposes of the Sunshine Act which included avoiding “secrecy in public affairs” and assisting the “public’s effectiveness in fulfilling its role in a democratic society.”²⁵ A similar rationale applies here—telecommunication allows the public to effectively fulfill its role by providing comments to the agency.

The Pennsylvania Supreme Court went even further last year in response to challenges to the Governor’s order. The Court found that even the constitutionally guaranteed freedoms of speech and assembly could be regulated in the face of COVID-19 “so long as [the restrictions] are designed to serve a substantial governmental interest and do not unreasonably limit alternative avenues of communication.”²⁶ It further held that “There is no question that the containment and suppression of COVID-19 and the sickness and death it causes is a substantial governmental interest” and the Executive Order provided for the required alternative avenues of communication “as it does not in any respect prohibit operations by telephone, video-conferencing, or on-line through websites and otherwise.”²⁷ If constitutionally guaranteed freedom of assembly can be regulated in response to the Governor’s emergency declaration, the public participation requirements of the Air Pollution Control Act clearly can be as well.

The DEP gave everyone a reasonable opportunity to have their voice heard.

While the virtual public hearings in this case were unquestionably popular and effective at generating a huge response from the public, the web-based format creates a challenge for those without broadband internet access. This issue is not unique to virtual public hearings. It has long been recognized that holding in-person meetings and hearings during business hours is a significant burden for those who are unable to take time off of work. Locating meetings in areas not served by public transit is a burden for those who don’t own a car. Not having sign language

²⁵ See *Babac v. Milk Mktg. Bd.*, 531 Pa. 391 (1992).

²⁶ See *Renton v. Playtime Theaters, Inc.*, 475 U.S. 41, 46-47 (1986).

²⁷ *Friends of Danny DeVito v. Wolf*, 227 A.3d 872, 903, (2020).

interpretation or other translation services available burdens those who are less effective at communicating in spoken English. While no perfect solution exists, perfection is not the standard. Instead, agencies attempt to give everyone a reasonable opportunity to have their voice heard.

The DEP mitigated concerns over lack of reliable internet access by allowing individuals to provide testimony via telephone where necessary. It also held ten (10) virtual public hearings at different times across five (5) days so those with limited or intermittent internet access and availability would have more opportunities to participate according to their schedule. And, as is typical for public hearings, provisions were made for both language interpretation services and accommodations for those with disabilities. If none of those options worked, written comments sent via mail were accepted as well.²⁸

While public health and safety concerns may have prevented DEP staff from traveling to specific counties to take testimony, the people of Pennsylvania had many opportunities to have their voices heard. The results of the DEP's efforts speak for themselves—32 hours of public testimony and 14,038 written comments is a huge response by any measure. Claims that “hundreds of thousands” of people were disenfranchised because of the public participation procedures adopted in this case are unsupported by evidence and highly suspect.

Objection 4.) *The proposal will have a negative fiscal impact on the Commonwealth's economy. The coal industry, fossil-fuel-fired EGUs, large industrial users of electricity, small businesses, labor unions, and individuals will be harmed financially.*

Response 4.) In its February 16, 2021 comments, the Commission summarized the Committees' comments regarding the proposed regulation's economic impacts as follows: “The proposal will have a negative fiscal impact on the Commonwealth's economy. The coal industry, fossil-fuel-fired EGUs, large industrial users of electricity, small businesses, labor unions and individuals will be harmed financially.”

In fact, both RGGI's historical record since 2008 and economic modeling conducted by the DEP show that the proposed CO2 Budget Trading Program is likely to have significant net benefits for the Commonwealth when all relevant economic development, job creation, and health benefits are taken into account and the program's costs are accurately characterized and quantified.

The transition away from fossil fuels is already underway and cannot be stopped. RGGI proceeds could help ease the transition and assist current fossil fuel workers to transition. We encourage a portion of the proceeds to be set aside for investments that will aid in worker and community transition where needed. According to the Department's modeling, gas-fired plants are already

²⁸ 50 Pa.B 6212 (Nov. 7, 2020).

responsible for significantly more carbon emissions in Pennsylvania than coal plants, and that disparity will only grow over this decade whether Pennsylvania participates in RGGI or not. The compliance obligations for these gas-fired generators will be the primary source of RGGI proceeds. As discussed below, Pennsylvania's glut of cheap, unconventional gas has been the primary market force driving the retirement of coal plants over the past 10-12 years.

RGGI's Historical Record

The effects of RGGI have been studied extensively since September 2008, when the first auction of carbon dioxide allowances was held. Among other analyses:

- Since 2013, RGGI, Inc. the non-profit corporation that conducts the auctions and performs other administrative functions for the RGGI states, has produced annual reports that analyze electricity generation and associated carbon dioxide (CO₂) emissions in the RGGI states.²⁹
- Since 2016, RGGI, Inc. has issued annual reports describing how the states have invested their respective proceeds from the allowance auctions and the emissions avoided by those investments. (The first report covered RGGI's first six years, while each subsequent report has covered the previous year).³⁰
- Since 2011, the Analysis Group, an independent economics consulting firm, has conducted triennial analyses of RGGI's economic impacts as part of the RGGI Project Series. The three analyses produced to date (covering 2009-11, 2012-14, and 2015-17) assess RGGI's effects on wholesale power prices, electricity bills, job creation, and overall economic activity, among other things.³¹
- Two major studies have analyzed RGGI's public health impacts during the period 2009-14: one that looks at RGGI's contributions to improved air quality and public health generally, and another that focuses specifically on RGGI's benefits for children's health.³²

The health impacts studies concluded that RGGI has significantly improved public health, producing health benefits with a monetary value of between three and eight billion dollars

²⁹ See RGGI, Inc., Electricity Monitoring Reports, available at <https://www.rggi.org/allowance-tracking/emissions>

³⁰ See RGGI, Inc., Investment of Proceeds Reports, available at <https://www.rggi.org/investments/proceeds-investments>

³¹ See Analysis Group, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Northeast and Mid-Atlantic States*, available at <https://www.analysisgroup.com/Insights/cases/the-economic-impacts-of-the-regional-greenhouse-gas-initiative-on-northeast-and-mid-atlantic-states/>

³² See Abt Associates, *Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative, 2009–2014*, available at <https://static1.squarespace.com/static/5ab0544a9d5abb6d42468691/t/5b2842f56d2a73363e8961da/1529365238457/RGGI+Health+Study+Executive+Summary+%28Jan+2017%29.pdf>, and Perera et al., Co-Benefits to Children's Health of the U.S. Regional Greenhouse Gas Initiative, available at <https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP6706>.

overall, including hundreds of millions of dollars of benefits for children's health, by reducing criteria pollutants from power plants.³³ The Analysis Group reports, meanwhile, have determined that RGGI has created thousands of job-years and increased the gross state products of the RGGI states, mainly through investments in energy efficiency and other clean energy measures

The DEP's Economic Modeling of the CO2 Budget Trading Program

Economic modeling conducted by the DEP projects that implementation of the proposed CO2 Budget Trading Program will lead to similar benefits in Pennsylvania.

