



**COMMENTS ON PROPOSED RGGI RULE BY LEAD  
PENNSYLVANIA LAWYERS, LAW PROFESSORS, AND  
OTHER ACADEMICS AND PROFESSIONALS CONCERNED  
ABOUT CLIMATE DISRUPTION**

**January 13, 2020**

**I. Introduction and Summary of Comments.**

We are a group of Pennsylvania lawyers, law professors, and other academics and professionals who are very concerned about climate disruption caused by greenhouse gas (“GHG”) pollution and have been working on the issue in one form or another for many years.<sup>1</sup> We have written extensively on climate disruption and the use of the law to mitigate it and adapt to it and have won awards for our work. We have experience in litigating issues at all levels including the United States Supreme Court, developing climate mitigation and adaptation plans, participating and chairing American Bar Association (“ABA”) and Pennsylvania Bar Association (“PBA”) climate committees, and participating in United Nations’ UNFCCC Conferences of the Parties. We have participated in state, regional and local climate planning efforts; worked with utilities and other companies in developing climate action policies and plans; designed and administered large scale energy efficiency services to environmental justice communities; provided

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<sup>1</sup> See Exhibit 1, including the names, mailing addresses, email addresses, experience in climate and energy, and selected publications for the members of the group. Please direct questions and comments to Robert B. McKinstry, Jr.

advice in state, federal and local government and private company clean energy financing; and developed and commented on federal, state, and local energy, air pollution and climate laws, regulations and ordinances.

We write to provide our strong support for swiftly promulgating the proposed rulemaking as a final-form regulation to establish a Pennsylvania CO<sub>2</sub> Budget Trading Program and participate in the Regional Greenhouse Gas Initiative (“RGGI”) beginning in January 2022, *CO<sub>2</sub> Budget Trading Program*, 50 Pa. Bull. 6212 (Nov. 7, 2020) (“RGGI Regulation”). We also to urge the Environmental Quality Board (“EQB”) to take further action to adopt the regulation proposed in the February 28, 2019 petition that would expand the program to all sectors of the economy and continue emissions reductions to achieve GHG emissions neutrality no later than 2052. *See Petition Pursuant to 25 Pa. Code §§ 23.1-23.5, Article I, §27 of the Pennsylvania Constitution, and the Pennsylvania Air Pollution Control Act to Adopt the Attached Regulation Establishing a Comprehensive Program to Limit Greenhouse Gas Emissions Through an Auction-Cap-and-Trade Program to Conserve and Maintain a Stable Climate and Other Public Resources for Which the Commonwealth is a Trustee* (Feb. 28, 2019),

[http://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PublicPartCenterPortalFiles/Environmental%20Quality%20Board/2019/02\\_Petition\\_GHG%20Emissions/GHG%20Emission%20Petition\\_February%2028,%202019.pdf](http://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PublicPartCenterPortalFiles/Environmental%20Quality%20Board/2019/02_Petition_GHG%20Emissions/GHG%20Emission%20Petition_February%2028,%202019.pdf)

(“*Climate Protection Petition*”).<sup>2</sup> The proposed RGGI Regulation as well as the further action that would be implemented by the proposed regulation that is the subject of the *Climate Protection Petition* are constitutionally mandated and statutorily authorized.

#### **A. Summary of Comments**

Section II of these comments sets forth the relevant law applicable to the proposed RGGI Regulation. As described there, the RGGI regulation and the Commonwealth’s participation in the RGGI program are specifically authorized by the law and consistent with the Commonwealth and federal Constitutions. In fact, action to reduce GHG Pollution is mandated by Article I, § 27 of the Pennsylvania Constitution.

In Section III of these comments, we make the case for the proposed RGGI Regulation being a necessary but insufficient action to address the threat of climate disruption from GHG pollution. It is necessary to establish a cap on GHG emissions and to reduce that cap annually. Given that there is a cap, an auction with provision for trading is the fairest way to allocate permission to emit GHGs. A descending cap with an announced schedule and an auction is not only necessary

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<sup>2</sup> We request that the full *Climate Protection Petition* be included in the record for the RGGI Regulation Rulemaking Docket in that its content strongly supports adoption of the proposed RGGI Regulation, as well as further action that could build on and expand the RGGI Regulation, including implementation of the Transportation Climate Initiative.

but will also likely generate significant economic benefits for the Commonwealth and its residents. Arguments that RGGI or the California-Quebec auction-cap-trade-and-invest programs have not driven emissions reductions or that they inherently produce outcomes that disproportionately burden environmental justice communities are misplaced.

Section IV explains why RGGI is insufficient, by itself, to address climate disruption. It is necessary to include additional sectors in the auction-cap-trade-and-invest program so that the entire economy will be under the proposed auction-cap-trade-and-invest program. Deep decarbonization will require electrification of many sectors. Putting a cost on GHG emissions for the electricity sector without reflecting that cost in other sectors could reduce the incentive for operators in other sectors to electrify. Pennsylvania should therefore expand the auction-cap-trade-and-invest program to its entire economy. The most expeditious way to do so would be to adopt the proposed regulation set forth in the *Climate Protection Petition*, which is already before the EQB. This could be accomplished in a separate rulemaking proceeding following the adoption of the proposed RGGI regulation. The proposed regulation in the *Climate Protection Petition* can readily be modified to make it consistent with the RGGI regulation and not impair the Commonwealth's ability to participate in the RGGI program.

Section V of these Comments explains that meaningful action to address the climate crisis by limiting and reducing emissions of GHG pollutants is also required by ethical principles. The arguments against taking action are inconsistent with well-established ethical principles.

Section VI of these Comments explains how RGGI revenues can and should be directed to programs to support GHG emissions reduction while promoting environmental justice. The proposed deposit of allowance auction proceeds into the Clean Air Fund will support these twin goals. Those uses are supported by the law and regulations governing use of the Clean Air Fund. The experience of RGGI states shows that auction revenues can be used to leverage the finance of a variety of programs, including sustainable energy utilities (“SEUs”) such as Efficiency Vermont and the Delaware SEU. The comments provide examples of how best to use the funds.

Section VII sets forth the strong evidence of how, by using auction revenues in the ways described in Section VI, the RGGI states have generated jobs and accelerated economic growth. Pennsylvania must do the same.

Section VIII explains why Pennsylvania’s Alternative Energy Portfolio Standards and energy efficiency requirements are not adequate substitutes for a RGGI compliant regulation. Arresting emissions of GHG pollution in a way

sufficient to prevent severe climate disruption requires an all-of-the-above approach.

Section IX explains why adopting a RGGI-compliant regulation and the further actions proposed in these comments will help Pennsylvania meet anticipated federal requirements under the Biden Administration. President-elect Biden has adopted the science-based goals of achieving GHG emissions neutrality in the electricity sector by 2035 and economy-wide GHG emissions neutrality by 2050. These goals are likely to become federal mandates under the Clean Air Act when the incoming Administration adopts regulations to implement the President-elect's vision. Pennsylvania will need to submit regulations as part of its SIP and the proposed regulation will put Pennsylvania ahead in meeting these anticipated requirements.

In Section X, we explain how Pennsylvania will need to take further actions to prevent leakage that will reduce the efficacy and potentially displace generation to jurisdictions outside of Pennsylvania that do not put a price on emitting GHG pollution. The PJM Interconnection LLC has explored mechanisms to prevent leakage and will be receptive. FERC has been more receptive to uniform carbon-based measures than to technology-based initiatives such as Pennsylvania's AEPS. Pennsylvania should move quickly on this.

In Section XI, we describe proposed revisions to the proposed RGGI regulation that are necessary to prevent Pennsylvania participation from causing a crash in RGGI allowance prices and to bring the proposal into consistency with President-elect Biden's policy of achieving emissions neutrality in the electricity generation sector by 2035. The proposed regulatory language is set forth in Exhibit 2.

**II. Approval of the Proposed RGGI Regulation is Constitutionally Mandated and Statutorily Authorized.**

**A. Article I, § 27 of the Pennsylvania Constitution Mandates Meaningful Action to Reduce GHG Pollution to Conserve Pennsylvania's Public Natural Resources.**

The promulgation of the proposed regulation is not merely a policy preference of the Wolf Administration. Rather, it represents the Commonwealth's fulfillment of its constitutional duty as a trustee under Article I, § 27 of the Pennsylvania Constitution to address climate disruption caused by GHG emissions. Robert B. McKinstry, Jr. & John C. Dernbach, *Applying the Pennsylvania Environmental Rights Amendment Meaningfully to Climate Disruption*, 9 Mich. J. Env't & Admin. L. 50 (2018) ("*McKinstry-Dernbach*").

As set forth at greater length in the *Climate Protection Petition* which we incorporate in these comments by reference,<sup>3</sup> emissions of GHG pollutants now

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<sup>3</sup> See n. 2, *supra*.

pose an existential threat not only to Pennsylvania’s natural environment but to that of the entire world. Pennsylvania’s natural environment supports the values that the Environmental Rights Amendment protects and to which every Pennsylvania resident, including those in future generations, has an individual right under that Amendment. Pa. Const. Art. I, § 27; *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 953-54, 976 (Pa. 2013) (plurality) (“*Robinson Township*”); *Pa. Env’tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 930-31 (Pa. 2017) (“*PEDF*”); *McKinstry-Dernbach, supra*. Moreover, the Environmental Rights Amendment makes the Commonwealth and all of its constituent units trustees for the values that it protects, including the right to a natural environment not unduly disrupted by GHG pollution. *Id.* Science tells us that, to prevent this disruption, developed nations, including the United States (and Pennsylvania as a major source of GHG emissions within the United States) must take immediate action to reduce GHG emissions to achieve a 45% reduction of emissions from 2010 levels by 2030 and GHG emissions neutrality by 2050.<sup>4</sup>

At minimum, the constitutional duty to conserve a natural climate “requires Pennsylvania to do as much as it can, using existing authority.” *McKinstry-Dernbach*, 9 Mich. J. Env’tl & Admin. at 79. Because the Pennsylvania Air

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<sup>4</sup> Intergovernmental Panel on Climate Change (“IPCC”), Myles Allen *et al.*, *Global Warming of 1.5 °C* (Oct. 6, 2018) (“*IPCC 2018 Report*”), [www.IPCC%20-%20SR15.htm](http://www.IPCC%20-%20SR15.htm) at SPM-19.



Pollution Control Act provides ample legal authority, Pennsylvania can and must use that authority to promulgate the proposed RGGI regulation to achieve its projected GHG emissions reductions from fossil fuel-fired power plants. Indeed, as set forth in Sections III and IV of these comments, Pennsylvania cannot stop there. After adopting the proposed RGGI regulation, it must continue to regulate across the economy and to achieve net zero GHG emissions by 2050.

The constitutional duty does not stop with the Administration. It applies to legislation enacted by the General Assembly. *See Robinson Twp. v. Commonwealth*, 83 A.3d 901, 969 (Pa. 2013) (plurality) (“*Robinson Township*”); *Pa. Env’tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 930-36 (Pa. 2017) (“*PEDF I*”). In *Robinson Township*, our Supreme Court invalidated legislation that it found to interfere with municipalities’ obligation to regulate land use consistent with their duty as trustees for constitutionally protected public natural resources under Article I, § 27. By the same token, legislation that reduces the existing power of the Administration to adopt regulations aimed to protect the naturally occurring climate from disruption by GHG pollution would also be unconstitutional. That would include, for example, bills introduced in the 2019-20 legislative session (likely to be re-introduced this session<sup>5</sup>) that would require

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<sup>5</sup> Members-elect of the Pennsylvania General Assembly were officially sworn into office for the 2021-22 legislative session on January 5, 2021.

additional action by the General Assembly before the proposed regulation or any action to limit GHG emissions could be adopted. *See, Dernbach-McKinstry, supra*, 9 Mich. J. Env't'l & Admin. at 112-113.

**B. The RGGI Regulation is Authorized by the Pennsylvania Air Pollution Control Act.**

**1. Participation in the RGGI Interstate Trading Program is Expressly Authorized.**

The proposed RGGI Regulation and its implementation through participation in the cooperative interstate RGGI program is expressly authorized by the Pennsylvania Air Pollution Control Act (“APCA”). Moreover, the Pennsylvania Uniform Interstate Air Pollution Agreements Act authorizes participation in air pollution control programs on a regional basis, encouraging the Pennsylvania Department of Environmental Protection (“DEP”) to coordinate and cooperate with “State and local authorities of other states affected by air sheds or regional air masses lying partly within another state or states, or moving between or among this State and another state or states.” 35 Pa. Cons. Stat. §§ 4101-4106. This authorizes the provision for interstate trading in the RGGI Program as provided by the proposed RGGI regulation. The Commonwealth currently participates in the interstate NO<sub>x</sub> trading program pursuant to this same authority. 25 Pa. Code §§ 123.101-123.121.

## **2. Participation in RGGI is Consistent with the Compacts Clause of the United States Constitution.**

Contrary to the protestations of opponents of the proposed regulation, participation in RGGI does not violate the Compacts Clause of the United States Constitution. U.S. Const. Art. I, § 10, cl. 1. That Clause limits the ability of states to enter into *binding* agreements with one another or foreign governments. The Compacts Clause requires that states obtain the consent of Congress to “enter into any Agreement or Compact with another State, or with a foreign Power.” U.S. Const. Art. I, § 10, cl. 3.

