
Testimony

Submitted on behalf of the
Pennsylvania Chamber of Business and Industry

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**Hearing on Modernizing the Natural Gas Act to Ensure It Works for Everyone**

Before the:
**United States House of Representatives**
**Committee on Energy and Commerce**
**Subcommittee on Energy**

Presented by:
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Chairman Rush, Ranking Member Upton, and members of the House Energy and Commerce Committee Subcommittee on Energy,

Thank you for the opportunity to speak before you this morning on the matter of natural gas development and infrastructure. My name is Gene Barr, President and CEO of the Pennsylvania Chamber of Business and Industry (PA Chamber), the largest, broad-based business advocacy organization in the Commonwealth. Our nearly 10,000 members range in size from sole proprietorships to Fortune 100 companies and represent every industrial and commercial category. All of our members rely on affordable, reliable supplies of energy as well as a stable, predictable and rational regulatory environment.

My testimony this morning will encompass a brief overview of the PA Chamber's position on energy and environmental policy, followed by a discussion of the tremendous gains (both economic and environmental) our state has seen over the past ten years thanks to the development of Marcellus shale resources. I will then discuss some challenges that our members have noted with regard to pipeline development as well as the severe negative economic consequences associated with a domestic ban on natural gas development.

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

For the past several decades, the PA Chamber has been actively involved in issues relating to the 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 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 across the Commonwealth.

We recognize that a changing climate will present significant challenges to Pennsylvania and the United States, and that anthropogenic activities are a contributing factor. Addressing this challenge will necessarily involve the private sector to develop innovative solutions, practices and technologies; however, 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, while still pursuing the desired environmental result. As this testimony will further make clear, the existing regulatory framework (including the implementation of the

federal Natural Gas Act regarding pipeline approvals) has delivered considerable environmental benefit while also driving down costs for consumers.

**Development of Pennsylvania's Shale Gas Resources Has Yielded Tremendous Economic and Environmental Benefits**

Pennsylvania is a keystone energy producer and our tremendous natural resources have allowed the United States economy to grow, while significantly reducing both reliance on foreign energy sources and emissions of greenhouse gasses and criteria pollutants. Pennsylvania is the second largest shale-gas producer, the third-largest coal-producer, the second-largest nuclear energy producer, and is in the top 20 for wind and solar installed capacity.[1] As a result of the utilization of all of these natural resources, Pennsylvania is the third largest electricity producing state in the nation and is the largest energy exporter in the 13-state PJM grid, which delivers electricity through competitive markets to 61 million Americans in the Midwest and mid-Atlantic. Pennsylvania is also home to the eighth largest manufacturing sector in the nation, and our energy resources are positioning our state to lead in the advanced manufacturing, advanced materials, robotics, data centers, biotechnology, health care and education segments – industries which require low-cost and stable energy.

In 2004, the first Pennsylvania shale gas well was developed through horizontal hydraulic fracturing. Over the next 15 years, Pennsylvania went from being an after-thought in natural gas production to the source of 20 percent of the nation's natural gas supply. The state annually produces more than 6 trillion cubic feet of gas (up from 5 tcf in 2016 and 4 tcf in 2014), trailing only Texas for leadership among states in shale production. In recent years, Pennsylvania has become a net exporter of natural gas, and has helped position the United States to be net-energy independent for the first time in decades.

While these productivity gains have been tremendous, the gas does not have much value if there is not infrastructure to deliver it to market. We have made it a priority of our organization to advocate for the expansion of infrastructure broadly and natural gas infrastructure specifically. We believe there is ample supply in Pennsylvania to both grow our state's economic base as well as that of states in our region, while also exporting natural gas and associated liquids to countries abroad. The results of such exports will be a bolstering of economic cooperation between our country and nations abroad who have heretofore been reliant on the energy produced by corrupt and/or anti-democratic regimes.

Natural gas infrastructure has seen tremendous investment in recent years. According to a summary compiled by Energy in Depth, more than two dozen FERC-approved projects "are feeding $32.6 billion in investments across the Appalachian Basin. This infusion of capital will result in roughly 3,500 miles of new, repurposed or replaced pipelines across Ohio, Pennsylvania and West Virginia and generate more than 124,000 jobs."[2] Across the entire economy of Pennsylvania, the American Petroleum Institute estimates that all segments of the oil and gas industry in Pennsylvania are supporting more than 300,000 jobs.