To calculate the monetary value of air pollution reductions for public health, the DEP used the EPA's regional benefit-per-ton methodology. The resulting analysis, which is detailed on pages 20-21 of the DEP's Regulatory Analysis Form, shows that the reductions in criteria pollutants (NO_x, SO_x, etc.) resulting from the CO2 Budget Trading Program would prevent hundreds of premature deaths in Pennsylvania, along with tens of thousands fewer of asthma attacks and lost workdays, resulting in billions of dollars of public health benefits. These benefits are in addition to the climate benefits of RGGI's reducing carbon dioxide emissions.

To forecast changes in employment and gross state product, the DEP used an economic model called REMI. This analysis, which is described on pages 22-24 of its Regulatory Analysis Form, shows that if Pennsylvania's proceeds from RGGI allowance auctions are invested equally among energy efficiency, renewable energy, and greenhouse gas abatement, the Commonwealth will see a net increase of 30,000 job-years and a \$1.9 billion increase in gross state product. Although disposable income would be expected to decrease slightly in this scenario in 2030, it would increase by 2033.

The Legislative Committees' Mischaracterization of Program Benefits and Costs

Although the Commission's February 16, 2021 comments accurately summarize the legislative committees' comments on the draft CO2 Budget Trading Program, the legislative comments mischaracterize the program's benefits and costs in at least three respects.

First, the Committees completely disregard the economic benefits of avoiding pollution and investing RGGI proceeds. Every regulation has both benefits and costs, and the Regulatory Review Act requires agencies proposing regulations to identify both. The DEP has done so in its Regulatory Analysis Form, acknowledging that in addition to the projected benefits of the CO2 Budget Trading Program noted above, the program will have some costs, including the marginally earlier retirement of some coal-fired power plants. The EQB's decision to advance the final-form regulation reflects its determination that the program's benefits far exceed these costs.

³³ See Perera et al., *supra*.

The comments of the legislative committees, on the other hand, make no attempt to weigh benefits and costs. The Committees simply ignore the benefits, failing even to acknowledge RGGI's historical record or the DEP's economic modeling results, let alone to attempt to refute them.

As the Analysis Group has explained, "RGGI's net positive economic outcome results in large part from the states' decisions to sell CO2 allowances via a centralized auction and then to use the auction proceeds in various ways that address state policy objectives." There is copious evidence to support this conclusion in both the Analysis Group's reports and the annual RGGI, Inc. investment reports. The Committees' disregard of this evidence shows that their comments are motivated not by the results of any analysis of the CO2 Budget Trading Program, but by pre-determined opposition to it.

Second, the Committees dramatically overstate the impact the program is likely to have on Pennsylvania's remaining coal-fired power plants while mischaracterizing its impact on the Commonwealth's gas plants and ignoring its (positive) impact on nuclear plants.

According to the Committees, "RGGI will trigger the near immediate closure of coal plants in Pennsylvania in the first year of the program, devastating the tax bases of local governments and school districts, and hurting the small businesses in those communities."³⁴ This statement is incorrect. While coal plants in the Commonwealth are indeed likely to close soon after the program begins, they are just as likely to close if the program is never implemented. The fundamental problem they face, which participation in RGGI will not change, is competition from newer, more efficient, less expensive gas-fired power plants.

In 2004 – before fracking arrived in Pennsylvania – 55 percent of the electricity produced in the Commonwealth came from coal, while only 5 percent came from gas. By 2019, coal generation was down to 17 percent and gas generation up to 43 percent. Before shale gas, coal was generally Pennsylvania's cheapest electricity source. However, the Marcellus Shale gas boom brought sharply reduced gas prices and then private equity funds and other investors saw an opportunity to out-compete the old coal plants on PJM's electricity markets by building highly efficient combined-cycle gas power plants. So they have. Since 2010, 13,678 MW of new gas plants have come online in Pennsylvania, another 3,273 MW are being built, and 16 coal plants have closed or announced their closure. This trend is expected to continue. Last week, a new S&P Global Market Intelligence analysis predicted that more than half of the U.S. coal generation in operation as of 2015 will retire by 2035.³⁵

³⁴ See comments of Senate Environmental Resources and Energy Committee, February 3, 2021, available at http://www.irrc.state.pa.us/docs/3274/COMMENTS_LEGISLATIVE/3274%2002-03-21%20SEN%20ENV%20RES%20EN%20COMM.pdf

³⁵https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#news/article?id=65741012&KeyProductLinkType=58&utm_source=MIAAlerts&utm_medium=scheduledalert&utm_campaign=Alert_Email

Because gas is typically cheaper in Pennsylvania than in other states, the latest DEP power sector modeling projects an even sharper decline in the Commonwealth: the retirement of more than 11,000 megawatts of coal capacity by 2030 *with or without RGGI*.

Coal Retirements (in MW) in the DEP’s 2021 Power Sector Modeling

	2022	2025	2028	2030
DEP reference case (no RGGI)	2,830	9,529	10,902	11,184
DEP policy case (RGGI)	2,830	10,181	11,069	11,184

Moreover—and critically—the DEP’s auction of RGGI allowances would generate hundreds of millions of dollars in proceeds that could be used to support the communities and workers affected by the coal plant closures. To date, the General Assembly has done virtually nothing to provide financial support, workforce training opportunities, or other assistance to the communities and workers affected by the closure of the 16 Pennsylvania coal plants that have already retired. Nor, with the exception of Act 66 of 2020, has it done anything in recent years to support trade unions’ ability to organize or the payment of family-sustaining wages.³⁶ To support trade union members who will be affected by the—again, inevitable—retirement of Pennsylvania’s remaining non-waste coal plants, the General Assembly can and should do both. Meanwhile, the CO2 Budget Trading Program will *help* support trade union jobs at Pennsylvania’s four operating nuclear plants.³⁷

Regarding waste coal plants, the Committees’ position is entirely without basis. Because the final-form regulation gives those plants a blanket exemption from any requirement to buy carbon allowances for their emissions, the Commonwealth’s participation in RGGI is unlikely to have any negative effect on them at all. If anything, the higher wholesale power prices that result should help the waste coal plants.

With respect to the Commonwealth’s gas-fired power plants, the Committees claim that “RGGI will trigger the closure or reduce generation from Pennsylvania gas plants, and will make it highly unlikely that any new gas-fired plant will be constructed to replace the lost Pennsylvania

³⁶ Act 66 (Act of July. 23, 2020, P.L. 654, No. 66), conditions receipt of tax credits for the use of methane in manufacturing petrochemicals on the payment of wages at levels established under the Pennsylvania Prevailing Wage Act, P.L.987, No.442.