This provision has long been interpreted to apply only where the agreement or compact will be binding on the state and “directing to the formation of any combination tending to the increase of political power in the states, which may encroach upon or interfere with the just supremacy of the United States.” *United States Steel Corp. v. Multistate Tax Commission*, 434 U.S. 452, 468, 98 S.Ct. 799, 810 (1978), quoting *Virginia v. Tennessee*, 148 U.S. 503, 519, 13 S.Ct. 728, 734, 37 L.Ed. 537 (1893). States are free to enter into non-binding multi-lateral arrangements where this will not increase the states’ political power vis-a-vis the federal government. *Id.* In *United States Steel Corp. v. Multistate Tax Commission*, *supra*, the Supreme Court upheld the formation of a multi-state tax commission formed to develop tax policy for various states against a compacts clause challenge even where no Congressional consent had been approved. The

policy developed by the Commission would be implemented by each state individually, and there was no binding requirement to implement the policy. In the absence of such a binding requirement, the Court found that Congressional approval was not required because the compacts clause is “directed to the formation of any combination tending to the increase of political power in the states, which may encroach upon or interfere with the just supremacy of the United States.” *Id.* at 701 (*quoting Virginia v. Tennessee*, 148 U.S. 503, 519 (1893)). Thus, states can enter into non-binding cooperative arrangements with each other, as eleven states and a Canadian province have already done in both the existing Regional Greenhouse Gas Initiative and the California-Quebec program, without violating the clause. Furthermore, Pennsylvania would have independent authority under state law to implement this CO<sub>2</sub> Budget Trading Program even if RGGI did not exist, and the Commonwealth maintains authority and discretion under §145.401 to conduct Pennsylvania-run auctions if DEP determines this would exceed the benefits of participation in the multistate auction process.

**3. Promulgation of the Proposed Regulation Establishing a Cap on GHG Emissions and Providing for the Auction and Trading of Allowances is Authorized by and Consistent with the Pennsylvania Air Pollution Control Act.**

The APCA grants authority to promulgate the proposed RGGI regulation under two independent lines of reasoning. First, it is authorized by virtue of the state statute’s authorization to implement the provisions of the federal Clean Air

Act, under which GHG emissions from fossil-fired power plants are pollutants that can be and are regulated. Second, the Act also provides independent authority to regulate GHG emissions.

The APCA states that DEP “shall have the power and its duty shall be to [i]mplement the provisions of the Clean Air Act in the Commonwealth.” 35 Pa. Cons. Stat. § 4004(1). The Act further provides that the EQB “[s]hall have the power and its duty shall be to [a]dopt rules and regulations to implement the provisions of the Clean Air Act,” which “shall be consistent with the requirements of the Clean Air Act and the regulations adopted thereunder.” 35 Pa. Cons. Stat. § 4005(a)(8). GHGs are now clearly pollutants regulated under the Clean Air Act. *Coal. for Responsible Regulation, Inc. v. U.S. Env’tl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012) *aff’d in part and rev’d in part on other grounds sub nom. Util. Air Regulatory Grp. v. Env’tl. Prot. Agency*, 134 S. Ct. 2427 (2014); *see also Funk v. Wolf*, 144 A.3d 228, 250, n.17 (Pa. Commw. Ct. 2016), *aff’d without opinion*, 158 A.3d 642 (Pa. 2017). DEP must regulate those gases, at least to the extent required under the federal Clean Air Act.

EPA has twice promulgated regulations limiting GHG emissions from fossil-fired power plants, first as the Clean Power Plan, 80 Fed. Reg. 65662 (Oct. 23, 2015) and then as the Affordable Clean Energy Rule (“ACE”), 84 Fed. Reg. 32520 (July 2019). President-elect Biden’s climate platform makes it clear that the

current regulation will be considerably strengthened under the incoming administration. Thus, Pennsylvania currently has a mandate to regulate GHG emissions from power plants under the federal Clean Air Act and that mandate is very likely to be strengthened in the near future. The proposed RGGI regulation would be consistent with that mandate. It could, in fact, be incorporated into the State Implementation Plan (“SIP”) required by the ACE Rule to be filed by July 8, 2022. It is, therefore, undoubtedly authorized under the APCA.

Pennsylvania has promulgated other regulations that establish a cap-and-trade program, with an auction or other method for distributing allowances, to meet its obligations under the federal Clean Air Act. As noted in the Preamble, these have included the acid rain program established by the 1990 Amendments to the Clean Air Act, the Ozone Transport Commission's (OTC) NO<sub>x</sub> Budget Program, the NO<sub>x</sub> cap and trade program under the NO<sub>x</sub> SIP Call, the Clean Air Interstate Rule and the Cross-State Air Pollution Rule. See 25 Pa. Code §§ 123.101-123.121.

Use of tradable allowances distributed by way of auctions is specifically contemplated by the federal Clean Air Act. Section 110(a)(2)(A) of the Clean Air Act and the definition of “Federal Implementation Plan” (“FIP”) both make it clear that these standards of performance may include a wide variety of implementation measures, including both traditional “command and control” emissions limitations

and various market-based measures, such as a cap-and-trade program.

Specifically, section 110(a)(2)(A) of the Clean Air Act requires that each State

Implementation Plan “shall”

include enforceable emission limitations and other control measures, means, or techniques (*including economic incentives such as fees, marketable permits, and auctions of emissions rights*), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter[.]

42 U.S.C. § 7410(a)(2)(A) (emphasis added). Section 110(c) of the Clean Air Act,

*id.* § 7410(c), mandates promulgation of a FIP where the Administrator makes a

finding that a state implementation plan (“SIP”) is inadequate, as occurred in the

Cross-State Air Pollution Rule. *See EPA v. EME Homer City Generation, L.P.*,

572 U.S. \_\_\_, 134 S. Ct. 1584 (2014). The Clean Air Act defines the term

“Federal Implementation Plan” to mean:

[A] plan (or portion thereof) promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a State implementation plan, and which includes enforceable emission limitations or other control measures, means or techniques (*including economic incentives, such as marketable permits or auctions of emissions allowances*), and provides for attainment of the relevant national ambient air quality standard.

*Id.* § 7602(y) (emphasis added). Because the Pennsylvania APCA is expressly

intended to implement the federal Clean Air Act, these federal provisions expressly

authorizing cap-auction-and-trade provisions must be read *in pari materia* with the

Pennsylvania statute to authorize the cap-auction-and-trade program contemplated by the proposed RGGI Regulation.

Further, the EQB's duty to adopt regulations limiting GHG emissions goes beyond the minimum that may be required under the Clean Air Act, even without considering the Commonwealth's duty as a trustee under Article I, § 27 of the Pennsylvania Constitution. The APCA provides the EQB with the authority and the mandatory duty to:

Adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth or to such parts or regions or subregions thereof specifically designated in such regulation which shall be applicable to all air contamination sources regardless of whether such source is required to be under permit by this act.

35 Pa. Cons. Stat. § 4005(a)(1).

The APCA defines "air contaminant" to include a "gas," which therefore includes greenhouse gases. *Id.* at § 4003 (definition of "air contaminant"). The statute defines "air contamination" as the "presence in the outdoor atmosphere of an air contaminant which contributes to any condition of air pollution". *Id.* The EPA endangerment finding under the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009), the DEP reports under the Climate Change Act, and a wide variety of other scientific studies support the conclusion that GHGs constitute air pollution as defined in the Pa APCA. *See Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497,



528-530 (2007) (analysis of why greenhouse gases are air pollutants under the Clean Air Act).

The DEP, accordingly, has authority under existing law to regulate GHGs through adoption of regulations by EQB, even in the absence of regulations under the federal Clean Air Act. The Pennsylvania Climate Change Act requires not only a report on greenhouse gas impacts every three years but also requires DEP to develop a climate change action plan for submission to the Governor identifying “cost-effective strategies for reducing and offsetting GHG emissions.” 71 Pa. Cons. Stat. §§ 1361.3, 1361.7 (2018). This provision would not make sense unless the APCA authorized the adoption of regulations that controlled GHGs so as to provide for their reduction or offsetting. The fact that the plan is submitted to the administrative branch rather than the legislative branch suggests that the General Assembly contemplated that the administrative branch could implement those strategies through rule-making and other actions already authorized by the General Assembly.

The fact that the RGGI regulation is more stringent than the ACE rule is immaterial. Both the APCA and Article I, § 27 authorize the Department to adopt regulations more stringent than federal regulations and require more stringent regulations where necessary to protect health and conserve the Commonwealth’s public natural resources. *Commonwealth, Dep’t of Env’tl Res. v. Pa. Power Co.*,

384 A.2d 273, 284-85 (Pa. Commw. Ct. 1978); *see Funk v. Wolf*, 144 A.3d 228 , 250 (Pa. Commw. Ct. 2017) ), *aff'd without opinion*, 158 A.3d 642 (Pa. 2017) (noting “Respondents further acknowledge that the General Assembly, through the APCA, bestowed upon them a duty to promulgate and implement rules and regulations to reduce CO<sub>2</sub> and GHG emissions,” and citing 35 P.S. § 4004(1) and “*Massachusetts v. Environmental Protection Agency*, 549 U.S. at 528–29, 127 S.Ct. 1438,” but holding there was no mandatory duty supporting mandamus.). The Clean Air Act expressly reserves the right of states to adopt regulations for stationary sources more stringent than federal requirements. 42 U.S.C. § 7416.

**C. An Auction of Permission to Pollute is Not a Tax.**

The argument that the RGGI Rule requires authorization beyond that already provided because the auction is a tax is a red herring. There is no right to pollute. By causing GHG pollution by creating carbon dioxide through combustion of fossil fuels, a polluter is appropriating a public natural resource, whose ownership is committed to the Commonwealth, including future generations. Requiring that this right be auctioned with an appropriate reserve price means that the polluter must pay for the resources, just as those who acquire other public natural resources must pay. Thus, private parties must acquire timber or mineral resources from public lands through auctions with a reserve price and hunters and fishers must pay the Commonwealth for a license to take those public resources. The failure of the

Commonwealth to charge for GHG polluters' use of a public resource (*i.e.*, the capacity of the atmosphere to absorb GHGs without causing climate disruption) is a failure of the Commonwealth's duty as a trustee under Article I, § 27 of the Pennsylvania Constitution.

In failing to charge for this private appropriation of a public resource, the Commonwealth perpetuates an inappropriate economic incentive to pollute. If the resource is free to all comers, fossil-fuel power generators and other polluters that might otherwise turn to cleaner technologies have no incentive to do so. Charging for the social and economic costs of carbon dioxide generation will correct for this distorted incentive and create a more efficient market for power generation that results in GHG emissions. It will also assure that Pennsylvania energy companies that develop technologies appropriate to an effective market for public resources will have opportunities for market success and will lead the way in reducing emissions.

The issue of whether a cap-and-trade program distributing allowances by way of an auction with a reserve price was a tax was specifically considered and rejected by the California Court of Appeals. That Court examined the attributes of California's GHG allowance auction, which utilizes a reserve price, and found that it operated as a sale, not a tax. *Cal. Chamber of Commerce v. State Air Res. Bd.*, 216 Cal. Rptr. 3d 694, 700 (Cal. Ct. App. 2017) ("These twin aspects of the

auction system, voluntary participation and purchase of a specific thing of value, preclude a finding that the auction system has the hallmarks of a tax.”). That reasoning is equally applicable to the proposed RGGI regulation.

### **III. The RGGI Rule is a Needed First Step but Insufficient Action to Address Climate Disruption.**

The RGGI Rule is an important beginning but insufficient to address the existential crisis of climate disruption. It addresses less than half of the Commonwealth’s overall GHG emissions footprint and represents only one of many tools that must be employed. As long as emissions allowances are auctioned or sold at a sufficiently high price, with proceeds deposited in the Clean Air Fund and directed as suggested here, other tools will be made available and those tools can partially address other sectors. Nevertheless, as discussed in Section IV of these Comments, the cap must be extended to other sectors.

#### **A. A Descending Cap is Necessary, and an Auction with Trading is the Fairest and Most Effective Way to Allocate Rights to Emit GHGs.**

As an initial matter, a descending cap, as provided by the RGGI Rule but going to the point of carbon neutrality by a given date, is a necessary element of a suite of measures to reduce GHG pollution. A steadily descending cap provides industry and society as a whole the planning certainty to support capital investment for infrastructure that will need to be in place in 2050 and beyond. This is

particularly true for the electricity generation, transmission and distribution sector, which must make large capital investments through that period.

The need for a descending cap to provide guidance for long term capital investments extends well beyond the electricity industry. As noted by the Department in the Preamble to the proposed rulemaking, according to the 2020 Inventory, electricity generation produces just 29% of the Commonwealth’s GHG emissions. Although this is significant, to prevent the worst impacts of climate disruption, Pennsylvania, like the rest of the world must achieve carbon neutrality in *all* sectors of the economy by 2050. While there are many possible pathways to achieve this “deep decarbonization,” electrification of other sectors of the economy – transportation, buildings, industry, and waste<sup>6</sup> - is widely expected to be required.<sup>7</sup> These measures will increase electricity demand, while also requiring decarbonization of the electricity sector.

