



January 14, 2021

The Honorable Patrick McDonnell, Chairman
Environmental Quality Board
Rachel Carson State Office Building
P.O. Box 8477
Harrisburg, PA 17105-8477

Re: Proposed Rulemaking – CO₂ Budget Trading Program submitted electronically via RegComments@pa.gov and <https://www.ahs.dep.pa.gov/eComment/>

Dear Chairman McDonnell:

The Marcellus Shale Coalition (MSC) was formed in 2008 and is comprised of approximately 125 producing, midstream, transmission and supply chain members who are fully committed to working with local, county, state and federal government officials and regulators to facilitate the safe development of natural gas resources in the Marcellus, Utica and related geological formations. Our members represent many of the largest and most active companies in natural gas production, gathering, processing and transmission in the country, as well as the suppliers and contractors who partner with the industry.

The MSC appreciates the opportunity to comment on the Environmental Quality Board's (EQB or Board) proposed rulemaking related to a carbon dioxide trading program. This proposed rulemaking seeks to enter Pennsylvania into the Regional Greenhouse Gas Initiative (RGGI) multi-state carbon dioxide cap and trade program, as directed under Governor Tom Wolf's Executive Order of October 3, 2019.¹ This cap-and-trade program requires certain electric generation units (EGUs) to procure and submit to the Commonwealth for compliance an allowance for each short ton of carbon dioxide emitted.

It is imperative for the MSC to stress the importance its members place on being good stewards of Pennsylvania's environment and natural resources. Our member companies take pride in the significant and positive impact that natural gas development has had on, not only Pennsylvania's economy, but also in drastically improving air quality through the reduction of criteria pollutants and helping the United States be a leader in reducing greenhouse gas emissions from its power generation sector. Many members of the industry have established their own internal emission reduction goals and taken concrete steps to implement efficiencies and sustainable business practices throughout their enterprise.

These comments are offered in the spirit of ensuring that any public policies pursued by Pennsylvania, such as the proposed RGGI rulemaking, are cost-effective, efficient, consider all

¹ Executive Order 2019-07: Commonwealth Leadership in Addressing Climate Change through Electric Sector Emissions Reductions <https://www.oa.pa.gov/Policies/eo/Documents/2019-07.pdf>

factors and metrics that could impact outcomes, and are in conformance with all applicable laws of the Commonwealth.

Introduction

Following is an Executive Summary of the primary comments, questions and concerns expressed by the MSC, followed by a section-by-section discussion and expansion of these comments.

Executive Summary of Comments

Section 1

Pennsylvania has benefitted from significant and historic reductions in CO₂ emissions thanks to the increased utilization of natural gas in electric power generation.

Section 2

The Department of Environmental Protection (DEP or Department) has constrained itself as to the scope and impact of changes which can be made to the proposed rulemaking, because RGGI requires any state that participates in the program to adopt rules that are “fully compatible” with those of RGGI.

Section 3

- A** RGGI is not necessary to meet the 2025 goal set by Governor Wolf for CO₂ emission reductions from power generation, as this goal has already been met.
- B** Pennsylvania’s entry into RGGI leads to significant displacement of power generation to other states, and therefore a significant increase in CO₂ emissions outside of Pennsylvania.
- C** DEP unreasonably limits the types of projects eligible for allowance offsets, which frustrates the purported goal of the rulemaking, which is to reduce climate change inducing emissions.

Section 4

Revenue generated from RGGI allowance auctions does not constitute a “fee” as authorized or envisioned by the state’s Air Pollution Control Act.

Section 5

The power sector modeling commissioned by the Department overstates the overall benefit to Pennsylvania for participating in RGGI and includes several shortcomings in its analyses. These include



- A** Utilizing inaccurate baseline emissions data to justify purported benefits of RGGI participation.
- B** Demonstrating CO₂ emissions increase in Non-PA PJM states by 93 MST.
- C** Demonstrating CO₂ emissions increase in Non-PA Eastern Interconnection states by 137 million short tons (MST).
- D** The cost of compliance on a per ton basis is understated.
- E** Ignoring the impact of potential increases of other criteria pollutants from upwind states where emissions will be shifted.
- F** Failing to model the impact of a Phase IV of the Commonwealth's Act 129 energy efficiency and demand response program, which was a foreseeable policy outcome from the Pennsylvania Public Utility Commission and will be implemented this year.
- G** Misrepresenting natural gas prices.
- H** Establishing inconsistent assumptions for future natural gas and renewable generation.
- J** Including numerous unexplained data inconsistencies.
- K** Not accounting for impacts from the COVID-19 global pandemic.

Section 6

- A** The public health co-benefits of the proposed rule are overstated because they capture improvements to the environment prior to any participation in RGGI and fail to recognize shifting co-emissions from sources west of Pennsylvania.
- B** The CO₂ emissions attributable to RGGI states are overstated because they capture years prior to RGGI's promulgation.
- C** The proposed rule fails to identify any public health benefits for Pennsylvanians attributable to CO₂ emission reductions under RGGI and further fails to demonstrate how this rulemaking will protect the citizens of Pennsylvania from the harms it alleges flow from climate change.

Section 7

The Department proposes to spend RGGI revenue to subsidize competing electric generation, despite not having proposed a formal revenue expenditure plan for public comment.

Section 8

- A** The Department's ability to adjust the availability of banked allowances in the future is arbitrary and capricious.
- B** Allowing for banked allowances place Pennsylvania entities at a competitive disadvantage with historic RGGI participants.

Section 9

The Department miscalculates the number of allowances which are available to regulated entities from the Commonwealth.



Section 10

The Department allows third party entities, such as NGOs, to purchase and retire allowances, which is not consistent with the stated purpose of the RGGI program.

Section 11

The Department fails to meet the requirements of the Cost-Benefit analyses required by both the Regulatory Review Act and Executive Order 1996-1.

SECTION 1

A DECADE OF CHANGE: PENNSYLVANIA'S HISTORIC REDUCTION OF CO₂

Too often, lost in most environmental and climate change discussions are the significant improvements that already have been realized through free-market innovations and economic progress. It is far-too-easy to ignore this significant progress by, for example, moving baseline years for measuring progress, which seems to be done to either purposefully negate the positive changes that have occurred or possibly manipulate the metrics in order to advance specific policy agendas. Regardless, it is critical to understand the significant improvements that have been accomplished in order to constructively build upon those successes.

To this point, throughout its formulation and advocacy for this proposed rulemaking, the Department has refrained from highlighting or acknowledging in any meaningful way the significant success Pennsylvania has achieved in reducing CO₂ emissions from the electric generation sector. This omission is conspicuous and deserving of address.

Pennsylvanians deserve to know of this progress if for no other reason than it better informs reaction to the proposed rulemaking and puts the Commonwealth's progress to-date in its proper context. Absent this data and recent trendlines, Pennsylvanians are left with the impression that, but for mandatory government action such as this proposed rulemaking, no meaningful reductions of CO₂ have or will occur. Much of the Department's efforts to advocate for this rulemaking – particularly with respect to social media – reinforce this inaccurate and misleading narrative.

Section 1.A

Environmental Benefits of Pennsylvania's Natural Gas Transition

Pennsylvania's transition to utilizing an increasing amount of natural gas in its electric generation portfolio has led to historic reductions in CO₂ emissions. From 2005 through 2017, Pennsylvania's share of electricity from natural gas increased from 5% to 34%, resulting in a



39% decrease of CO₂ emissions during this same time-period.² Furthermore, as measured from 2008 (the year before the RGGI's first full compliance year), Pennsylvania has achieved a cumulative reduction of 184 million tons of CO₂ emissions.³

The environmental and public health benefits of this transition to natural gas extend far beyond reductions in CO₂ emissions. For example, according to PA DEP data, from 2005 through 2018, nitrogen oxide (NO_x) emissions from Pennsylvania's power generation sector are down 81%, while sulfur oxide (SO_x) emissions are down 93%. Furthermore, volatile organic compounds (VOCs) from the power generation sector are down 40% over the same time-period.⁴

Section 1.B

Health Benefits of Pennsylvania's Natural Gas Transition

The MSC and its member companies are proud of the natural gas industry's collective contributions to these historic reductions in emissions during the modern unconventional shale development era. In addition to helping the United States become a global leader in the reduction of greenhouse gas emissions, natural gas has helped reduce emissions that directly impact air quality, like NO_x, SO_x and VOCs. Using the Department's own metrics, these reductions demonstrably have had a direct public health benefit by reducing the number of respiratory illnesses and hospitalizations attributable to air quality, translating into significant public health and economic benefits for the citizens of Pennsylvania.

Utilizing the exact same methodology used by the Department, the aforementioned reduction of key pollutants, due in large part to the increased use of natural gas for electric generation, translates to approximately \$31 Billion to \$71.5 Billion in annual public health benefits for the citizens of Pennsylvania.⁵

SECTION 2

THE EQB HAS CONSTRAINED THE AUTHORITY OF IRRC

The EQB has essentially bound itself to the regulatory framework of the RGGI Model Rule as it must do to be "fully compatible" with the RGGI Model Rule and to participate in RGGI.⁶ Accordingly, the Independent Regulatory Review Commission (IRRC) has limited ability to

² CO₂ emissions from PA's electric power sector were 126 million metric tons in 2005 and had fallen to 76.8 million metric tons by 2017: U.S. Energy Information Administration State Carbon Dioxide Emissions Data <https://www.eia.gov/environment/emissions/state/>

³ U.S. Energy Information Administration State Carbon Dioxide Emissions Data <https://www.eia.gov/environment/emissions/state/>

⁴ PA Department of Environmental Protection – Air Emission Report (Power BI)

⁵ U.S. EPA Methodology on Estimating Public Health Benefits of Emission Reductions – Krewski et al. and Lepeule et al.