³⁷ See, e.g., Energy Harbor’s decision not to deactivate its Beaver Valley nuclear plant because of the wholesale power price support RGGI will provide: <https://dailyenergyinsider.com/news/24695-energy-harbor-corp-rescinds-deactivation-of-beaver-valley-nuclear-power-facility/>

generation.” The first part of this statement is untrue, the second part is debatable but irrelevant. As noted above, Pennsylvania’s gas plants are mostly new and highly efficient; as a result they have been out-competing the coal plants on PJM’s markets and—as the coal plants retire—ramping up their own generation. All evidence points to the continuation of this trend. For example, the DEP’s most recent (2021) power sector modeling projects the retirement of only 50 megawatts of gas-fired power between 2022 and 2030 and no retirements of new combined-cycle plants. Moreover, like the waste coal plants, the gas plants will benefit from higher wholesale power prices under the program.

Third, the impact of the proposed CO2 Budget Trading Program on electricity costs is expected to be minimal, and to a significant extent the impacts that do occur can be mitigated through energy efficiency.

RGGI affects electricity costs in two ways. First, RGGI's requirement that power plants buy allowances for their carbon dioxide pollution typically leads to small increases in wholesale electricity rates. This is because power plants have to include the cost of the allowances as an operating cost in their bids on PJM's markets, thereby raising those bids. Second, RGGI states’ investments of allowance proceeds into clean energy, especially energy efficiency, lowers customers’ bills, i.e., what customers actually pay for electricity. Efficiency saves money because electricity pricing is largely volumetric: the more you use, the more you pay. Consequently, when customers reduce their electricity consumption through efficiency measures, they save money. Indeed, lower consumption can result in lower bills even when customers’ kilowatt-hour electricity rate goes up.

According to the Analysis Group’s most recent independent economic evaluation of RGGI (covering 2015-17), this is in fact what happened during RGGI’s first decade:

[T]he inclusion of the cost of CO2 allowances in wholesale prices tends to increase wholesale electricity prices.... But these near-term impacts are more than offset ... because the states invest a substantial amount of the RGGI auction proceeds on EE [energy efficiency] programs that reduce overall electricity consumption and on RE [renewable energy] projects that reduce the use of higher-priced power plants. Consumers gain because their overall electricity bills go down. Since RGGI’s commencement in 2009, energy and dollar savings resulting from all states’ investments in EE and RE has more than offset the wholesale market price increases associated with inclusion of allowance costs in market bids.³⁸

³⁸ Analysis Group, *The Economics Impacts of the Regional Greenhouse Gas Initiative, 2015-17* at 5. Available at https://www.analysisgroup.com/globalassets/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf

The results of the DEP's power sector modeling for the CO2 Budget Trading Program are consistent with these historical results. As the DEP's Regulatory Analysis Form explains at pages 45-46, based on its most recent power sector modeling the DEP projects that (1) the program will lead to small (1.73 percent - 3.96 percent) increases in PJM wholesale power prices, which Pennsylvania's electric distribution companies and competitive generation suppliers pay for the electricity before reselling it to consumers, and (2) these wholesale price changes will translate into similarly small increases in retail bills (\$.84 – \$1.92 per month for residential customers who heat with fuels other than electricity). However, these projected increases do not reflect the effect of investments in energy efficiency that the DEP intends to make. As in the current RGGI states, these investments can lower the bills of low-income customers and small businesses even as electricity rates rise.

Energy affordability is a critical problem for millions of Pennsylvanians. According to this year's Home Energy Affordability Gap data published by Fisher, Sheehan, and Colton, in 2020 the 284,000 Pennsylvania households with incomes of below 50 percent of the Federal Poverty Level (FPL) paid 29 percent of their annual income for home energy bills. Another 346,000 households with incomes between 50 percent and 100 percent of the FPL faced a home energy burden of 16 percent. An energy burden of more than 6 percent is generally considered unaffordable.

Pennsylvania's participation in RGGI will not solve this problem, but it can help ameliorate it if Pennsylvania invests significant allowance proceeds from the program into weatherization and other low-income energy efficiency programs. In addition, the General Assembly could take action to allow RGGI proceeds to be distributed as cash assistance for low-income Pennsylvanians. (In its current form, the Air Pollution Control Act does not allow this because such assistance would not reduce air pollution).

***Objection 5.)** CO2 is not an “air pollutant” as defined by the APCA. The proposal does not prevent or reduce greenhouse gases because generation will shift to fossil-fuel-fired EGUs in other states and emissions from those EGUs will pollute the environment of the Commonwealth. This is referred to as leakage. Any reduction of pollution would be insignificant, thus, the proposal fails to meet the APCA's standard that regulations must produce a meaningful reduction of “air pollution.”*

Response 5.) From the DEP's Comment and Response document, shared with the EQB at its meeting on July 13, 2021:

“The Department contends that CO2 is in fact a regulated ‘air pollutant.’ Specifically, section 5(a)(1) of the APCA provides the Board with authority to regulate CO2 emissions. CO2 falls under the definition of ‘air pollution’ in

section 3 of the APCA. First, CO₂ is a gas, and falls within the definition of ‘air contaminant,’ under section 3 of the APCA, which is defined as ‘[s]moke, dust, fume, gas, odor, mist, radioactive substance, vapor, pollen or any combination thereof.’ By extension, CO₂ is also ‘air contamination,’ under section 3 of the APCA, which is defined as ‘[t]he presence in the outdoor atmosphere of an air contaminant which contributes to any condition of air pollution.’ The term ‘air pollution’ is defined as ‘[t]he presence in the outdoor atmosphere of any form of contaminant ... in such place, manner or concentration inimical or which may be inimical to the public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.’ Therefore, CO₂ is also considered to be ‘air pollution’ under the APCA. CO₂ is also a Federally regulated air pollutant under the CAA (42 U.S.C.A. §§ 7401—7671q). See *Massachusetts v. EPA*, 549 U.S. 497 (2007). Moreover, the EPA has issued an Endangerment Finding for CO₂ emissions resulting from fossil fuel-fired EGUs. See 80 FR 64509 (October 23, 2015); *Am. Lung Ass’n v. Env’t Prot. Agency*, 985 F.3d 914 (D.C. Cir. 2021).

While there is a potential for leakage as outlined in the Department’s modeling for this final-form rulemaking, this potential leakage does not undermine the value of the significant benefits that will accrue to this Commonwealth and its residents as a result of this final-form rulemaking. The potential for reducing CO₂ produced in this Commonwealth by 2030 ranges from 97 million—227 million tons. The meaningful reductions of air pollution stemming from this final-form rulemaking have also been confirmed by independent power sector modeling conducted by PJM and the Penn State Center for Energy Law and Policy.”