Deep decarbonization will require electrification of our buildings, transportation, and much of our industrial infrastructure before and by 2050.

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<sup>6</sup> Agriculture and forestry will also need to be addressed. However, to the extent that these sectors are not electrified, a suite of measures can be employed in these sectors to use or capture natural biogenic emissions and even achieve overall carbon capture. Forestry today is achieving negative emissions.

<sup>7</sup> James H. Williams et al., Energy and Environmental Economics, Inc. *et al.*, US 2050 REPORT, VOLUME 2: POLICY IMPLICATIONS OF DEEP DECARBONIZATION IN THE UNITED STATES at 12 (2015); Vicki A Arroyo *et al.*, AMERICA’S ZERO CARBON ACTION PLAN (2020) at 16, *available at*, <https://www.unsdsn.org/Zero-Carbon-Action-Plan>.

Industries that cannot electrify will need to convert to fuels generated by sustainable biomass, employ different manufacturing methods that will not emit GHG pollution, or install carbon capture and sequestration. Moreover, deep decarbonization will also require that new infrastructure employ the best measures for energy efficiency and conservation. A suite of regulatory measures will be required. For example, building and zoning codes represent the least cost mechanism to assure that new construction is energy efficient and electrified rather than reliant on fossil fuels for heating, cooling and cooking. Nevertheless, all of these measures must be backed by a cap going to zero on a foreseeable schedule with an escalating price on emissions or fuels, so that companies and individuals can justify capital investments now.

A descending cap on emissions covering all sectors of the economy requires a fair way to allocate emissions allowances. The fairest and most efficient way (with a few exceptions) is by way of an auction with a reserve price for tradeable allowances. GHGs are emitted by every sector of the economy and by virtually all residents, as they drive their cars, heat their homes and cook their food. Allocating non-tradeable allowances by a formula based on past emissions leads to a high cost of compliance, because those that can easily reduce emissions will do only what is required and those for whom compliance is expensive will none-the-less pay a high

price for full compliance. Tradeable allowances permit the low-cost avoiders of emissions to do most of the work, reducing the overall social cost of compliance.

Providing free allowances to use this limited public resource to some but not all sources of pollution, whether in a cap-and-trade program or by way of traditional command-and-control permits, does not treat all emitters equitably. Moreover, allocating the limited remaining capacity of the atmosphere to absorb GHG emissions without causing climate disruption at no cost neither provides an incentive to reduce emissions nor generates revenues to use for other needed measures. As noted in Section II.C of these comments, this is the equivalent of giving away timber from state lands or wildlife without payment; it also violates the Commonwealth's duty as a trustee under Article I, § 27 of the Pennsylvania Constitution. *See, McKinstry & Dernbach, supra.*<sup>8</sup> An auction of tradeable allowances, by contrast, treats all emitters alike, and sends a price signal as to the value of future GHG emissions reductions. Moreover, the ability to bank and trade allowances in RGGI and other allowance markets has led to the development of

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<sup>8</sup> There are cases where providing free allowances or allowances at a reduced price can be warranted. For example, providing free allowances to waste coal facilities that are burning legacy waste coal piles that would otherwise burn in uncontrolled waste and gob piles while contaminating Pennsylvania streams can be constitutionally justified, since the allowances are, in a sense, paying for environmental remediation. Likewise, awarding free allowances or allowances at reduced cost as a means of preventing leakage to jurisdictions that do not put a price on GHG emissions may also be justifiable.

well-functioning futures markets, which provide industry with greater predictability and transparency.

**B. Arguments that RGGI and California's Auction-Cap-Trade-and-Invest Program Have Not Driven GHG Emissions Reductions are Speculative and Unsupported.**

Some argue that RGGI is not needed because emission reductions in RGGI states have occurred primarily due to coal plants shutting down (fuel switching to combined cycle natural gas-fired generation) and this would have happened even without RGGI. This argument fails to recognize the changing dynamics of power generation in this region.

A large number of factors go into the long-term strategy of power companies facing substantial capital investments in old generating plants. This includes relative heat rate of the plant, projected energy prices, projected energy demand, total projected capital expenditures in the business planning horizon, and projected annual operating and maintenance expenditures required to keep the plant running -- which would, of course, include the costs of regulatory compliance.

Over the last decade, as cheap natural gas has led to a proliferation of combined-cycle natural gas-fired plants, and, less efficient, more costly coal-fired plants began to shut down. These retirements occurred both with and without RGGI. For example, in Pennsylvania, the percentage of power from coal plants in the generation mix from 2010 – 2019 fell from 47% to 17%. DEP projects that



coal plants will continue to retire in Pennsylvania even without RGGI, and they will represent only 3% of Pennsylvania's generation mix by 2030. This projection, however, does not suggest that RGGI will not drive reductions in reliance on fossil fuels that are greater than would occur without RGGI.

DEP's modeling shows that RGGI would help to further drop coal's share of the generation mix by 2030 from 3% without RGGI to 1% with RGGI. The modeling also shows that gas would drop from 57% without RGGI to 56% with RGGI and nuclear would increase from 34% without RGGI to 37% with RGGI. Longer-term, as the cap continues to drop it can be expected to lead to more dramatic reductions in natural gas-fired generation. Governor Wolf's backing of RGGI has already altered investment calculations and forestalled the shutdown of some nuclear units. If anything, the appropriate conclusion is not that RGGI is unnecessary but rather that it will not be enough for Pennsylvania to achieve the GHG reductions necessary to avoid the worst impacts of climate disruption.

Many have also argued that California's economy-wide auction-cap-and-trade program has not reduced GHG emissions. They argue that other measures, such as California's mobile source emissions program, alternative fuel program, the State's investment of auction proceeds in other measures, and other complementary measures have instead produced the reductions. These arguments are not backed up by sound modeling and represent a fundamental

misunderstanding of the place of a cap in the policy framework necessary to address climate change. As explained elsewhere, deep decarbonization requires a suite of technologies and policy measures. Over a thousand such measures have been identified in the leading legal treatise on deep decarbonization. Michael B. Gerrard & John C. Dernbach, eds., *LEGAL PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES: SUMMARY & KEY RECOMMENDATIONS* (Environmental Law Institute 2018) (“*Pathways*”).

Multiple tools must be used together as complementary measures to achieve deep decarbonization cost-effectively and in time to avert the worst ravages of climate disruption. No one measure works alone. One can build a primitive log cabin with an axe, but a modern home requires a whole suite of tools.

In examining the tools identified for each sector in *Pathways*, putting a price on GHG emissions and capping those emissions with flexible trading appears as a critical tool in the discussion for each sector. A cap is a necessary backstop, and a cap cannot be applied without allowances, trading, and an initial distribution mechanism. No one should be allowed to dispose of waste GHGs in the atmosphere without paying for such use. Indeed, as argued above, Article I, § 27 requires that polluters pay.

California has been applying a suite of measures, including its economy-wide auction-cap-trade-and-invest program, whose revenues are invested in other

programs to reduce GHG emissions. California Air Resources Board, *Cap-and-Trade Program*, <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program>. Similarly, RGGI proceeds have been generating investments that reduce GHG emissions. In the case of both RGGI and California's programs, it is the state's overall program that is successfully reducing emissions so that the economy-wide emissions are being reduced in accordance with the descending cap.<sup>9</sup> Where an integrated program is achieving documented reductions, it defies common sense to claim, without significant and appropriate statistical analysis, that a single element of that program is unnecessary.

**IV. Further Action to Include Additional Sectors an Economy-wide GHG Reduction Program is Necessary. The *Climate Protection Petition* Currently Before the EQB Would Support the RGGI Program and Can be Readily Modified to Include the RGGI Program.**

The proposed RGGI regulation will regulate only a portion of Pennsylvania's GHG emissions and the schedule of the reductions in its cap, as

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<sup>9</sup> "The lifetime effects of 2018 RGGI investments are projected to avoid the release of 4.6 million short tons of carbon pollution. RGGI-funded programs also save consumers money and support businesses. RGGI investments in 2018 are estimated to return \$2 billion in lifetime energy bill savings to over 120,000 households and over 1,200 businesses that participated in programs funded by RGGI proceeds, while over 750,000 households and businesses received direct bill assistance in 2018."  
<https://duckduckgo.com/?t=ffnt&q=The+Investment+of+RGGI+Proceeds+in+2018&atb=v185-1&ia=web>. See, The Regional Greenhouse Gas Initiative, *The Investment of RGGI Proceeds in 2018* (July 2020), available at [https://www.rggi.org/sites/default/files/Uploads/Proceeds/RGGI\\_Proceeds\\_Report\\_2018.pdf](https://www.rggi.org/sites/default/files/Uploads/Proceeds/RGGI_Proceeds_Report_2018.pdf).

currently proposed, will be insufficient to achieve the reductions necessary to achieve GHG emissions neutrality by 2050. Even if and when Pennsylvania joins and implements the Transportation and Climate Initiative (“TCI”), that initiative is only at the design stage, will require years to develop and implement, and even then RGGI and TCI together will address only 53 % of Pennsylvania’s GHG emissions. *See* Transportation and Climate Initiative Program, *Memorandum of Understanding*, <https://www.transportationandclimate.org/sites/default/files/TCI%20MOU%2012.2020.pdf>; Pennsylvania Greenhouse Gas (GHG) Inventory - 2020, <https://www.dep.pa.gov/Citizens/climate/Pages/GHG-Inventory.aspx>. Moreover, putting a price on electricity use through RGGI and Pennsylvania’s outdated AEPS, without also putting a price on GHG emissions from direct use of fossil fuels and industrial processes burning those fuels, poses an economic deterrent to the electrification in other sectors that will be necessary to achieve deep decarbonization by 2050.<sup>10</sup>

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<sup>10</sup> The current AEPS puts the price on its subsidy of favored technologies on electricity users and should be replaced with a technology neutral clean energy standard that puts a price on electricity generators that emit GHG pollution. *See*, C. Baird Brown & Robert B. McKinstry, Jr., *From RPS to Carbon: An Evolutionary Proposal*, 50 E.L.R.10755 (Sept. 2020). Of course, the replacement of ,or change to, the AEPS will require legislative action. The changes recommended here can be achieved by way of regulatory action by the EQB.

The EQB has before it a proposed regulation, similar in framework to California’s economy-wide GHG auction-cap-trade-and-invest program, that could rapidly fill the gap and impose a price on emissions from the transportation (62.38 MMTCO<sub>2</sub>e), commercial (10.94 MMTCO<sub>2</sub>e), residential (18.53 MMTCO<sub>2</sub>e), and waste management (4.27 MMTCO<sub>2</sub>e) sectors.<sup>11</sup> *Climate Protection Petition, supra*. The regulation contained in the *Climate Protection Petition* can readily be modified to make it consistent with the proposed RGGI Regulation without endangering Pennsylvania’s participation in RGGI. Although that regulation is the subject of a different rulemaking proceeding, we urge DEP, in the long-overdue report on the regulation, to propose moving forward with the changes we propose here. This would represent the most timely and cost-effective mechanism for filling the important gap in reaching neutrality by the middle of the century.

The regulation in the *Climate Protection Petition* already contemplates linkage to both RGGI and the California programs. Given that Pennsylvania will have finalized the proposed RGGI regulation before the regulation in the *Climate Protection Petition*, small modifications to the regulation in the *Climate Protection Petition* could readily be made so that both regulations are working together,

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<sup>11</sup> 2020 *Pennsylvania Greenhouse Gas Inventory Report* (July 2020) at 6, <http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2020/Pennsylvania%202020%20GHG%20Inventory%20Report.pdf>.

compatibly, to achieve maximum emissions reductions as efficiently as possible while maximizing revenues for the Commonwealth.

**V. Meaningful Action to Address the Climate Crisis by Limiting Emissions of GHG Pollutants is Ethically Required.**

The most basic and powerful reason for taking meaningful action to limit emissions of GHG pollution concerns the duty of humans not to cause harm to life. Whether phrased as a religious mandate to protect the “creation,” or as an ethical mandate to respect the rights of others, the world’s leading religious and ethical leaders have reached an overwhelming consensus on the importance of taking strong and immediate action on reducing GHG emissions. This is not a choice right now for Pennsylvania but a duty, not just as a matter of law as explained above, but as a more fundamental moral or ethical duty that fully justifies the corresponding legal duty.

Philosophers and religious leaders who have examined the climate crisis and the arguments against taking action have overwhelmingly concluded that ethical principles demand action consistent with the IPCC’s recommendations and that the arguments against such action are inconsistent with universally held ethical principles. Donald A. Brown, *et al.*, *White Paper on the Ethical Dimensions of Climate Change*, <https://rockethics.psu.edu/documents/whitepapers/edccwhitepaper.pdf>; Stephen Gardiner, *The Ethical Dimension of Tackling Climate Change*,

YaleEnvironment260 (Oct. 20, 2011),

[https://e360.yale.edu/features/the\\_ethical\\_dimension\\_of\\_tackling\\_climate\\_change;](https://e360.yale.edu/features/the_ethical_dimension_of_tackling_climate_change;)

Pope Francis, *Laudato Si; Encyclical on Climate Change & Inequality: On Care for Our Common Home*, (2015),

[https://e360.yale.edu/features/the\\_ethical\\_dimension\\_of\\_tackling\\_climate\\_change.](https://e360.yale.edu/features/the_ethical_dimension_of_tackling_climate_change.)