Pennsylvania companies are increasingly examining ways by which to improve sustainability and lower operating costs, in part through innovations in energy and technology. Some recent strides include:

- Innovation into microgrids at defense and aviation facilities to improve resilience and lower operational costs by pairing renewable and gas-fired generation

[1] Pennsylvania State Energy Profile. U.S. Energy Information Administration, last updated Aug. 15, 2019. https://www.eia.gov/state/print.php?sid=PA
[2] More than $32 billion being invested in Appalachian basin pipeline projects. Energy in Depth, Feb. 28, 2019. https://www.energyindepth.org/infographic-more-than-32-billion-being-invested-appalachian-basin-pipelines/

- Adoption by hospitals, educational facilities, financial institutions and manufacturers of combined heat and power to improve resiliency and lower operational costs

- Purchase and conversion of alternative-fuel vehicles in logistics and delivery fleets, included electric, propane, and natural gas derived from landfill or agricultural sectors

- Committing to significantly reducing fugitive emissions from pipeline systems

The flagship project for investment that is occurring in Pennsylvania thanks to good policy and our region's abundant natural resources is the $6 billion Shell petrochemical facility in southwestern Pennsylvania. Currently, construction activity is at peak employment, with more than 6,000 highly skilled workers on site. The facility will refine natural gas liquids for use in a variety of consumer, automotive and medical device uses.

Another example is that of several leading pulp and paper manufacturers throughout Pennsylvania adopting combined heat and power systems to significantly reduce operating costs and improve their sustainability profiles. These industrial processes are in need of large quantities of both heat and power, and the use of CHP has greatly improved these facilities' ability to continue to operate and compete in an increasingly challenging global market. Thanks in part to CHP technology, hydraulic fracturing of resources on their site as well as recently upgraded midstream infrastructure to stabilize gas flow, one paper products manufacturer in rural northeastern PA significantly reduced operating costs and was able to maintain its presence.

We also have among our membership a leading steel manufacturer who as part of a commitment to their community is investing hundreds of millions of dollars in pollution control upgrades, as well as looking to harness locally produced natural gas to power their furnaces and reduce emissions. There has been a significant improvement in the air quality of southwestern Pennsylvania, and we expect this type of innovation will continue that trend while also affording what has been a lynchpin of the local economy to continue operating.

Recent economic reports make clear there is even more potential for further economic development in Pennsylvania and across the Appalachian region. In 2017, Chevron and Peoples Gas partnered with a leading consulting firm to produce an economic analysis of the benefits to Pennsylvania should the state fully leverage its energy assets into more investment in the manufacturing and technology sectors. The report, Forge the Future, estimated that pro-growth energy policies could yield the state 100,000 more new jobs, a $2-3 billion increase in tax revenues, an additional $60 billion in state GDP and an increase in natural gas demand of 4-5 trillion cubic feet.[3]

TeamPA, the state government's public-private collaborative that works with industry on economic development and site selection, contracted with IHS Markit for an analysis for the potential investment in additional Shell-cracker type investments. Their report estimates the state has the potential for five more such facilities. IHS Markit, in a related but separate analysis, has estimated that the potential return on investment in petrochemical projects sited in Appalachia is four times that of the return from similar projects located along the Gulf Coast.[4]

A recent economic report from the United States Department of Energy also estimated the potential for additional investment into the region should a regional ethane storage hub be constructed. This report noted that ethane production in the Marcellus/Utica regions has the potential to increase 20-fold by 2025.