⁶ New State Participation in RGGI: "Principles for Participation: Any new state entrant into the RGGI market must develop an independent CO₂ Budget Trading Program regulation that is fully compatible with the RGGI Model Rule."

[https://www.rggi.org/sites/default/files/Uploads/Participation/RGGI New State Participation Overview.pdf](https://www.rggi.org/sites/default/files/Uploads/Participation/RGGI%20New%20State%20Participation%20Overview.pdf)



recommend or direct alterations to the proposed rules without the blessing of RGGI, regardless of the appropriateness of any provision to Pennsylvania. In light of these constraints, the MSC has focused many of its comments on the materials surrounding the proposed rulemaking's Annex, including the power sector and economic modeling, Regulatory Analysis Form, and other materials that are all utilized to justify the Commonwealth's entry into RGGI. The MSC encourages the Board and the IRRC to consider not just the language of the rulemaking, which again, is constrained by the model rule, but all the material developed to support the proposed rulemaking.

SECTION 3

POLICY CONSIDERATIONS OF PROPOSED RULEMAKING

Section 3.A

Governor Wolf's CO₂ Reduction Goals for Power Generation Have Already Been Met

On January 8, 2019 Governor Wolf issued an Executive Order⁷ establishing goals of achieving a 26% reduction by 2025, and an 80% reduction by 2050, of net greenhouse gas emissions statewide as compared to 2005 baseline emissions. While these goals are aspirational, and do not have the effect of state law, they nonetheless have been cited as a key objective of the RGGI rulemaking process.

The Executive Order is broad-based, referring to greenhouse gases and not merely carbon dioxide, and it is not limited simply to the electric generation sector. However, it is fair to presume that in seeking to meet this goal, the Department will pursue greenhouse gas emission reductions that are proportional to each sector's contributions. The goals are simply unachievable otherwise.

The Executive Order does not contemplate nor seek to achieve a cumulative reduction in emissions over this time period, nor is it concerned with the pace of reductions. Rather, it merely establishes specific emission goals to be achieved in two specific years – 2025 and 2050 – and seeks to ensure that emissions in those years are lower by 26% and 80%, respectively, compared to 2005.

As noted above, by 2017 Pennsylvania's electric generation sector had already decreased CO₂ emissions by 39% compared to 2005 baseline emissions. Moreover, under DEP's own power sector modeling, this reduction would rise to 42% by 2025 and 52.4% by 2030 under a business-as-usual scenario in which Pennsylvania does not enter RGGI.⁸ In summary, Pennsylvania's electric generation sector – thanks principally to an historic shift to natural gas generation – has far exceeded its commensurate share of the greenhouse gas emission reductions envisioned under Executive Order 2019-01.

⁷ Executive Order 2019-01: Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance <https://www.oa.pa.gov/Policies/eo/Documents/2019-01.pdf>

⁸ According to PA DEP Power Sector Modeling, CO₂ emissions from PA's electric power sector are projected to be 73 million metric tons in 2025 and 60 million metric tons in 2030 if PA does not enter the RGGI.

Section 3.B:

PA's Entry into the RGGI Increases CO₂ Emissions Outside Pennsylvania

DEP's own modeling shows that, as currently constructed, Pennsylvania's entry into RGGI will result in a net increase in CO₂ emissions in PJM states (excluding Pennsylvania) and a net increase in CO₂ emissions in Eastern Interconnection states (excluding Pennsylvania). This topic is explored in greater detail in the Power Sector Modeling section of these comments.

Section 3.C

Economic Parity

Both Governor Wolf⁹ and the Department¹⁰ have claimed that there is no greater threat to the public health and environment of Pennsylvanians than the risk posed by climate change. Yet, the Department's own rulemaking says otherwise. In setting aside carbon dioxide emission allowances equal to the approximate cumulative total of carbon dioxide emissions from Pennsylvania's waste coal facilities, it is clear that these facilities will not be required to either reduce their emissions or expend financial resources to purchase allowances and comply with this rulemaking in the same manner as other electric generation units. In establishing this exception, the Department is explicitly recognizing that the environmental challenges posed by the existence of waste coal – chiefly, impaired waterways from acid mine drainage – are greater environmental threats and therefore more worthy of remediation than further mitigating climate change.

Before proceeding further, lest there be any confusion or misrepresentation of the matter, the MSC wholeheartedly acknowledges the significant environmental benefits and attributes of Pennsylvania's waste coal electric generation facilities. These facilities have removed hundreds of millions of tons of waste coal that have scarred the Commonwealth's landscape and in doing so, helped to restore the water quality of countless waterways. Waste coal facilities have returned hundreds of acres of land to productive use while improving water quality for both human consumption and aquatic life.

While these environmental attributes are undeniable and certainly ought to be continued, there nonetheless is no rational basis for the Department to fail to acknowledge other significant environmental attributes of other sources of electric generation, and to provide a similar and commensurate recognition of these benefits in the rulemaking. Examples of this include generation sources which invest resources to remediate legacy environmental degradation, such as acid mine drainage or the plugging of historic conventional orphan and abandoned oil and gas wells.

⁹ "Climate change is the most critical environmental threat confronting the world, and power generation is one of the biggest contributors to greenhouse gas emissions" – Gov. Tom Wolf (Press Release: October 3, 2019): <https://www.governor.pa.gov/newsroom/governor-wolf-takes-executive-action-to-combat-climate-change-carbon-emissions/>

¹⁰ Climate change is "the most critical environmental issue facing Pennsylvania, our residents, and every other state and country on this planet." – DEP Secretary Patrick McDonnell (September 19, 2019): House Environmental Resources and Energy Committee.

The Department has documented well the potential greenhouse gas emissions associated with historic conventional abandoned and orphan oil and natural gas wells, the vast majority of which were drilled and operated before the legislative and regulatory modernizations that were adopted by Pennsylvania in the 1980s. Additionally, it is well-understood that there are currently limited dollars available to the Department to prioritize and plug these wells.

In earlier iterations of this proposed rulemaking, the Department contemplated recognizing the greenhouse gas emission reduction benefits that could be realized through plugging of historic conventional abandoned and orphan wells. If the goal of this proposed rulemaking is truly to reduce greenhouse gas emissions, it seems logical for the Department to encourage or incentivize a wide range of compliance options for electric generators, including the plugging of these wells. The MSC strongly encourages the Department to re-examine its exclusion of well plugging as a potential allowance offset opportunity for a generator with a compliance obligation under this proposed rulemaking. Since offset allowances may not exceed 3.3% of a sources' total emission in any control period (§145.355(a)(3)), authorizing well plugging as an offset project would not flood the system with excess allowances, would directly reduce greenhouse gas emissions, and would contribute toward reducing an environmental concern that the Department has repeatedly highlighted.

It is worth reiterating that there are numerous other positive attributes that other generation sources may possess which are not present in waste coal generation sources. For example, natural gas generation produces significantly fewer SO_x and NO_x emissions that provide significant public health benefits to citizens through fewer respiratory incidents, hospitalizations and premature deaths. SO_x and NO_x emissions from the electric power generation sector, for example, have declined by 93% and 81%, respectively, between 2005 and 2018¹¹, translating into hundreds of billions of dollars in public health benefits to Pennsylvanians.

SECTION 4

RGGI ALLOWANCE REVENUE ARE NOT FEES AUTHORIZED BY THE APCA

The Department correctly notes that it has implemented other cap and trade programs, citing for example, the NO_x trading program in 25 Pa Code Chapter 145. However, in the other cap and trade programs cited by the Department, allowances were assigned to sources, not sold or allocated by the Department. Under the other programs, tradeable and salable allowances could be created by retiring sources or over controlling sources, but these sources were not required to buy allowances from the Commonwealth or another outside entity.

The Department acknowledges that the proposed RGGI rule creates a “cap and invest” program (Preamble, 50 Pa Bul. p 6215-6216). This acknowledgement that the proposed rule creates a revenue producing program is significant with respect to the Department’s authority to auction allowances, collect potentially hundreds of millions of dollars, and spend the funds as it sees fit, all without legislative approval.

¹¹ PA Department of Environmental Protection – Air Emission Report (Power BI)

There is nothing in the Air Pollution Control Act (APCA) that authorizes the Department to auction allowances as a means of air pollution control. Nor is there any provision that authorizes the Department to raise revenue for discretionary spending. The Department attempts to avoid this lack of authority by calling the allowance a fee. However, merely calling it a fee does not in fact make it one. As understood by the courts of this Commonwealth, a fee is a charge to cover the cost of administering a program or providing a service.¹² Section 6.3 of the APCA, upon which the Department relies, authorizes specific fees to support the Title V program and also fees “to support the air pollution program authorized by this act.”

Read in context, this authority is clearly limited to the costs of administering the program. Moreover, there is no authorization in the APCA for an auction program, and thus there is no “program authorized by this act” to support. To the contrary, the bulk of the funds obtained from a RGGI auction will not go to “support” the program, but rather they will go towards the “investments” that the Department proposes.

Some have suggested that the allowances are a tax; however, even without addressing that question, it is clear that the revenue derived from the sale of allowances is not a fee. Thus, there is no authorization in the APCA for the sale of allowances nor the raising of revenue for expenditure by the Department as it deems fit. This limitation of the APCA further underscores the need for the Department to engage with the General Assembly on this issue.

