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Attachment 7

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Testimony of Michelle Bloodworth
President and CEO, America's Power
Before the Pennsylvania House of Representatives
Environmental Resources & Energy Committee
July 21, 2020

Good afternoon, Chairman Metcalfe, Chairman Vitali, and members of the Environmental Resources & Energy Committee. My name is Michelle Bloodworth. I am CEO of America's Power, a national trade association representing coal-fired electric power generation. The members of America's Power include coal-fired electricity generators, coal producers, rail and barge companies, and mining equipment and service providers.

Thank you for the opportunity to testify today about the prospect of Pennsylvania joining the Regional Greenhouse Gas Initiative (RGGI), a multi-state cap-and-trade program that covers the electric power sector in each of the RGGI states.

At the outset of my testimony, I'd like to make three points. First, climate change is a very important issue for all of us because of its environmental and economic consequences. Second, joining RGGI's cap-and-trade program is not a sensible or meaningful way to address climate change. Third, the nation's fleet of coal-fired electric generating units is only the number three source (26% share) of energy-related CO2 emissions in the U.S. economy; transportation is first (45%) and natural gas is second (29%).[i]

A. Benefits

To begin with, there are no real climate change benefits from joining RGGI. That's because joining RGGI would reduce CO2 emissions by a trivial amount. If CO2 emissions are reduced by a trivial amount, then the benefits would be trivial also.

According to DEP analysis, CO2 emissions from U. S. electricity generation are almost the same regardless of whether Pennsylvania does or does not join RGGI. Emissions of CO2 from electricity generation in the U.S. average —

- 1.127 billion tons per year over the period that DEP analyzed if Pennsylvania joined RGGI, and
- 1.130 billion tons per year if the commonwealth did not join RGGI.

These numbers mean the reduction in CO2 emissions if Pennsylvania joined RGGI would average 3 million tons per year, which might sound like a large reduction, but it is not. It's actually a trivial reduction with no real effect on climate change. Here's why.

U.S. greenhouse gas (GHG) emissions—about 80% of which are CO2—totaled more than 7 billion tons in 2018, according to the most recent data from the U.S. EPA.[ii] A reduction of 3 million tons per year if Pennsylvania joined RGGI would equate to a reduction of 0.05% in U.S. emissions, which is a rounding error for all practical purposes. If you had $10, this would be equivalent to reducing it by a half a penny.

More importantly, worldwide GHG emissions total more than 50 billion tons.[iii] Reducing emissions by 3 million tons would be smaller than a rounding error, and the climate effect would be meaningless.

My last statistic to put the RGGI emissions reduction into perspective is the fact that in 2018 energy-related CO_2 emissions increased worldwide by more than 600 million tons.[iv] China was responsible for exactly half of this global increase.[v] If Pennsylvania joined RGGI, it would take four decades of emission reductions by RGGI to simply make up for only one year of emissions increases by China.

In short, my point is that Pennsylvania joining RGGI would have no real effect on climate change.

B. Disadvantages

Besides the lack of any real climate change benefits, there are downsides to joining RGGI. In particular, it could cause the retirement of more coal-fired generation and will increase power prices in Pennsylvania.

a) Coal retirements

Coal-fired generation, both in Pennsylvania and nationally, is essential because it –

- **Helps maintain grid reliability,**
- **Is a highly resilient source of electricity,**
- **Is one of the two most fuel-secure electricity sources we have,**
- **Provides affordable electricity,**
- **Serves as an insurance policy against spikes in fuel and electricity prices, and**
- **Promotes national security because of its resilience and reliability.**

Since 2010, more than 8,600 megawatts (MW) of coal-fired generating capacity in Pennsylvania have retired. The 9,600 MW of coal-fired generating

capacity that remain are now less than 20% of the state's electric generating capacity.

As I'm sure you are aware, the nation's electricity grid is undergoing profound changes that include the retirement of traditional baseload sources of electricity, specifically coal and nuclear. These changes have become more complicated because of Covid-19.

Much of this retiring capacity is being replaced with natural gas and renewables, each of which has its unique role to play as part of a diverse energy portfolio. However, the grid's increasing dependence on natural gas and renewables, along with the retirement of fuel-secure coal and nuclear power plants, have led concerns that these trends may be jeopardizing both the reliability and resilience of the electric grid. Such concerns have been raised by DOE, FERC, NERC, ISO/RTOs, the National Academy of Sciences, and the National Energy Technology Laboratory (NETL), among others.[vi]

Fuel security is important because it makes the grid resilient. The coal fleet provides a high degree of fuel security because the average coal-fired power plant has at least two months of coal stockpiled on site.[vii] This means the average coal plant could continue operating for several weeks even in the unlikely event that coal supplies were interrupted. Without fuel-secure electricity sources, our electricity supply is more vulnerable to highly disruptive events like extreme weather and cyber and physical attacks.