## **VI. RGGI Revenues Can and Should Be Directed to Programs to Support Emissions Reduction and Environmental Justice**

States that have participated in the RGGI cap-and-invest program have reduced their GHG emissions while increasing their gross state product and creating good jobs. They have done so by reinvesting revenues from auctions of the pollution allowances into other measures that reduce GHG emissions. This was the conclusion of the well-respected Analysis Group following a three-year review of the results of the program:

During this period, the emissions cap for power plants in the region was lowered, and the prices power generators had to pay for emissions rose,” said report co-author [Paul Hibbard](#), a Principal with Analysis Group. “Some observers had wondered whether tightening emissions targets would choke off the modest but consistent stream of economic benefits the region has seen since RGGI went into effect in 2009. But that didn't happen: economic benefits and job creation continued, at magnitudes similar to what we've seen in previous study periods.”<sup>12</sup>

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<sup>12</sup> <https://www.analysisgroup.com/news-and-events/press-releases/new-data-from-analysis-group-show-limiting-carbon-emissions-from-power-plants-continues-to-boost-the-economy-and-create-jobs/> This quotation relates to the third three-year review of RGGI, which can be found at:

Pennsylvania can do the same by directing the GHG auction proceeds to the Clean Air Fund. If these funds are then used to assist or leverage the finance of non-emitting energy generation technology, energy efficiency, energy storage, energy conservation, and smart energy management as the RGGI states have done, Pennsylvania's program will have the same result. Directing funds to municipal or county sustainable energy utilities will be a particularly effective mechanism for achieving these results, while helping our local governments do the same for their residents. Philadelphia has already created the Philadelphia Energy Authority, a sustainable energy authority similar to the model of Efficiency Vermont and the Delaware Sustainable Energy Utility. Directing these investments to low-income residents and communities will be particularly effective in reducing GHG emissions because those communities lack access to capital and would most likely be incapable of making those investments otherwise. This would also promote environmental justice and do so more sustainably than simply reducing electricity rates by subsidization.

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<https://www.analysisgroup.com/news-and-events/news/latest-study-from-analysis-group-confirms-that-rggi-program-continues-to-boost-the-economy-and-create-jobs/>.



**A. The Clean Air Fund Can Be Directed to Finance or Leverage the Financing of a Wide Range of Uses that will Reduce GHG Emissions in Many Economic Sectors and Promote Environmental Justice.**

The law and regulations governing use of the Clean Air Fund support the types of uses of auction proceeds that will generate jobs and promote environmental justice while further reducing GHG emissions.<sup>13</sup> DEP contemplates use of the Fund in this manner. The proposed rulemaking states at § 145.401(d) that the DEP “will retain control over the proceeds associated with the sale of all of Pennsylvania CO<sub>2</sub> allowances, whether sold in a multistate or Pennsylvania CO<sub>2</sub> allowance auction and will credit the proceeds to the Clean Air Fund.” The Clean Air Fund was established in 1974 pursuant to the APCA, which grants the DEP authority to implement the provisions of the Clean Air Act in Pennsylvania. 25 Pa. Code § 143; 35 Pa. Cons. Stat. § 4001. The Fund is to “be administered by the department for use in the elimination of air pollution.” 35 Pa. Cons. Stat. § 4009.2(a). The APCA’s specific policy goals include protecting “the air resources of the Commonwealth to the degree necessary for the (i) protection of public health, safety and well-being of its citizens; (ii) prevention of injury to plant and animal life and to property; (iii) protection of the comfort and convenience of the

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<sup>13</sup> Richard Marcil, *Allocations of Funds Under Pennsylvania’s Regional Greenhouse Gas Initiative Program* (2020). This paper also contains a detailed description of how each of the other RGGI states allocates its auction revenues.

public and the protection of the recreational resources of the Commonwealth; (iv) development, attraction and expansion of industry, commerce and agriculture.” Id. § 4002(a).

Disbursements from the Clean Air Fund are governed by 25 Pa. Code § 143.1. Under the regulation, funds are “disbursed at the discretion of the Secretary [of the DEP] for use in the elimination of air pollution.” 25 Pa. Code § 143.1(a).

The regulation states a broad commitment to all actions useful “in the elimination of air pollution” and then lists, without limitation, examples of such actions:

For the purpose of this chapter, the full and normal range of activities of the Department shall be considered to contribute to the elimination of air pollution []. Disbursement of Clean Air Fund monies may therefore be made for, but may not be limited to [emphasis added], the following purposes:

- (1) Purchase and operation of equipment for the purpose of air monitoring and for the purpose of collecting and analyzing data on air quality and air contaminant emissions.
- (2) Purchase and operation of other equipment for the purpose of laboratory analyses of air pollutants, field studies of air pollutants or their effects, enforcement of air pollution control regulations, and office and administrative support.
- (3) Purchase of contractual services and consultation from firms or individuals with air pollution or other relevant expertise.
- (4) Purchase of materials or services and travel necessary for personnel training and for provision of information and educational materials on air pollution to schools, colleges, institutions and citizens.
- (5) Extraordinary costs of litigation arising out of the enforcement of the air pollution laws of the Commonwealth such as the printing of briefs and records.

(6) Payment, in whole or in part, of the costs of a public project necessary to abate air pollution whether or not the exclusive purpose of that project is the abatement of air pollution. For projects where multiple purposes will be served, monies from the Clean Air Fund may be used to cover that proportion of the total expense that is estimated to be attributable to abate the air pollution portion of the project.

25 Pa. Code § 143.1(b).

Most of the expenditures permitted by the six above-listed provisions are obvious. But section (4) above is worth considering in greater depth due to its environmental justice potential. Outreach, education, and job training have not been high priorities for RGGI states. A 2018 analysis found that only 2 percent of all RGGI funds were devoted to these expense categories. Paul Hibbard, *et al.*, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States* 5 n.7 (2018),

[https://www.analysisgroup.com/globalassets/uploadedfiles/content/news\\_and\\_events/news/analysis\\_group\\_rggi\\_report\\_april\\_2018\\_executive\\_summary2.pdf](https://www.analysisgroup.com/globalassets/uploadedfiles/content/news_and_events/news/analysis_group_rggi_report_april_2018_executive_summary2.pdf).

Pennsylvania is right to invest in personnel training and outreach materials. When the state formally joins RGGI, Pennsylvania will become the coalition's leading producer of both coal and natural gas. To ensure a "just transition" in Pennsylvania -- one that allows the state to move towards a sustainable energy economy while providing workers (especially those who have been displaced by the decline of the fossil fuel industry) with new jobs and fair wages -- retraining and outreach investments will be crucial.

Retraining combined with support for investment in energy efficiency and clean energy will provide jobs. (Critics have inaccurately attacked RGGI as a job-killer for months. Rachel McDevitt, *Pa. Lawmakers Hear From Industry, Environmental Advocates on Impact of Cap-and-trade Program*, StateImpact Pennsylvania (June 24, 2020),

[https://stateimpact.npr.org/pennsylvania/2020/06/24/lawmakers-hear-from-industry-environmental-advocates-on-impact-of-cap-and-trade-program/.](https://stateimpact.npr.org/pennsylvania/2020/06/24/lawmakers-hear-from-industry-environmental-advocates-on-impact-of-cap-and-trade-program/))

Moreover, investment in retraining is wise in light of the damage wrought by COVID-19 pandemic. Clean energy is already a major job creator in the state, Rachel McDevitt, *Report: Clean Energy Jobs Among Fastest-growing in State from 2017-2019*, StateImpact Pennsylvania (Aug. 20, 2020),

[https://stateimpact.npr.org/pennsylvania/2020/08/20/report-clean-energy-jobs-among-fastest-growing-in-state-from-2017-2019/.](https://stateimpact.npr.org/pennsylvania/2020/08/20/report-clean-energy-jobs-among-fastest-growing-in-state-from-2017-2019/) It makes sense to capitalize on clean energy's proven track record of success to accelerate the shift away from fossil fuels while simultaneously rebuilding the state's economy.

In addition to job-retraining investments, outreach efforts will be equally necessary to educate the public as to why RGGI is necessary and to promote the alternative job opportunities that RGGI will make available.

In any case, the hypothetical investment scenario laid out by the DEP envisioned spending 31 percent of RGGI proceeds on energy efficiency, 31 percent

on GHG abatement, and 32 percent on clean and renewable energy investments.<sup>14</sup>

Given the foregoing analysis, these investment goals should be well within reach.

**B. RGGI Auction Proceeds Can and Should be Directed to the Following Uses.**

To the extent authorized, the Department should use RGGI auction proceeds to support the clean energy programs that have allowed RGGI states to help fund progress on building a new resilient green economy. Especially now, as we look ahead to the task of rebuilding the economy in the wake of COVID-19, funding economic and job growth in ways that are sustainable is especially urgent. Jobs in energy efficiency and renewable energy in Pennsylvania far outpace jobs in the fossil fuel sector according to the US Energy and Employment Report, a report compiled by state energy officials nationwide. Jobs in the fuels and fossil generation sector are only about 2/3 of the jobs in energy efficiency and clean energy generation (including nuclear). Moreover, three times as many jobs would be created per \$1 million invested in wind and solar generating capacity than would be generated by investment in fossil fuel power.<sup>15</sup> There are already almost

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<sup>14</sup> Pennsylvania Department of Environmental Resources, Air Quality Technical Advisory Committee, Draft Proposed Rulemaking (Slideshow) 22, <http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2020/5-7-20/AQTAC%20PA%20CO2%20Budget%20Trading%20Program.pdf>.

<sup>15</sup> “We find that on average, 2.65 full-time-equivalent (FTE) jobs are created from \$1 million spending in fossil fuels, while that same amount of spending

one-third as many jobs in energy storage and microgrids as there are in the traditional grid, and energy efficiency workers are the hardest to hire of all energy workers (which speaks to the need for training programs). Separately, a report commissioned by national clean energy groups demonstrates that clean energy jobs pay substantially better on average than the national median wage. These jobs cannot be exported. The following uses should be supported:

1. *Providing Funding to Sustainable Energy Utilities*

DEP should first and foremost devote funds to sustainable energy utilities (“SEUs”) modeled on the Delaware Sustainable Energy Utility or Efficiency Vermont. As discussed below, Philadelphia has already established an energy authority on this model and Pennsylvania counties and municipalities can establish similar sustainable energy authorities under the Municipality Authorities Act, 56 PA. Cons. Stat. Ann. §§ 5601-5621. The auction revenues devoted to an SEU can establish a revolving fund for financing projects or providing outright grants.

The Delaware Sustainable Energy Utility provides an excellent example of how Pennsylvania could use auction revenues to fund state or local revolving funds

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would create 7.49 or 7.72 FTE jobs in renewables or energy efficiency. Thus each \$1 million shifted from brown to green energy will create a net increase of 5 jobs.” Garrett-Peltier, H. 2016. *Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model*. 61 ECONOMIC MODELLING 439 (Feb. 2017), <http://www.sciencedirect.com/science/article/pii/S026499931630709X>.

to support clean energy projects. Formed in 2007, the Delaware SEU has been funded by a legislative commitment of half of Delaware's RGGI auction proceeds each year. Delaware's population is only about 800,000, but the SEU has had an astonishing impact on every segment of the Delaware economy and population.

Looking at its annual report for 2019 its programs included:

- Home performance with Energy Star
  - Provides home energy assessments
- ZeMOD (Zero Energy Modular Home)
  - Creates small zero energy modular homes built in Delaware
- Pre-weatherization Program
  - Gets homes eligible for the federal low-income Weatherization Assistance Program (*e.g.* fixes roof leaks)
- Affordable Multifamily Housing
  - Energy efficiency improvements for multi-family housing
- Energy Assessments for non-profits and governments
  - Energy Assessments provided by University of Delaware graduate students from its Mid-Atlantic Industrial Assessment Center
- Low interest revolving loan program
  - Pays for self-funding energy improvements for businesses, farms, non-profits schools and local governments.

- Pathways to Green Schools
  - Mini-grants for student eco-action and green team projects.
- Faith Efficiencies
  - Provides multiple supports for energy efficiency and clean energy for faith-based organizations
- Farm Programs
  - Comprehensive energy efficiency and renewable energy strategies for farms
- Lights-on Programs
  - Provides outdoor LED lighting on buildings to increase neighborhood safety
- Residential Solar loans
  - Low interest, up to \$30,000
- Energy Savings Performance Contracting
  - Major self-funding energy efficiency projects with tax-exempt finance.

Energy Savings Performance Contracting is a particularly effective mechanism that could be used by Pennsylvania energy authorities. Baird Brown worked with the Delaware SEU to complete a pooled financing of nearly \$70 million for six state agencies and two Delaware higher education institutions. The



aggregate energy savings in excess of debt service are over \$30 million. (That deal was later refinanced in 2020 for a further 10 percent debt service saving.) In 2019, Baird Brown and the Delaware SEU secured another \$20 million for three other major projects including two school districts. The SEU has now selected a bank to provide tax-exempt lease financing for such projects, and two other projects were financed in 2020.