SECTION 5

POWER SECTOR MODELING

On April 23, 2020, the Department released its Power Sector Modeling¹³ which was prepared by ICF International Inc. (ICF). This modeling attempted to examine the impacts of the Commonwealth’s entry into the RGGI on Pennsylvania’s power generation sector and compared that modeling to another business-as-usual analysis that it also developed. The MSC offers the following comments and observations regarding this modeling.

Section 5.A

Inaccurate Baseline Comparisons

The modeling compares cumulative data between 2019 and 2030. Given that Pennsylvania’s RGGI obligations would not commence until calendar year 2022, it is unclear why ICF or the Department includes emissions from 2019-2021 in this data, since it is unaffected by a policy decision to enter RGGI. Moreover, the data presented in the model – at least as it relates to what has been released to the public – does not include a year-by-year breakdown of emissions to understand how significant the years 2019-2021 may be. Logic dictates that since it is already

¹² *Costa v. City of Allentown*, 153 A.3d 1159, 1165 (Pa. Commw. 2017); *Rizzo v. City of Philadelphia*, 668 A.2d 236, 237 (Pa. Commw 1995)

¹³ Presentation to DEP Air Quality Technical Advisory Committee and Citizen’s Advisory Council, April 23, 2020: <http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2020/4-23-20/RGGI%20IPM%20Modeling%20Webinar.pdf>



2021, the third year removed from the arbitrary baseline year, these changes either have or have not occurred, and no additional action will change the present status. At best, it seems to skew the results and capture changes in the power sector that are unrelated to entering RGGI.

Section 5.B

Carbon Dioxide Emissions Increase in Non-PA PJM States

While the Department has acknowledged that even without entry into RGGI, Pennsylvania CO₂ emissions will continue to decline through 2030, it has argued that the modeling demonstrates that there is a significant, cumulative emission reduction benefit from RGGI. Specifically, the Department has argued that without entry into RGGI, Pennsylvania CO₂ emissions from affected power generation units cumulatively will total 871 (MST) between 2019 and 2030. However, with entry into RGGI, Pennsylvania CO₂ emissions will total 691 MST between 2019 and 2030. Therefore, the model indicates that Pennsylvania will see a net cumulative benefit of 180 MST by entering RGGI.

However, this same analysis shows that between 2019 and 2030, cumulative CO₂ emissions within PJM¹⁴ will be 3,798 MST if Pennsylvania enters RGGI, and 3,885 MST if Pennsylvania does not enter RGGI. This means that Pennsylvania's entry into RGGI would have a net benefit to PJM of reducing CO₂ emissions by 87 MST between 2019 and 2030. Given that this calculation factors in Pennsylvania reducing its own CO₂ emissions by 180 MST, this means that *Pennsylvania's entry into RGGI would increase CO₂ emissions in non-PA PJM states by 93 MST.*

Section 5.C

Carbon Dioxide Emissions Reductions Increase within Non-PA Eastern Interconnection

Similar to the above analysis of impacts to PJM, an examination of DEP's power sector modeling for the Eastern Interconnection¹⁵ shows that despite a net reduction of emissions in Pennsylvania, the rest of the Eastern Interconnection shows a net increase in carbon dioxide emissions. Specifically, if Pennsylvania enters the RGGI, cumulative CO₂ emissions within the Eastern Interconnection would be 13,837 MST between 2019 and 2030. If Pennsylvania does not enter RGGI, DEP's modeling shows that cumulative CO₂ emissions across the Eastern Interconnection would be 13,880 MST between 2019 and 2030. This difference of 43 MST amounts to a net reduction of only 0.31% across the Eastern Interconnection. However, recognizing that DEP's model shows a cumulative net reduction of 180 MST in Pennsylvania alone from entry into the RGGI, this means that the balance of the Eastern Interconnection (excluding Pennsylvania) will see a *net increase of CO₂ emissions of 137 MST.* Put into context, more than 76%¹⁶ of the purported 'benefit' of reducing CO₂ emissions in Pennsylvania are

¹⁴ PJM Interconnection is the Regional Transmission Organization serving all or part of Pennsylvania, twelve additional states and the District of Columbia.

¹⁵ The Eastern Interconnection is the major electrical grid that interconnects electric utilities serving an area roughly encompassing central Canada south to the Midwest and extending east to the Atlantic Ocean. See <https://www.eia.gov/todayinenergy/detail.php?id=27152>

¹⁶ 137 MST (Eastern Interconnection increase) divided by 180 MST (Pennsylvania decrease) = 76% of Pennsylvania net benefit cancelled due to displacement, or leakage, of CO₂ emissions to other states

negated by the resulting increases in CO₂ emissions in other states – increases that PA DEP’s own modeling concedes would not occur if Pennsylvania stays out of RGGI.

Section 5.D

Cost of Compliance is Understated

In addition to discrediting the alleged benefits of reduced CO₂ emissions, this cumulative increase in emissions within Eastern Interconnection states has the perverse effect of significantly increasing the total cost of compliance on a per-ton reduction basis. For example, the Department estimates in its Regulatory Analysis Form that the cost of compliance to purchase 57 million allowances in 2022 will be approximately \$318 million¹⁷, or roughly \$5.58 per allowance based upon 2017 average allowance prices. However, given that the Department’s own modeling acknowledges that more than 76% of reduced emissions in Pennsylvania are simply shifted elsewhere, this results in the \$5.58/ton reduction price assumed by the Department is artificially low by a factor of 4.17. This means that entities with a compliance obligation under the proposed rulemaking are paying at least \$23.27 per *net* ton of CO₂ actually reduced under the Department’s scenario. The MSC notes that this estimate of \$23.27 per net ton is itself artificially low, given that more recent RGGI auctions resulted in allowances sold for more than \$7.40/allowance (compared to the Department’s estimated \$5.58/allowance).

Section 5.E

Criteria Pollutants Impact of Upwind Leakage Ignored

With the Department’s modeling demonstrating that new generation will shift to states that are upwind of Pennsylvania (e.g. West Virginia, Ohio), there is no accounting for the shift in NO_x, SO_x, VOCs and associated particulate matter that would be generated elsewhere. At the very least, the Department’s modeling should take into account other potential environmental impacts on Pennsylvania and its citizens as a result of the leakage clearly demonstrated in the modeling.

Section 5.F

Phase IV of Act 129

In developing its analysis, ICF made several assumptions, including assuming that the Pennsylvania Public Utility Commission (PA PUC) would not develop a so-called Phase IV of its Act 129¹⁸ energy efficiency and demand response program (Act 129 program). The Act 129 program establishes mandatory electricity efficiency and conservation obligations for large electric distribution companies (EDC) across Pennsylvania, and each phase is evaluated every five years to determine if the benefits to consumers outweigh costs. The current Phase III runs through May 31, 2021. Importantly, Act 129 requires the PA PUC to establish a subsequent

¹⁷ Pgs 43-44 Regulatory Analysis Form:

<http://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PubPartCenterPortalFiles/Environmental%20Quality%20Board/2020/September%202015/04-7-559-CO2%20Budget%20Trading-Proposed-RAF%20.pdf>

¹⁸ Act 129 of 2008

<https://www.legis.state.pa.us/CFDOCS/LEGIS/LI/uconsCheck.cfm?txtType=HTM&yr=2008&sessInd=0&smthLwIInd=0&act=0129>



phase of the Act 129 program if it determines the preceding phase resulted in a net benefit to consumers.¹⁹ Given past determinations, it was highly likely to presume during the preparation of the power sector modeling that the PA PUC would establish a subsequent Phase IV of the Act 129 program.

Indeed, on March 12, 2020 the PA PUC adopted a tentative implementation order²⁰ for Phase IV of the Act 129 program and finalized the implementation order on June 18, 2020. Phase IV will run from June 1, 2021 until May 31, 2026. According to a presentation offered by the PA PUC to the Department's Climate Change Advisory Committee²¹, the energy conservation portion of a potential Phase IV could result in potential incremental savings of 4,375 GWh, equal to approximately 3% of total EDC sales. Moreover, the demand response savings could result in potential incremental savings of 861.6 MWs, equal to approximately 3.2% of total peak demand sales.

Given the finalization by the PA PUC of Phase IV of the Act 129 program, and the significant potential incremental savings and reductions of energy consumption in the Commonwealth, the Department is strongly encouraged to have ICF re-analyze its Power Sector Model to account for these reductions. Accounting for this potential is critical to ensuring the accuracy of the analysis and a fair comparison between the business-as-usual versus RGGI participation scenarios.

Section 5.G

Henry Hub Pricing for Natural Gas

The model employs an estimate of future natural gas prices based upon the Henry Hub.²² It has been well-established that this price does not accurately reflect the price of natural gas transacted in Pennsylvania. This concern has been conveyed to the Department and the Administration in the past with respect to consideration and evaluation of various other public policy proposals.

As has been well-documented, the abundance of natural gas in Pennsylvania, combined with pipeline and related infrastructure constraints to get gas to market, has manifested itself in two ways: 1) sustained, low natural gas prices in Pennsylvania and 2) a persistent price differential which results in Pennsylvania gas selling at a significant discount to NYMEX.

Data from the U.S. Energy Information Administration, which tracks average sale prices at multiple transaction points across the country – including several within Pennsylvania – and Henry Hub or NYMEX average index prices shows that the price differential within

¹⁹ 66 Pa.C.S. §2806.1(c)(3): “If the commission determines that the benefits of the program exceed the costs, the commission shall adopt additional required incremental reductions in consumption.”