Twenty years ago, more than 70 percent of the nation's electric generating capacity was comprised of <u>fuel-secure</u> electricity sources. Today, we have the opposite situation where <u>fuel-insecure</u> electricity generating sources make up 70 percent of the electricity supply.[viii]

A good example of the importance of fuel security comes from the PJM system. During the polar vortex storm of January 2018, high electricity demand drove natural gas prices to levels nearly 40 times higher than they had been the previous month due to demand for power generation, and a study from NETL concluded that there simply was not enough gas available to supply all the power plants that needed it. For that reason, an additional 26,000 MW of coal-fired generation was called on—raising the total to 45,000 MW of coal—to keep the lights on. In fact, in the six regional power markets affected by the polar vortex, coal-fired generation provided 63% of the additional electricity needed to meet surging demand.[ix] PJM's CEO later noted in Congressional testimony that PJM "could not have served customers without coal-fired assets."[x]

PJM, which includes Pennsylvania, has established a task force to address fuel security in its 13-state region. ISO New England has already enacted a

tariff to compensate electricity generators that provide fuel security. Just this year, NERC enacted reliability guidelines to help grid operators identify and manage fuel security risks. We are hopeful that FERC will provide guidance in the near future on resilience and fuel security. In the meantime, it is risky to take steps that could make Pennsylvania's electricity supply less resilient and less fuel secure.

b) Higher power prices

In addition to causing premature coal retirements, taxing carbon emissions via RGGI's cap-and-trade program will increase power prices in Pennsylvania. Recently, PJM modeled the effect of RGGI on the region's power prices and carbon emissions.[xi] PJM assumed two prices (or two levels of taxation) for carbon emissions—one based on a "cost containment reserve" and the other based on an "emissions containment reserve" that are fundamental to the RGGI program. PJM found that if Pennsylvania joined RGGI, power prices across Pennsylvania and three other RGGI states (DE, MD, and NJ) that belong to PJM could increase by as much as 13.2%.[xii] The remaining PJM states that do not belong to RGGI would see their power prices increase by as much as 8%. Therefore, joining RGGI puts Pennsylvania at an economic disadvantage relative to many other states in the region.

I should also point out that PJM's modeling projects a CO2 emissions reduction of 11 million to 17 million tons in 2023 if Pennsylvania joins RGGI. This equates to, at most, an insignificant reduction of 0.2% in U.S. GHG emissions and a trivial reduction of 0.03% in worldwide emissions.

C. Path forward

In summary, the coal fleet in Pennsylvania provides an affordable, reliable, resilient, and fuel-secure supply of electricity. Joining RGGI would lead to a meaningless reduction in CO2 emissions and would have no effect on climate change, which undercuts the reason for joining RGGI.

On the other hand, joining RGGI is likely to cause the premature retirement of more coal-fired generation and higher power prices. Considering the economic consequences of the Covid pandemic, neither of these two outcomes is desirable.

Some want to eliminate coal, but that is simply unrealistic and unwise for the reasons I have highlighted. Better technologies—some available today, some yet to come—are the best strategy to reduce CO2 emissions from the coal fleet. Better technologies are the main reason each kilowatt-hour of electricity generated from coal today emits 90% fewer conventional air pollutants compared to several decades ago.[xiii] These technologies took time

and sustained effort, but the environmental payoff was worth it. I would urge all of us to apply that same lesson to reducing CO2 emissions.

Thank you again for the opportunity to testify today. I would be pleased to answer your questions.

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[i] EIA, "*Energy-Related Carbon Dioxide Emissions by State, 2005-2016*," February 27, 2019.

[ii] U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018*, April 2020. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[iii] International Energy Agency, "*Global Energy & CO_2 Status Report – The latest trends in energy and emissions in 2018*," March 2019.

[iv] *Ibid.*

[v] *Ibid.*

[vi] These include DOE's "*Notice of Proposed Rulemaking, Grid Resiliency Pricing Rule*," Docket RM17-3-000, Sept. 28, 2017; NERC's *Generation "Retirement Scenario Special Reliability Assessment*," Dec. 18, 2018; NETL's "*Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units, Volume I: The Critical Role of Thermal Units During Extreme Weather Events*," DOE/NETL-2018/1883, Mar. 13, 2018; FERC's Docket AD18-7-000, "Grid Resilience in Regional Transmission Organizations and Independent System Operators," opened January 8, 2018; National Academy of Sciences "*Enhancing the Resilience of the Nation's Electricity System*, 2017; Western Electricity Coordinating Council "*Western Interconnection Gas – Electric Interface Study*," prepared by Wood Mackenzie, June 2018; and PJM "*Fuel Security: Analyzing Fuel Supply Resilience in the PJM Region, Summary of Results, Conclusions and Next Steps*," Nov. 1, 2018.

[vii] EIA, "*Electricity Monthly Update With Data for March 2020*," May 2020.