One lesson from these efforts is that RGGI money provided the funding to set up these programs, allowed the SEU to make bridge loans for some of these projects until bond financing was completed, and has provided for construction management services for some of them. This small amount of RGGI capital (well less than \$1 million) has now leveraged over \$100 million in private capital for these programs. The SEU has also created an innovative job tracking system that collected job reports for each of the three projects financed in the 2019 bond issue. In total, 46,162 job-hours were reported, the equivalent of 22 fulltime jobs for one year.

Pennsylvania already has programs like these, and the Department should encourage others to be established. Two existing programs are the Philadelphia Energy Authority and the Pennsylvania Sustainable Energy Finance (“PennSEF”) program. The Philadelphia Energy Authority has taken a small amount of funding from the City and is well on its way to its goals of investing \$1 billion and creating

over 10,000 jobs over 10 years. The PennSEF program is a collaboration between the Pennsylvania Treasury and the Foundation for Renewable Energy and Environment. It was launched with a small grant from the West Penn Power Sustainable Energy Fund. It has had some notable successes such as an LED street lighting program for 35 municipalities in the counties surrounding Philadelphia in collaboration with the Delaware Valley Regional Planning Commission, but it has not had the funding to promote its objectives broadly. RGGI proceeds disbursed from the Clean Air Fund could leverage those efforts to rebuild the Pennsylvania economy more cleanly and more sustainably.

By making RGGI funds available to SEUs, the Department could also encourage counties, groups of counties, and groups of municipalities with populations similar to Delaware to form SEUs to support clean energy projects throughout the Commonwealth. These projects could support projects similar to those cited above, including projects supporting agriculture, forestry, and the forest products industry. These important rural economic sectors can supply sustainable biomass waste that can create usable energy rather than simply rotting or adding methane to the atmosphere. Multi-county SEUs could also support projects creating permanent jobs for the local populations in the Marcellus Shale region, rather than the fossil fuel jobs that all too often have gone to temporary residents from other states.

2. *Retraining and education in Clean Energy Jobs.*

Technical training and workforce development in energy efficiency; solar, wind and other forms of renewable energy; carbon sequestration; and other means of carbon mitigation can be supported by RGGI revenues. Particular support can be given to those workers in the fossil fuel industry who want to transition to the clean energy industry in order to foster a “just transition.” Similarly, particular focus on displaced, discouraged, unemployed, low income, and minority workers can alleviate income inequality statewide.

3. *Support of Federal, State and Local renewable energy, electrification, and conservation and energy efficiency programs.*

Existing programs that produce strong results can be expanded, building on success and local infrastructure. In some cases, these programs may need to be modified to maximize their carbon reduction benefits. For example the Weatherization Assistance Program should have carbon reduction added as a metric. This program has recently been extended and expanded to include renewable energy and indoor air improvements creating health benefits.

**C. Adoption of the RGGI Auction-Cap-Trade-and-Invest Regulation Will Promote Environmental Justice.**

Some critics of the RGGI and California auction-cap-trade-and-invest programs have suggested that these programs disserve environmental justice.

First, these critics argue that these programs harm the poor by increasing electricity

prices or, in the case of California, fossil fuel prices broadly, and that this will have a disproportionate impact on disadvantaged populations. Second, the critics argue that the programs will cause hot spots that will concentrate air pollutants harming health in disadvantaged neighborhoods. We believe, on the contrary, that RGGI can substantially advance environmental justice, but that, as with the statewide decarbonization project, RGGI by itself is not enough.

First, critics of GHG emission pricing mechanisms like RGGI sometimes suggest that GHG emissions pricing is regressive because it will lead to higher energy costs, which hurt disadvantaged communities the most. However, as an empirical matter it is not at all clear that that RGGI will lead to higher prices. As discussed above, prices have fallen in other RGGI states, and the ways in which costs imposed on fossil fuel generators play through the PJM auction pricing mechanism for wholesale power, even in a static analysis, are not simple. *See, C. Baird Brown & Robert B. McKinstry, Jr., From RPS to Carbon: An Evolutionary Proposal*, 50 E.L.R.10755, 10762 (Sept. 2020). Moreover, the all-in cost of new renewable generation is now generally less than new natural gas generation. So as the system evolves to cleaner generation, the overall cost in addition to the marginal costs are most likely to come down. Finally, the general energy price level affects customers primarily through the structure of the utility tariff. If the tariff is regressive, disadvantaged folks will bear the brunt of a price rise. That is

a matter of concern but is in the jurisdiction of the Public Utility Commission and not mandated or predicted by the proposed RGGI regulation.

The other dimension of the auction price effects is the significant RGGI proceeds that existing RGGI states have already directed and that Pennsylvania can and should direct to eliminating adverse economic impacts on low-income people, using the mechanisms that we suggest above. By directing funds to mechanisms such as subsidizing low-income weatherization, alternative energy, energy efficiency and transportation mechanisms, along with job training, this CO<sub>2</sub> Budget Trading Program can create a net benefit for disadvantaged communities.

The second line of attack suggests that a GHG auction-cap-trade-and-invest program will result in concentration of health-harming pollutants in low-income neighborhoods. This argument could have been true for the attempt by the Bush Administration to replace control of hazardous air pollutants from power plants under section 112 of the Clean Air Act with a cap-and-trade-program for mercury only. It is not at all true for a cap-and-trade program for GHGs.

The proposed RGGI regulation is a well-designed program to help achieve the critically important goal of substantially reducing GHG emissions to address climate disruption, which has disproportionately high adverse impacts upon disadvantaged populations worldwide. Pricing GHG emissions is one of the most effective tools to reduce those emissions. To the extent that RGGI succeeds in

discouraging continued operation of fossil fuel fired power plants, it will reduce emissions of other harmful pollutants as well. In fact, the RGGI program will reduce emissions from fossil fuel-fired power plants and cause the closure of many fossil-fired power plants, which can be located in low-income areas, so that emissions of those pollutants are likely to be reduced.

Moreover, the fact that a power plant may be located in a disadvantaged area does not mean that its emissions are felt there. Current air pollution control regulations that base air permit emissions limitations on local air quality impacts, requiring that those limits not exceed health-based National Ambient Air Quality Standards (“NAAQS”). This results in construction of tall stacks that result in those pollutants being carried miles away from the source rather than affecting the neighborhood of the source. For example, in the Cross State Air Pollution Rule modeling, EPA determined that emissions from sources in Texas would affect air quality in places as far away as Michigan and Pittsburgh.

If emissions of pollutants that adversely affect health could be concentrated as a result of GHG cap-and-trade resulting in hot spots, that effect (for which there is no supporting evidence<sup>16</sup>) should be addressed by tightening the NAAQS or

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<sup>16</sup> To the extent that conventional and hazardous air pollutants may be shown to be concentrated in California or the RGGI states, that correlation does not establish causation. Indeed, some of the highest concentrations of hazardous and conventional air pollutants are found in the so-called “cancer alleys” of Louisiana,

other regulations governing conventional and hazardous air pollutants under the sections of the Clean Air Act governing those pollutants. That effect should not be used as an argument against an effective regulatory mechanism to reduce GHG emissions.

**VII. Experience Shows that With Proceeds Directed in This Way, the RGGI Program will Boost Pennsylvania’s Gross State Product and Increase Jobs.**

We unequivocally agree with the EQB’s assessment of the economic benefits of joining the RGGI program. Aside from the significant health and other benefits that would accrue from reducing emissions from fossil fuels and avoiding the adverse impacts of climate change, RGGI would create jobs in Pennsylvania, save money for Pennsylvania consumers, and add millions of dollars in net economic value for the Commonwealth. This conclusion is based on over a decade of experience in other RGGI states. The benefits arise both from the existence of the cap with trading, itself, as well as the reinvestment of proceeds.

**A. A Descending Cap with an Announced Schedule will also Likely Generate Significant Economic Benefits.**

Instituting a cap-and- trade regime with an announced schedule of a gradually tightening supply of permits available for auction and trading not only

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Texas and West Virginia, which lack any program to price or reduce GHG emissions.

reduces total CO<sub>2</sub> generation over time, but it will likely generate important economic benefits, even if only applied to power generation:

- It will generate an immediate demand from the electricity sector for means of reducing emissions which may be satisfied in a variety of ways, including both improved energy efficiencies and clean generating capacity without forcing a particular technology when new options are continuously being developed.
- It will likely stimulate more innovation and competition on the part of distributed energy resource aggregators that provide utilities with tools for managing peak loads.
- The scheduled future cuts in supply of allowances will create a higher level of certainty about future conditions and thus an incentive for longer term investments in conservation, efficiency, and non-emitting generation.
- The prospective investments themselves will likely stimulate innovation in both energy efficiency and non-emitting energy sectors, by the power industry and other firms that can serve customer needs.
- Those innovations can be expected to generate Pennsylvania-based products and services that can be marketed outside Pennsylvania, expanding the total product of the Commonwealth.



**B. Studies of RGGI’s Auction-Cap-Trade-and-Invest Program Confirm that the Program Increases Economic Growth and Generates Jobs.**

The RGGI states’ combination of an auction-cap-and-trade program and investments in energy efficiency and alternative energy have, in fact, resulted in growth of state GDP and created jobs. This has been confirmed by economic studies of the results of RGGI implementation.

A recent report from the Acadia Center, a nonprofit organization committed to advancing the clean energy future, concluded that the gross domestic product of RGGI states grew by 47%, outpacing the rest of the country by 31%. Acadia Group, *The Regional Greenhouse Gas Initiative: Ten Years in Review* (2019), available at [https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center\\_RGGI\\_10-Years-in-Review\\_2019-09-17.pdf](https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center_RGGI_10-Years-in-Review_2019-09-17.pdf). Additionally, proceeds from RGGI auctions generated nearly \$3.3 billion in state investments from 2009 to 2019. Similarly, the Analysis Group, one of the largest economic consulting firms in the world, found that RGGI states added \$1.3 billion to \$1.6 billion in net economic value during each of the three RGGI control periods it examined (2009 – 2011, 2012-2014, 2015 -2017). Paul J. Hibbard, Susan F. Tierney, Pavel G. Darling & Sarah Cullinan, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States* (April 17, 2018) available at <https://www.analysisgroup.com/globalassets/uploadedfiles/content/insights/publish>

[ing/analysis\\_group\\_rggi\\_report\\_april\\_2018.pdf](#). These benefits included the following savings that accrued directly to residential, commercial, and industrial customers:

- Consumers of electricity saved \$99 million
- Consumers of natural gas and heating oil saved \$121 million

These savings were in addition to the benefits the customers received as members of the local economies.

These studies show that compared to non-RGGI states, the RGGI states increased their economic output, increased jobs, and reduced long-run wholesale electricity costs. The Acadia Center found that participating in RGGI produces these benefits particularly where the state uses its share of auction proceeds to increase energy efficiency (“EE”) and renewable energy (“RE”) within the state. For example, if Pennsylvania were to use its share of the auction proceeds to incentivize EE measures and invest in RE facilities with low operating costs, this would lower electricity prices in wholesale power markets (compared to prices without RGGI), which would in turn lower consumer bills over time. Auction proceeds used to pay for engineering services for energy audits, sales of energy-efficient equipment, and training of installers would largely be dollars spent within Pennsylvania -- which would have both direct and indirect multiplier effects, including increases in tax revenues.

Experience in the other RGGI states has shown that local investment of RGGI dollars on energy efficiency and renewable energy offsets the impact on electricity prices resulting from CO<sub>2</sub> allowance costs. The Analysis Group found that the inclusion of the cost of CO<sub>2</sub> allowances in wholesale prices tended to increase wholesale electricity prices in the RGGI region at the beginning of the 2015-2017 period. But these near-term impacts were more than offset during these years and beyond because the states invested a substantial amount of the RGGI auction proceeds on EE programs that reduced overall electricity consumption and on RE projects that reduce the use of higher-priced power plants. Consumers gained because their overall electricity bills went down. The Analysis Group found the net gain to be \$220 million for energy consumers in the RGGI program in 2015-2017.

This demonstrated success by the RGGI states provides a clear and unassailable road map for Pennsylvania to garner similar benefits for its citizens by joining RGGI.

### **VIII. Pennsylvania’s Alternative Energy Portfolio Standards and Energy Efficiency Requirements Are Not Adequate Substitutes for a RGGI Compliant Regulation**

Some commenters have suggested that the environmental, economic and health benefits of Pennsylvania’s renewable portfolio standards under the Alternative Energy Portfolio (“AEPS”) Act and energy efficiency requirements

under Act 129 should first be evaluated before Pennsylvania proceeds with a RGGI-compliant regulation. This suggestion arises suffers from three fundamental misunderstandings.

First, and most importantly, neither of those programs enables the state to creatively fund sustainable energy jobs in the ways described in Section V above. As demonstrated by the experience of the existing RGGI states, well-structured energy efficiency programs are particularly effective in growing the state's economy and increasing jobs while addressing the needs of low-income consumers.

