

INTERCONNECTION AND NET METERING RULES UNDER AEPS
NativeEnergy Recommendations

Thank you for this opportunity to comment. I am the Director of Mid-Atlantic Operations for *NativeEnergy*, which is a national marketer of renewable energy credits headquartered in Vermont. Our interest in the Advanced Energy Standard relates to our work in marketing the renewable energy benefits from Pennsylvania farm waste anaerobic digesters, a Tier 1 resource.

In 2003, the Pennsylvania Departments of Environmental Protection and Agriculture invited our company to meet with their Biomass Working Group to explore how our unique marketing approach for small-medium renewable energy projects could support the growth of farm methane digesters. With our renewable energy “green tags futures” approach, we have been helping to build Native American-owned utility-scale wind turbines on the Great Plains, a wastewater treatment plant digester in Vermont, and we support research and development on farm methane systems. Our activity in Pennsylvania, on behalf of the farms, can help bring between 15-20% of the capital costs to the farms up front.

Farm biogas digester systems are reliable base-load power generators that not only significantly reduce greenhouse gas emissions – specifically methane and carbon dioxide – but also help with local odor control and, as recently noted in Governor Rendell’s Chesapeake Bay Tributary Strategy, can assist in reducing harmful nutrient runoff into our watersheds. These systems, generally ranging between 75 – 250 kW, produce electricity with generators fueled by biogas from the anaerobic digestion of livestock wastes. Several farm biogas digesters have been operating successfully in Pennsylvania for more than 15 years with over 95% up time. These 24-hours-per-day generators can add base electric generating capacity to our Commonwealth system while reducing air and water pollution. Germany, which is the largest dairy & pork economy in Europe, has advanced from 40 digesters in the 1950’s to more than 2000 systems in 2002, adding about 250 MW of capacity.

During the last year, *NativeEnergy* has established contracts with several Pennsylvania family dairy farms that are in the process of installing biogas digesters, and we have launched our marketing program in Pennsylvania and Maryland. With farm contracts in hand, we are selling the renewable energy credits in advance of digester construction in order to deliver cash payments shortly after commissioning. Our marketing efforts and related sales to institutions, businesses and individuals, are now ramping up in anticipation of making payments to the farms later this year as their projects become operational.

Our major concern now is the economic viability of these projects due to the unanticipated tariff fees and standby charges that the farms are reporting as they attempt to finalize agreements with their utilities. The lack of adequate net metering, uniform terms and conditions and interconnection standards in Pennsylvania makes economic projections uncertain at best, or inadequate to support anticipated project costs.

For example, the first farm family that we have been working with recently learned that even though they plan to spend more than \$450,000 for a full scale digester, which will generate more than 2-3 times the power needed to run their new milking parlor, they would still be charged 65% of the electricity cost they'd pay otherwise for the parlor without the digester. In other words, while using virtually 0 kWhs from their utility for their milking facility, the farm family will still have to pay the utility about \$24,000 per year for the milking parlor due to custom billing fees, reservation charges and a fully allocated share of the transition or stranded costs against previous kWh usage. The 35% cost savings equates to only about 2.7 cents per kWh earned for electricity generated and used at the milking facility. Ongoing operating and maintenance costs for biogas digesters would consume almost all of this at about 1.5 - 2.0 cents per kWh generated. Little to no return would be provided to recover capital investment.

This same farm digester is presently designed to utilize the full fuel value of the livestock waste – something which we believe is important to the Commonwealth for both environmental and economic reasons. Without the digester, over 6000 CO₂-equivalent tons per year of methane will escape into the atmosphere from an open manure storage lagoon. All of this methane fuel and more can instead be captured in the enclosed digester and converted into electricity and useful heat – producing about 2-3 times the requirement of the milking parlor.

The farm's electric utility tariffs do not encourage efficient use of this excess production of electricity that could be available to serve other facilities and residences on the farm, or to serve other utility customers requirements. We believe that this encourages downsizing the digester, and is throwing away a valuable local fuel stock for the Commonwealth. Even with a net metering regulation that provides full retail value for the electricity generated to power the milking parlor – in this example at 8 cents per kWh versus the 2.7 cents that would be credited – the economic value still only provides about a 10-year simple payback period if no production incentives or grant subsidies are provided.

Our sale of the renewable energy credits provides a substantial income stream to the farms, but is not sufficient alone. Therefore, if the state's objective for encouraging the development of these farm-based renewable energy systems is to be met, net metering and interconnection provisions must recognize the full value of the generation and should:

1. Provide net metering on farms that enables the farms to credit the digester's total electric output against electricity consumed on all accounts associated with the farm – all meters on the site – including all residences and buildings, in order to permit the farm to optimize the value of the waste materials and generation. Establish a significant net metering level – e.g. 400 kW or more – resulting in a significant level of the generation being credited to the farm at full retail value.
2. Provide for an automatic purchase of excess deliveries on an annual basis by the utility or load serving entity at the applicable average PJM LMP.

For our technical input to the AES, we propose that the net metering and interconnection standards be combined, and essentially follow those of New Jersey **N.J.A.C. 14:4 –9 Net**

Metering and Interconnection Standards for Class 1 Renewable Energy Systems with the following exceptions and additions:

1. Under **14:4-9.2 Definitions** of “net metering”, item 1.0 add:

For a farm system, this would include all meters associated with farm buildings and residences owned or occupied by the person operating the farm system, the person’s family or farm employees, identified by account number and location. Farm waste electric generating equipment means equipment that generates electric energy from biogas produced by the anaerobic digestion of agricultural waste, such as livestock manure, farming wastes and food processing wastes with a rated capacity of not more than four hundred kilowatts, that is:

- i. Fueled at a minimum of ninety percent on an annual basis by biogas produced from the anaerobic digestion of agricultural waste such as livestock manure materials, crop residues, and food processing waste; and
- ii. Fueled by biogas generated by anaerobic digestion with at least seventy-five percent by weight of its feedstock being livestock manure materials on an annual basis.

Item 2 under the definition would be revised as: (net metering is a system that) Compensates the customer-generator at the full retail rate for excess generation each month, with such credit to be carried over from one monthly billing period to the next, until the end of the annualized period. At the end of the annualized period, the electric supplier/provider shall compensate the customer-generator for any excess kWh generated, at the supplier/provider’s avoided cost of wholesale power.

2. Under **14:4-9.3 Net metering general provision (b)**, add “ For farm waste electric generating systems, this capacity would match to peak electricity needs for the entire farm complex but not to exceed 1000kW.
3. Under **14:4-9.3 Net metering general provision**, replace subsection (i) with: A customer-generator that is eligible for net metering shall own the renewable energy attributes produced by the system and may trade or sell the attributes or may apply for REC’s.
4. Replace **14:4-9.3 Net metering general provision (k)**, with: A supplier/provider or EDC shall not charge any new or additional demand charge, standby charge, reservation charge, customer charge, minimum monthly charge, custom billing charge, interconnection charge, or other charge that would increase an eligible customer-generator's costs beyond those of other customers in the rate class to which the eligible customer-generator would otherwise be assigned.

Finally, I would add that several of the farms planning for digesters are served by rural electric co-ops. Rural Cooperatives or other generation or transmission and other electricity distribution service providers should be included in the rules as if they were Electric Distribution Companies.

On behalf of *NativeEnergy* and the farms that we are serving, I sincerely thank the Commission for this opportunity to comment on this legislation.