[viii] EIA, "*Electric Power Annual*," October 22, 2018, and EIA, "*Annual Energy Outlook 2019*," January 24, 2019.

[ix] National Energy Technology Laboratory (NETL), "*A Review of PJM Interconnection's April 13, 2018, Response to National Energy Technology Laboratory's Report on Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units*." Report DOE/NETL-2019/1912, November 7, 2018.

[x] Senate Energy and Natural Resources Committee, "*Full Committee Hearing to Examine the Performance of the Electric Power System Under Certain Weather Conditions*," 23 January 2018, https://www.energy.senate.gov/public/index.cfm/hearings-and-business-meetings?ID=9AEFC551-DFEC-450F-B0A9-15D23C90CA5F.

[xi] PJM Carbon Pricing Senior Task Force, "*Expanded Results of PJM Study of Carbon Pricing & Potential Leakage Mitigation Mechanisms Version 2*," March 27, 2020.

[xii] *Ibid.*

[xiii] America's Power, "*Coal Facts*," June 2020. www.americaspower.org.

Attachment 8

Pennsylvania Manufacturers' Association

TESTIMONY BEFORE THE:
SENATE OF PENNSYLVANIA
ENVIRONMENTAL RESOURCES AND ENERGY COMMITTEE

REGIONAL GREENHOUSE GAS INITATIVE: A FLAWED PROPOSAL FOR PENNSYLVANIA

JUNE 23, 2020

Carl A. Marrara, Vice President of Government Affairs

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Good morning, Pennsylvania State Senate Environmental Resources and Energy Committee Chairman Gene Yaw, Chairman Steven Santarsiero, and esteemed members of the committee. I am Carl A. Marrara, Vice President of Government Affairs for the Pennsylvania Manufacturers' Association. Founded in 1909 by Bucks County industrialist Joseph R. Grundy, the Pennsylvania Manufacturers' Association is the nonprofit, statewide trade organization representing the manufacturing sector, it's 570,000 employees on the plant floor, millions of additional jobs in supporting industries, and more than $93 billion in gross state product in Pennsylvania's public policy process.[1] Headquartered just steps from the State Capitol in Harrisburg, PMA works to improve Pennsylvania's ability to compete with other states for investment, jobs, and economic growth. PMA's mission is to improve Pennsylvania's economic competitiveness by advancing pro-growth public policies that reduce the baseline costs of creating and keeping jobs in our commonwealth, including spending restraint, tax relief, limits on lawsuit abuse, regulatory reform, and ensuring a prepared workforce.

I am honored to join you today to discuss the topic of the Regional Greenhouse Gas Initiative, more commonly referred to as "RGGI." RGGI is a flawed proposal and is not sound public policy for the Commonwealth of Pennsylvania. We, the Pennsylvania Manufacturers' Association, urge you to take any and all legislative action to reject Governor Wolf's Executive Order 2019-7 to enter Pennsylvania into RGGI.

Let us begin by establishing a commonsense baseline: everyone desires a clean, healthy, and sustainable environment. The issue at hand is whether or not a government program, that will undoubtedly add substantial costs to Pennsylvania's electricity consumers, is the best mechanism to achieve the cleanest, healthiest, and most sustainable environment possible. You'll find that the answer to this question is clearly that RGGI does not accomplish this goal, but the program will negatively impact Pennsylvania's economy in a punishing way. This potential economic impact could not come at a worse time given the economic downturn caused by the Wolf Administration's decision-making in response to COVID-19.

It is imperative that Pennsylvania policymakers not enact laws or regulations that place our commonwealth at a competitive disadvantage to our competitor states. Laws and regulations should not be more stringent than federal regulations or laws unless there is a compelling reason that is unique to our commonwealth. Ensuring that environmental regulation is approached on sound scientific evidence to ensure that regulations are

[1] National Association of Manufacturers. 2019. https://www.nam.org/state-manufacturing-data/2019-pennsylvania-manufacturing-facts/

reasonable and within technological limits is paramount. It is likewise prudent that these regulations achieve real environmental benefits and do not advantage one sector of the economy to the detriment of another. RGGI fails all of these bright-line tests and should be rejected by Governor Wolf and the Pennsylvania General Assembly.

Unilaterally enacting a policy such as RGGI will have dire economic consequences, as has been proven in other RGGI states. According to research published by the CATO Institute by David Stevenson,

> "RGGI allowance costs added to already high regional electric bills. The combined pricing impact resulted in a 12 percent drop in goods production and a 34 percent drop in the production of energy-intensive goods. Comparison states increased goods production by 20 percent and lost only five (5) percent of energy-intensive manufacturing. Power imports from other states increased from eight (8) percent to 17 percent."[2]

Manufacturers are energy intensive operations. No matter what is being made, raw materials become finished manufactured goods and energy a large part of that process. For many manufacturers, energy costs are the largest cost output month-to-month. Adding on additional costs will drive manufacturers out of Pennsylvania and make it exceedingly difficult to bring new firms in; essentially making RGGI a hard- cap on economic growth in the manufacturing sector. For every dollar invested in manufacturing the multiplier effect on the larger economy is $1.33; the largest multiplier effect of any industry, making manufacturing the engine that drives whole economies throughout our commonwealth.