Second, by participating in RGGI, Pennsylvania can cap the greenhouse gas emissions from the power generation sector. Although this still leaves out significant portions of the economy, it is better than the AEPS and Act 129 which provide no certainty on emission reductions.

Third, both programs are technology specific. The AEPS favors only certain non-emitting technologies. It leaves out the non-emitting technologies that currently generate the majority of Pennsylvania's carbon-free energy (*i.e.*, nuclear and large-scale hydro-electric). It also excludes emerging technologies, such as carbon capture and sequestration, energy storage (which can shift peak load reducing the need for dirtier generators at peak), and others that may be developed in the future. Solving the climate crisis requires an all-of-the-above approach. Act

129 is even more flawed. It simply looks at reduction of electricity or utility-supplied natural gas use. It does not consider the importance of electrification. For example, replacing oil heat with ground-source geothermal or adding an electric car will increase electricity use while significantly decreasing greenhouse gas emissions.

**IX. Adopting a RGGI-Compliant Regulation and the Further Actions Proposed Here Will Help Pennsylvania Meet Anticipated Federal Requirements Under the Biden Administration.**

President-elect Biden’s platform establishes a science-based goal of achieving a clean-energy economy and GHG emissions neutrality by 2050. “On day one, Biden will sign a series of executive orders that put us on this track.” *See The Biden Plan for a Clean Energy Revolution and Environmental Justice, available at <https://joebiden.com/climate-plan/>.* In recent announcements, President-elect Biden has indicated that this will include the interim goal of achieving emissions neutrality for the power generation sector by 2035.

Although the Biden Plan calls for new legislation, it is likely that he will need to rely upon regulatory action under the Clean Air Act whether or not new legislation is enacted. With respect to the electricity generation sector and other large industrial facilities, it is very likely that EPA, relying on authority under sections 115, 110 or 111(d) of the Clean Air Act, 42 U.S.C. §§ 7415, 7410,

7411(d), will call for the submission of SIPs requiring that Pennsylvania and other states achieve these reductions.

The proposed RGGI Regulation will put Pennsylvania ahead in meeting these federal requirements. However, as noted elsewhere, the proposed regulation is only a first step and more will be required to meet these anticipated federal requirements and to give Pennsylvania businesses the regulatory certainty that they need. As noted elsewhere, to satisfy future federal requirements, the budget in the proposed RGGI regulation should be amended to provide for 7.7 percent annual reductions in the emissions cap to achieve carbon neutrality by 2035 consistent with President-elect Biden's current plans. Likewise, Pennsylvania should proceed to propose and adopt the economy-wide auction-cap-trade-and-invest program that is the subject of the proposed rulemaking petition to achieve carbon neutrality by 2050. The funds generated by both programs can then go to the Clean Air Fund and be invested to leverage or match the substantial federal funds that President-elect Biden has pledged to make available to achieve carbon neutrality in all sectors.

Adopting the RGGI Regulation with our proposed budget amendments will put Pennsylvania ahead in meeting these federal requirements. There is every reason to believe this will not only be acceptable to existing RGGI states, but that those states will also be amending the model rule to bring it into consistency with

these anticipated federal requirements. Moving forward to include all sectors of the economy in the program pursuant to some version of the regulation proposed in the rulemaking petition will also serve this purpose. Waiting on either and starting the rulemaking process later will only result in requirements for drastic reductions later. Waiting will thus hurt Pennsylvania's economy, while acting now will provide regulatory certainty, a more reasonable glide path to achieving President-elect Biden's goals, and funds that can be used to invest in the public and private infrastructure that will help us achieve these goals while creating jobs and growing our economy. Acting now will also improve Pennsylvania's competitiveness in the region and the world.

**X. Without Federal Action Pennsylvania Needs to Take Further Action to Prevent Leakage**

Although we expect the Biden Administration to issue a SIP call that will impose costs on GHG emissions for power plants in all states, that rulemaking will take time. During that time, Pennsylvania generators could find their generation displaced by fossil-fired facilities in neighboring states that do not apply a cost on GHG emissions through the phenomenon known as "leakage." RGGI does not currently include a mechanism to prevent leakage, and, indeed, the existing RGGI states have seen some leakage to Pennsylvania since 2009. Pennsylvania should take further action to prevent its generators from suffering from leakage that would

reduce demand for their generation capacity while also decreasing the GHG emissions reductions resulting from Pennsylvania participating in RGGI.

Fortunately, the PJM Interconnection LLC. (“PJM”) has already been considering mechanisms to prevent leakage. It has indicated that it will not implement these mechanisms until it receives a request from the RGGI states to do so. Pennsylvania should now join with Delaware, Maryland, New Jersey, Virginia, and the District of Columbia to request that PJM begin the process of creating and adopting such a mechanism. This process should begin even before the RGGI regulation is finally adopted so that it can be put in place at the same time as the RGGI regulation becomes effective in January 2022.

PJM will also need approval from the Federal Energy Regulatory Commission (“FERC”). FERC has a recent mixed record on mechanisms that incorporate emissions costs into electricity prices. However, we expect that recent appointments to FERC combined with further appointments under the Biden Administration, will lead FERC to favor measures to limit GHG emissions and to have the costs of those limitations reflected in electricity prices.

## **XI. Proposed Modifications of the Proposed Regulation.**

The Board should consider several modifications to strengthen the proposed regulation. First, the proposed regulation should provide for an initial Pennsylvania-only auction with a reserve price to assure that allowance prices do



not crash and base future yearly budgets based on the number of allowances that clear that auction. Second, the proposed budgets should be lowered to put Pennsylvania on track to achieve the Biden Administration's goal of achieving GHG emissions neutrality in the electricity sector by 2035. Assuming a 2022 start, this will require that the GHG budgets provide for annual reductions of 7.7%, rather than the reductions in the proposed RGGI regulation. Third, the proposed regulation should be revised to include restrictions that assure that allowances allocated from the waste coal set-aside can be used and retired only for carbon-dioxide emissions from waste-coal and biomass.

**A. A Higher Reserve Price and Adjusted GHG Budget Are Necessary to Protect Allowance Markets, Drive Reductions, and Assure Revenue.**

Emissions caps and budgets in cap-and-trade programs based on modeling, such as those in the proposed rule, frequently prove too high in practice, such that they are or soon become non-constraining.<sup>17</sup> Pennsylvania's emissions budget is so large that it equal or exceeds the combined budgets of the other RGGI states. Therefore, if the modeling used by Pennsylvania has set the budget too high, as has been the case with other cap-and-trade programs, there is a real risk that

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<sup>17</sup> The acid rain cap-and-trade program created by the 1990 Amendments to the Clean Air Act quickly became and is currently non-constraining throughout the nation. The caps in the NO<sub>x</sub> and fine particulate cap-and-trade interstate air pollution programs have also repeatedly become non-constraining, necessitating multiple rulemakings.

Pennsylvania joining RGGI could flood the market with such a large number of additional allowances that allowance prices could crash. The measure we suggest below should prevent this from occurring.

We propose that Pennsylvania conduct a Pennsylvania-only auction with a reserve price for at least the first compliance period and adjust the proposed GHG budget to reflect allowance sales during that period. Pennsylvania should establish a Pennsylvania-only reserve price equal to the highest of the actual allowance clearing price in RGGI markets over the previous six years and the projected allowance price in RGGI modeling for the next year (assuming that Pennsylvania were not participating). Both RGGI allowances and Pennsylvania-only allowances then could be traded and used throughout the RGGI region. If Pennsylvania-only allowances are not sold during this “training wheels” period, they should be retired and Pennsylvania’s baseline GHG budget should be reduced to reflect the lower sales. Thus, the GHG budget for the year after this training wheels period would be the lower of the proposed budget and 92.3% of the derived budget (so that emissions would drop by an annual percentage necessary to achieve carbon neutrality by 2035).

**B. The Proposed Budgets Should be Adjusted to Meet the Biden Administration’s Goal of Achieving GHG Emissions Neutrality by 2035.**

As noted, the Department should assure that the final regulation is consistent with the policy positions announced by President-elect Biden so that it will be in a position to satisfy what we anticipate will be federal SIP requirements without imposing undue burdens on Pennsylvania industry.

President-elect Biden has announced a goal of achieving GHG emissions neutrality in the electricity generation sector by 2035. Assuming that Pennsylvania’s RGGI program starts in 2022, this will require annual emissions budget reductions of 7.7%, which are far greater than those in the proposed RGGI regulation. If 7.7% reductions are not incorporated into the regulation now, the electricity industry could face an emissions reduction “cliff,” where far more drastic emissions reductions will be required in later years. The companies in the electricity industry require stable, long-term market signals to guide their capital investment and retirement decisions. Establishing those future requirements now will increase their willingness to make GHG-reducing investments now, protect the existing non-emitting generating capacity, and protect the industry from disruption and its customers from associated price shocks.

**C. The Allocation of Allowances in the Waste Coal Set Aside Should Be Limited to Use for CO<sub>2</sub> Emissions from Combustion of Waste Coal.**

The waste coal set aside in the proposed RGGI regulation is intended to assure that waste coal facilities continue to operate and help Pennsylvania address its abandoned minelands problem. Addressing abandoned culm and gob piles can also reduce unregulated GHG emissions from burning coal piles or seams.

However, these results can only be assured *if* the set aside allowances are, in fact, retired to satisfy the compliance obligations arising from the combustion of legacy waste coal. This will not be the case if the owner of the facility simply sells the allowances in allowance markets or if the allowances are used to satisfy the compliance obligations from combustion of other waste, such as used tires.

Therefore, the proposed RGGI regulation should be revised to require reporting and allowance allocation adjustments to assure that the allowances are retired only from the combustion of waste coal. The proposed RGGI regulation proposes to do this by defining a waste coal facility as one whose feedstock is 75% waste coal. However, a facility meeting that definition could decide to operate fewer hours and simply sell allocated allowances. Likewise, it could burn, for example, 25% waste tires. Therefore, facilities receiving an allocation from this set aside should be required to report its feedstock and actual operations for the relevant reporting period and be charged the highest auction clearing price during

the relevant period for any emissions that do not arise from waste coal or biomass.<sup>18</sup>

## **XII. Conclusion.**

The EQB, therefore, clearly has the authority to join its neighbors in the reduction of GHG pollution from the power sector by promulgating the proposed RGGI regulation in final-form, as amended by the recommendations herein, and using the proceeds to support additional measures to address the climate crisis. In finalizing the RGGI regulation Pennsylvania can “do well by doing good,” creating jobs and economic growth while protecting the environment. Adoption of this regulation is not merely prudent, such action is required by both a Constitutional and an ethical imperative.

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<sup>18</sup> If, however, the waste coal facility has employed technology for carbon capture and sequestration or reuse, the facility should be entitled to its full allocation.

These same Constitutional and ethical imperatives require that the EQB then go further to take additional actions to assure that Pennsylvania reduces its emissions of GHG pollution economy-wide to achieve a 45% reduction of emissions from 2010 levels by 2030 and GHG emissions neutrality by 2050. To do so, it should adopt the amendments to the RGGI regulation proposed here, invest RGGI funds as also proposed here, and move on to adopt the regulation proposed in the *Climate Protection Petition* to make the auction-cap-trade-and-invest program applicable to Pennsylvania's entire economy.

Respectfully Submitted,

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## **Exhibit 1**

### **Names, Addresses, email Addresses, and Climate, Finance, Environmental and Economic Experience of the Commenters**

**C. Baird Brown** is the principal of eco(n)law LLC. He works with customers and communities and their technology and finance partners to deploy a new generation of energy and sustainability infrastructure, and advocates for supporting regulatory and legislative change. He has helped develop pooled procurement and financing techniques for building energy efficiency improvements and renewable energy and has structured public private partnerships for a broad array of infrastructure projects. He helped form and serves as co-counsel to the Microgrid Resources Coalition.

Baird handles corporate transactions for energy and environmental companies, including restructuring and workouts of troubled projects. He counsels clients in connection with taxable and tax-exempt, rated and unrated, and registered and unregistered financings and credit arrangements. He also acts as underwriter's counsel, bond counsel, and borrower's counsel on complex project financings. He develops tax structure and regulatory strategies for projects.

In the context of public private partnerships and other projects, Baird has developed and negotiated a wide range of project and financing documents for transactions with ongoing public interest dimensions. He understands the risks and obligations appropriate to public and private parties and structures incentive compensation arrangements that align private incentives with public goals. In particular, he represents clients with strong environmental goals in practical transactions that create clean energy results.

Baird has played key roles in organizations that advance energy and sustainability goals. He served as a co-chair of energy related committees of the American Bar Association (ABA) and the International Bar Association, and he was a principal author of the form Renewable Energy Credit Purchase Agreement for the American Council on Renewable Energy (ACORE), the Energy Markets Association, and ABA. He represents the Foundation for Renewable Energy and Environment and serves on the boards of non-profit organizations that work for community revitalization and energy justice.

Baird received a B.A. in Economics from S.U.N.Y at Buffalo and a J.D. from the University of Pennsylvania Law School. He began his legal career in the Office of the General Counsel of the Federal Reserve Board.