²⁰ PA PUC Phase IV Tentative Implementation Order – Docket No. M-2020-3015228

²¹ DEP Climate Change Advisory Committee, April 30, 2020:

<http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2020/4-30-20/Presentation%20-%20Act%20129%20Phase%20III%20Update%20-%20Joe%20Sherrick%20-%2004-30-20.pdf>

²² Henry Hub refers to a natural gas pipeline located in Louisiana that serves as the official delivery point for natural gas futures contracts transacted on the New York Mercantile Exchange, commonly referred to as NYMEX.



Pennsylvania can be as great as 60% - 70% or more below national index prices.²³ Basing the modeling on Henry Hub is not an accurate representation of the economic dynamics of Pennsylvania and therefore skews the modeling results.

Section 5.H

Modeling Inconsistently Measures New Natural Gas Generation and New Renewable Generation

Under both the business as usual and the policy case scenarios, the Department's modeling concludes there will be no new natural gas generation in Pennsylvania. When asked for the rationale for even the business-as-usual scenario having no new natural gas generation, the Department explained that the modeling was based on planned and financed projects already under consideration. However, when contemplating future impacts, the modeling does provide for estimates related to new renewable generation. This dichotomy, namely suggesting new natural gas generation cannot be modeled absent actual plans but renewable generation can be predicted and modeled, appears to be disingenuous at best and contrary to the very purpose and concept of "economic modeling." MSC would urge the Department to re-evaluate the modeling in terms of planned new generation for natural gas, as even the aforementioned leakage suggests there would be new natural gas generation under both the business as usual and policy case scenarios. The future of the Commonwealth's electric generation portfolio is of critical importance, as we have learned from California that without baseload backup for renewable and intermittent sources of power generation, like wind and solar, we will jeopardize grid stability and impact consumer electric power reliability.

Section 5.I

New York State Modifications to Its RGGI Program

On April 29, 2020 the New York Department of Conservation announced²⁴ proposed modifications to New York's RGGI regulations, which are slated to be effective on January 1, 2021. Much of the proposed modifications are intended to conform New York's regulations to the modified regional allowance cap agreed to by the participating RGGI states. However, New York has also stated its intent to amend the applicability of its RGGI regulations to now include electric generation units that have a nameplate capacity of 15 megawatts and which reside at a facility with two or more such units.

New York's stated reason for lowering its applicability threshold to 15 megawatts is as follows:

²³ For comparison, as of December 9, 2020 Pennsylvania composite prices at two benchmark trading hubs identified by the U.S. Energy Information Administration (Dominion South and Tennessee Zone 4) were, on average, 30% below the average weekly Henry Hub spot market closing price for calendar year 2020. On November 4, 2020 this differential reached 82%, meaning on average Pennsylvania producers received 18 cents for every \$1 received at the Henry Hub. Source: U.S. EIA Natural Gas Weekly Update: <https://www.eia.gov/naturalgas/weekly/>

²⁴ DEC and NYSERDA Release Proposal to Reduce New York's Regional Greenhouse Gas Initiative Emissions Cap by 30 Percent: <https://www.dec.ny.gov/press/120316.html> (April 29, 2020)

“This change recognizes that most of these smaller sources are located in proximity to New York’s Environmental Justice communities, which include communities of color and low-income communities that bear an undue and historic burden of air pollution.”²⁵

Given that the RGGI program is focused upon reducing carbon dioxide emissions from electric generation units – and that carbon dioxide has no associated ambient air quality standard and does not result in local air quality impacts that may disproportionately affect a local community – it is unclear what benefit New York seeks to deliver to its residents. It is also worth noting, as New York expresses its concern for proximity of generation units to environmental justice communities, that nothing within New York’s proposed modification would actually require such units to reduce any emissions. Thus, there are no environmental benefits delivered to these communities; the units are merely taxed for their carbon dioxide emissions.

In the aggregate, it is possible that expanding the number of units that are obligated to obtain allowances, while simultaneously not expanding the number of allowances in the regional cap available to meet a unit’s compliance obligation, may raise the cost of allowances and may ultimately expand the number of units unable to acquire sufficient allowances and thus need to retire. At a minimum, Pennsylvania’s power sector modeling should be revised to contemplate the implications of New York’s RGGI rule modifications.

Section 5.J

Data Questions and Potential Inconsistencies

- Under the Business-as-Usual (Reference) Case utilized by the Department and ICF International, Pennsylvania CO₂ emissions from the power sector are estimated at 78 MST in 2022. However, under the Policy Case scenario, CO₂ emissions are set at 57 MST in 2022. No rationale is offered for such a significant discrepancy in these figures, which have significant impacts on the modeling results and accumulation of CO₂ reductions attributable to participation in RGGI. If the Department’s argument is that the mere discussion of Pennsylvania’s entry into RGGI has impacted business decisions and led to the retirement of higher-emitting sources, this assumption should be applied equally to both the Reference and Policy cases, since Pennsylvania clearly is already in the midst of such a discussion, and that is unique from the implications of whether Pennsylvania ultimately enters RGGI. Put simply, the RGGI discussion has already impacted the Business-as-Usual scenario and all models ought to reflect this reality.
- According to the April 23, 2020 PowerPoint presentation to the joint meeting of the Air Quality Technical Advisory Committee and the Citizen’s Advisory Council, the model assumes 9.3 million²⁶ allowances are set aside for waste coal generators. However, the modeling results contained in the Policy Case excel data spreadsheet that accompanied

²⁵ DEC and NYSDERDA Release Proposal to Reduce New York’s Regional Greenhouse Gas Initiative Emissions Cap by 30 Percent: <https://www.dec.ny.gov/press/120316.html> (April 29, 2020)

²⁶ Slide 11:

<http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2020/4-23-20/RGGI%20IPM%20Modeling%20Webinar.pdf>

the PowerPoint presentation states that the model assumed 7.9 million²⁷ allowances set aside for waste coal generation.

The draft proposed rulemaking²⁸ which existed at the time of the modeling assumptions references 7.9 million allowances for waste coal generation. It is important for the Board to clarify this discrepancy and determine what, if any, impact this may have had on the modeling results.

- The April 23, 2020 PowerPoint presentation contains information regarding Pennsylvania's electric generation portfolio for 2010 and 2019 (Slides 13 and 14). It appears the percentages for coal and natural gas as represented in the pie charts on Slide 13 differ slightly from the numerical representations on Slide 14. These differences may be inconsequential, but the Board may wish to examine these and any other data inconsistencies which have been identified to date.

Section 5.K

COVID-19 Pandemic

Understandably, the power sector modeling does not include any consideration related to the COVID-19 pandemic and related disaster emergencies declared by President Trump and Governor Wolf. The MSC recognizes that neither the Department nor ICF could have anticipated this pandemic nor the response to it, which largely shuttered whole segments of the nation's economy for an extended period of time. Nonetheless, the Department now knows that this unprecedented shutdown of our state, national and international economy has fundamentally altered both the baseline data and future data projections relied upon in the power sector modeling. To this point, as noted by the International Energy Agency²⁹, the decline in energy usage specifically is unprecedented. Global energy demand is projected to fall 6% in 2020, or nearly seven times more than the energy demand reduction associated with the 2008 recession, while in the United States energy demand is projected to decline by 9%. These unprecedented reductions are permanently and fundamentally shifting electric generation portfolios, particularly as older and less-economic units retire even earlier than previously expected. In total, because of these alterations to our economy, energy demand, and energy generation, total carbon emissions from the energy sectors are projected to decline by 8%. The U.S. Energy Information Administration (EIA) forecasts even larger reductions of energy-related carbon emissions of

²⁷ Policy Case Results – Assumptions Overview (Line 20):

<https://www.dep.pa.gov/Business/Air/BAQ/AdvisoryGroups/Air-Quality-Technical-Advisory-Committee/Pages/default.aspx>

²⁸ Draft PRN CO₂ Budget Trading Annex A1-30-20 presented to Air Quality Technical Advisory Committee:

<http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2020/2-13-20/Draft%20PRN%20CO2%20Budget%20Trading%20Annex%20A%201-30-20.pdf>

²⁹ International Energy Agency: *Global Energy Usage to Plunge this Year as a Result of the Biggest Shock since the Second World War* – <https://www.iea.org/news/global-energy-demand-to-plunge-this-year-as-a-result-of-the-biggest-shock-since-the-second-world-war>

11% for 2020, representing the largest decrease both in terms of percentage as well as absolute terms since the EIA began to compile data in 1949.³⁰

The implications of this ongoing pandemic will be felt for years to come. Without question, there have been significant changes to key factors and assumptions that would affect outcomes of the Department's power sector modeling, such as energy usage, energy prices, and the economic viability of current and planned electric generation facilities. This revised information may have significant impacts on both the business-as-usual as well as entry-into-RGGI scenarios and should be revisited by the Department. This is critical since the power sector modeling results, at a minimum, form the foundation for the Department's calculations of its cost-benefit analysis as well as compliance costs to affected electric generation units.

SECTION 6

ECONOMIC MODELING

Section 6.A

Public Health Benefits from NO_x and SO_x Reductions are Overstated

On August 6, 2020 the Department released its Economic Modeling of the RGGI proposed rulemaking.³¹ A key assertion of the Economic Modeling results is that Pennsylvanians will see between \$2.8 billion and \$6.3 billion in public health benefits due to avoided NO_x and SO_x emissions, as compared to a business-as-usual scenario.

