



**Comments prepared for the Pennsylvania Senate Majority Policy Committee  
Hearing on Conservative Approaches to Renewable Energy  
October 22, 2019**

Chairman Argall, Committee Members,

I want to open my comments by thanking the Chairman and the Majority Policy Committee for the opportunity to participate in these very important discussions that impact the role energy will play in the economy of Pennsylvania and livelihoods of Pennsylvanians. My work as an educator for the Pennsylvania State University provides emphasis to me of the important role sustainably managed renewable energy technologies will play across the mid-Atlantic region as we transition from the electric grid of the 19<sup>th</sup> and 20<sup>th</sup> century to the grid of the 21<sup>st</sup> century and beyond. So, I thank all the participants for this opportunity to contribute perspective gained from education and experience. The role of sustainably managed renewable energy at Penn State has grown significantly to the point that ground has been broken and construction is underway on the largest solar PV facility in the state. With a capacity to meet as much as 25% of the University's annual electrical requirements the facility, being built in Franklin county, will occupy about 250 acres of agricultural land. The University will purchase the entire production through a long-term power purchase agreement. Another unsung renewable energy project that is under construction at main campus is an anaerobic digester that will convert the consumable wastes from manure produced by several thousand farm animals into methane for heat and electricity that will also offset purchases from the grid. Public policy that continues to foster institutional and industry partnerships like these that result in "iron in the ground" operating projects should be an ongoing goal that will lead to expanded growth of Solar PV, Bioenergy, and other renewable energy technologies.

As an employee of the college of Agriculture my own focus is on the health, strength, and success of agricultural producers and the communities that comprise Pennsylvania's agricultural sector. An ever-growing block of that sector is exploring the use of crops and forest residues as bioenergy feedstocks. Bioenergy technologies and energy derived from these sources, are becoming more attractive as substitutes for conventional fossil fuels since they are renewable and can be carbon neutral. These technologies create jobs in rural communities both in economically growing and processing these feedstocks, while decreasing reliance on fossil fuels. Adopting bioenergy technologies also creates alternative, low input, crop options that farmers can grow on marginal land allowing them to add a cash crop to their portfolio and increase cropland utilization. In the forest, the additional demand for bioenergy feed stocks creates greater need for underutilized forest resources that include small round woods, low value timber, genetically inferior trees, and undesirable species. Conversion technologies, in addition to anaerobic digestion, include thermal combustion, gasification, biochemical and thermochemical processes.

Farms are also in need of assistance improving on-farm energy efficiency to lower the cost of operations. This assistance can come in a number of ways including energy audits, equipment upgrades, conversions to less expensive and/or more efficient energy forms and the integration of renewable energy technologies to offset conventional energy purchases. At Penn State Extension we provide support services including assistance tapping grant and loan funds made available by

the USDA. Because of the unstable finances some of these businesses can't access assistance, the renewable energy tax credit, is unavailable unless the business has taxes to claim. That tax credit is also beginning to sunset next year. Staffing and expertise to help the ag producer community is very limited and largely funded by third party support. To meet the growing demand for these services fixed funding would be very helpful in adding staffing and reach. Public policy that recognizes the value these businesses provide and the need for support services are an important inclusion in future legislative initiatives.

The AEPS act passed in 2004 has gone a long way to bringing us to the public policy intersection that we can see on the horizon. Part of that law critical to its success are potentially on the chopping block. That is net metering or the ability to trade a fossil derived kWh from the distribution grid with a sustainably derived kWh from an approved renewable energy generator. In PA that trade is one-for-one and has led to a robust development of small scale (less than 1 megawatt) primarily solar PV generation. Paying the full price, as in generation, transmission, and distribution has been key to the success. That deal needs to be maintained in any revision of the existing rules and regulations going forward. It is fair and equitable to pay all the avoided costs. A second function of the original act that needs to be preserved and if possible enhanced is the provision establishing the Alternative Energy Credit market. As the Chief Operating Officer of Future Times Energy, operating under the Penn State umbrella, we serve over 500 operating systems in the state who made the investment, in part, because of the AECs. They act as a market-based incentive to develop the grid of the future. They should be preserved and enhanced with an increased percentage of supply requirement in any follow-on public policy.

As we near the year 2021, date of full compliance with the AEPS act, a sector of consumers who were left out of the benefits has been identified. These are consumers who are renters, own property unsuitable for solar PV installation, are short term in the property ownership role, can't afford a full-blown installation. These consumers have been left out of the opportunity to support and benefit from the attributes sustainable managed renewable energy can provide. The original act did not provide a community solar option, other states have implemented one it's time for one in PA. One possible direction for adoption of rules conducive to growing sustainably managed renewable energy capacity in the state following the path established by the Regional Greenhouse Gas Initiative (RGGI) that has been proposed. Under RGGI the state could negotiate a path that would charge generators for their carbon emissions while rewarding zero carbon generators and other offsetting carbon emissions for their investment in sustainable technologies. This path could provide a means for assisting ag producers in improving energy efficiency and adopting ecosystem practices that reduce carbon emissions by transitioning to more sustainable agricultural practices. If RGGI becomes the chosen pathway controls need to be put in place to make sure that financial support that flows into the system be kept within the system to fund the specified outcome and not comingled in the general fund resulting in diluted results.

The future for sustainably managed renewable energy technology in Pennsylvania has never been, from my perspective, brighter. I encourage the committee to dig deep into the opportunities presented and adopt policies that enable environmentally sound improvements, support the growth of rural communities and business, that make smart economic sense. I am available to assist the members of the committee in anyway feasible.