Ironically, Pennsylvania was a part of that increase in goods and in power generation cited by the aforementioned study published by the CATO institute. Pennsylvania, over the past decade, has been the largest exporter of energy in the United States[3] and has been the main supplier of energy exports for RGGI states, all while our emissions were lowering at rates faster than theirs. If Pennsylvania enters RGGI, not a single atom of carbon will be lessened because the power generation will just transfer further west to Ohio or West Virginia and be sold back to us for a higher price. We lose the jobs, we lose the power, and we all pay more for no environmental benefit.

[2] David Stevenson, "A Review of the Regional Greenhouse Gas Initiative," CATO Institute. Winter 2018.
[3] U.S. Energy Information Administration, "California imports the most electricity from other states; Pennsylvania exports the most," Today in Energy. April 4, 2019.

Governor Wolf's arbitrarily proposed targeted emissions reductions of 26 percent by the year 2025 is well within striking distance today, some five years away. The private sector has led the way, doing what the private sector does best – inventing, innovating, and forging a better future for all of us. Energy related CO2 emissions have decreased 22 percent from 2005 to 2016[4] and with more natural gas fired power plants coming online since 2016, that percentage will increase as the data is updated and republished. Governor Wolf's goals are being met without entering Pennsylvania into a regional accord that will thwart private sector innovation, forcing layoffs of thousands of our commonwealth's workers, and putting our economy into a tailspin as entire communities will be negatively impacted.

One of the reasons for these goals being met are thanks to Governor Ridge-era policy changes that moved Pennsylvania into a competitive electricity marketplace. At that time, PMA was at the forefront of supporting the efforts to deregulate electric generation in Pennsylvania. To date, integrating competitive market forces into electric generation has worked for all Pennsylvania consumers - residential, commercial, and industrial. But, by no means has this transition been painless. Abnormally low natural gas prices resulting from booming Marcellus Shale production and a lack of pipeline capacity takeaway, combined with exceedingly expensive state and federal government environmental mandates has taken a serious toll on coal fired generation over the years. We realize that is how competitive markets work. However, RGGI is the antithesis to Pennsylvania's competitive electric marketplace. Imposing a tax that will surely result in the closure of all coal and many natural gas power plants - possibly up to a third of our total generation capacity - thwarts competition and greatly undermines the competitive markets that have proven effective both economically and environmentally.

You'll hear from others today about the importance of coal in our commonwealth's electricity market, but the premature shuttering of coal and waste coal facilities could have even larger impacts. Consider the fact that Pennsylvania's steel makers require coal to make coke and coke to make steel. Coking coal, more scientifically known as Metallurgical Coal, is a necessary ingredient to produce steel. There is no substitute. Many of the same mining operations that extract coal for power generation also mine Metallurgical Coal. If the power plants shut down, this will surely impact the mining jobs that supply the coal to the power plants. If those mining operations have to shutter their businesses, Pennsylvania's steel industry will be impacted as a key feedstock for their product will be more difficult and more expensive to attain. This regional accord

[4] U.S. Energy Information Administration, State Energy Data System and EIA calculations, United States National-Level Total, *EIA Monthly Energy Review*. September 2018.

threatens entire industries well outside of the realm Governor Wolf is aimed at, and it puts Pennsylvania at a unique competitive disadvantage. Our economy is not like that of Vermont or Massachusetts, and our public policies shouldn't be reflective of the New England states directives.

Once again, all of us desire a clean, healthy, and sustainable environment. Pennsylvania is fortunate to have abundant natural resources. Individuals have been and continue to be attracted to the Keystone state because of the vast choices for outdoor recreation and quality of life. Likewise, many of those natural resources have been the source of prosperity for the state throughout different points in our history. This is precisely why we should want industrial activity to happen here in Pennsylvania than elsewhere in the world. We benefit from the jobs and the economic activity, but we also benefit from the fact that Pennsylvania has some of the strictest regulations when it comes to emissions standards, oil and gas drilling, and mineral extraction. From an environmental standpoint, we should rather that activity happen here, where companies are good stewards of the environment and there is strict oversight, instead of Russia where environmental regulations are skirted, or China where there are serious human rights violations, worker exploitation, and heavy pollution.