Even taking the formulaic methodology utilized by the Department at face value, these public health benefits are overstated. Inexplicably, the Department calculates such avoided emissions from the period 2019 through 2030. However, under the Department's proposed rulemaking, Pennsylvania's entry into RGGI would not be effective until January 1, 2022. It appears that the Department has incorrectly modeled and attributed reductions in NO_x and SO_x between 2019 – 2021 to RGGI. Based on the modeling data released by the Department,³² the avoided emissions of NO_x are overstated by 15% and the avoided emissions of SO_x are overstated by 18.7%.

While the Department has noted the health benefits to be derived from the co-reduction of NO_x and SO_x emissions within Pennsylvania, it has not assessed the impact of additional NO_x, SO_x and particulate matter that will be co-emitted and transported by the prevailing winds into Pennsylvania from sources in PJM states to the west of Pennsylvania or from the broader Eastern Interconnection. As noted previously, CO₂ emissions will increase from sources in both PJM and the Eastern Interconnection. Those CO₂ emissions inevitably will be accompanied by NO_x, SO_x and particulate emission, some of which will be transported into Pennsylvania thus reducing the health benefits of NO_x and SO_x reductions in Pennsylvania.

³⁰ U.S. Energy Information Administration: *EIA expects energy-related carbon dioxide emissions to fall 11% this year* – <https://www.eia.gov/todayinenergy/detail.php?id=43715&src=email>

³¹ Economic Modeling Overview Presentation Slides:

<http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/RGGI/FINAL%20RGGI%20101%20Webinar.pdf>

³² <https://www.dep.pa.gov/Citizens/climate/Pages/RGGI.aspx> - select "Economic Modeling Results (Excel)"

Section 6.B

Reductions of CO₂ Emissions Attributable to RGGI States are Overstated

The Department's Preamble and supporting documents, published in the October 31, 2020 *Pennsylvania Bulletin*, overstate the reductions of CO₂ emissions from RGGI-participating states. The Department largely relies upon a publication put out by the Acadia Center. Inexplicably, the Acadia Center calculates reductions of CO₂ emissions from RGGI participating states starting with a baseline year of 2005. This is a full four years before RGGI took effect with a compliance obligation for generators (2009), and no rationale is offered as to why the Department continues to utilize this faulty baseline data or fails to scrutinize the data asserted by the Acadia Center. If the Department wishes to articulate the reductions of CO₂ emissions from RGGI-participating states as a justification for Pennsylvania entry into the program, it ought to utilize factual, defensible, and accurate data.

Furthermore, the Department is not making an apples-to-apples comparison. When asserting that there were greater reductions in RGGI states than in Pennsylvania during the 2005 to 2016 period, the Department compares Pennsylvania's total net CO₂ emission reduction to the reductions from only "covered sources" in the RGGI states, failing to address the economy-wide emission increases or decreases that comprise a state's net emissions. (RAF p. 14).

Section 6.C

No Public Health Benefits from CO₂ Reductions are Identified

The brevity of the following statement should not discount its magnitude: While this proposed rulemaking seeks to regulate and ostensibly reduce carbon dioxide emissions from certain electric generation units, the Department's own economic modeling results provide no quantifiable public health benefits from the claimed reductions of carbon dioxide.

Much of the Commonwealth currently is meeting attainment for criteria pollutants, such as SO_x, NO_x and particulate matter. If additional steps are necessary for the Commonwealth to comply with federal ambient air quality standards, the Department already has tools at its disposal to achieve these standards.

SECTION 7

REVENUES SUBSIDIZING ALTERNATIVE ENVIRONMENTAL PROJECTS

The Department also has modeled planned expenditure of the revenues derived from the sale of credits (RGGI PLUS INVESTMENTS). There are significant policy considerations to weigh in the proposal to utilize revenues from certain energy sources (primarily natural gas) to subsidize other energy sources (i.e. renewables such as wind and solar). Clearly "robbing Peter to pay Paul" creates certain economic disparity between power generation sources, as well as consequent manipulation of the price for power generated by both the subsidizing source as well as the subsidized source. This is worthy of weighing as a consideration, as the current plan demonstrates there will be winners and losers among the various energy sources.



Further, setting aside the clear efficiency challenges that renewables present when compared to natural gas generation, the plan to embrace renewable generation seems devoid of any consideration of associated environmental impacts. Manufacturing of solar panels requires significant mining operations for the rare earth minerals that are necessary in their construction. Each windmill built requires industrial scale steel and concrete to manufacture. While perhaps not all in our backyard, the impacts of these sources, particularly on the scale necessary to impact CO₂ emission from the power generation sector, need to be factored in order to have a broad understanding of the long-term environmental impacts of such policy decisions.

Furthermore, there seems to be no consideration at the shorter life cycle of current solar and wind generation facilities when compared to natural gas generation facilities. And likewise, there appears to be no consideration or forethought to the environmental impacts from the disposal of solar panels, wind turbines and blades when those sources reach the end of their much shorter useful life.

This is not to suggest that these, namely wind and solar, are not viable forms of energy that should be considered as an integral part of an overall energy mix. But they are just that - segments of a broader energy policy that need to be weighed appropriately. For example, even the Progressive Policy Institute has observed that *“Natural gas can play an indispensable role in managing the risk that a precipitous leap to renewables will make electricity more expensive and potentially less reliable.”*³³ Indeed, we need not look any further than the rolling blackouts in California to remind us that baseload generation from natural gas is absolutely necessary to back up the variable generation of power through wind and solar. As such, policy considerations pertaining to the subsidization of alternative energy sources need to factor many issues before embracing a plan to enhance certain energy forms at the cost of others.

Any investments should be based upon maximizing the return on investment of reduced CO₂ emissions, particularly given that the current Department-proposed spending plan appears to yield only 8 MSTs of additional benefits attributable to RGGI PLUS from over \$2.5 Billion in spending between 2022 – 2030. It appears that the Department’s proposed expenditure of such a significant amount of money has no meaningful or appreciable benefit related to impacts from climate change.

Alternatively, MSC would suggest that should Pennsylvania ultimately enter into RGGI, there should be other, more meaningful options considered for utilization of revenues derived from an auction of allowances. In addition to the previous discussion regarding the co-benefits of plugging orphaned and abandoned wells, why not consider additional options that could limit environmental impacts of existing forms of power generation? To this end, the development and enhancement of carbon capture technologies would certainly help reduce any environmental and climate impacts of CO₂ emissions. Not only should carbon capture technologies be considered, but further investment in the exploration of geologic opportunities unique to Pennsylvania for such options should be considered, as well. Again, even the Progressive Policy Institute has

³³ Wind, Solar, and Gas: Managing the Risks of America’s Clean Energy Transition – Progressive Policy Institute: <https://www.progressivepolicy.org/publication/wind-solar-and-gas-managing-the-risks-of-americas-clean-energy-transition/> December 16, 2020

recognized the critical role of carbon capture technologies in reducing emissions and making progress toward net zero carbon emissions.³⁴ These concepts would surely provide a better strategy to reduce atmospheric CO₂.

In short, MSC encourages a much broader discussion and consideration before embracing any one approach on revenue expenditures over another. The MSC looks forward to the opportunity to comment on a formal expenditure plan from the Department on the use of any RGGI revenue, and strongly encourages engagement with the General Assembly to broaden the potential investment opportunities available to the Commonwealth.

SECTION 8

RGGI BANKED ALLOWANCES

Section 8.A

Section 145.342 subsections (f) and (g) are arbitrary and capricious or disingenuous

These subsections provide that DEP “may” determine to make an adjustment to the base allowance budget to account for so-called banked allowances. The formula in subsection (g) makes it clear that this adjustment will reduce the number of allowances available. Subsection (f) provides a complicated formula for determining what that adjustment (reduction) will be. The formula factors in the banked allowances held by all covered sources in the entire RGGI region, as well as the emissions from all covered sources in the RGGI region and the ratio of Pennsylvania’s allowance budget versus the entire RGGI allowance budget. However, neither of these subsections provide any criteria for determining whether such an adjustment is necessary. Nowhere in the Preamble or Regulatory Analysis Form is it explained why this adjustment is needed or when it “may” be triggered. Without any standard or criteria, these subsections seem arbitrary and capricious.

In this case, however, “may” may not actually mean may. As the Department has made clear, its proposed rule is based on the RGGI Model Rule, and RGGI Inc. has made clear that such state regulations must be “fully compatible” with the RGGI Model Rule.³⁵ The current version of the RGGI Model Rule, in fact, provides that participating states shall adjust their base budgets for the banked allowances for the years 2021 through 2025. See RGGI Model Rule section xx-5.3 (h) and (j). Those sections of the RGGI Model Rule provide formulas that are virtually identical to those in the DEP proposed rule. To be consistent with the other RGGI states, it is unclear if DEP will be compelled to make an adjustment for banked allowances even though the regulation

³⁴ How Natural Gas Can Play a Long-Term Role in Meeting Growing Demand and Decarbonization Goals – Progressive Policy Institute: <https://www.progressivepolicy.org/pressrelease/how-natural-gas-can-play-a-long-term-role-in-meeting-growing-demand-and-decarbonization-goals/> December 16, 2020

³⁵ New State Participation in RGGI: “Principles for Participation: Any new state entrant into the RGGI market must develop an independent CO₂ Budget Trading Program regulation that is fully compatible with the RGGI Model Rule.” [https://www.rggi.org/sites/default/files/Uploads/Participation/RGGI New State Participation Overview.pdf](https://www.rggi.org/sites/default/files/Uploads/Participation/RGGI%20New%20State%20Participation%20Overview.pdf)

says it “may” do so. An explanation, clarification and modification of the proposed rulemaking are in order.