We concur with the Department. The language of the APCA is clear and unambiguous. There is no reasonable interpretation of the statutory text to support the argument that CO₂ does not qualify as an “air pollutant.” Moreover, the APCA and existing air quality regulations in Pennsylvania define the term “regulated pollutant” to include those compounds regulated under the federal Clean Air Act (CAA) sections 111 or 112.³⁹ The EPA finalized rulemakings in October 2015 specifically regulating greenhouse gases—including carbon dioxide—under section 111(d)⁴⁰ and 111(b)⁴¹ of the CAA, making clear that carbon dioxide is included in the list of regulated pollutants.⁴²

³⁹ See APCA § 6.3(m) and 25 PA Code § 127.705(c)

⁴⁰ 80 Fed Reg. 64662 (Oct. 23, 2015)

⁴¹ 80 Fed Reg. 64509 (Oct. 23, 2015)

⁴² Note: The Affordable Clean Energy Rule, 84 Fed Reg. 32520 (July 8, 2019), attempted to repeal the Clean Power Plan, but it has since been vacated. See *American Lung Assn. v. EPA*, 958 F.3d 914 (D.C. Cir. Jan. 19, 2021).

This followed the EPA's December 2009 Endangerment Finding, wherein the Administrator concluded that "the body of scientific evidence compellingly supports" the finding "that greenhouse gases [including carbon dioxide] in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare."⁴³ The primary scientific bases for the finding were the major assessments by the U.S. Global Climate Research Program (USGCRP), the Intergovernmental Panel on Climate Change (IPCC), and the National Research Council (NRC), and the Administrator reached her determination by considering "both observed and projected effects of greenhouse gases in the atmosphere, their effect on climate, and the public health and welfare risks and impacts associated with such climate change."⁴⁴

The argument that follows from the legislative standing committees about purported leakage is a *non sequitur*. Emissions leakage refers to "activity or investment that directly or indirectly causes emissions to shift from a jurisdiction with carbon reduction regulations to jurisdictions with less or no regulation, or from a source within a jurisdiction that is subject to emissions regulation to a source within that jurisdiction that is not subject to regulation."⁴⁵ Or, as the Department states in its Regulatory Analysis Form, leakage is "the shifting of emissions from states with carbon pricing to states without carbon pricing."⁴⁶

We support effective leakage mitigation measures to ensure the CO2 Budget Trading Program's integrity, but the potential for leakage as a consequence of this rulemaking has no bearing whatsoever on the question of whether CO2 constitutes an air pollutant as defined by the APCA. Furthermore, even if leakage occurs at the highest levels that have been projected, implementation of this final-form rulemaking will still result in a significant net decrease in carbon dioxide emissions across the PJM region, and will deliver significant health and economic benefits to Pennsylvania.

The Department references modeling conducted by the [Penn State Center for Energy Law and Policy](#), which has a methodology that suffers from several serious flaws, including reliance on outdated assumptions concerning renewables prices, failure to account for recent state policy developments in PJM and RGGI states, and disregard of the availability of battery storage and

⁴³ "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule," 74 Fed. Reg. 66,496, 66,514 (Dec. 15, 2009) ("Endangerment Finding"), *aff'd Coal. for Responsible Regulation, Inc. v. U.S. Evtl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012) ("CRRF"), *aff'd in part and rev'd in part on other grounds sub nom. Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) ("UARG").

⁴⁴ *Id.*

⁴⁵ Pace Energy and Climate Center (Musgrove, Taylor, Valova, and Rabago), *Emissions Leakage in RGGI: an Analysis of the Current State and Recommendations for a Path Forward* (December, 2017), available at <https://peccpubs.pace.edu/getFileContents.php?resourceid=5319719d12c3c3e>

⁴⁶ Department of Environmental Protection, Regulatory Analysis Form for C02 Budget Trading Program, available at https://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PubPartCenterPortalFiles/Environmental%20Quality%20Board/2021/July%2013/7-559_RGGI%20Final%20RM/05a_7-559_CO2%20Budget%20Trading_Final_RAF.pdf, at 41.

offshore wind technologies.⁴⁷ As a result, this model projected significantly higher amounts of leakage than the Department's or those conducted by [EDF](#) and NRDC.⁴⁸ Nevertheless, crucially, even the Penn State analysis projected that Pennsylvania's participation in RGGI will reduce carbon dioxide emissions across the PJM region, despite the higher leakage estimates, and deliver significant net benefits: "Even though the emissions leakage rate is high, we find that CO2 emissions in the multistate PJM region decline following Pennsylvania joining RGGI and that the climate benefits exceed the monetary costs of participating in RGGI." ([see p.4](#)).

Moreover, there are tools available to the Department to mitigate leakage in partnership with PJM and the other RGGI states. The Department should continue its engagement with the Public Utility Commission in PJM's Carbon Pricing Senior Task Force, with the goal of securing an effective PJM carbon border adjustment that ensures that all electricity imports to Pennsylvania are subject to a carbon fee, just as RGGI-covered sources within Pennsylvania will be. The Department should also work with PJM and the other PJM states to ensure that any leakage that may occur from Pennsylvania to other PJM states can be accurately measured. The Department should invest RGGI proceeds from the Clean Air Fund to drive increased efficiency and renewables, which are essential complementary measures for reducing emissions as well as for mitigating leakage. There are also pending actions at the federal level likely to contribute to leakage mitigation going forward.⁴⁹

The fundamental point is this: concerns about potential leakage should in no way undermine the Commission's finding that this final-form regulation is clearly in the public interest under the criteria established by section 5.2 of the Regulatory Review Act.

***Objection 6.)** The modeling used by the EQB to justify the rulemaking is outdated and does not provide an accurate estimate of the economic impact that the rulemaking will have. The modeling also does not account for leakage.*

***Response 6.)** To forecast the impacts of the CO2 Budget Trading Program, the DEP conducted two kinds of computer-based analysis known as "modeling." Regarding the program's effects on air emissions, human health, and electricity prices, the DEP conducted two rounds of power sector modeling using ICF International's Integrated Planning Model ("IPM"). To project*

⁴⁷ See Joint Commenters' arguments at p. 29:

http://www.irc.state.pa.us/docs/3274/COMMENTS_PUBLIC/3274%2001-14-21%20SIERRA%20CLUB.pdf

⁴⁸ See Natural Resources Defense Council, "Modeling Pennsylvania's Power Future: 2020 Carbon & Clean Energy Policy Scenarios" (April 23, 2020, unpublished).

⁴⁹ In *Am. Lung Ass'n v. EPA*, the D.C. Circuit vacated the ACE Rule and its embedded repeal of the Clean Power Plan and remanded the action to EPA for further consideration. The agency's rulemaking process on remand is ongoing, but it is anticipated that it will establish federal carbon reduction regulations for the power sector nationwide.

economic activity and employment impacts, the DEP conducted macroeconomic analysis using a proprietary model of the Regional Economic Model, Inc. (“REMI”).

