

Alternative Energy Credits and the Renewable Energy Marketplace in Pennsylvania

Introduction

The passing of Pennsylvania's Alternative Energy Portfolio Standards Act (Act 213) on November 30, 2004, set in motion a series of events that are helping spur on a renewable electrical energy and energy conservation industry in Pennsylvania. Understanding these developments is important if one is to take advantage of the opportunities now available for renewable and alternative energy production. This fact sheet describes the purpose and background of the bill, including a discussion of the bill's central provision: the Alternative Energy Credit. In addition, some comments are made about the value and importance of "aggregating" Alternative Energy Credits in order to meet the needs of the industry.

Historical Background: PURPA

Probably the most significant renewable energy legislation prior to 2004 was the federal Public Utility Regulatory Policy Act (PURPA) of 1978. PURPA requires utilities to purchase electricity from other power generators, known as non-utility generators (NUGs), at the utility's "avoided costs." NUGs were limited to renewable or waste fuels generators and include wind, low-head hydro, geothermal, waste coal, municipal solid waste, or bioderived gases. Avoided costs were defined to be costs that the purchasing utility would have incurred if they had built a competing facility from the ground up and generated the same amount of electricity. This policy was put in place with the intention of developing alternative energy resources that on a purely economic basis would otherwise not be developed.

The results of PURPA have been somewhat mixed. While many renewable energy projects did come into existence as a result of the act, the fraction nationwide of renewable electricity generation remained fairly small. Furthermore, many utility companies complained that the bill resulted in higher-than-necessary electricity costs for consumers. Some new approach was needed if renewable electrical energy was to grow and thrive as a business.

Today, with Act 213 on the books and being phased in, a new model with similarities to PURPA is emerging that has the potential to incentivize a renewable and energy conservation industry that will produce a more lasting impact than the PURPA prescription of old provided. Act 213 establishes a new commodity unique to Pennsylvania called an Alternative Energy Credit (AEC).



What Are Alternative Energy Credits?

Essentially, an Alternative Energy Credit (AEC) is the official proof that either a certain amount of energy has been saved, or that a certain amount of alternative energy has been generated. Within the act are provisions for two distinct classes of credits categorized into one of two tiers. Tier I class credits ("premium" credits) include electric generation resources such as wind, certain types of biomass, coal mine methane, low-head hydro, and a special subcategory for solar photovoltaic generation. Tier II class credits ("catch all" credits) include generation from resources such as waste coal, distributed generation, and a subcategory for conservation that includes demand side management, demand response, energy efficiency, large-scale hydro, and coal gasification. The purpose of both tiers is to provide a commodity of value determined by a transparent market that can be bought and sold to meet the legislated obligations of retail sellers of electricity.

Act 213 requires sellers of electricity (utility companies and electricity generation suppliers [EGSs] that supply electricity to homes and businesses) to provide a portion of their electricity supply from a combination of Tier I and Tier II resources. This obligation to provide from Tier I and II resources grows progressively from compliance year to compliance year, ending in 2020 with a requirement that 8 percent be supplied

from Tier I and 10 percent supplied from Tier II resources. Obligations can be met in three ways: by generation of the electricity, by direct purchase of electricity from a Tier I or II qualified facility, or by purchasing an equivalent number of AECs. An AEC is defined as being equal to 1,000 kWh (kilowatt-hours), which is the same as 1 megawatt-hour. AECs can be registered by the owners of qualified facilities or by entities that have acquired the rights of ownership or authorization in a contractual written form.

When 1,000 kWh have been generated from a qualified Tier I or II facility, the owner of the rights to the credits or their designee must post the required information into an Internet-based information tracking system called the Generation Attribute Tracking System (GATS). GATS will assign a certificate number for each AEC. The certificate number is used to track current and future ownership as well as the certificate's one-time use in meeting a seller's obligation. Once the power company or EGS has used a certificate to meet an obligation, the certificate and its number are permanently retired.

The result of the successful completion of this cycle of events is that power companies and EGSs are able to meet their requirements for alternative energy by buying credits in a competitive marketplace from the least-cost resource. Due to its environmental attributes, electricity generated from a qualified renewable energy resource will generally have a higher value than that sourced from fossil fuels or grids. As a result, these credits are an incentive to build and operate clean, renewable generation that may not, otherwise be economically justified.

How Can Smaller Entities Take Advantage of AECs?

Most small-scale renewable energy producers won't produce a large number of credits, but they can still participate in the program. The way for even the smallest market participant to take advantage of the AEC market is through "aggregation."

Aggregation is the process whereby small alternative energy producers form groups that sell their combined credits together as part of a single transaction. For example, if ten participants that each produce a small number of credits "aggregate" their efforts, they have the bargaining power of a single producer with a portfolio of credits available.

Will the Market Work?

The challenge to moving this market forward involves connecting the owners of qualified renewable energy facilities with the companies in the electricity supply market charged with the obligation to meet the supply standards enacted into law by the legislation. Most owners of these facilities have little knowledge of or experience with the wholesale electric market within which these credits are traded. Furthermore, the amount of renewable energy associated with most of these systems is small and the ability to successfully shop around and attract competitive bids will be time consuming and difficult to achieve.

It is reasonable to assume that the formation of aggregation groups would allow a scale-up of the number of available credits while minimizing the number of seller/buyer transactions. An aggregation group that provides these benefits simplifies the market, saves time, and allows generation owners who would otherwise be excluded to participate. Aggregation helps guarantee equitable pricing and promotes market development. It is also logical to conclude that as the obligation of electricity suppliers to purchase credits grows, the need to provide simplified handling of these transactions will be greatly valued by the buyers, sellers, and the administrators charged with oversight of the process, to the point that compensation as a percentage of deal volume will be warranted.

At that time, competition for the supply of these services will exist, and generation owners wishing to sell and those obligated to purchase will have the option to compare price and level of service and make choices as to where and with whom they chose to do business. Entities involved in this new business opportunity may be for profit or not for profit, depending on the area of the market they wish to serve and the business model they are pursuing. There are also numerous alternate business opportunities that may be spun out of this market-derived service.

If this need is left undeveloped and unmet, there will likely be a shortfall of credits resulting in an overall illiquid market, causing a general collapse of the AEC market. It is, based on this potential for collapse, important for participants knowledgeable in the market design and its shortcomings to step forward to meet these needs at a minimal cost, to help this fledgling industry become established until such time as the opportunities described herein gain momentum and become self-sustaining.



Prepared by Edward V. Johnstonbaugh, assistant extension educator

Visit Penn State's Renewable and Alternative Energy Program on the Web: energy.extension.psu.edu

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