



Testimony

Submitted on behalf of the  
Pennsylvania Chamber of Business and Industry

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## **Addressing Climate Change by Controlling Carbon Emissions**

Before the:  
**Pennsylvania Senate Democratic Policy Committee**

Presented by:  
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Senator Boscola, Senator Costa, and members of the Senate Democratic Policy Committee,

Thank you for the opportunity to testify on behalf of the PA Chamber on the subject of carbon emissions and climate change.

The nearly 10,000 members of the PA Chamber are of all industrial and commercial categories and sizes; all of them rely on not just a reliable, affordable supply of energy, but a rational, predictable and well-functioning regulatory environment as well. Thanks to its tremendous assets in nuclear, oil, natural gas, coal and renewables, Pennsylvania is both the second-largest producer of electricity and the second largest net-exporter of electricity in the nation.

### **Pennsylvania Chamber of Business and Industry Statement of Policy on Environmental Regulation**

For the past several decades, the PA Chamber has been actively involved in issues relating to stewardship of Pennsylvania's environmental resources and development of its energy assets, bringing the perspective of the regulated community to the development and refinement of the state environmental regulations and the implementation of various federal requirements.

As a statement of policy, the PA Chamber believes that environmental stewardship and economic growth are mutually-compatible objectives, and that environmental and natural resources laws and regulatory programs should be framed and implemented to concurrently meet these twin objectives. We seek environmental laws, regulations and policies that:

- (1) are based on sound science and a careful assessment of environmental objectives, risks, alternatives, costs, and economic and other impacts;
- (2) set environmental protection goals, while allowing and encouraging flexibility and creativity in their achievement;
- (3) allow market-based approaches to seek attainment of environmental goals in the most cost-effective manner;
- (4) measure success based on environmental health and quality metrics rather than fines and penalties; and
- (5) do not impose costs which are unjustified compared to actual benefits achieved;

With regard to greenhouse gas emissions, we support efforts in Pennsylvania which balance societal environmental, energy, and economic objectives, fit rationally within any national or international strategy which may take shape, and capitalize on the availability of Pennsylvania's diverse natural resources to facilitate economic development in the Commonwealth.

This policy framework has directed the PA Chamber in its comments on various regulatory, statutory and legal proceedings. These include the PA Chamber's support for Act 175 of 2014, a bipartisan bill which increased the General Assembly's (and, by extension, the general public's) role in formulating a state compliance plan for the Clean Power Plan, as well as the PA Chamber being a lead named party in an amicus brief filed in the United States Supreme Court by 166 business and manufacturing groups supporting a challenge to the Obama administration's Clean Power Plan on the grounds that the regulation exceeded what Congress authorized EPA to do under the Clean Air Act. The brief argued

the Clean Power Plan would have significantly increased costs for consumers and businesses while securing negligible reductions in global emissions; the Clean Power Plan was ultimately stayed nationwide and has since been rescinded by the current administration, with a more durable and reasonable replacement regulation offered under the Affordable Clean Energy rule.

To be clear, we recognize that a changing climate will present significant challenges to Pennsylvania and the United States, and the human activity is a major contributing factor. Addressing this challenge will necessarily involve the private sector to develop innovative solutions, practices and technologies; we must be judicious in proceeding in a manner that continues to leverage Pennsylvania's historic strengths as an energy producer and a leader in manufacturing, allowing businesses and consumers the choice to develop and utilize the energy solution that works best for them and that will achieved the desired environmental result. As this testimony will further make clear, competitive markets have delivered greater environmental benefit than cap-and-trade constructs while also driving down costs for consumers.

## **Pennsylvania's Historic Strengths in Energy and Manufacturing: Jobs and Power Generation Overview**

Pennsylvania has historically been a leader in manufacturing and energy. With the 8<sup>th</sup> largest output in the country, Pennsylvania manufacturers provide nearly 600,000 jobs.<sup>1</sup> Within the energy industry, the nuclear industry in Pennsylvania also supports nearly 16,000 highly skilled and well-paying jobs, and contributes \$2 billion to the state economy.<sup>2</sup> The natural gas and oil industry supported 322,600 jobs in the state and contributed \$44.46 billion to the state's economy.<sup>3</sup> The state's coal industry also supports approximately 30,000 jobs.