The DEP’s modeling forecasts, among other things, that the CO2 Budget Trading Program will reduce emissions of both carbon dioxide and criteria pollutants not only in Pennsylvania but across the PJM Interconnection region; that the PJM-wide reductions will occur despite some amount of emissions “leakage” to non-RGGI PJM states; and that the program will lead to net economic benefits in Pennsylvania. Despite suggestions to the contrary, the DEP has made public all of the assumptions, or “inputs,” of its modeling,⁵⁰ and in the winter of 2021 the DEP updated those inputs to account for the impacts of the COVID-19 pandemic.

As the Commission noted in its February, 2021 comments (which were issued before the DEP released its updated 2021 modeling), the committees and some other commenters have criticized the DEP’s modeling on various grounds. However, as is explained below, these criticisms either rest on misunderstandings or misrepresent the DEP’s assumptions, disclosures, and results.

The DEP’s Power Sector Modeling

In its Regulatory Analysis Form, the DEP describes the IPM model, which it used to forecast impacts of the program on power plant capacity, generation, emissions, and electricity prices, as follows:

IPM is a dynamic model of the United States power sector that can determine least-cost solutions for meeting energy and peak demand requirements. The model considers a number of key operating or regulatory constraints, such as emission limits, transmission capabilities and constraints, renewable generation requirements, fuel market constraints, etc. IPM can perform integrated analysis and can project wholesale power prices, CO2 allowance prices, and CO2 emissions in an optimal and internally consistent manner. It is also particularly suited to evaluating the impacts of environmental regulations and policies. IPM is well-suited to consider complex treatment of emission regulations involving trading, banking and traditional command-and-control emission policies. Because of the model’s endogenous treatment of natural gas, coal and biomass fuel markets, it is fully capable of analyzing policies that directly affect these markets. A detailed unit-level database of every grid-connected EGU in the United States is the fundamental input to IPM.⁵¹

As this explanation suggests, the IPM model is complex. Essentially, though, IPM virtually “builds” and “runs” the most economically efficient power sector possible, given a particular set of policies, the rules of applicable electricity markets (in this case PJM’s), and the best

⁵⁰ See the spreadsheets available under the “Power Sector Modeling” and “Economic Modeling” tabs on the DEP’s RGGI webpage, <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx>.

⁵¹ DEP, Regulatory Analysis Form at 17-18.

information available about other variables that affect the power sector, such as fuel costs, and to forecast emissions and power prices based on this optimization. No analytical tool can predict the impact of a particular policy with certainty, but for the power sector, modeling is the best forecasting tool we have – and IPM is regularly used by both private sector power companies and government regulators, including the EPA. It is also the standard model used by the current RGGI states in designing their own CO2 budget trading programs.

In 2020, the DEP performed three IPM modeling runs: a “reference case” in which Pennsylvania did not implement the CO2 Budget Trading Program, a “policy case” in which the program was implemented but auction proceeds were not invested in energy efficiency and other forms of clean energy, and a second policy case that did model such investments. In 2021, the DEP updated its reference case and the first policy case (i.e., the case not including investments). The results of these analyses are summarized on pages 17 – 18 of the DEP’s Regulatory Analysis Form, and spreadsheets containing the complete results, along with the DEP’s starting assumptions about policies in other states in region, fuel prices, etc., are available on the DEP’s RGGI webpage.

As noted, the results forecast the reduction of both carbon dioxide and criteria air pollutants across the PJM region, as well as in Pennsylvania. They also project a small increase in wholesale power prices on the PJM electricity and capacity markets and (in the absence of investments in energy efficiency with RGGI proceeds) a small increase in rates. Importantly, however, the DEP’s power sector modeling does not account for the way in which RGGI proceeds investments in clean energy, especially energy efficiency, can lower electricity *bills*.⁵²

The DEP’s Economic Modeling

To forecast the macroeconomic impacts of the CO2 Budget Trading Program, the DEP used REMI, a dynamic economic modeling program regularly used by the federal government, state and local governments, corporations, higher education institutions, and others.

The goal of the REMI modeling, which is described on pages 22 – 24 of the Regulatory Analysis Form, was to forecast the effect of the CO2 Budget Trading Program on economic activity (measured as gross state product) and on the number of jobs (expressed as job-hours) in the Commonwealth. For purposes of the analysis, the DEP assumed that all proceeds from the auction of RGGI allowances would be deposited in the Clean Air Fund established under the Air Pollution Control Act and invested in energy efficiency (31 percent of annual proceeds), renewable energy (32 percent) and greenhouse gas abatement (31 percent). The modeling estimated that from 2022 to 2030, the program would lead to a \$1.9 billion increase in gross state product and a net increase of over 30,000 jobs in the Commonwealth.

⁵² For a more detailed discussion about the way participation in RGGI affects electricity prices, see NRDC’s March 14, 2021 blog, “Smart RGGI Investments Can Lower Electricity Bills in PA,” available at <https://www.nrdc.org/experts/mark-szybist/how-rggi-will-affect-electricity-costs-pennsylvania>

Criticisms of the DEP's Modeling

In comments filed on January 12, 2021, the House Environmental Resources and Energy Committee stated: “as demonstrated by modeling conducted by the Department itself...Pennsylvania joining RGGI will result in ‘leakage’ as power plants in neighboring states will generate more electricity and thus more carbon emissions after our entry.

The Senate Environmental Resources and Energy Committee directed two criticisms at the DEP's modeling: first, that the DEP's modeling “assumed the RGGI allowance price would not exceed \$7.00 until calendar year 2025,” and that because allowance prices later rose to \$7.41, “the core assumptions upon which RGGI is based are fundamentally wrong;” and second, that “none of the modeling ... accounts for the phenomenon known as ‘leakage.’”

In its February, 2021 comments the Commission also lists several additional criticisms made by commenters, including that the DEP's modeling underestimates future gas prices and does not adequately account for new natural gas generation, the impacts of the COVID-19 pandemic, or “the expansion of other federal and state regulations and initiatives that impact the production and distribution of electricity.

The DEP has responded to these and other comments at length at pages 175-188 of its Comment and Response document. The Joint Commenters respectfully refer the Commission to these responses and would add three summary remarks, as follows.

First, the answer to the criticism that the modeling is “obsolete” because it does not account for the impacts of the COVID-19 pandemic, for New Jersey and Virginia's participation in RGGI, or for other policy and market developments, is that the DEP updated its 2020 power sector modeling in 2021. Whether this update was actually necessary is debatable, because as profoundly as the COVID-19 pandemic affected the United States' economy, it did not materially change the landscape of Pennsylvania's power sector. Nor is it clear whether the commenters arguing that the DEP's modeling was obsolete actually believed their own argument, because many (e.g., the Senate Environmental Resources and Energy Committee) were happy to cite the DEP's results when they served the commenters' interests, e.g., in showing the likelihood of some emissions leakage. In any case, the DEP did the update; therefore, the concern is moot.