[3] Forge the Future Econometric Analysis and Ideas for Action Reports. https://paforgethefuture.com/reports/
[4] Petrochemical Cluster: A bright future for the Tri-state region. IHS Markit, May 25, 2018. https://ihsmarkit.com/research-analysis/petrochemical-cluster-a-bright-future-for-the-tristate-region.html

Currently, about one-third of the domestic petrochemical industry is within 300 miles of Pittsburgh, and is creating $300 billion in revenue across the nation.[5]

Shale gas development has also benefitted the household finances of the average Pennsylvania family. According to a review of gas distribution utility companies' filings with the Pennsylvania Public Utility Commission conducted by the Marcellus Shale Coalition, the average purchased gas cost by the utilities fell 66 percent between 2008 and 2018 – resulting in the average residential ratepayer saving nearly $1,600 per year in lower heating costs.[6] This reduction results in significant beneficial economic impacts in Pennsylvania, where approximately one-half of the state's residents rely on natural gas for heating.

One final note with respect to the positive economic consequences of shale gas development: The onset of shale gas development in Pennsylvania afforded the state the ability to weather the recession. According to a labor study conducted by researchers at the University of Illinois, during the years of the Great Recession through 2014, while most states and sectors saw demand for skilled labor shrinking, states with significant shale gas industries were adding millions of new labor hours per year. The report noted that "but for natural gas projects, the region would have experienced substantially higher incidences of construction industry job displacement."[7]

In terms of achieved and forecasted emissions reductions, the state's success in meeting and surpassing federal air quality obligations cannot be emphasized enough. According to DEP and EPA air quality data, the state has achieved the following significant reductions in air emissions statewide since 1996:

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| Nitrogen oxides | -65% |
| Volatile organic compounds | -36% |
| Particulate matter (2.5 ug/m3) | -27% |
| Particulate matter (10 ug/m3) | -45% |
| SO2 | -90% |
| Carbon monoxide | -69% |
| Carbon dioxide | -21% |

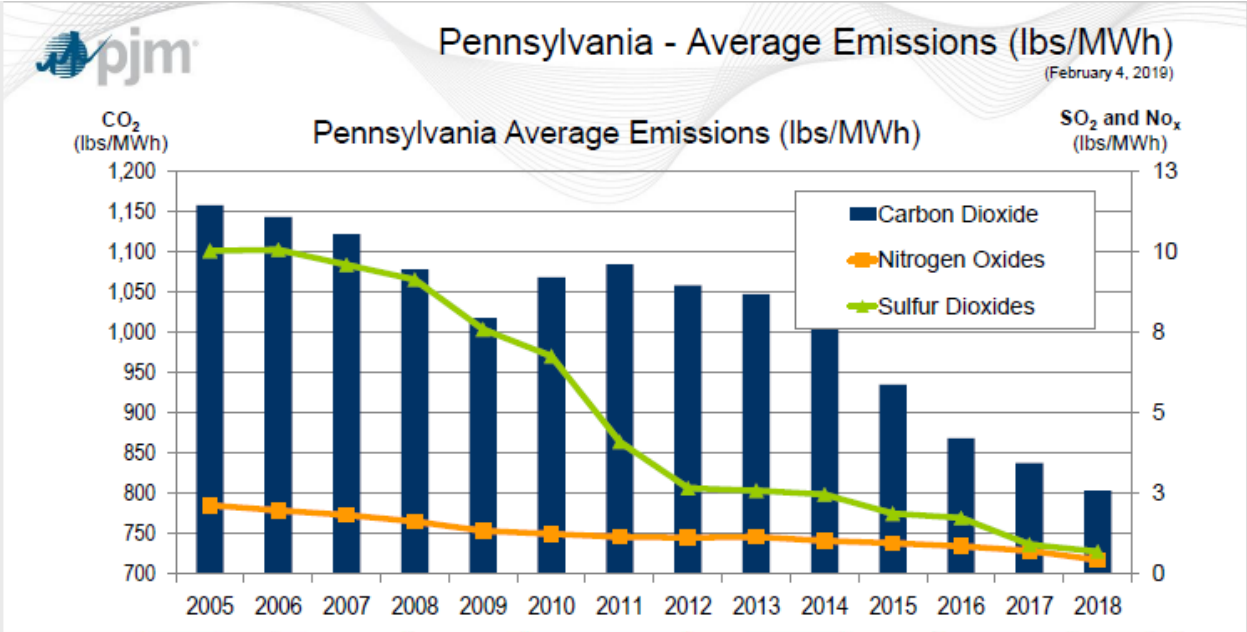
With specific regard to Pennsylvania, since 2005 the state has reduced its greenhouse gas emissions in total tons more than that of all but one other state, according to the most recently available federal Energy Information Administration data.[8] According to EPA data, Pennsylvania has reduced such emissions in total by 22 percent since 2005, with an 11.5 percent reduction from the transportation sector and a 38 percent reduction in the power generation sector.[9]