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## **Publications**

C. Baird Brown & Robert McKinstry, Jr., *From RPS to Carbon: an Evolutionary Proposal*, 50 E.L.R. 10755 (Sept. 2020)

C. Baird Brown, *Financing at the Grid Edge*, 48 ELR Sept. 2018

C. Baird Brown, *Learning from the Fed: Lessons for Federal Electricity Regulation*, *The Electricity Journal*, Vol.18, Issue 3 at 15 (April 2005)

## **Selected Representations**

Baird represents the Philadelphia Energy Authority in connection with program design and documentation including:

- One of the largest “Solarize” programs in the country providing pooled procurement for residential solar.
- A low- and moderate-income pilot for the Solarize program.
- The Philadelphia C-PACE commercial energy efficiency loan program.
- Solar power purchase arrangements on behalf of the City of Philadelphia.

He represents the Delaware Sustainable Utility as project counsel and bond counsel including:

- Bond issues for pooled financing for energy efficiency retrofits for state agencies and higher educational institutions in Delaware.
- Development of a tax-exempt leasing program for energy efficiency projects.

He helped form and represents the Microgrid Resources Coalition (MRC), a non-profit consortium of owners, operators, developers, suppliers and investors formed to advocate for policies and regulations that support microgrid deployment.

He acts as counsel to the Foundation for Renewable Energy and Environment (FREE) in projects and programs including:

- Implementing a statewide energy efficiency structuring and finance program for governmental and non-profit entities under a contract with the Pennsylvania Treasury, that has assisted with a 35-municipality pooled LED streetlight replacement program and energy efficiency improvements for several higher education institutions.
- Drafting legislation to establish municipal sustainable energy authorities for the state of Delaware.

He has represented several major universities and a consortium of independent schools in connection with procurement of solar, biomass and geothermal projects.

He represented an engineering firm in connection with its participation in a joint venture to develop sustainable infrastructure, including electricity service, for a planned community in India.

Baird represented ISO New England in Federal Energy Regulatory Commission (FERC) rulemaking and tariff proceedings regarding the design and implementation of energy and ancillary services markets and in FERC judicial proceedings.

**Mary Coe** is a former Regional Counsel, U.S. Environmental Protection Agency, Region III (Mid-Atlantic Office) where she was responsible for management of an 80-person office providing legal and policy advice to Regional and Headquarters senior management. Her duties included oversight and approval of all legal advice and policy recommendations of the Office of Regional Counsel relating to civil and criminal enforcement, defensive litigation, regulatory actions, grants, contracts, employment, information and other matters; representation of EPA Region III at national conferences and meetings with other EPA offices, other federal agencies and departments, states and municipalities, and individual public officials; and implementation of EPA policies and practices. Prior to serving as Regional Counsel, Mary served in various management positions and as a staff attorney in the Office of Regional Counsel. Her career at EPA spanned 35 years. Before joining EPA, Mary was an associate at the Washington, DC office of Cleary, Gottlieb, Steen and Hamilton. Mary currently serves on the Board of Directors of the Fairmount Park Conservancy, a nonprofit organization that leads and supports efforts to restore and improve the City of Philadelphia's parks, and on the Board of Directors of the Willows Park Preserve, a nonprofit organization established to restore a historic property and convert it to use as a venue for, among other things, community programming on nature and environmental stewardship. Mary is vice-chairman of the Radnor Township Parks and Recreation

Board and a member of Radnor Township’s “Green Team”, a volunteer committee established to assist the Township in meeting its commitment to use 100% clean renewable electricity by 2035 and 100% renewable energy for heat and transportation by 2050. Mary has lectured extensively on environmental law topics at various bar association and environmental organization conferences. She received her B.A. from Georgetown University and her J.D. from the University of Pennsylvania Law School.

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**John C. Dernbach** is Commonwealth Professor of Environmental Law and Sustainability at Widener University Commonwealth Law School in Harrisburg, Pennsylvania and Director of that school’s Environmental Law and Sustainability Center. Professor Dernbach has written on climate change, sustainable development, environmental law, and other topics in more than 50 articles for law reviews and peer-reviewed journals, and has authored, coauthored, or contributed chapters to more than 20 books. He and Professor Michael Gerrard are the co-editors of *Legal Pathways to Deep Decarbonization in the United States* (ELI Press 2019), a comprehensive analysis and description of more than 1,000 legal tools for reducing greenhouse gas emissions by at least 80% by 2050. He is also the principal author or editor of three books assessing U.S. progress toward sustainability and making recommendations (*Acting as if Tomorrow Matters: Accelerating the Transition to Sustainability* (2012), *Agenda for a Sustainable America* (2009), and *Stumbling Toward Sustainability* (2002)). A fourth book on U.S. progress on sustainable development is planned for publication in 2022. Professor Dernbach coauthored a successful *amicus* brief to the U.S. Supreme Court on behalf of 18 prominent climate scientists in *Massachusetts v. Environmental Protection Agency*. His scholarship and advocacy helped persuade the Pennsylvania Supreme Court in landmark decisions in 2013 and 2017 to reinvigorate the Environmental Rights Amendment (Article I, Section 27) of the Pennsylvania Constitution. He is the recipient (with Robert McKinstry) of the Pennsylvania Bar Association’s Environmental and Energy Law Section 2010 Award for Distinguished Service. He is a vice chair and former chair of the American Bar Association’s Climate Change, Sustainable Development, and Ecosystems Committee, and is the primary drafter of an ABA House of Delegates resolution adopted in 2019 urging a broad range of actions to reduce U.S. greenhouse gas emissions “to net zero or below.”

In two periods totaling about 15 years, he worked for the Commonwealth of Pennsylvania. He was policy director at the Department of Environmental Protection from 2003 to 2005. From 1981 to 1993, he counseled the waste and mining programs at the Department of Environmental Resources and served as special assistant in the waste program. In those capacities, he played a major role in drafting four major waste and mining laws. Two of these were significant rulemakings--comprehensive revisions to municipal waste regulations finalized in 1988 and comprehensive revisions to residual waste regulations finalized in 1992—that are, in complexity, scale, and public visibility, somewhat analogous to the present rulemaking.

He is a *cum laude* graduate of the University of Michigan Law School (1978), and a *summa cum laude* graduate of the University of Wisconsin-Eau Claire (1975).

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## **Selected Climate Change and Energy Publications**

### Books

John C. Dernbach, *Evolution of U.S. Climate Policy*, in GLOBAL CLIMATE CHANGE AND U.S. LAW (3rd ed., Michael B. Gerrard, Jody Freeman, & Michael Burger eds., American Bar Association, forthcoming 2022 ).

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**Stephen G. Harvey** is a lawyer in Philadelphia, PA, and the owner of Steve Harvey Law LLC. He has over thirty years of experience as litigator and trial lawyer for complex and business matters.

In 2014, with Robert McKinstry and others he founded A Call to the Bar: Lawyers for Common Sense on Climate Change. The effort is now known as Lawyers for Climate Action. From 2014 to the present, this group of lawyers from around the world has convened multiple times with leaders from other disciplines to discuss the problem of climate change and what lawyers and the legal community can do about it.

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Environmental attorney for over 35 years, mostly with PPL Corporation, a large, international power company. Advised the company on policy and strategy on all clean air matters, including market-based programs for acid rain and ozone-forming pollutants.

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**Robert B. McKinstry, Jr.**, provides environmental and climate law consulting services. He is a fellow in both the American College of Environmental Law and the American Bar Foundation. In 2018, he retired from Ballard Spahr LLP, where he co-founded and headed the firm’s Environmental and Natural Resources Practice Group and then its Climate Change and Sustainability Practice Initiative. He continues his practice involving the full range of environmental issues but concentrates on climate and public interest work. He completed a six-year appointment as the Maurice K. Goddard Chair in Forestry and Environmental Resource Conservation at the Pennsylvania State University School of Forest Resources on July 1, 2007. He was co-counsel for group of leading climate scientists before the Supreme Court in *Massachusetts v. EPA*, where the Court ruled that there is authority to address emissions of greenhouse gases under the federal Clean Air Act. He represented clean energy utilities supporting EPA rulemaking before the Supreme Court and the United States Court of Appeals for the DC Circuit in *EPA v. EME Homer City Generation* and *Michigan v. EPA*. He is the Chair of the East Marlborough Township Board of Supervisors. He is the Vice President of Lawyers for Climate Action: A Call to the Bar and is a member of the Board of Directors of the Pennsylvania Environmental Council. He has served on the Boards of many non-profit organizations and state, regional and local advisory committees. He is a member of the Environmental, Energy and Resources Section (SEER) of the American Bar Association, where he is a former Co-chair and a current Vice Chair of the SEER Committee on Climate Change, Sustainable Development, and Ecosystems. He has taken a lead role numerous



state, regional and local greenhouse gas reduction planning processes. He is a member of the Environmental and Energy Law (EEL) Section of the Pennsylvania Bar Association and serves on the EEL Climate Committee. Robert McKinstry is a Master in the Delaware Valley Environmental Inns of Court. He is the recipient of PBA's Energy and Environmental Section 2010 Award for Distinguished Service and was named as MVP in environmental law by Law360 in 2014. He has been recognized by Chambers USA as a Leading Lawyer for Business in the fields of both climate and environmental law, has been named by The Best Lawyers in America in environmental law and environmental litigation, has been named to Who's Who Legal: Environment, and has been named as one of Pennsylvania's Super Lawyers in environmental law. He holds a B.A. with Honors from Swarthmore College, a J.D. from Yale Law School and an M.F.S. from Yale School of Forestry & Environmental Studies.

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### **Selected Climate and Energy Publications**

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Donald Brown, Nancy Tuana, Marilyn Averill, Paul Baer, Rubens Born, Carlos Eduardo Lessa Brandão, Robert Frodeman, Christiaan Hogenhuis, Thomas Heyd, John Lemons, Robert McKinstry, Mark Lutes, Benito Müller • José Domingos Gonzalez Miguez, Mohan Munasinghe, Maria Silvia Muylaert de Araujo, Carlos Nobre, Konrad Ott, Jouni Paavola, Christiano Pires de Campos. Luiz Pinuelli Rosa, Jon Rosales, Adam Rose, Edward Wells, & Laura Westra, *White Paper on the Ethical Dimensions of Climate Change*, The Pennsylvania State University Rock Ethics Institute (2006).

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**Professor Peter B. Meyer PhD**, conducts research on the economics and financing of public sector climate change response. He is President and Chief Economist of The E.P. Systems Group, Inc., and Professor Emeritus of Urban

Policy and Economics at the University of Louisville. He also serves as a member of the Borough Council and the Planning Commission for the Borough of New Hope, PA. He left the University of Louisville in 2008 after directing the Center for Environmental Policy and Management in the College of Business from its founding in 1993 to his retirement. He also directed the US EPA Region 4 Environmental Finance Center from 1996 to 2007 and served as an Expert Witness to EPA's Environmental Finance Advisory Board from 1996 to 2011 and then on the agency's Board of Scientific Advisors from 2014 to 2017. From 2010 to 2013, he provided financial management technical assistance to state and local governments funded to promote energy efficiency and renewable energy under the American Recovery and Reinvestment Act. His federal environmental and energy policy work has been funded by EPA, HUD, the US Department of Commerce and the Department of Energy. He previously provided education and training to state legislators on the economics of climate change from 2008-2010 with funding from the British government and continues to serve on the steering committee of an EU-funded project to improve city and regional energy policies in Europe. In his international research on climate change policy and economics he participates in the German-US 'Zukunftsstadt – Future City' Network, serves on the Executive Committee of the International Urban Policy and Environment Association, directs economic analysis for the Urban Climate Change Research Network, and has represented the UCCRN at United Nations meetings. Dr. Meyer was on the faculty of The Pennsylvania State University from 1968 to 1987 and directed its Local Economic Development Project for a decade. He provided economic impact expert witness services to the Pennsylvania Legal Aid Society and the Pennsylvania Utility Law Project and served as a consultant to PECO and the Utility Emergency Services Fund through the 1980s. He holds a B.A. from Swarthmore College and a PhD in Economics from the University of Wisconsin – Madison.

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### **Selected Energy-Related Publications**

Meyer, P.B., and R. Schwarze. 2019. [Financing Climate-Resilient Infrastructure: Determining Risk, Reward, and Return on Investment](#). *Frontiers of Engineering Management*. VI(1): 117-127.

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Meyer, P.B., and L. Gamm. 1976. A Community Development Response to the Energy Problem. *Journal of the Community Development Society of America* VII(1): 142-152.

**Joseph Minott** serves as the Executive Director and Chief Counsel for Clean Air Council, a member-based environmental non-profit headquartered in Philadelphia. Clean Air Council is Philadelphia's oldest environmental non-profit, having served the mid-Atlantic region for over 50 years. The Council is driven by its mission to protect and defend everyone's right to a healthy environment, and Mr. Minott supervises all Council projects. He previously served as a regulatory and litigation attorney for the Council and has over 40 years' experience in this field. As an environmental attorney, Mr. Minott has litigated cases primarily brought under the Clean Air Act and Air Pollution Control Act. He has developed statewide recognition as an expert on urban air pollution issues, air pollution impacts on low-income neighborhoods, and climate change mitigation. Mr. Minott has served on numerous regulatory and policymaking boards at the state and local level over the past four decades. Mr. Minott has also taught environmental policy courses at the University of Pennsylvania. He holds an M.A. in political science from the University of Pennsylvania and a J.D. from the Villanova University School of Law.