Second, while the Commission has characterized the Committees' comments as suggesting that the modeling does “not account for leakage,” those comments are largely about the fact that the modeling *does* forecast leakage (albeit not at levels that render the program ineffective). The Committees' complaint, rather, is that because some leakage is projected, the final-form regulation should not be promulgated. This argument is addressed at length in our response to Objection 5, above. In short, although some amount of emissions leakage appears highly likely, it is also clear that the CO2 Budget Trading Program will lead to lower emissions across PJM, as well as within Pennsylvania, with significant health benefits.

Third, it is simply not true that “the underlying assumptions and data used for the modeling have not been made available to the public.” As noted above, all of the assumptions and data are available on the DEP’s RGGI webpage. Moreover, the Senate Environmental Resources and Energy Committee is wrong to state that the DEP’s modeling included an assumption that “the RGGI allowance price would not exceed \$7.00 until calendar year 2025.” The DEP’s modeling did not make any exogenous assumptions about allowance prices; instead, it generated allowance prices forecasts endogenously, i.e., as outputs. The fact that actual allowance prices are currently higher than those generated in the model outputs is in no way an indictment of the model, as allowance prices are expected to fluctuate, and the entry of Pennsylvania and Virginia into RGGI may have a significant impact on allowance prices.

Objection 7.) *The federal government is moving forward with climate change policies.*

Response 7.) With President Biden’s renewed commitment to the Paris Agreement, new greenhouse gas targets of a 50 to 52 percent reduction in U.S. Greenhouse Gas Pollution from 2005 levels by 2030⁵³ have been established—significantly more stringent than the targets adopted under prior administrations. In addition, the U.S. Court of Appeals for the D.C. Circuit issued a ruling in January of 2021 finding that the Trump administration’s attempt to repeal and replace the Obama administration’s Clean Power Plan with a substantially weaker version “rested critically on a mistaken reading of the Clean Air Act.” That regulation—known as the “Affordable Clean Energy Rule”—was vacated.⁵⁴ As a result, new federal action limiting greenhouse gas pollution is expected.

It is also expected that any federal program will allow for, if not specifically mandate, some form of carbon pricing. The scientific community has determined to a very high degree of confidence that keeping global temperatures from rising to dangerously high levels will require, in part, “carbon prices much higher than the ones observed in real markets.”⁵⁵ The importance of pricing carbon emissions has also been recognized by the International Monetary Fund⁵⁶ and the World Bank has stated that “pricing carbon is inevitable if we are to produce a package of effective and cost-efficient policies to support scaled up mitigation.”⁵⁷

The Clean Air Act is designed to work in conjunction with state-based programs to achieve emissions reductions.

⁵³ The White House, FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target (Apr. 22, 2021).

⁵⁴ *American Lung Assn. v. EPA*, 149 (D.C. Cir., Jan. 19, 2020).

⁵⁵ IPCC, *Global Warming of 1.5°C*, 148 (2018)

⁵⁶ Ian W.H. Parry *et al*, *Getting Energy Prices Right*, (IMF 2014).

⁵⁷ World Bank Statement: *Putting a Price on Carbon*, (June 3, 2014)

Although the climate crisis is a global issue, and new federal action that includes pricing carbon could be promulgated, this does not remove the role of state governments in addressing the issue. The principle of cooperative federalism recognizes that “the local implications of climate change policies provide a justification for allowing some state flexibility in determining how to implement national goals.”⁵⁸ This idea is made operational in Section 111(d) of the Clean Air Act, which covers standards of performance for existing sources.⁵⁹ Far from supplanting state authority, that section explicitly gives states the leading role in crafting plans to meet given emissions standards.

Adopting a CO₂ budget trading program in cooperation with other RGGI states is just the sort of state-based plan the Clean Air Act envisions. In fact, when the Clean Power Plan final rule was announced under section 111(d) it noted that states with “well-developed existing programs and the attendant legal authority underpinning such programs”—specifically referencing states participating in the RGGI market—would have an easier time meeting program deadlines.⁶⁰ The EPA also highlighted RGGI participation as a potential compliance option.⁶¹

Far from creating a risk, enacting a CO₂ budget trading program tailored to our specific policy goals not only results in immediate net benefits for Pennsylvania, it gives the DEP an opportunity to develop a program that reflects state policy goals in ways that a generic “50-state” plan would not. This includes the unique set-aside provisions DEP has proposed in this regulation, but it also includes giving Pennsylvania significant flexibility in how proceeds from our trading program are invested. It is unlikely that a 50-state federal rule would make those same policy choices.

While Pennsylvania is in a better position to tailor a regulatory program to its specific needs, having a separate federal program provides additional benefits. In particular, a strong federal regulation mitigates concerns of potential emissions leakage from Pennsylvania to states with weaker pollution controls.

The Commonwealth must address additional concerns beyond meeting minimum federal standards.

Although federal legislation or regulations addressing carbon pollution is necessary to respond to the climate crisis, Pennsylvania has not only the authority but the responsibility to act.

Elected officials in Pennsylvania have sworn an oath to support and defend our state constitution and, with that oath, comes the clear and explicit fiduciary duty to “conserve and maintain our

⁵⁸ A. Kaswan, A Cooperative Federalism Approach for Climate Change Legislation, *Denv. Univ. L. R.* 85:4 (2008).

⁵⁹ 42 U.S.C. §7411(d).

⁶⁰ 80 Fed. Reg. 64855.

⁶¹ 80 Fed. Reg. 64888.

public natural resources for the benefit of all the people, including generations yet to come.”⁶² Environmental rights, specifically including the right to clean air, were included after a unanimous vote in the legislature⁶³ and approval by referendum. They are now part of Article I—Pennsylvania’s Bill of Rights—included alongside the freedom of speech, freedom of religion, the right to bear arms, the right to trial by jury, and many other rights.

Interpreting this provision, our Pennsylvania Supreme Court has held that “the Commonwealth has a duty to refrain from permitting or encouraging the degradation, diminution, or depletion of public natural resources, whether such degradation, diminution, or depletion would occur through direct state action or indirectly, e.g., because of the state’s failure to restrain the actions of private parties.”⁶⁴ As fossil-fueled electricity production was responsible for over 32 percent of the state’s carbon pollution in 2017⁶⁵ and a number of new fossil fuel plants are either planned or under construction in Pennsylvania⁶⁶, failure to take action to limit this pollution would be just this sort of dereliction of duty.

Objection 8.) *The potential costs of the rulemaking outweigh any meaningful benefits that may result from it, especially during the time of the COVID-19 pandemic.*

Response 8.) As noted above, the final-form rulemaking is designed to ensure there will be net benefits for Pennsylvania’s citizens, economy, and environment.

Economic Growth; Public Health

Studies have demonstrated that RGGI has resulted in economic and job growth for participating states, with investments directly benefiting consumers, creating new business and employment, and further reducing CO2 emissions. The following chart reflects GDP growth and emission reductions in the nine states that have participated in RGGI since its beginning in 2009 through 2019 (“RGGI 9” - CT, DE, ME, MD, MA, NH, NY, RI, and VT).