Natural gas is also a growing component of the state's power generation mix, with the fuel source now providing about 36 percent of the state's electricity production – up from single digits in 2005. As just one example of the consequences of this shift in generation mix, a site in central PA which used to host a coal-fired power plant has been refitted to be fueled by natural gas, produced just a few counties away. The

[5] Ethane Storage and Distribution Hub in the United States. U.S. Department of Energy, November 2018. https://www.energy.gov/sites/prod/files/2018/12/f58/Nov%202018%20DOE%20Ethane%20Hub%20Report.pdf
[6] Purchased Gas Cost Rates. Pennsylvania Public Utility Commission. http://www.puc.state.pa.us/NaturalGas/pdf/PGC.pdf
[7] Study of Construction Employment in Marcellus Related Oil and Gas Industry. Bruno & Cornfield, University of Illinois, Aug. 29, 2014. https://ler.illinois.edu/wp-content/uploads/2015/01/Marcellusjobsstudy_FINAL.pdf
[8] Energy-Related Carbon Dioxide Emissions by State, 2005-2016. U.S. Energy Information Administration. https://www.eia.gov/environment/emissions/state/analysis/
[9] CO2 Emissions from Fossil Fuel Combustion by State, 1990-2017. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2019-11/documents/co2ffc_2017.pdf

facility's output is twice the capacity of the previous coal plant and is helping maintain reliability and low cost electricity for homes and businesses in central Pennsylvania.

As noted previously in this testimony, Pennsylvania is the second largest producer of electricity in the nation after Texas, and is also a net exporter of power to the 13-state PJM grid, the largest managed regional transmission operation in the world. Pennsylvania has been able to maintain its position as a net exporter of power while reducing emissions over the past two decades, with about one-third of its production being sent across state lines for consumption in other states. Data from PJM excerpted below demonstrates in visual form the significant reductions in carbon intensity and NOx and $SO_2$ emission rates from PA sources.




The reductions in emissions of $CO_2$ and criteria pollutants have resulted in meaningful improvements in ambient air quality, with several regions of the state now reclassified as demonstrating attainment with federal ambient air quality standards. DEP employs a statewide network of monitors to track the Commonwealth's air quality to inform the state's progress in meeting federal air quality standards. As DEP data and reports have noted, every monitoring station in the state is measuring attainment for the daily particulate matter standard, all but one monitoring station is measuring attainment for the annual particulate matter standard and 1-hour $SO_2$ standard, and all but four monitoring stations are measuring attainment of the 8-hour standard for ozone. This represents considerable progress compared to where the state was in years past, as concentrations of ozone and sulfur dioxide are now a fraction of where they were 30 years ago. As one example, ambient levels of $SO_2$ were measured at 342 parts per billion in Beaver County in 1991. Today, the measurements are around 22 parts per billion. Shale gas development and associated natural gas infrastructure build-out have been catalysts to these dramatic improvements in air quality.

**Policies Designed to Block or Impede Shale Gas Production Will Setback Environmental Progress and Erode the Nation's Energy Security**

The aforementioned economic and environmental gains have demonstrably improved quality of life for many Pennsylvanians. However, there is more work to be done. Currently, states bordering Pennsylvania such as New York and New Jersey have attempted to use the state water quality certification process granted under Section 401 of the federal Clean Water Act to attempt to unilaterally derail federally approved infrastructure projects. If there is any need to reform siting processes dealing with natural gas infrastructure, it is to take steps to ensure that the sponsors of projects which are found by independent federal regulators to meet the long-established standards regarding public convenience and necessity are actually able to construct those projects. The attempted blockades of projects into these neighboring states have not only raised utility costs for communities in the receiving states[10] but have resulted in moratoriums that frustrate local economic development, both in the states that are manipulating the Clean Water Act to block this needed infrastructure and beyond. Even worse, the lack of pipeline infrastructure into New England contributed to the import of Russian gas into a Boston LNG port last winter. Given the prolific supplies of natural gas being developed in northeastern Pennsylvania, just a few hours' drive from New England states, it is unconscionable that gas from overseas – where it was likely developed and transported without the rigorous environmental standards applicable here – would be where these states get their energy. The lack of gas infrastructure in the northeast has also led to a spike in wintertime emissions, due to the increased use of diesel-fired generators, which often run without the type of environmental controls used in large power generation facilities.