Energy assets afforded Pennsylvania the ability to weather the Great Recession much better than other states. In the years following the recession, while construction and infrastructure spending was being reduced across the country and employment opportunities for those in the skilled trades were hard to find, development in the Marcellus shale resulted in the hiring of more than 45,000 skilled workers, who in total were afforded more than 73 million work hours of projects, in the five post-recession years, according to an analysis by a labor economist at the University of Illinois.<sup>4</sup>

With respect to power generation, Pennsylvania is blessed to have a diverse and balanced portfolio of energy assets. Natural gas represents approximately 30 percent of the total installed capacity in Pennsylvania while coal represents 30.0 percent and nuclear represents 23.2 percent. Renewables (wind, hydro and solar) constitute slightly less than 6 percent of installed generation. In terms of their shares of power produced, nuclear resources represented 39 percent of generation used in Pennsylvania while

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<sup>1</sup> Key Industries: Advanced Manufacturing & Materials. Pennsylvania Department of Community and Economic Development. <http://www.newpa.com/business/key-industries/advanced-manufacturing-materials>

<sup>2</sup> Pennsylvania Nuclear Power Plants' Contributions to the State Economy. Brattle Group, December 2016. [https://pachamber.org/assets/pdf/pa\\_nuclear\\_report.pdf](https://pachamber.org/assets/pdf/pa_nuclear_report.pdf)

<sup>3</sup> Economic Impacts of the Natural Gas and Oil Industry. American Petroleum Institute, July 2017. <https://www.api.org/news-policy-and-issues/american-jobs/economic-impacts-of-oil-and-natural-gas>

<sup>4</sup> Study of Construction Employment in Marcellus Shale Related Oil and Gas Industry. Dr. Robert Bruno and Michael Cornfield, University of Illinois, August 2014. [http://ler-illinois.us-east-2.elasticbeanstalk.com/wp-content/uploads/2015/01/Marcellusjobsstudy\\_FINAL.pdf](http://ler-illinois.us-east-2.elasticbeanstalk.com/wp-content/uploads/2015/01/Marcellusjobsstudy_FINAL.pdf)

natural gas and coal averaged 29 percent and 25 percent, respectively. Renewables (wind, hydro and solar) again constitute slightly less than 6 percent of produced electricity.

Most notably, Pennsylvania exports nearly 28% of the power it produces to the other 12 PJM states and the District of Columbia – our energy assets are vitally important in sustaining the largest grid in the world.<sup>5</sup>

### **Competition and Innovation in the Private Sector Are Producing Energy Solutions**

The conversation around energy is broader than just power generation at the RTO level. At the individual facility level, it must be pointed out that commercial and industrial customers are shopping for electricity and natural gas at much higher levels than residential consumers. While about a third of residential consumers are choosing a retail supplier, more than three-quarters of commercial customers and nearly all industrial customers are shopping.<sup>6</sup> As competition occurs for the largest users of power, the private sector is developing innovative solutions to help these large industrial facilities meet their goals, which often include efficiency, economic and environmental goals. With respect to regulated utilities, our member companies in this sector remain focused on delivering water and energy affordably and safely by maintaining a network of utility assets. These companies continue to innovate and deploy technologies and practices to improve system performance and reduce outages and supply constraints, as well as work with individual customers to improve efficiency and minimize water and energy waste.

Some of our member companies are responding to the questions and concerns of their shareholders (both individual retail investors and large institutional investors) about how they will manage climate risks and improve sustainability. In certain cases, executive compensation is tied to the company's performance on various environmental and sustainability indices and metrics. In other cases, management is making decisions to reduce energy use and waste out of a desire to operate more competitively and sustainably.

The solutions to these challenges are many and varied, and there is no one energy source or approach that will work for every company's operational profile. Some of our members are proceeding with innovative solutions for their manufacturing facilities. A leading producer of consumer products in northeast Pennsylvania has been able to drastically reduce its energy costs by harnessing natural gas produced on-site for heat and power. Another Chamber member, a global leader in steel manufacturing, is reusing industrial gasses to generate power and provide fuel for its furnaces at a major industrial site in southwestern Pennsylvania; in addition to reducing emissions, the project is recognized as a generator of alternative energy credits.

The PA Chamber also includes among its membership a consortium of power plant operators who reclaim waste coal piles from abandoned mine projects that have contributed for decades to impaired water quality. These companies reclaim these sites (thousands of acres to date) and use the waste coal for power generation, producing a net environmental gain.