By entering into RGGI, industrial activity will be relocated, and who knows where it will go. Tax policies and responses to COVID-19 at the federal level are making it the smart business decision to locate, hire, and expand here in the United States. Let's not drive that activity back across our borders into neighboring states, or worse, foreign countries. It's not a stretch to say that by supporting RGGI you're supporting Russian and/or Middle Eastern global energy leadership and Chinese steel-dumping. Let's work with our industries to invent, innovate, and forge a clean, healthy, and sustainable environment – not overregulate our many vital industries out of existence. For these reasons we, the Pennsylvania Manufacturers' Association, urge you to take any and all legislative action to reject Governor Wolf's Executive Order 2019-7 to enter Pennsylvania into RGGI.

Attachment 9

Senate Environmental Resources and Energy Committee

June 23, 2020

Regional Greenhouse Gas Initiative (RGGI)

Good morning, Chairman Yaw, Chairman Santarsiero, and members of the committee. My name is Rebecca Oyler, and I am the Legislative Director for the National Federation of Independent Business (NFIB) in Pennsylvania. NFIB is the premier small business advocacy organization with over 13,000 members in Pennsylvania and about 300,000 members nationwide. We appreciate your allowing us to be here today to speak on behalf of Pennsylvania's small businesses on the Governor's proposal to join the Regional Greenhouse Gas Initiative (RGGI).

The importance of energy to small businesses

Small businesses always have and always will make up an enormous segment of Pennsylvania's business community. More than 99% of Pennsylvania businesses are small. Generally, they are responsible for almost half of the private sector workforce and create two out of every three *new* jobs. They have also been disproportionately impacted by the recent shutdown orders, and many are currently struggling. Some small businesses won't make it.

But even during these difficult economic times, small businesses continue to be the engine of economic growth in the state and in their local communities. Their success will be key to Pennsylvania's economic recovery in the coming months and years. As such, policymakers would be wise to consider policies that set them up for success, and at the very least, don't stack the deck against them.

We believe that the Governor's proposal to join RGGI would stack the deck against small businesses at a most inopportune time. Though they would not be directly affected by the taxes imposed by RGGI, there are second- and third-order impacts that will harm small business, in many ways disproportionately to other businesses.

Because of their size, small business owners are particularly sensitive to energy cost increases. This is especially true of energy-intensive small businesses like laundromats, car dealerships, convenience stores, and small manufacturers. Tight margins make it difficult to adjust the price of their goods and services or to change business practices quickly enough to manage steep increases. For example, small business owners usually can't afford to buy new, more energy-efficient equipment if current equipment still has useful life. And unlike many big businesses, they are typically much too small to negotiate reduced rates from electric suppliers.

NFIB surveys have found that energy costs are one of the top three business expenditures in 35% of small businesses. And even if they are not high on the list of direct expenses, every business—large and small—depends on services and materials that are impacted by energy prices. Higher energy costs stack along each step of the supply chain, increasing the price of services and supplies businesses need to produce, and as a result, inflating the cost of final products. And in today's interconnected

marketplace, even slightly higher costs will make it more difficult for Pennsylvania products to compete.

In this way, RGGI's energy cost increases will in effect be a hidden tax throughout the economy that will put Pennsylvania businesses and jobs at risk.

Pennsylvania's competitive advantages keep rates lower

As it is, Pennsylvania is fortunate to have certain energy advantages that benefit businesses here. First, our competitive electric market allows small businesses, like all consumers, to shop for the best price for their energy needs. Electric deregulation has led to competitively low energy rates, innovations in energy distribution, and new products and services for all consumers. In fact, electric competition has produced a market for renewable energy sources, which many Pennsylvanians choose to purchase.

And of course we can't talk about Pennsylvania's competitive advantages without discussing the innovations in hydraulic fracturing and horizonal drilling that have revolutionized energy and have already reduced CO2 emissions here in our state and, indeed, throughout the world.

These advantages have helped make Pennsylvania energy competitive among states. This is a key selling point for business location and expansion and a factor that helps existing businesses compete. In fact, **energy costs are currently lower in Pennsylvania than in every other RGGI state**. This will be a critical advantage as Pennsylvania's small businesses seek to recover from the COVID-19 crisis.

Pennsylvania's comparative energy advantages also make us the nation's largest net exporter of electricity,[1] producing more than twice the energy we consume.[2] This export capacity brings needed capital into the state, creates thousands of jobs, and also ensures energy prices continue to stay competitive. As a result, joining RGGI will affect the commonwealth to a much greater degree than it has other RGGI states, squandering the comparative advantage that Pennsylvania has and losing energy market share to non-RGGI states, where energy production is cheaper.

Cost increases on coal and natural gas electric generators, which make up 57% of Pennsylvania's energy mix,[3] will force many power plants out of business. **Jobs will be lost in communities where power plants close—not just the jobs in these plants and their supply businesses, but jobs with contractors, garages, retailers, small grocery stores, and countless other small businesses serving those communities.** With the staggering unemployment rate in Pennsylvania brought about by COVID-19 business closures, the timing could not be worse.

