

**Testimony of**  
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**Pennsylvania Department of Environmental Protection**  
**House Consumer Affairs Committee**  
**Hearing to Discuss Alternative Energy Portfolio Standards**

**May 6, 2019**

Good Morning Chairman Roae, Chairman Matzie, and members of the Committee. My name is David Althoff, and I am the Director of the Energy Programs Office in the Department of Environmental Protection (DEP). I would like to thank you for the opportunity to appear before you today to discuss the Alternative Energy Portfolio Standards (AEPS) Act, the Department's role in administering it, as well as the recommendations for program improvement.

**AEPS Overview**

Pennsylvania's alternative energy portfolio standard enacted in 2004, administered by the Public Utility Commission (PUC) in cooperation with the Department, requires that 18% of electric power come from alternative and renewable resources; including 8% from renewable resources like solar and wind, by 2021. The standard has helped to grow the clean energy industry in Pennsylvania, while providing support for the deployment of clean energy options to Pennsylvania businesses and homeowners. As of 2017, more than 1,300 megawatts of wind power and 285 megawatts of solar has been installed in Pennsylvania. These resources have brought in billions of dollars in capital investment in Pennsylvania. For the 2017 reporting period, 14.2% of the electricity sold to retail

customers was produced by qualified alternative and renewable energy providers from both in-state and out-of-state resources.

### **DEP's Role in Administering the AEPS Program**

DEP plays an important role in administering the alternative energy portfolio standard. The AEPS Act directed that the DEP ensure that all qualified alternative energy resources meet all applicable environmental standards and in addition, verify that an alternative energy resource meets the eligibility definitions and criteria set forth in the Act.

Additionally, Act 213 instructed the DEP to work cooperatively with the PUC to monitor the performance of all aspects of the act and work collaboratively in the provision of an annual report to the Senate and the House of Representatives. The annual report includes the status of compliance by electric distribution companies and electric generation suppliers, current costs of alternative energy for all alternative energy technology types, costs associated with the alternative energy credits program, the status of the alternative energy marketplace, and recommendations for program improvements.

Throughout each reporting year, the Energy Programs Office works together with the PUC and the AEPS administrator to conduct an environmental compliance review to ensure those facilities with environmental permits are maintaining operations in compliance with all applicable environmental standards. In addition, DEP assists the PUC in ensuring that all energy resources meet the requirements of the act and work together to review alternative energy data and trends from the AEPS Program to gain insight into the energy marketplace within Pennsylvania. Lastly, my office also works closely with the PUC Staff to review and help develop the annual report to the legislature documenting compliance and trends.

## **AEPS Program Trends**

The 2017 reporting year identifies several trends. It is notable that for the Tier I non-solar requirement, which drives the substantial majority of the AEPS program's investments, 26% of credits came from Pennsylvania, 27% came from Illinois and 24% came from Virginia. Wind energy, 80% of which comes from outside of Pennsylvania, produced nearly half of the retired Tier 1 credits. Hydro, biomass energy and landfill gas produced most of the rest of the Tier I credits. Overall, according to the PUC's 2017 Annual Report the cost of the Tier I non-solar requirement was \$98,783,650. In practical terms, this means that roughly \$26 million was invested in renewable energy credits (RECs) generated within Pennsylvania, while \$73 million was invested in RECs generated elsewhere.

For the Solar PV requirement, 39% of retired credits originated in Pennsylvania, while 48% came from North Carolina, 5% came from Ohio, and 4% came from Virginia. The remaining other 4% came from several other states.

Looking forward, the number of solar credits from out-of-state is expected to drastically decrease due to the passage of Act 40 of 2017, which "closed the borders" on solar credits by only allowing facilities located within Pennsylvania to be eligible for solar credits. This Act will now allow the AEPS program to support more in-state investment in new solar deployments rather than support existing out-of-state solar installations.

Furthermore, expanding that eligibility requirement to all Tier I resources would increase the development of in-state alternative energy resources. As only 26% of all Tier I credits retired in 2017 came from Pennsylvania, "closing the borders" for the remaining Tier I

resources would allow Pennsylvanians to maximize the environmental and economic benefits that are currently being received by other states.

For the Tier II requirement which currently requires 8.2% of the electricity portfolio, 66% of retired credits are the result of energy production from Pennsylvania resources, while the remaining third come from energy resources in Virginia and West Virginia. Waste coal produced nearly 2/3 of the available Tier II credits from 16 eligible facilities, while hydro-pumped storage produced approximately 1/3 of the credits. It is important to note that the Tier II price per credit, which averaged 16 cents in the 2017 compliance year, is not nearly as robust of an incentive for the Tier II eligible resources as compared to Tier I credit prices due to over-supply of eligible resources. The entire investment driven by the Tier II credit requirement in 2017 was \$1,771,147.