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<sup>5</sup> 2017 Pennsylvania State Infrastructure Report. PJM Interconnection, May 2018. <https://www.pjm.com/-/media/library/reports-notices/state-specific-reports/2017/2017-pennsylvania-state-infrastructure-report.ashx?la=en>

<sup>6</sup> PAMemberSwitch Monthly Update, Pennsylvania Public Utility Commission, October 2018. <http://www.papowerswitch.com/sites/default/files/PAMemberSwitch-Stats.pdf>

Chamber members in the insurance, water treatment and data center management industries have turned to wind and solar to fuel their operations. Manufacturers, hospitals and university campuses are partnering with our members to utilize combined heat and power systems using natural gas, and we have a variety of energy efficiency and utility companies exploring ways to develop microgrid systems – projects which produce localized power to keep the lights on in the event of a disaster or emergency.

The PA Chamber also has among its membership companies involved in developing clean energy procurement, demand response and energy efficiency management products for the residential, commercial and industrial sectors.

The state’s historic leadership in nuclear energy is well represented in a recent DOE initiative to develop and implement the next generation of advanced nuclear reactor design.

We urge legislators and policymakers to recognize that coal, oil and natural gas are used not just to fuel power generation and transportation – they are vital and necessary inputs to commodities such as fabricated steel, plastics, asphalt, cement and fertilizer. These commodities are necessary to further build out Pennsylvania’s strengths in manufacturing, transportation, infrastructure and agriculture.

### **Competitive Markets Outperform Cap-and-Trade Constructs, Economically and Environmentally**

Last year, the United States once again reduced greenhouse gas emissions while growing the economy – a multi-decade trend. Overall greenhouse gas emissions in 2017 fell nationwide by 2.7 percent year-over-year<sup>7</sup>, and emissions from the power generation sector have declined 25 percent since 2005, a trend that is expected to continue.<sup>8</sup>

Since 2005, the United States has reduced greenhouse gas emissions by about 760 million metric tons, in large part due to private sector innovation and competition, while the European Union has reduced emissions by 770 million metric tons at considerably greater costs.<sup>9</sup> EU policies – replacing nuclear with renewables, awarding massive government subsidies to particular energy sources, and imposing taxes on both carbon emissions and energy consumption – have resulted in declining household disposable income, as well as retail electric, natural gas and motor fuels prices for residential consumers are more than double that of the United States. Electricity prices for industrial customers are 75% higher and natural gas prices for industrial customers are 143% higher. Should the United States adopt

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<sup>7</sup> Data Shows Decrease in US Greenhouse Gas Emissions During Trump’s First Year in Office. United States Environmental Protection Agency, Oct. 17, 2018. <https://www.epa.gov/newsreleases/data-shows-decrease-us-greenhouse-gas-emissions-during-trumps-first-year-office>

<sup>8</sup> Latest Inventory of US Greenhouse Gas Emissions and Sinks Shows Continued Progress. United States Environmental Protection Agency, April 28, 2018. <https://www.epa.gov/newsreleases/latest-inventory-us-greenhouse-gas-emissions-and-sinks-shows-continued-progress>

<sup>9</sup> US Leads in Greenhouse Gas Reductions, but Some States Are Falling Behind. Environmental and Energy Study Institute, March 27, 2018. <https://www.eesi.org/articles/view/u.s.-leads-in-greenhouse-gas-reductions-but-some-states-are-falling-behind>

these policies, household energy costs would rise by nearly \$5,000 per year and labor markets would shrink by nearly 8 million jobs, with heavy losses in the skilled trades and industrial sectors.<sup>10</sup>

We also note that should Pennsylvania heed the calls of the “keep it in the ground” movement and ban hydraulic fracturing, our state would suffer a loss of 466,000 Pennsylvania jobs, a \$45 billion reduction in annual state GDP, and an increase in household energy costs of \$3,537.<sup>11</sup>

Similarly, should there be no further pipeline development into New York and New England, we will face a loss of nearly 22,000 PA jobs, \$2.4 billion in state GDP, and \$1.3 billion in labor income.<sup>12</sup>

On a domestic basis, it is also important to compare the environmental results achieved by Pennsylvania’s embrace of competitive energy markets and that of the Regional Greenhouse Gas Initiative, a cap-and-trade program entered into by New England states. Using 2008 as the baseline (the year prior to RGGI’s formation), Pennsylvania has reduced its greenhouse gas emissions by more than any one RGGI state and proportionally more than RGGI as a whole, according to the most recent available federal data.<sup>13</sup>