Section 8.B

Section 145.342 subsections (f) and (g) should be removed from the regulations

In addition to the defects noted above, it is inappropriate to adjust the allowances available to Pennsylvania sources based on historically banked allowances. Sources outside of Pennsylvania have participated in RGGI for years and have acquired allowances over these years, often at prices significantly below current allowance prices. In addition, non-governmental organizations (NGOs) and investment firms which do not have compliance obligations have also acquired allowances during this time. All of these allowances, whether held by sources in compliance accounts or by others in general accounts are counted in the formulas discussed above. Pennsylvania sources have not had an opportunity to bank allowances nor any reason to do so to date.

While an adjustment for banked allowances may or may not be appropriate for existing RGGI states with sources already holding banked allowances, there seems to be no reason to include such an adjustment in DEP’s rules when Pennsylvania sources have not banked allowances. Reducing Pennsylvania’s allowances available to in-state sources based on the banked allowances held by others places them at a disadvantage and will make compliance more difficult and expensive. This is particularly true in the case of banked allowances held by NGOs or investment firms. Based on the language of §145.342(f) and (g), allowances held by these entities will reduce the allowances the state will offer for sale, potentially increasing the value of those allowance and conferring an economic benefit to the secondary market in the case of investment firms or further limiting the allowances available for compliance in the case of NGOs.

SECTION 9

MISCALCULATION OF AVAILABLE ALLOWANCES AND FORECASTED REVENUE

On pages 34 -35 of the Regulatory Analysis Form the Department states that it expects the “effective” budget of allowances available for auction in 2022 to be 60.9 MST (MST). The Department arrives at this allocation after “deducting allowances for the set aside allocations and the ECR” (RAF p. 34). The projected “effective budget” and expected revenues are shown on Table 7, page 35 of the Regulatory Analysis Form. DEP projects revenue of approximately \$330 Million for 2022 as a benefit of the program. This revenue will be collected from electric generation units which have a compliance obligation under the proposed rulemaking, or NGOs and third-party entities that choose to purchase allowances for reasons other than compliance.

However, this calculation seems flawed. The 2022 allowance base budget is 78 MST. Subtracting 7.8 MST for the Emission Containment Reserve (ECR) (10% per §145.342(e), as DEP suggests they will automatically do each year) leaves 70.2 MST. The waste coal set aside



found in §145.342(i) is 9.3 MST, resulting in the 60.9 MST of allowances as shown in Table 7, page 35 of the Regulatory Analysis Form. The same methodology appears to have been used for subsequent years on Table 7, as well. However, this calculation omits the co-generation set aside established in §145.342(k). Although the number of allowances to be set aside for co-generation facilities is not stated (presumably the Department knows the potential range of that number), it is clear that the Department intends to set aside a number of allowances for each co-generation unit equal to the emissions related to the production of thermal energy and electricity provided to its co-located facility. Accordingly, there will be some number of allowances less than 60.9MST for auction.

Therefore, it appears the Department may have overstated the revenue it will obtain. This apparent overstatement has a cascading effect, as it directly impacts the amount available to the Clean Air Fund for subsequent Department spending and, correspondingly, the projected benefits of further CO₂ emission reductions from this spending. In short, less money equals fewer projects to fund and fewer emission reductions than forecast in the Department's modeling.

Moreover, the Department fails to explain why it believes that 60.9 MST of allowances will, in fact, be purchased. According to the Department's modeling, in 2022 actual emissions from all covered sources in Pennsylvania will be 57 MST. The 57 MST presumably includes emissions from waste coal and co-generation facilities. Those facilities are provided with set asides and, therefore, do not need to purchase allowances. Given the magnitude of those set asides it is clear that there will be an in-state demand of less than 47.7 MST of allowances (57 MST minus 9.3 MST for the waste coal set aside). If DEP's emission modeling is correct, there will not be an in-state demand for 60.9 MST. The Department offers no explanation why it believes the purchase of allowances will exceed the total actual emissions that it models, much less account for the sources with set asides.

Conversely, the Department may be improperly reducing the allowances that should be available. The statement quoted above from page 34 of the Regulatory Analysis Form indicates that DEP intends to deduct the ECR every year, thereby initially reducing the allowances available to all covered sources by 7.8 MST in 2022. Pursuant to the proposed rulemaking, the ECR is triggered only if the auction clearing price of allowances falls below the ECR Trigger Price. For 2022 the trigger price is \$6.42 according to the proposed rule and the RGGI Model Rule. At the last RGGI auction held in December 2020 the clearing price for allowances was \$7.41³⁶, so the ECR would not have been triggered. However, the Department projects a clearing price of \$5.42 in 2022, without any explanation. It is difficult to see how the clearing price will be essentially \$2.00 lower per allowance in 2022 notwithstanding a doubling of the demand for allowances by reason of Pennsylvania's entry into RGGI.

There is no explanation as to how the Department reached this conclusion. The MSC urges the IRRC to direct the EQB to clarify its calculation of allowances available for sale in the market; the correlation of allowances available to facilities in Pennsylvania which must purchase those allowances to comply with the rulemaking; the impact these recalculations have on the amount

³⁶ RGGI Auction 50: <https://www.rggi.org/Auction/50> December 2, 2020

of available revenue to invest in Clean Air Fund projects; and the associated benefits speculated to be realized from these investments.

SECTION 10

DISALLOW THIRD PARTY PURCHASE OF ALLOWANCES

The Department proposes to allow any individual or entity which meets the requirements of an auction participant (as outlined in §145.405 & §145.406) to participate as a bidder in a CO₂ auction conducted pursuant to this proposed rulemaking. This seems wholly inappropriate, as entities with no compliance obligation under the RGGI rule will be eligible to purchase allowances and either re-sell them for investment purposes – thus raising the overall compliance costs on Pennsylvania businesses and residents – or simply retire them so that they are unavailable for purposes of complying with the rulemaking. Neither of these reasons is in conformance with the stated purposes of the rulemaking and will result in manipulation and distortion of the allowance market.

Moreover, the Department claims that it has carefully set annual allowance allocations and modeled impacts of the rulemaking based on the number of affected electric generation units and forecast emissions in the Commonwealth. These calculations are detrimentally affected by the potential for third party entities to manipulate this artificial allowance market merely for their own political or pecuniary ends. The MSC strongly urges the Department to amend the requirements of an auction participant to state that such a participant must have a compliance obligation under this proposed rulemaking.

SECTION 11

COST-BENEFIT ANALYSIS

The Regulatory Review Act requires the EQB to prepare a Regulatory Analysis Form that, among other information, includes an estimate of the direct and indirect costs of a proposed regulation to the Commonwealth, its political subdivisions, and the private sector as well as an evaluation of the benefits to be realized.³⁷ Additionally, under Executive Order 1996-1, no regulation may be promulgated if the costs of the regulation outweigh its benefits.³⁸

To meet the obligations of both the Regulatory Review Act as well as Executive Order 1996-1, the MSC believes that the EQB must demonstrate that the benefits to be realized by the citizens of Pennsylvania are equal to or are greater than the financial costs to comply with this rulemaking. Such benefits must be tangible and quantifiable, just as the costs are tangible and

³⁷ §5(a)(4) and §(10) of Act 181 of 1982, known as the Regulatory Review Act

³⁸ Executive Order 1996-1: Regulatory Review and Promulgation

https://www.oa.pa.gov/Policies/eo/Documents/1996_1.pdf



quantifiable. It is insufficient and in conflict with the Regulatory Review Act merely to suggest that emissions will be “reduced”.

Moreover, given the unique nature of carbon dioxide emissions – which manifests itself with global, rather than local or regional implications – it is imperative that the EQB demonstrate that *actual carbon emissions* in total are reduced, not merely displaced to jurisdictions outside of the Commonwealth’s reach. For example, if implementation of the RGGI resulted in Pennsylvania electric generators emitting 100 million fewer tons of carbon dioxide over a five-year period – but neighboring jurisdictions increased emissions by a comparable amount – there would be no tangible environmental or public health benefit derived by the citizens of Pennsylvania. There would, however, be significant cost to the Commonwealth’s power generation sector, and ultimately consumers, in the form of payment to procure carbon dioxide allowances.

Carbon dioxide is a unique emission compound, unlike anything the EQB has regulated before. It is not a criteria health pollutant, and it has no established ambient air quality standard. While regulation and reduction of more traditional criteria health pollutants, such as NO_x, SO_x, and various particulate matters can translate into direct and tangible public health benefits both locally and regionally, the same is not true for carbon dioxide. The Department often touts the dangers of unchecked carbon dioxide emissions and climate change (rising sea levels; increased frequency and severity of storms and flooding; heat waves; etc.). In fact, the Department asserts that these rules are necessary to shield the Commonwealth from the worst impacts of climate change. However, it provides no analysis or demonstration as to how this rulemaking will accomplish that goal for Pennsylvania citizens in light of the global scope of climate change.