### **Opportunity for Program Improvement**

When the original AEPS act was passed 15 years ago, Pennsylvania took a position as a leader in alternative energy development. Pennsylvania's alternative energy portfolio standard has been critical in helping to grow our clean energy resources both in-state and in the PJM region. This has helped to diversify our electricity generation portfolio over the last 15 years.

There is however still significant room for improvement. As part of the Department's responsibility to provide recommendations to the AEPS program and given that the AEPS program is one of Pennsylvania's critical clean energy policies, the Department included analysis of potential adjustments to the AEPS act in the Pennsylvania Solar Future Plan and the updated 2018 Climate Action Plan.

The Department's Pennsylvania Solar Future Plan presented 15 strategies to increase solar generation to 10% of in-state electricity consumption by 2030. These strategies included:

- Increasing the AEPS solar carve out
- Enabling Community Solar
- Uniform Siting and Land Use Policies
- Alternative Ratemaking and Grid Modernization
- Increasing access to capital
- Carbon Pricing
- Tax Incentives
- Long Term Contracts
- Grid Modernization
- Virtual Net Metering
- Use of Property Assessed Clean Energy
- Accelerating the use of Smart Meters.

Since the AEPS legislation passed in 2004, nearby states have set significantly more aggressive renewable targets, especially for solar. Maryland, Delaware, and New Jersey have set solar targets at 2.5%, 3.5%, and 5.1%, respectively, while Pennsylvania's solar target remains at 0.5% of supplied electricity. The Solar Future Plan recommends increasing the solar carve out to between 4%-8% by 2030. Analysis conducted as a part of the Solar Future Plan predicts that greenhouse gas emissions would likely decrease by 9.3% if the Solar Future goals are met.

Other states have also included aspects of their portfolio standard that incentivize energy innovation and develop a clean energy economy. Additions to an alternative energy

portfolio standard can include storage technologies that will bridge the intermittency of solar and wind technologies, building more local distributed generation projects to result in additional resiliency into the grid, and creating microgrid systems.

The Climate Action Plan, just released this week, includes over 100 actions that government, businesses, and citizens can take to both mitigate and adapt to climate change.

The Plan set targets in line with Governor Wolf's recent Executive Order aimed at reducing GHG emissions 26% from 2005 levels by 2025 and 80% by 2050. If all states achieved similar GHG reduction targets, and other nations met comparable goals, climate science analysis suggests that global temperature rise could be kept below the 2-degree Celsius threshold cited by experts as the level beyond which dire consequences would occur, including sea level rise, superstorms, and crippling heat waves.

The Department's analysis team quantitatively modeled 15 of the actions, including actions such as increasing the AEPS, investing in renewable energy generation, increasing energy conservation and energy efficiency, and more. Using just those 15 actions, the analysis team projected GHG emissions would decrease 21% from 2005 levels by 2025 and 36% by 2050.

Specifically, the team quantified a number of actions related to the electricity sector.

Three of those actions are as follows:

- Increasing Alternative Energy Portfolio Standard Tier 1 targets to 30% by 2030, with a 6% solar carve out, and then increasing to a 50% Tier 1 target by 2050.
- Implement a policy to maintain nuclear generation at current levels, whether through zero emissions credits, inclusion in the AEPS, or some other mechanism.

- Limit carbon emissions through an electricity sector cap and trade program.

The analysis team found that implementing those three actions could have significant environmental benefits. In fact, the analysis in the Climate Action Plan states that just increasing the AEPS Tier I target to those levels would reduce in-state emissions an average of 16 million metric tons of CO<sub>2</sub> equivalent per year from 2020-2050.

Additionally, the modeling results showed that each action was cost effective. The Climate Change Act of 2008 requires that the Department include cost effectiveness as part of the analysis when considering recommendations in the Climate Action Plan.

In closing, as we near 2021, the Department is encouraged to see the legislature looking ahead to ensure Pennsylvania continues to grow our in-state clean electricity generating resources while supporting next generation alternative energy and renewable energy technologies. The AEPS Act states that DEP shall make recommendations for AEPS program improvements. We look forward to continuing to work with the legislature to provide input on how the AEPS act can help Pennsylvania not only reduce emissions, but also maintain our status as an energy leader by increasing competitiveness with neighboring states in development and deployment of clean and alternative energy resources.