Costs and Benefits

Given the impacts RGGI will have, the question the General Assembly should consider is whether the benefits are worth the considerable costs that RGGI will bring to Pennsylvania, especially considering the uncertainty of our economic recovery.

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[1] https://triblive.com/news/pennsylvania/report-pennsylvania-largest-net-exporter-of-electricity-in-u-s/

[2] https://www.whitehouse.gov/wp-content/uploads/2019/10/The-Value-of-U.S.-Energy-Innovation-and-Policies-Supporting-the-Shale-Revolution.pdf

[3] http://files.dep.state.pa.us/AboutDEP/Testimony/2019/2019.11.01%20House%20D%20Policy%20Committee%20Hearing%20RGGI%20DEP%20Testimony.pdf

If the primary goal is CO2 reduction, Pennsylvania is already ahead of the game. Between 2010 and 2017, Pennsylvania's energy sector reduced CO2 emissions by 36% from 120.9 million metric tons to 76.8 million metric tons.[4] Between 2007 and 2015, RGGI states reduced CO2 emissions, but they also doubled the amount of power they imported, much of it from Pennsylvania and unregulated by RGGI.

If encouraging renewable energy is a goal, it's not clear that RGGI is the answer. Between 2007 and 2015, RGGI states increased wind and solar generation by 2.3%, while non-RGGI comparison states increased it by 5.5%.[5]

DEP has stated that to have the desired impact on climate change models, Pennsylvania's commitment to RGGI would not be enough. In fact, all states would need to commit to similar greenhouse gas reductions, and all nations would have to meet comparable goals. This seems unlikely and makes us question the true benefit to Pennsylvania of joining. Indeed, DEP's own modeling has found that CO2 reduction and climate benefits would be negligible.

DEP's plan will raise revenue for the state to spend on air pollution reduction programs. But if pollution reduction is a primary goal of joining RGGI, again, Pennsylvania is already ahead of the curve. Since 1990, nitrogen oxides are down 83% in Pennsylvania, particulate matter, 31%, volatile organic compounds, 60%, and sulfur dioxide, 93%. Total emissions are down 88% in the past 30 years.[6]

Indeed, pollution reduction efforts have been an unheralded success, and our air is cleaner than it has been in my lifetime. Of course, we can always do better, but committing the state to the overhead of an expensive and complicated carbon trading program is not the only answer. Consideration should be given to finding true market incentives here in Pennsylvania that improve air quality and the quality of life directly in our local communities. The Wetlands Replacement Project is a successful DEP program that leverages public and private funding to restore and create wetlands. Pennsylvania might consider creating a similar program that would incentivize public and private investment in community projects that improve air quality. Eligible projects could include: reforestation, improved forest management, energy efficiency improvements, pedestrian/bike trails, parking areas for shared ride programs, research grants, and even abandoned well plugging.

And although RGGI's supporters say it is a market-based solution, the limits placed on allowances create only an artificial market that derives from mandates. True free-market solutions will inspire people to innovate without hindering economic prosperity. Market forces are creating amazing innovations every day that were unforeseen just a few years ago, including energy efficiency innovations, resource conservation measures, and even recycling waste and CO2 into fuel and valuable chemicals. Many of these ideas will come from entrepreneurs, whose small businesses will need strong economic conditions to thrive.

<u>Decision appropriate for the legislature</u>

There is no doubt joining RGGI involves significant tradeoffs Pennsylvania must consider. This was highlighted by the unwillingness of majorities of DEP's Citizens Advisory Council and Air Quality

[4] https://www.eia.gov/environment/emissions/state/
[5] https://www.cato.org/sites/cato.org/files/serials/files/cato-journal/2018/2/cato-journal-v38n1-chapter-11.pdf
[6] https://www.dep.pa.gov/OurCommonWealth/Pages/Article.aspx?post=38

Technical Advisory Committee to recommend the proposed regulatory framework when it came up for a vote at their recent meetings. These advisory groups heard heart-wrenching testimony from union workers, manufacturers, community members, and small business owners concerned that the downsides of RGGI are not being considered.

The significant impacts of RGGI on these individuals' livelihoods and communities make clear that costs and benefits must be weighed by representatives of all citizens, not just the executive branch alone. This is why we support Senator Pittman's bill, SB 950, which requires that the General Assembly must authorize Pennsylvania's participation in RGGI. The bill also mandates a thorough examination of direct and indirect costs to the private and public sectors, including industry sectors like small businesses; the impact on the cost of goods, services, and productivity; and effects on the state's energy resiliency. Importantly, it also asks that less costly, less intrusive alternatives be examined.

Pennsylvania's small business owners support a clean environment and healthy communities. In fact, many of them make their living from natural resources, from whitewater rafting operator to farm-to-table restaurant to solar panel installer. But they also understand that balance is key, and they know that responsible decision-making involves considering all factors before making a choice.