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### **Selected Publications**

“Fugitive Emissions: The Marcellus Shale and the Clean Air Act,” Joseph Minott and Jonathan Skinner. *Natural Resources and the Environment*. Vol 26, Winter 2012.

TITLE V: A Citizens' Guide to Stationary Source Permitting Process (1999 EPA Contract).

**Elizabeth Hill Robinson** is a professional in clean energy and energy conservation whose skills include Strategic Planning and Policy Development, Program Design and Evaluation, Administration and Management, Coalition Building, Development. Public Education and Communication, and Public/Private Partnerships. Her professional experience includes the following:

Executive Director, Philadelphia Solar Energy Association

1/18 – current

PSEA, a nonprofit, supports the growth of the solar industry through public education, advocacy and training. PSEA sponsors the Junior Solar Sprint, an annual event through which middle school students design, build and race model solar cars. PSEA has been instrumental in laying the groundwork for the growth of the solar industry in PA, with the first net metering tariff, the first solar installer training, the first public education campaign and other policy developments.

Executive Director, Energy Coordinating Agency of Philadelphia

11/1984 – 8/2017

Founded and directed a public private partnership responsible for helping people save energy and work toward a sustainable and equitable energy future in the greater Philadelphia region. ECA administers conservation, home repair, education and bill payment assistance programs, trains men and women for careers in energy; and advocates for clean, affordable energy. ECA provides energy services to more than 20,000 households a year.

Founder and Board Member, Keystone Energy Efficiency Alliance

7/2006- present

Founded the Keystone Energy Efficiency Alliance (KEEA), and its sister organization, the KEEA Energy Education Fund (KEEF). KEEA is the trade association of energy efficiency businesses in Pa, dedicated to growing the clean energy industry through advocacy, training and public education. KEEA was instrumental in the passage of PA Act 129, the state's energy efficiency portfolio standard.

Executive Director, Energy Cooperative Association of Pennsylvania

1996-1999

Managed the Energy Cooperative Association of Philadelphia, converting it from a citywide fuel oil cooperative, to a statewide renewable energy cooperative,

growing the membership from 700 to over 7000 households in three months' time. ECAP was spun off in 1999 to become an independent organization.

Director, GRASP (Grass Roots Alliance for a Solar Pennsylvania)

5/84 – 11/84

Directed a non-profit organization working with community groups toward energy self-reliance.

Energy Coordinator, Philadelphia Council of Neighborhood Organizations

4/83 – 5/84

Promoted conservation in neighborhoods across the city. Developed grassroots network in response to a dramatic increase in gas utility terminations, convened the Energy/Poverty Task Force, researched Philadelphia's low income energy problem and led a state-wide effort to resolve the home heating crisis for low income.

Prior employment includes directing a homeless shelter, teaching, and community organizing.

EDUCATION

Wayne State University, Detroit Michigan, M.F.A. Program, Sculpture

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**James A. Schmid, Ph. D.** is a biogeographer and plant ecologist who has headed the firm of Schmid & Company, Inc., Consulting Ecologists, since 1985. He holds a B.A. degree *cum laude* from Columbia University, where he was elected to Phi Beta Kappa, and M.A. and Ph. D. degrees from the University of Chicago. He left his tenure-track position as Assistant Professor in the Department of Biological Sciences at Barnard College and Columbia University to become Vice President at the consulting firm of Jack McCormick & Associates in Devon, Pennsylvania, and served as Senior Ecologist at other firms before establishing his own organization. Dr. Schmid has served hundreds of clients, both those seeking permits for construction and those opposing projects, as well as federal, State, and local regulatory agencies seeking to design and implement environmental regulatory programs nationwide and in the MidAtlantic States. He frequently provides expert testimony on environmental matters in federal and State courts. He has published a dozen books, many book chapters and professional papers, and hundreds of reports including dozens of environmental impact statements. He has served on the professional certification committees of the Ecological Society of America and the Society of Wetland Scientists. For three decades he served on the Environmental Advisory Board of Marple Township in Delaware County and currently is in his second term as a gubernatorial appointee to the Citizens Advisory Council of the Pennsylvania Department of Environmental Protection.

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**Professor Amy Sinden** is a Professor of Law at the Temple University Beasley School of Law and on the board of directors of the Center for Progressive Reform, [www.progressivereform.org](http://www.progressivereform.org). She writes and teaches in the areas of environmental, climate, and natural resources law. She has written about the misuse of economic

theory in environmental law and about the application of classical human rights norms to climate change and other environmental conflicts. Her articles have appeared in a number of academic books and journals, including the *Iowa Law Review*, the *Harvard Environmental Law Review*, and have twice been selected for the *Land Use and Environmental Law Review*'s annual compilation of the five best environmental law articles of the year. She has also published in a number of popular news outlets, including *The American Prospect* and *The Hill*. Prof. Sinden received her B.A. from Swarthmore College and her J.D. *summa cum laude* from the University of Pennsylvania Law School. Before joining the Temple faculty in 2001, she practiced law for 10 years, including representing citizen groups in Clean Water Act and endangered species litigation with Earthjustice and PennFuture. She has been working on environmental/climate change issues since 1997.

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**Climate-related publications:**

*A Human Rights Framework for the Anthropocene*, GLOBAL CLIMATE CONSTITUTIONALISM (Jordi Jaria i Manzano & Susana Borrás Pentinat, eds., Elgar 2019).

*Shifting the Domestic and International Logjams on Climate Change: A New Defense of Cap and Dividend*, 19 TULANE J. INTL. & COMP. L. 79 (2010)

*Allocating the Costs of the Climate Crisis: Efficiency versus Justice*, 85 WASH. L. REV. 293 (2010)

*The Abandonment of Justice and Toward Distributional Justice* (with Carl Cranor) in ECONOMIC THOUGHT AND U.S. CLIMATE CHANGE POLICY (David M. Driesen, ed., MIT Press 2010)

*Revenue-Neutral Cap and Trade*, 39 ENVTL. L. REP. 10944 (Oct., 2009)

*The Missing Instrument: Dirty Input Limits*, 33 HARV. ENVTL. L. REV. 66 (2009)(with David M. Driesen), selected for republication in Volume 41 of the

Land Use and Environmental Law Review as one of the five best environmental law articles of the year in 2010.

*An Emerging Human Right to Security from Climate Change: The Case Against Gas Flaring in Nigeria* in ADJUDICATING CLIMATE CHANGE: SUB-NATIONAL, NATIONAL, AND SUPRA-NATIONAL APPROACHES (William C.G. Burns & Hari M. Osofsky, eds., Cambridge University Press) (2009)

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## **Exhibit 2**

### **Proposed Revisions**

## § 145.341. Pennsylvania CO<sub>2</sub> Budget Trading Program

### base budget.

(a) For 2022, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is initially 78,000,000 tons but shall be adjusted, as provided in this section 145.341(a).

(i) For budget year 2022, Pennsylvania shall conduct an auction of Pennsylvania-only allowances that may not be surrendered for compliance obligations of any source not located in Pennsylvania or banked for use in future years.

(ii) In the Pennsylvania-only auction for budget year 2022, the auction shall be subject to a reserve price equal to the highest of the actual allowance clearing price in RGGI markets over the previous six years and \_\_\_\_\_, which is the projected allowance price in RGGI modeling for the next year assuming that Pennsylvania were not participating in the RGGI market. Any unsold allowances from the Pennsylvania-only auction shall be permanently retired.

(iii) The “Baseline Budget” shall be the number of allowances that clear the Pennsylvania-only auction and are surrendered for compliance by Pennsylvania sources in budget year 2022.

(b) For 2023, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .846 times the Baseline Budget and 71,994 [75,510,630] tons.

(c) For 2024, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .769 times the Baseline Budget and 65,988 [73,021,260] tons.

(d) For 2025, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .692 times the Baseline Budget and 59,981 [70,531,890] tons.

(e) For 2026, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .615 times the Baseline Budget and 53,976 [68,042,520] tons.

(f) For 2027, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .538 times the Baseline Budget and 47,970 [65,553,150] tons.

(g) For 2028, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is the lower of .461 times the Baseline Budget and 41,964 [63,063,780] tons.

(h) For 2029, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget is **the lower of .384 times the Baseline Budget and 35,958 [60,574,410] tons.**

(i) For 2030 [and each succeeding calendar year], the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget **the lower of .307 times the Baseline Budget and 35,958 [8,085,040] tons.**

(j) **For each succeeding year, the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget shall be reduced by 6,006 tons from the previous year until reaching zero.**

**§ 145.342. CO<sub>2</sub> allowance allocations.**

(b) *Set-aside allocations.*

(1) *Waste coal set-aside account.* The Department will allocate CO<sub>2</sub> allowances to a waste coal set-aside account for each allocation year from the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget set forth in § 145.341, as provided under subsection (i).

\* \* \*

(i) *Waste coal set-aside allocation.* The waste coal set-aside allocation will consist of tons from the Pennsylvania CO<sub>2</sub> Budget Trading Program base budget set forth in § 145.341, as applicable. The Department will administer the waste coal set-aside account in accordance with the following:

(1) *Applicability.* This subsection applies to waste coal-fired units located in Pennsylvania that commenced operation on or before (*Editor's Note:* The blank refers to the effective date of this rulemaking, when published as a final-form rulemaking.), that are subject to the CO<sub>2</sub> Budget Trading Program requirements under § 145.304 (relating to applicability).

(2) *General account.* The Department will open and manage a general account for the waste coal set-aside account.

(3) *Allowance transfer.* By March 1 of each calendar year, the Department may transfer a portion of the CO<sub>2</sub> allowances allocated to the air pollution reduction account to the waste coal set-aside account in an amount equal to legacy emissions from waste coal-fired units applicable under subsection (i)(1). The Department has determined that the total amount of legacy emissions equal 9,300,000 tons.

(4) *Compliance allocation.* Except for a year with an exceedance of legacy emissions under subsection (i)(5), by March 1 of each calendar year, the Department will allocate CO<sub>2</sub> allowances from the waste coal set-aside account to the compliance account of each waste coal-fired unit in an amount equal to the actual number of CO<sub>2</sub> emissions in tons emitted from the waste coal-fired unit **due to the combustion of waste coal or eligible biomass** during the previous year.

(i) After allocating CO<sub>2</sub> allowances under subsection (i)(4), the Department will transfer any undistributed CO<sub>2</sub> allowances from the waste coal set-aside account to the strategic use set-aside account.

(ii) CO<sub>2</sub> allowances allocated under this subsection must only be used for compliance with the CO<sub>2</sub> budget emissions limitation for the waste coal-fired unit **and only to the extent that the emissions arise from combustion of waste coal or eligible biomass**. The sale or transfer of CO<sub>2</sub> allowances from the unit's compliance account will be considered a violation of this subchapter.

(5) *Exception for exceedance of legacy emissions*. If the total actual CO<sub>2</sub> emissions from waste coal-fired units **due to the combustion of waste coal or eligible biomass** exceed 9,300,000 tons during a calendar year, the Department will account for the exceedance as follows:

(i) By February 15 of the year following the exceedance, the Department will determine the difference between each unit's legacy emissions and the unit's actual emissions units **due to the combustion of waste coal or eligible biomass** during the previous year.

(ii) By February 15 of the year following the exceedance, the Department will allocate CO<sub>2</sub> allowances from the waste coal set-aside account to the compliance account of each waste coal-fired unit in an amount equal to the actual number of CO<sub>2</sub> emissions in tons emitted from the waste coal-fired unit units **due to the combustion of waste coal or eligible biomass** during the previous year minus the exceedance of legacy emissions.

(iii) After the allocation under subsection (i)(5)(ii), if there are CO<sub>2</sub> allowances remaining in the waste coal set-aside account, the Department may distribute CO<sub>2</sub> allowances to each waste coal-fired unit requiring CO<sub>2</sub> allowances to meet the CO<sub>2</sub> requirements under § 145.306(c) (relating to standard requirements) **for emissions arising from the combustion of waste coal or eligible biomass** in an amount proportionate to the exceedance.

(iv) By the CO<sub>2</sub> allowance transfer deadline of the year following the exceedance, the owner or operator of each waste coal-fired unit requiring additional CO<sub>2</sub> allowances to satisfy the CO<sub>2</sub> requirements under § 145.306(c) must transfer CO<sub>2</sub> allowances for compliance deductions under § 145.355 (relating to compliance) to the compliance account of the unit.

(6) *Set-aside termination*. If no CO<sub>2</sub> allowances are allocated under subsection (i)(4) in any calendar year due to the fact that there were no actual CO<sub>2</sub> emissions **due to the combustion of waste coal or eligible biomass** from waste coal-fired units subject to this subsection, then the CO<sub>2</sub> allowances remaining in the waste coal set-aside account will be transferred to the strategic use set-aside



account. No additional CO<sub>2</sub> allowances will be allocated to the waste coal set-aside account under subsection (i)(3) and the Department will close the waste coal set-aside account.