It is therefore incumbent upon the EQB – and the Department, which originated this proposal – to demonstrate commensurate environmental and public health benefits that will be achieved through adoption and implementation of this specific rulemaking. It is not sufficient merely to assert that Pennsylvania is doing its fair share, and that such benefits will be realized when other jurisdictions – other states and nations – also do their fair share. Such an assertion may have merit in political or public policy circles, but because this rulemaking is advancing without the shield of direct legislative authorization, it must be evaluated under the strict and well-established cost-benefit criteria of both the Regulatory Review Act and Executive Order 1996-1. Moreover, the implied benefits from the Department utilizing revenue it receives from the auction of allowances to provide grants to projects related to energy efficiency and renewable energy – while perhaps meritorious – do not constitute ‘benefits’ that can be measured against the costs of compliance that will be incurred by regulated entities.

Conclusion

Since issuance of the governor’s Executive Order compelling the Department to pursue a regulatory path to entering RGGI, there has been considerable attention and activity paid to this issue by the General Assembly. In addition to passage of House Bill 2025, which was vetoed by Governor Wolf, there have been numerous legislative hearings and meetings on the subject of RGGI.

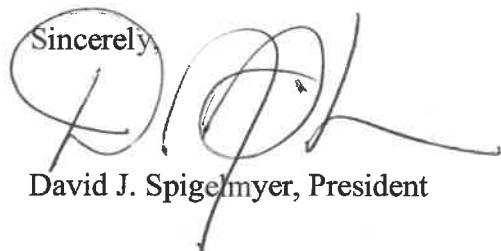


Entrance into RGGI signifies a considerable policy shift for the Commonwealth. While much attention will be paid by all sides as to whether the Department has sufficient existing statutory authority to enter into RGGI, it seems clear that meaningful collaboration with the elected General Assembly is critically important to achieving “buy-in” with the numerous constituent groups and communities which are impacted by such a sweeping new policy. The MSC urges Governor Wolf to directly engage the General Assembly on this issue, not merely through inviting written comments during a prescribed comment period dictated by the Department, but rather meaningful engagement that respects the General Assembly’s law-writing prerogative.

In addition to encouraging the engagement of the legislature more directly, the MSC has outlined above a number of inconsistencies and inaccuracies with the underlying data and the resulting power generation and economic modeling. The flaws and gaps in this information should be resolved and addressed if the Department is going to accurately and honestly inform Pennsylvanians on the proposed rulemaking. As such, both the underlying data and the modeling should be revised to address the aforementioned shortcomings.

Similarly, as it addresses the deficiencies in its supporting documentation, the Department should also outline what is to be achieved beyond several billion dollars in more revenue and a few dozen short tons less in CO₂ emissions should Pennsylvania enter RGGI. Given that the repeated foundational purpose for entering RGGI is the impacts of climate change on Pennsylvanians, the lack of specific outcomes related to this stated purpose is glaring and should be clearly articulated to demonstrate how RGGI negates or improves upon the impacts caused by climate change.

On behalf of the members of the Marcellus Shale Coalition, and their thousands of employees across Pennsylvania, thank you for your consideration of these comments.

Sincerely,


David J. Spigelmyer, President

cc: Independent Regulatory Review Commission
Environmental Quality Board
Senate Environmental Resources and Energy Committee
House Environmental Resources and Energy Committee

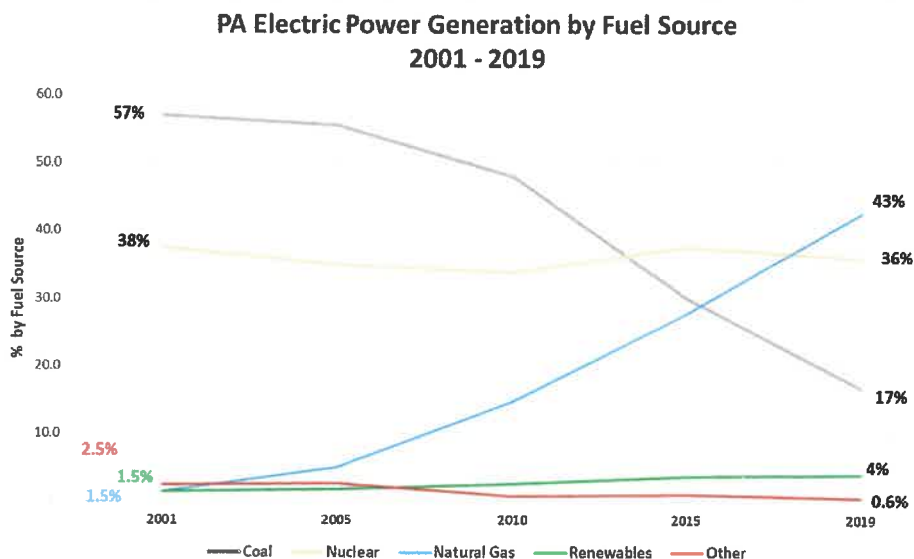


APPENDIX

Charts and Graphs Related to Public Health and Environmental Benefits from Increased Utilization of Natural Gas in Pennsylvania’s Electric Power Generation Sector & RGGI Modeling Results

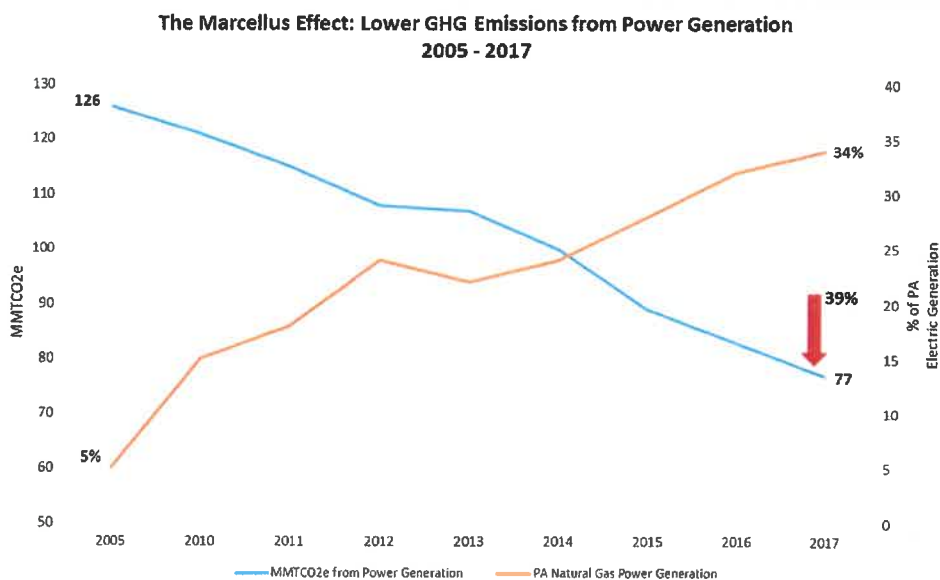
1) PA Electric Power Generation by Fuel Source 2001 – 2019

Source: U.S. Energy Information Administration – Electricity Data Browser



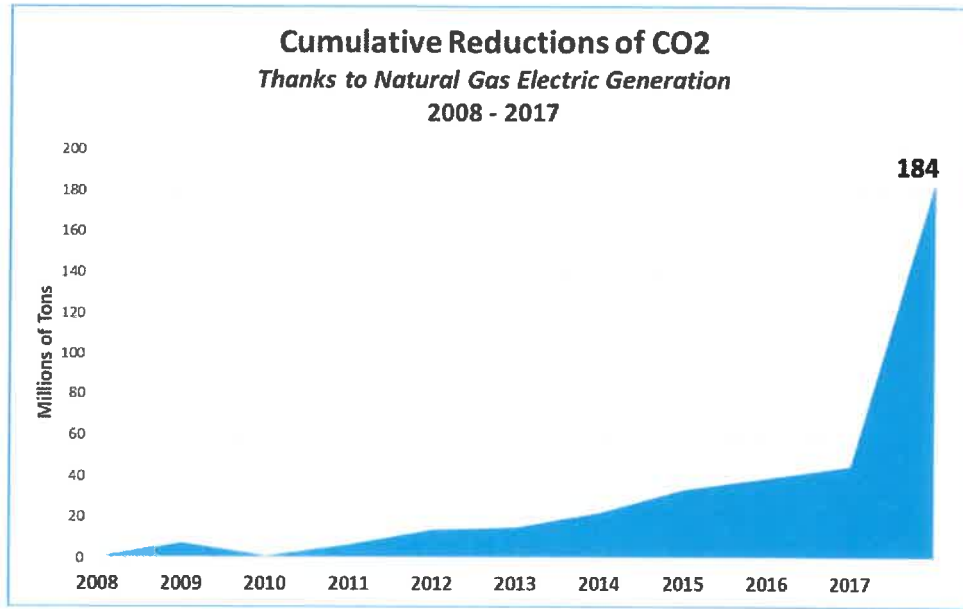
2) The Marcellus Effect: Lower GHG Emissions from Power Generation 2005 – 2017

