

Testimony of
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Pennsylvania Department of Environmental Protection
Joint Hearing before the Senate Consumer Protection and Professional Licensure
Committee and the Senate Environmental Resources and Energy Committee
Hearing to Discuss Alternative Energy Portfolio Standards

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Good afternoon, Chairman Tomlinson, Chairman Boscola, Chairman Yaw, Chairman Yudichak, and members of both Committees. 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 sources; 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 and has brought in billions of dollars in capital investment. 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 verify that an alternative energy resource meets the eligibility definition 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, my office has worked productively with the PUC to ascertain the status of qualified alternative energy resources meeting all applicable environmental standards and assist the PUC in ensuring that energy resources meet the requirements of the act. My office also works closely with the PUC Staff to review and help develop the annual report to the legislature and track compliance and trends.

AEPS Program Compliance & Trends

Each year, the Energy Programs Office, working together with the PUC and the AEPS administrator, conducts an environmental compliance review to ensure those facilities with environmental permits are maintaining operations in compliance with all applicable environmental standards. In addition, DEP reviews alternative energy data and trends from the AEPS Program to gain insight into the alternative energy marketplace within Pennsylvania.

In the 2017 reporting year, 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 within Pennsylvania, while \$73 million was invested 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 will allow the AEPS program to support more in-state investment in solar deployments rather than support 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 ¼ 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, 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 as much of an incentive for the Tier II eligible resources as compared to Tier I credit prices and 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 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 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. Some of those strategies include increasing the AEPS solar carve out, explore grid modernization, and enable community solar.

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.

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 bridge the intermittency of solar and wind technologies, local distributed generation to build resiliency into the grid, and provide support of 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 including:

- 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 CO₂ 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 alternative energy resources.