We ask that policymakers consider RGGI's significant costs and weigh them against its unclear benefits, especially during what has been an unprecedented time for our economy and small businesses. Now is the time to look ahead to recovery, not to saddle Pennsylvania's job creators and innovators with hidden tax burdens now and for the foreseeable future.

Thank you again for the opportunity to speak today on behalf of Pennsylvania's small businesses. I would be happy to answer any questions.

Attachment 10

Oil & Natural Gas

Common Products Made From Oil and Natural Gas*

Air mattresses
Ammonia
Antifreeze
Antihistamines
Antiseptics
Artificial turf
Artificial limbs
Aspirin
Awnings
Balloons
Ballpoint pens
Bandages
Beach umbrellas
Boats
Cameras
Candles
Candies and gum
Car battery cases
Car enamel
Cassettes
Caulking
CDs/computer disks
Cellular phones
Clothesline
Coffee makers
Cold cream
Combs
Computer keyboards
Computer monitors
Cortisone
Crayons
Credit cards
Curtains
Dashboards
Denture adhesives
Dentures
Deodorant
Detergent
Dice
Dishwashing liquid
Drinking cups
Dyes
Electric blankets
Electrical tape
Enamel
Epoxy paint
Eyeglasses
Fan belts
Faucet washers
Fertilizers
Fishing boots
Fishing lures
Fishing rods
Floor wax
Food preservatives
Footballs
Glue
Glycerin
Golf bags
Golf balls
Guitar strings
Hair curlers
Hair coloring
Hand lotion
Hearing aids
Heart valves
House paint
Hula hoops
Ice buckets
Ice chests
Ice cube trays
Ink
Insect repellent
Insecticides
Life jackets
Lipstick
Loudspeakers
Luggage
Model cars
Mops
Motorcycle helmets
Movie film
Nail polish
Noise insulation
Nylon rope
Oil filters
Paint brushes
Paint roller
Pajamas
Panty hose
Parachutes
Perfumes
Permanent-press clothes
Petroleum jelly
Pharmaceuticals
Pillow filling
Plastics
Plastic toys
Plywood adhesive
Propane
Putty
Purses
Refrigerants
Refrigerator linings
Roller skate wheels
Roofing
Rubber cement
Rubbing alcohol
Safety glasses
Shag rugs
Shampoo
Shaving cream
Shoe polish
Shoes/sandals
Shower curtains
Skateboards
Skis
Soap dishes
Soft contact lenses
Solvents
Sports car bodies
Sunglasses
Surf boards
Swimming pools
Synthetic rubber
Tape recorders
Telephones
Tennis rackets
Tents
Tires
Toilet seats
Tool boxes
Tool racks
Toothbrushes
Toothpaste
Transparent tape
Trash bags
TV cabinets
Umbrellas
Unbreakable dishes
Upholstery
Vaporizers
Vinyl flooring
Vitamin capsules
Yarn