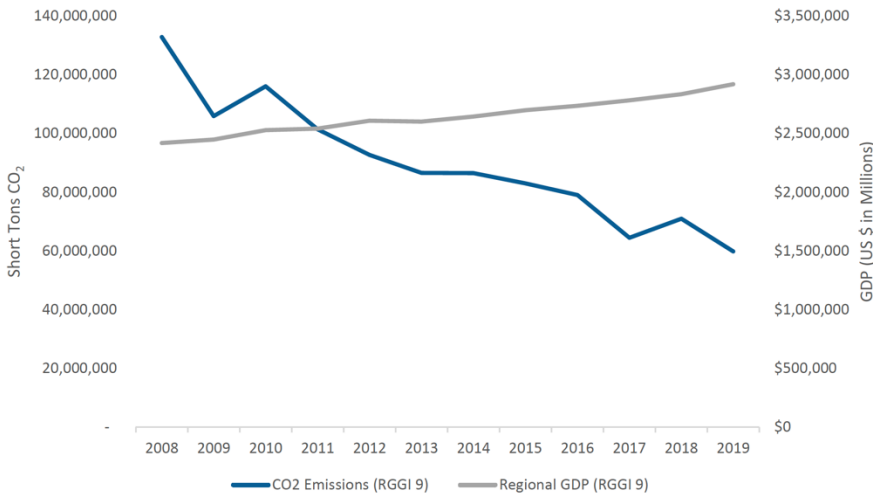
⁶² Pa. Const. Art. I § 27.

⁶³ R. Rinaldi, Dormant For Decades, the Environmental Rights Amendment of Pennsylvania's Constitution Recently Received a Spark Of Life From *Robinson Township v. Commonwealth*, 24 Widener L.J., 400 (2015)

⁶⁴ *Robinson Twp. v. Cmwth.*, 83 A.3d 901, 907 (Pa. 2013) (*emphasis added*).

⁶⁵ PA DEP, 2020 Pennsylvania Greenhouse Gas Inventory Report, 6 (July 2020).

⁶⁶ See Generally: *PJM New Services Queue* at <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx>



Source: RGGI 2019 Investments Report (2021)

From 2008 (before RGGI’s launch) to 2018, RGGI states’ economies grew by 47% versus 36% in states that do not regulate or put a price on carbon emissions.⁶⁷ In a 2018 peer-reviewed journal article, the Analysis Group found that during its first three compliance periods (2009-2017), the RGGI program yielded a net benefit of \$4.7 billion and more than 40,000 job-years (defined as the equivalent to one full-time job for one year) to participating states.⁶⁸

These numbers do not account for the public health benefits resulting from reduced air pollution emissions (reductions in CO₂ emissions also provide associated reductions in other criteria pollutants). A 2017 study⁶⁹ examined the public health impacts of the first six years of the RGGI program (2009-2014), concluding that the RGGI program’s air quality improvements led to public health benefits with an estimated cumulative economic value of \$5.7 billion. A recent study led by the Columbia Center for Children’s Environmental Health implies that the health benefits from RGGI may be even more significant.⁷⁰

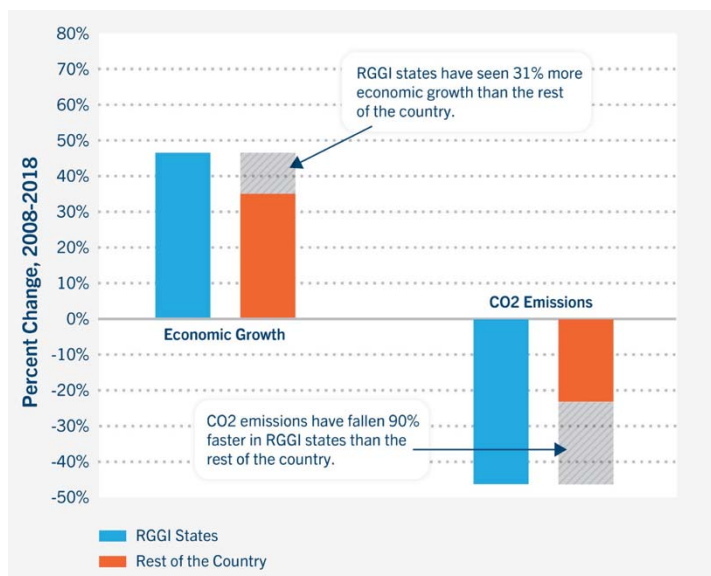
⁶⁷ Acadia Center, *The Regional Greenhouse Gas Initiative - Ten Years in Review* (2019). This comparison does not include California, which has similarly outpaced national growth since implementing its own emissions cap program. <https://acadiacenter.org/resource/the-regional-greenhouse-gas-initiative-ten-years-in-review/>

⁶⁸ Analysis Group, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States* (April 2018). https://www.analysisgroup.com/globalassets/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf

⁶⁹ Michelle Manion, et al., *Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative*, Abt Associates (January 2017). <https://www.abtassociates.com/insights/publications/report/analysis-of-the-public-health-impacts-of-the-regional-greenhouse-gas>

⁷⁰ Frederica Perera, David Cooley, Alique Berberian, David Mills, and Patrick Kinney, *Co-Benefits to Children’s Health of the U.S. Regional Greenhouse Gas Initiative*, *Environmental Health Perspectives*, Vol. 128, No. 7 (July 2020). <https://ehp.niehs.nih.gov/doi/10.1289/EHP6706>

Modeling performed by the Department has projected that, in addition to reduction of CO2 emissions, the proposed final rule will also result in cumulative emission reductions of 112,000 tons of oxides of Nitrogen (NOx) and around 67,000 tons of Sulfur Dioxide (SO2) over the next decade.⁷¹ NOx and SO2 contribute to several health problems, including asthma, increased risk of respiratory infection and disease, and premature death. Based on calculations utilizing the U.S. Environmental Protection Agency’s (“EPA”) Regional Benefit-per-Ton (BPT) methodology,⁷² the Department has estimated that the public health benefits of avoided SO2 and NOx emissions range between \$2.79 billion to \$6.3 billion by 2030, averaging between \$232 million to \$525 million per year.⁷³ Combined with CO2 emission reductions, the Department estimates that over 83,000 workdays lost to health impacts will be avoided by implementation of the proposed final rule.⁷⁴ Independent analysis conducted by Penn State’s Center for Energy Law and Policy estimated that the health benefits of the state’s participation in RGGI to be on the order of \$1 billion to \$4 billion per year over the initial decade.⁷⁵



Source: Acadia Center, The Regional Greenhouse Gas Initiative, Ten Years in Review (2019)⁷⁶

⁷¹ Regulatory Analysis Form. Available at: https://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PubPartCenterPortalFiles/Environmental%20Quality%20Board/2021/July%2013/7-559_RGGI%20Final%20RM/05a_7-559_CO2%20Budget%20Trading_Final_RAF.pdf

⁷² EPA, Regulatory Impact Analysis for the Clean Power Plan Final Rule (October 2015). https://www3.epa.gov/ttnecas1/docs/ria/utilities_ria_final-clean-power-plan-existing-units_2015-08.pdf

⁷³ See page 20 of the Regulatory Analysis Form.