We have provided testimony to this committee in the past regarding proposed modernization's of the nation's environmental statutes, including those related to air quality. We noted before in a hearing regarding New Source Review permitting that "[l]enders will not sign off on financing until the revolving door of lawsuits from third-party groups over the perpetually changing universe of Best Available Control Technology (BACT) and Lowest Achievable Emissions Rate (LAER) controls stops spinning. Economic growth and environmental progress depend upon a well-functioning and rational regulatory system."[11] We have noted a similar dynamic with respect to interstate gas infrastructure projects, in which states and NGO's are attempting to use the legal system to delay a project's approval until it is no longer economically feasible. This type of "keep it in the ground" advocacy is having major adverse economic impacts.

Efforts to "keep it in the ground" have already cost the United States nearly $92 billion in lost GDP, 728,000 lost job-years, and $20 billion in foregone federal revenues, according to an economic analysis conducted by the US Chamber's Global Energy Institute.[12] The Global Energy Institute has also estimated that should a national fracking ban be instituted, America's economy would stand to lose 19 million jobs by 2025, household power prices would quadruple and the nation would be more reliant on importing oil and gas from suppliers such as OPEC and Russia. Pennsylvania in particular would see a loss of nearly 610,000 jobs, a loss of $261 billion in state GDP and a $4,654 increase in the per-capita cost of living. These numbers make clear a ban on hydraulic fracturing is neither good policy nor in the national interest.[13]

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[10] Study Finds Energy Consumers Could Have Realized $435 Million in Savings Last Winter from PennEast Pipeline. May 17, 2018. https://penneastpipeline.com/study-finds-energy-consumers-could-have-realized-435-million-in-savings-last-winter-from-penneast-pipeline/

[11] Testimony of the PA Chamber Before the House Committee on Energy & Commerce Subcommittee on Environment re: New Source Review Permitting Challenges for Manufacturers and Infrastructure. Feb. 14, 2018, https://www.pachamber.org/advocacy/legislative_agenda/communications/PA_Chamber_House_EC_Sub_Enviro_NSR_Testimony_021418.pdf

[12] Infrastructure Lost: Why America Cannot Afford to Keep It In the Ground. U.S. Chamber Global Energy Institute, Dec. 18, 2018. https://www.globalenergyinstitute.org/sites/default/files/GEI_KIITG_report_WEB.pdf

[13] What If . . . Hydraulic Fracturing Were Banned? 2020 Edition. U.S. Chamber Global Energy Institute, Dec. 18, 2019. https://www.globalenergyinstitute.org/what-if-hydraulic-fracturing-was-banned-2020-edition

Finally, given this subcommittee's interest in reviewing ways by which federal policy regarding siting of interstate gas infrastructure may be in need of improvement, I would like to close with a note of support to the Trump administration's proposed revisions to the National Environmental Policy Act. It has been our members' experience that the length of time, as well as manpower and financial resources, devoted to getting through the federal permitting process has continued to lengthen. This has been the case for not just pipeline projects but electric transmission infrastructure, highway infrastructure, port expansions, LNG export projects, and more. The expansion and modernization of these infrastructure assets is crucially important if the United States wants to keep up with developed and developing nations, and we support the Trump administration's proposed modernization of NEPA regulations to unlock critically needed American investment.

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In closing, on behalf of our members, thank you for the opportunity to speak to the significance the increased development and use of natural gas has had on the Commonwealth of Pennsylvania. We appreciate the committee's interest in listening to our perspective, and we look forward to continuing to engage state and federal lawmakers and policymakers on pro-growth policy, within the energy sector and beyond. Thank you and I look forward to answering any questions you may have.