State	2008 Emissions (mmt)	2015 Emissions (mmt)	Net Change (mmt)	Net Change (%)
<b>CT</b>	38	37	-1	-2.63%
<b>DE</b>	16	13	-3	-18.75%
<b>MD</b>	74	59	-15	-20.27%
<b>MA</b>	77	66	-11	-14.29%
<b>NH</b>	19	15	-4	-21.05%
<b>NY</b>	190	168	-22	-11.58%
<b>RI</b>	11	11	0	0
<b>VT</b>	6	6	0	0
<b>All RGGI States</b>	431	375	-56	-12.99%
<b>Average RGGI State</b>	53.9	46.9	-7.0	-12.99%
<b>PA</b>	270	233	-37	-13.70%

<sup>10</sup> What If the United States Were Forced to Pay EU Energy Prices? United States Chamber of Commerce Global Energy Institute, October 2016.

[https://www.globalenergyinstitute.org/sites/default/files/CoC\\_EUReport\\_FULL\\_v11.pdf](https://www.globalenergyinstitute.org/sites/default/files/CoC_EUReport_FULL_v11.pdf)

<sup>11</sup> What If Hydraulic Fracturing Was Banned? United States Chamber of Commerce Global Energy Institute, January 2018. [https://www.globalenergyinstitute.org/sites/default/themes/bricktheme/pdfs/CoC\\_BannedFracking\\_FULL\\_v3.pdf](https://www.globalenergyinstitute.org/sites/default/themes/bricktheme/pdfs/CoC_BannedFracking_FULL_v3.pdf)

<sup>12</sup> What If Pipelines Aren’t Built in the Northeast? United States Chamber of Commerce Global Energy Institute, April 2017. [https://www.globalenergyinstitute.org/sites/default/themes/bricktheme/pdfs/20170405\\_1300\\_PipelineReport-update.pdf](https://www.globalenergyinstitute.org/sites/default/themes/bricktheme/pdfs/20170405_1300_PipelineReport-update.pdf)

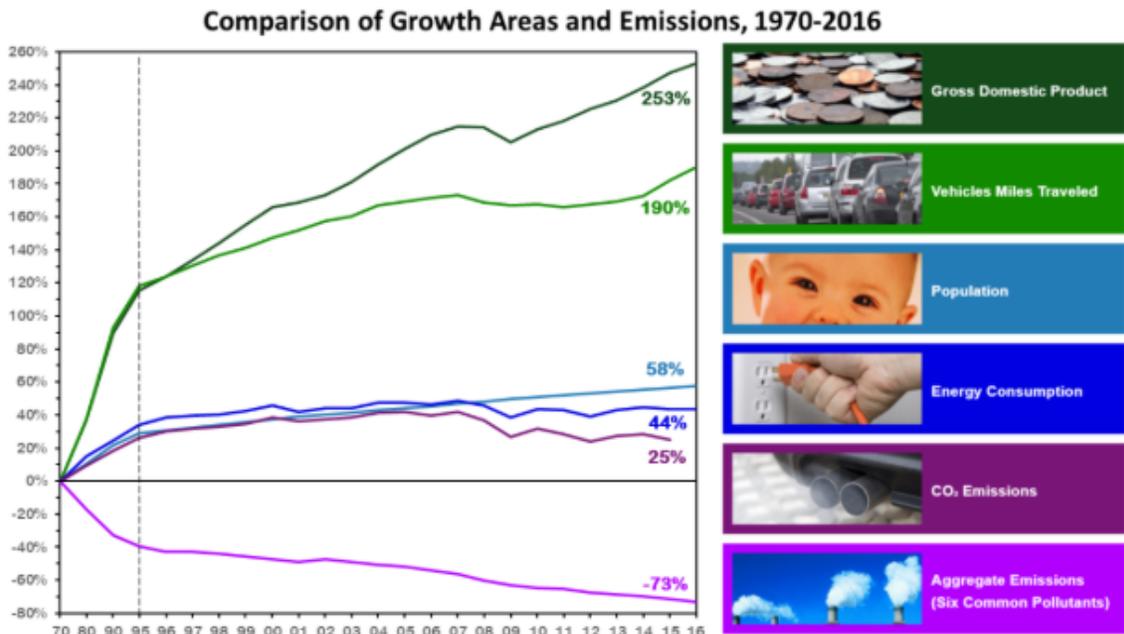
<sup>13</sup> State energy-related carbon dioxide emissions by year. U.S. Energy Information Administration, January 2018. <https://www.eia.gov/environment/emissions/state/analysis/>