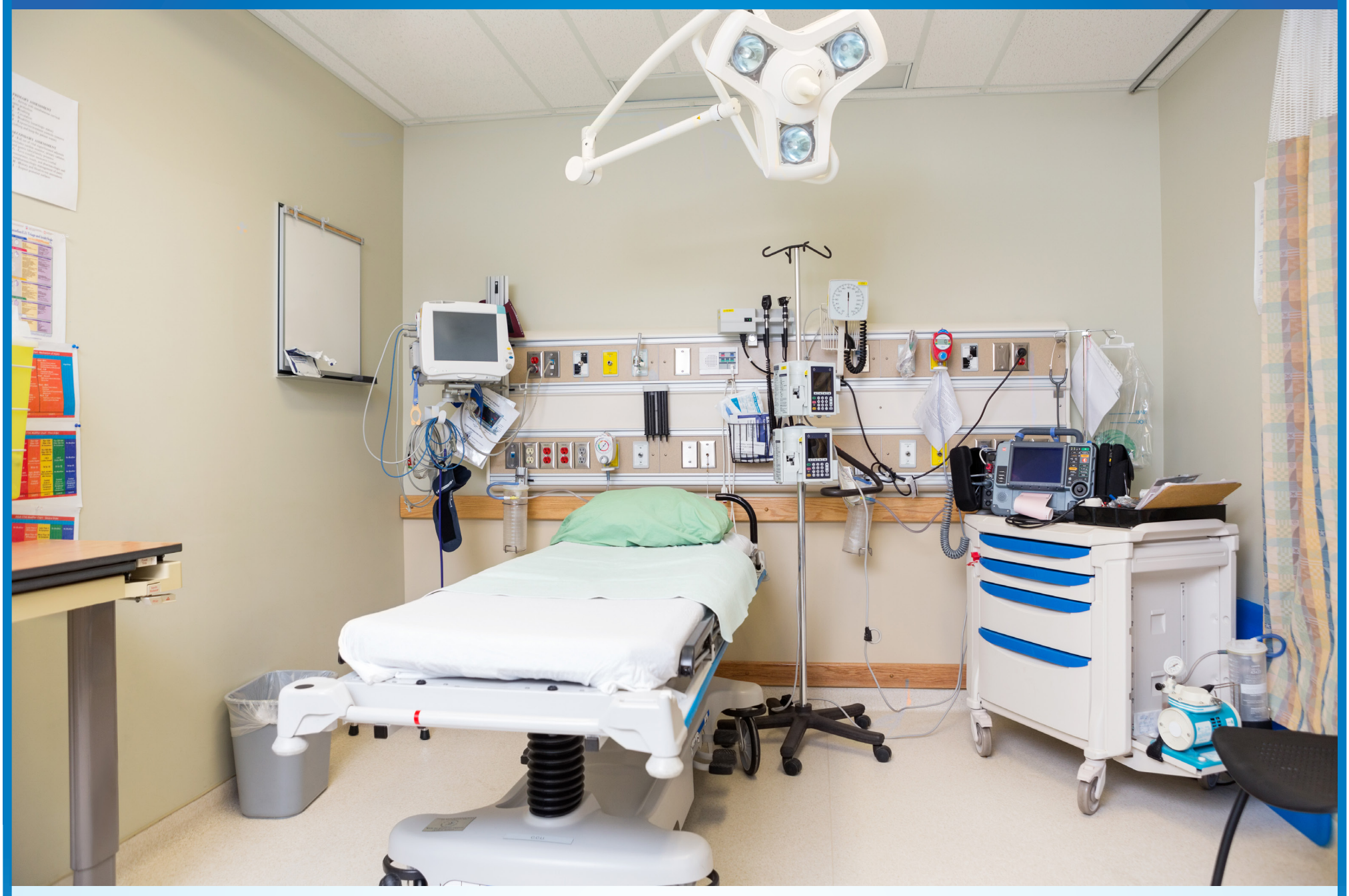
*Sources: Ohio Oil & Gas Energy Education Program, Oklahoma Energy Resources Board, Texas Mid-Continent Oil & Gas Association.

U.S. Department of Energy • Office of Fossil Energy

Attachment 11

Advanced Plastics in Modern Medicine: Only Possible with Hydraulic Fracturing

Improving Lives, Saving Lives



Americans often take for granted the thousands of products made from oil and natural gas that they use every day, from lightweight automobile parts and paint to food packaging and performance clothing. These important consumer items can only be made by processing crude oil and natural gas, using chemical treatments and technologies to make each product. The same goes for the hundreds of petroleum-derived items used by health care providers, from simple items such as band-aids and latex gloves, to complex heart valves and artificial joints. More than 90 items made possible through the processing of oil and natural gas into advanced plastics and synthetic rubber are shown in this photo of a typical emergency room.

Items in a typical emergency room

Blood pressure cuff
Blood pressure cuff tubing
Chair
Code cart/wheels
EKG Leads
EKG wire covers
End-Tidal carbon dioxide cable
Fluorescent light covers
Infectious waste container
IV Pole wheels and hook
IV pump
IV pump power cord
Laminated charts
Monitor/cables
Nasal canula
Ophthalmoscope
Otoscope
Ottoscope covers
Overhead lamp/bulbs
Oxygen saturation finger probe
Oxygen wall to tubing adapter
Patient education packets
Plastic patient belonging bag
Plastic slip cover for mattress
Plastic-lined pillows
Stethoscope label
Stethoscope tubing
Suction canister
Suction tubing
Thermometer
Thermometer probe covers
Trash bag
Trash can
Wall oxygen dial
Wall suction dial
Yankauer suction

Items found in an ER code cart

AED
Alcohol swab packaging
Ambu bag
Atomizer
Code cart lock tab
CPR back board
Endotracheal tubes
Exam gloves
Intubation blade
IV catheters
IV fluid bags
IV tubing
Lubrication
Medication ampules
Medication bottles
Nasopharyngeal airways
Needle caps
Non-rebreather mask
Oral airways
Oxygen tank dial
Pacer pads
Plastic cart housing
Plastic cover over tip of scissors
Plastic syringes
Plastic tape
Portable suction pump
Saline flushes
Sharps container
Syringe caps
Tourniquets
Venti-mask

Other medical devices used on a daily basis

Adhesive foam
Bedpan
Bleach wipe containers
Crutch pads/grips
Date stickers
Hemovac drain
IV caps
Jackson Pratt drain
Medical glue
Nasogastric tubes
Ostomy bags and appliance
Patient call bell
Patient room phone
Patient socks/grip bottoms
Peripheral venous catheter
Plastic boxes of gauze
Plastic medicine cups
Plastic packaging on medications
Pyxis machine
Skin barrier packaging
Sterile gowns
Sterile packaging
Sutures
Three-way stopcocks
Urinary catheters
Walkers/canes

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