

August 30, 2014

Pennsylvania Public Utility Commission
Attn: Secretary
PO Box 3265
Harrisburg, PA 17105-3265

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PA.P.U.C.
SECRETARY'S BUREAU

RE: Docket L-2014-2404361; 52 PA Code Chapter 75 Proposed Rulemaking

Dear Commissioners:

I'm writing to recommend reconsideration of the proposed rulemaking referenced above.

As a former resident of Pennsylvania and agricultural engineering consultant who worked for several years in the Commonwealth, I'm familiar with many families and businesses that could be directly affected by the proposed rulemaking as written. For example, some of the trash my family and I produced at home went to a landfill with a beneficial use system for the landfill gas. As part of my previous occupation, I had the opportunity to work with a number of Pennsylvania farms to implement anaerobic digester systems. These systems and the financial security of the farm families involved could be jeopardized by the proposed rulemaking.

As a current environmental engineering graduate student whose research focuses on the environmental implications of waste management systems and their interaction with our electricity system, I applaud the state's accomplishments in laying out the portfolio requirements in the Alternative Energy Portfolio Standards (AEPS) Act starting about ten years ago. However, the proposed rulemaking appears to take Pennsylvania a step backward in maximizing the benefits of alternative energy.

Many individuals and organizations have already commented on the concept that removing or significantly scaling back the current net metering policy could hinder achievement of the environmental stewardship intentions behind AEPS Act. I agree and hope the Commission decides against a reduction in net metering. My comments from this point forward apply in general but especially if the Commission decides that some reduction must take place.

Importantly, it is possible in many cases to achieve multiple-win scenarios when developing alternative energy generation capacity. In my area of study, when multiple benefits are simultaneously reaped from operation of one facility, each of the multiple benefits is called a co-product. Some, but not all, of the alternative energy sources currently classified as Tier I and II sources in the AEPS Act arise as co-products from a facility primarily providing another service.

For instance, the purpose of a landfill is to dispose of solid waste. Landfill gas is required by federal regulations to be collected and managed at most facilities over a certain size. Since it has energy value and must be collected anyway, many landfills have chosen to collect more aggressively and use the gas for electricity generation or other beneficial use. By doing so, these

landfills are simultaneously reducing greenhouse gas emissions through collection of gas and providing an alternative energy resource. Their primary purpose in this scenario is still solid waste disposal, not electricity generation.

Similarly, the purpose of a livestock farm is to produce food. All livestock farms must manage animal waste, and some have chosen to install anaerobic digesters as part of their manure management system. By doing so, the environmentally beneficial co-products of reduced greenhouse gas emissions, reduced odor emissions, and provision of an alternative energy resource (and often other benefits as well) are simultaneously realized. These co-products arising from on-farm digesters do not change the farm's primary purpose- food production. These two examples demonstrate the "two birds with one stone" effect possible with some, but not all, alternative energy sources.

In contrast, solar photovoltaic (PV) and wind systems generally do not provide environmentally beneficial co-products. While they undoubtedly produce clean energy, these systems typically offer no other direct environmental benefits.

It is worth noting the separate issue of capacity factor, which can be thought of as the percentage of time a generating facility is operating at full capacity. Higher capacity factors imply greater consistency and predictability for electricity distribution companies (EDCs) and regional transmission organizations (RTOs) managing the electricity system, which is generally desirable as distributed generation increases. Due to the nature of their operation, landfill gas energy systems and on-farm digesters typically have much higher capacity factors than intermittent sources like solar PV or wind.

From the discussion above, I would contend that alternative energy sources are inherently different from one another. It follows that, where practical, we should choose to prioritize those with the most benefits.

Please consider the following hypothetical result of the proposed rulemaking:

When other conditions are held constant, a blanket contraction in the availability of net metering generally reduces the financial viability of distributed alternative energy generation, and would likely slow or reduce deployment. As a result, to meet the AEPS standards, renewable generation capacity would most likely be added by utilities in large-scale installations such as wind farms. Following this logic, an expected result of blanket net metering contraction could be a disproportionate reduction in development of the "two birds with one stone" alternative energy sources such as landfill gas and on-farm digestion in favor of other larger, more centralized facilities. While this possible outcome would satisfy current AEPS standards and have certain advantages for EDCs and RTOs, it could represent many missed opportunities to realize environmental benefits from co-products and result an alternative energy portfolio with a higher potential capacity factor.

The scenario described above is purely hypothetical and not explicitly grounded in research. Utilities, consumer-generators, and other stakeholders would benefit from a thorough study. I

would like to suggest that the Public Utilities Commission (PUC) provide to the public a range of projections of the impact the proposed rulemaking would have on:

- a) the composition of the state's alternative energy portfolio over the next 10 years, and
- b) the finances of current customer-generators who would be removed from the net metering program in the absence of a grandfathering clause.

Further, I would like to suggest that the PUC consider treating inherently different renewable energy sources according to their broader environmental and electricity system implications. If net metering must be limited, it could be advantageous to provide exemptions or relaxed limits for preferred generation technologies, including landfill gas and on-farm digester systems. Others have made suggestions on specific relaxations that could be effective, such as site load limits, the 110% rule, generation caps, and the utility definition.

Thank you in advance to the PUC for your consideration of my comments. I hope and expect that you will make the best choices for Pennsylvania's future.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith Hodge", with a long horizontal line extending to the right.

Keith Hodge

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