Source: U.S. Energy Information Administration



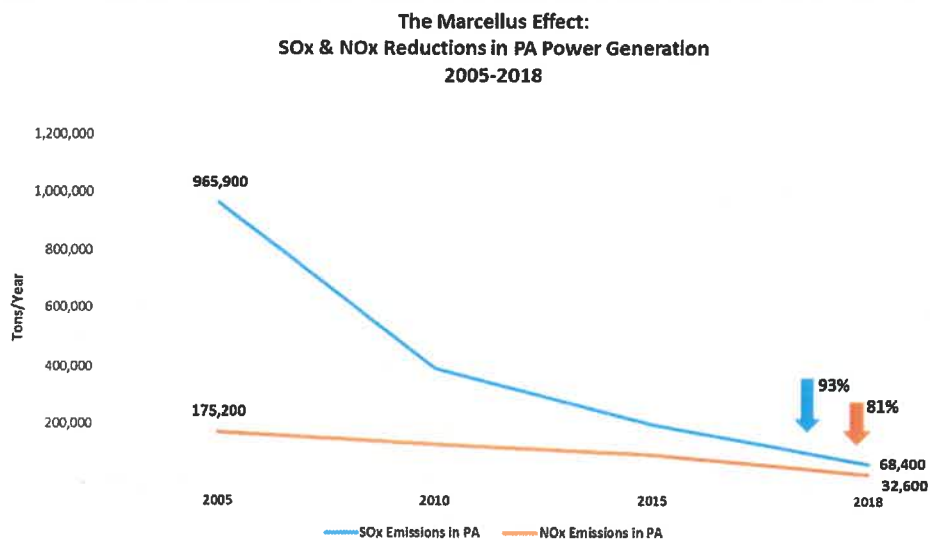
3) Cumulative Reductions of CO2 Thanks to Natural Gas Electric Generation 2008 – 2018

Source: U.S. EIA State Carbon Dioxide Emissions Data



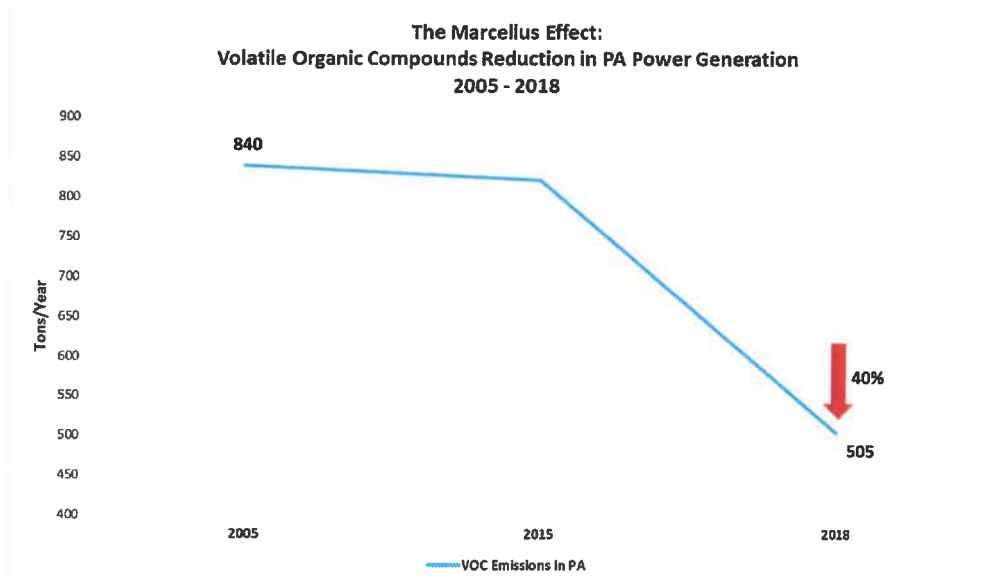
4) The Marcellus Effect: SOx & NOx Reductions in PA Power Generation 2005 – 2018

Source: PA DEP – Air Emission Report (Power BI) Accessed July 2020



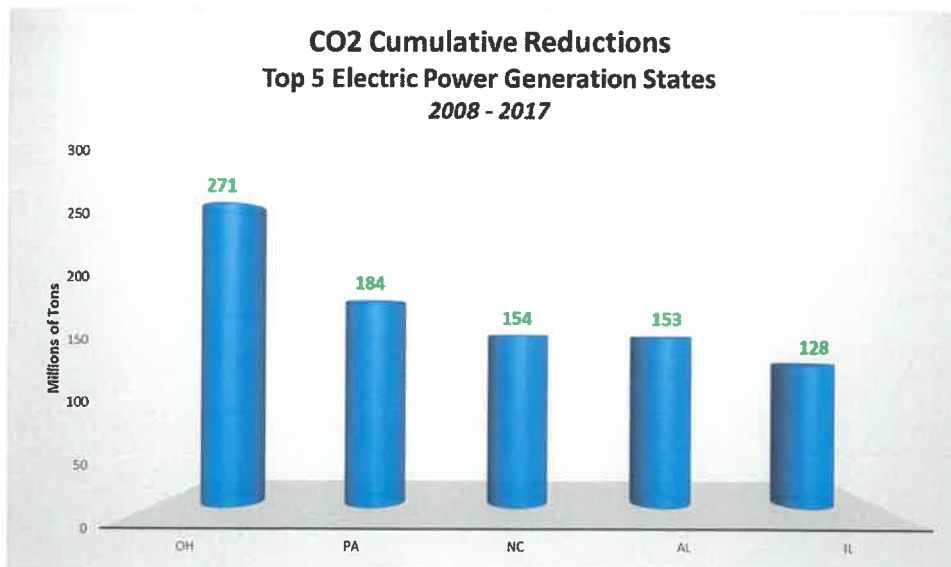
5) The Marcellus Effect: Volatile Organic Compounds Reduction in PA Power Generation 2005 – 2018

Source: PA DEP – Air Emission Report (Power BI) Accessed July 2020



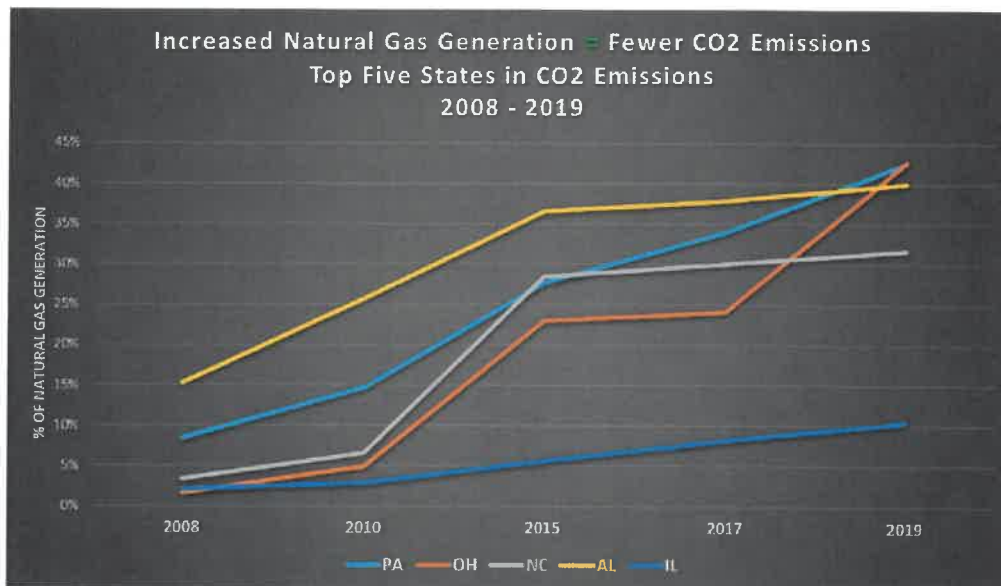
6) CO2 Cumulative Reductions: Top 5 Electric Power Generation States 2008 – 2017

Source: U.S. EIA State Carbon Dioxide Emissions Data



7) Increased Natural Gas Generation = Fewer CO2 Emissions. Top Five States in CO2 Emissions 2008 - 2019

Source: U.S. EIA Electricity Data Browser



8) Impact of PA RGGI Participation on CO2 Emissions in PJM States

Source: PA DEP/ICF International Power Sector Modeling Results

Year	PA CO ₂ Emissions	PA CO ₂ Emissions compared to BAU	PJM CO ₂ Emissions Excluding PA	PJM CO ₂ Emissions compared to BAU Excluding PA
2019	-	-	-	-
2020	75,000,000	+ 1,000,000	281,000,000	- 3,000,000
2021	-	-	-	-
2022	57,000,000	- 21,000,000	263,000,000	+ 12,000,000
2023	-	-	-	-
2024	-	-	-	-
2025	55,000,000	- 18,000,000	251,000,000	+ 9,000,000
2026	-	-	-	-
2027	-	-	-	-
2028	51,000,000	- 19,000,000	254,000,000	+ 11,000,000
2029	-	-	-	-
2030	51,000,000	- 9,000,000	244,000,000	+ 6,000,000
CUMULATIVE TOTALS	691,000,000	- 180,000,000	3,107,000,000	+ 93,000,000

9) Impact of PA RGGI Participation on CO₂ Emissions in Eastern Interconnection States

Source: PA DEP/ICF International Power Sector Modeling Results

Year	PA CO ₂ Emissions	PA CO ₂ Emissions compared to BAU	Eastern Interconnection CO ₂ Emissions Excluding PA	Eastern Interconnection CO ₂ Emissions compared to BAU Excluding PA
2019	-	-	-	-
2020	75,000,000	+ 1,000,000	1,222,000,000	- 2,000,000
2021	-	-	-	-
2022	57,000,000	- 21,000,000	1,059,000,000	+ 18,000,000
2023	-	-	-	-
2024	-	-	-	-
2025	55,000,000	- 18,000,000	1,054,000,000	+13,000,000
2026	-	-	-	-
2027	-	-	-	-
2028	51,000,000	- 19,000,000	1,092,000,000	+ 14,000,000
2029	-	-	-	-
2030	51,000,000	- 9,000,000	1,087,000,000	+ 7,000,000
CUMULATIVE TOTALS	691,000,000	- 180,000,000	13,146,000,000	+ 137,000,000