⁷⁴ See page 21 of the Regulatory Analysis Form.

⁷⁵ Center for Energy Law and Policy at Pennsylvania State University, *Prospects for Pennsylvania in the Regional Greenhouse Gas Initiative* (January 2021). https://sites.psu.edu/celp/files/2021/01/CELP_RGGI.pdf

⁷⁶ Acadia Center.

Energy Cost Reductions

Research performed by the Acadia Center (utilizing EIA data) has shown that energy prices in RGGI participating states have fallen by 5.7%—outperforming price levels in non-RGGI states.⁷⁷ Investment from 2019 RGGI proceeds alone are estimated to return \$1.3 billion in lifetime energy bill savings to over 260,000 households and over 1,400 businesses that directly participated in programs funded by RGGI proceeds, with over 130,000 households and businesses also receiving direct bill assistance. The cumulative estimated energy bill savings resulting from RGGI investments (through 2019) has been estimated at \$12,953,361,752.⁷⁸

It is important to note that energy efficiency programs benefit all consumers, even if not all consumers directly participate in programs. Lower overall electric load levels put downward pressure on prices; thus, RGGI-funded programs reduce overall payments by all electricity consumers for energy and capacity in wholesale markets.

With respect to Pennsylvania, modeling performed by the Department projects that the Commonwealth’s firm power prices after implementation of the final-form rulemaking are expected to be lower than prices would be without it, and that electric consumers will see bill savings by 2030 once investment of RGGI proceeds is factored in.⁷⁹ These findings are consistent with independent modeling performed by researchers at the Kleinman Center for Energy Policy at the University of Pennsylvania⁸⁰ and Resources for the Future.⁸¹

Environmental and Other Benefits

The Regulatory Analysis Form (“RAF”) issued by the Department with the final-form rulemaking goes into explicit detail on the economic, health, and environmental threats posed by climate change to Pennsylvania. The Commonwealth is already experiencing adverse impacts such as higher temperatures, changes in precipitation, and more frequent extreme weather events (including large storms, flooding, heat waves, and periods of drought). In addition to the RAF, these impacts are also detailed in the most recent Pennsylvania Climate Impacts Assessment.⁸² This periodic assessment is required pursuant to the Pennsylvania Climate Change Act of 2008,⁸³

⁷⁷ Id. Citing Energy Information Administration Form 826. <http://www.eia.gov/electricity/data/eia826>

⁷⁸ 2019 RGGI Investment Report (June 2021). <https://www.rggi.org/investments/proceeds-investments>

⁷⁹ See page 45 of the Regulatory Analysis Form.

⁸⁰ Jose Miguel Abito, *Self-Imposed Emission Limits – Is There a Case for Pennsylvania and RGGI?* (May 2019). <https://kleinmanenergy.upenn.edu/policy-digests/self-imposed-emission-limits>

⁸¹ Resources for the Future, *State Policy Options to Price Carbon from Electricity in Pennsylvania*. Issue Brief 19-07 (October 2019). https://media.rff.org/documents/IB_19-07.pdf

⁸² ICF and The Pennsylvania State University, *2021 Pennsylvania Climate Impacts Assessment* (May 2021). <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=3667348&DocName=PENNSYLVANIA%20CLIMATE%20IMPACTS%20ASSESSMENT%202021.PDF%20%20%3cspan%20style%3D%22color:green%3b%22%3e%3c/span%3e%20%3cspan%20style%3D%22color:blue%3b%22%3e%28NEW%29%3c/span%3e%204/30/2023>

⁸³ 71 P.S. §§ 1361.1—1361.8

reflecting the General Assembly’s recognition of the severity of climate change to our Commonwealth.

It is virtually impossible to quantify the economic consequences of these impacts, but they affect all Pennsylvanians. Consider the increased intensity of weather events. In its most recent Electric Service Reliability Report, the Pennsylvania Public Utility Commission noted that the increase in extreme weather contributed to a record number of power outages in 2019, and that this trend was likely to continue.⁸⁴ Similarly, the state Department of Transportation noted record costs from floods and landslides in excess of \$105 million extra for infrastructure replacement in 2018 alone.⁸⁵

These are just two examples of numerous metrics reflecting climate change’s escalating significance for Pennsylvania. Multiple sectors of Pennsylvania’s economy—from agriculture to outdoor recreation—will be affected. These impacts will only amplify if the final-form rulemaking is not enacted and emissions of CO2 from the electric generation sector continue unabated.

Consideration of the Covid-19 Pandemic

As discussed above, the proposed rulemaking will not substantially alter energy availability or affordability in the Commonwealth, nor will it impede the state’s status as a net energy exporter. In fact, by returning proceeds through the RGGI auction process, the proposed rulemaking can provide new, targeted opportunities to create and enhance programs that benefit all energy consumers.

It is also worth noting that in June 2021 the General Assembly formally voted⁸⁶ to end Governor Wolf’s Covid-19 disaster emergency declaration. At the end of June 2021, the Commonwealth ended its fiscal year with an all-time record \$40.4 billion in General Fund collections, beating estimates by \$3.4 billion, or 9.3%, for nearly every tax type. \$2.5 billion of that surplus was placed by the General Assembly in the Rainy Day Fund. In addition, the General Assembly elected to allocate only \$2.3 billion of the more than \$7 billion of federal assistance received through the American Rescue Plan Act.

⁸⁴ Pennsylvania Public Utility Commission, 2019 Electric Service Reliability in Pennsylvania. https://www.puc.pa.gov/General/publications_reports/pdf/Electric_Service_Reliability2019.pdf

⁸⁵ <https://www.penndot.gov/PennDOTWay/Pages/Article.aspx?post=165>

⁸⁶ House Resolution 106; signed in the state House and Senate on June 10, 2021.

Conclusion

The EQB's authority to promulgate the CO2 Budget Trading Program regulation is provided by the Air Pollution Control Act. The U.S. Supreme Court and Pennsylvania courts have further supported and affirmed EQB's and DEP's authority to establish and enforce air pollution control rules.

The Committees' objections are rooted in a mischaracterization of Pennsylvania's energy market -- expensive coal-fired EGUs have been closing in Pennsylvania for years and current trends clearly project closures will continue due to increased competition from less expensive gas-fired EGUs, not due to the perceived threat of RGGI's implementation in the future.

The CO2 Budget Trading Program addresses real public health, environmental, and energy market transition concerns in communities across the Commonwealth of Pennsylvania and is, thus, clearly in the public interest.