It has also been estimated that competitive energy markets are delivering between \$2.8 billion and \$3.1 billion of savings to consumers, while also contributing to the significant reduction in greenhouse gas and criteria pollutant emissions.<sup>14</sup>

Pennsylvania has also secured significant reductions in criteria pollutants over the past two decades, again in large part due to private sector innovation. Pittsburgh and Philadelphia in particular have seen massive decreases in concentrations of NOx, ozone, particulate matter and sulfur dioxide, while their economies have grown. This trend has occurred nationwide, with the United States seeing a growing economy, larger population and more vehicles traveled in a less energy- and pollution-intensive manner.

Philadelphia Air Quality Progress, 2001-2017			
Pollutant	2001	2017	Percent Change
GDP (billions of \$)	300	387	+27%
Nitrogen Dioxide (ppb)	77	46	-40%
Ozone (ppb)	105	79	-25%
PM 2.5 (ug/m3)	17.5	11.4	-35%
Sulfur Dioxide (ppb)	77	12	-84%

Pittsburgh Quality Progress, 2001-2017			
Pollutant	2001	2017	Percent Change
GDP (billions of \$)	300	387	+27%
Nitrogen Dioxide (ppb)	77	46	-40%
Ozone (ppb)	105	79	-25%
PM 2.5 (ug/m3)	17.5	11.4	-35%
Sulfur Dioxide (ppb)	77	12	-84%



<sup>14</sup> PJM Value Proposition. PJM Interconnection, 2018. <https://www.pjm.com/about-pjm/value-proposition.aspx>

## Opportunities for Common Ground

It is our hope that this testimony has made clear the substantial economic and environmental benefits that competitive markets and energy choice have delivered Pennsylvania consumers and business, and that we can agree substantial progress has been made with respect to growing the economy in a sustainable manner.

As we work to address our economic and environmental challenges, we would offer the following as areas of common ground: an energy-enabled growth agenda, flexibility with respect to implementing environmental requirements, and partnership on moving forward with infrastructure and disaster mitigation programs.

First, given the structural budget constraints state government is facing due in part to pension obligations and an aging workforce, it is vital that we find ways to grow the economy. Leveraging our energy assets and establishing Pennsylvania as a hub for advanced manufacturing will yield more than 100,000 new jobs, a \$60 billion increase in state GDP and billions of additional state tax revenue, as outlined in the Forge the Future initiative.<sup>15</sup> To accomplish this, we need leadership in Harrisburg that will make energy a priority and partner with the private sector on comprehensive reforms to our tax structure, regulatory regime and workforce programs.

Second, we also encourage this committee and the General Assembly at large to work with regulators in support a predictable and user-friendly permitting structure and multiple pathways to compliance. One concrete example would include continued support for electronic permitting across all of programs at the Department of Environmental Protection. Our members have reported an improvement in the timeliness of decisions from the department, and we understand DEP believes e-permitting will improve the quality of permit applications. Further, affording flexible implementation of federal standards and reform to air quality permitting programs, such as New Source Review, will result in the incentive to improve environmental performance along with bolstering global competitiveness for key domestic industries.

Finally, we also encourage leaders in state government to continue to partner with the private sector to build out our infrastructure and enhance our capacity to respond to emergencies. The PA Chamber helped champion the legislature's passage of Act 89, which provided for historic investment into the state's roads, bridges and transit networks, while also allowing for public-private partnerships to rapidly replace hundreds of the state's roads and bridges that had deteriorated. Additional P3 partnerships are possible in the realm of water infrastructure, stormwater management and infrastructure build-out; as discussions on a federal infrastructure bill continue, we hope Pennsylvania stands as a success story for the private sector serving as a partner with government to deliver services. We also encourage the General Assembly and the Wolf administration to take advantage of increased federal funding opportunities in the FAA Reauthorization and Bipartisan Budget Acts of 2018, which afford states funding to develop disaster mitigation and resilience programs. The private sector stands ready to partner with the administration on the development and execution of these plans to improve the state's ability to respond to disaster events.

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<sup>15</sup> Forge the Future: Pennsylvania's Path to an Advanced Energy-Enabled Economy. <https://paforgethefuture.com/>

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In closing, on behalf of the members of the Pennsylvania Chamber of Business and Industry, thank you for the opportunity to speak before you this morning.