

Department of Environmental Protection
Alternative Energy Portfolio Standards Act, Act 213
Section 2 Technical Guidance (Draft)

Department Authority

Section 7(b) of Act 213 provides for the following responsibilities for the Pennsylvania Department of Environmental Protection: “The Department shall ensure that all qualified alternative energy sources meet all applicable environmental standards and shall verify that an alternative energy source meets the standards set forth in section 2.” This document provides further guidance on applicable environmental standards and clarifies resource eligibility requirements set forth in section 2.

Eligibility Standards Required for All Qualifying Resources

Environmental Standards

As per Section 7(b) “...all qualified alternative energy sources [must] meet all applicable environmental standards...”

Permits – in order to qualify as an eligible alternative energy source, sources that require environmental permits must initially certify to the Department that they have all required state and federal environmental permits. If there is a modification or other instance, which requires issuance of a new permit, sources must re-certify. The Department will share this information on an annual basis with the system administrator. Failure to provide this certification or to have acquired all required state and federal environmental permits disqualifies sources from eligibility until such time as all required permits are obtained and certification is provided to the Department.

Compliance – Sources seeking to qualify as eligible must annually certify to the Department that they experienced no major environmental compliance violations during the reporting year. If a source reports that it has experienced a major compliance violation, alternative energy credits, equivalent to the number of megawatt hours generated during the period of major non-compliance, shall be disqualified from eligibility.

Permitting and Compliance for Alternative Energy Resources Outside of Pennsylvania – The use of alternative energy resources, located outside of Pennsylvania to meet Pennsylvania’s AEPS requirements, raises particular implementation issues because Act 213 imposes a mandatory duty on the Department to “ensure that all qualified facilities comply with all applicable environmental standards” even if the resources are located outside of Pennsylvania. To ensure that all generation located outside of the Commonwealth of Pennsylvania, but within the specified geographic scope of the Act meets all applicable environmental requirements, that the Department assumes will be equivalent to those of the Commonwealth of Pennsylvania, the Department will require that persons apply to the Pennsylvania Department of Environmental

Protection for a permitting and compliance determination. The Department will make the determination of compliance with all applicable environmental requirements before generation from sources may qualify. Qualifying facilities under this section must continue to comply with the permitting and compliance requirements set forth in the above sections.

The Department can verify the accuracy of self-certification reports with environmental agencies in other states and the federal government as necessary to ensure compliance with the act.

Eligible Resource Delivery Requirements

Section 3 requires that eligible generation must be from electricity from qualifying resources sold to retail customers in Pennsylvania. Acquisition of credits or energy attributes alone is not sufficient to qualify as eligible generation.

Pennsylvania Electric Generation Companies and Electric Distribution Companies must acquire eligible electric power from within their Regional Transmission Organization. Electric power from RTOs where Pennsylvania EGCs and Pennsylvania EDCs are not a member does not qualify as an eligible resource.

Eligibility Standards Required for Specific Qualifying Resources

Eligibility for alternative energy resources defined in Section 2, for which further clarification is not provided below, shall be determined based on the language found in the act. In addition to ensuring that qualified sources meet all requirements in Section 2, the Department is also directed to verify that all qualified sources are in compliance with all applicable environmental standards.

“Solar photovoltaic or other solar electric energy.” (Paragraph 1 of definition of alternative energy sources (AEPS)) – Electricity generated from solar photovoltaics and from other forms of solar electric energy, such as solar thermal applications, used to generate electricity shall generate alternative energy credits. Projects can be utility scale solar photovoltaic systems or small, distributed systems. Eligible credits can be derived from a single project or by aggregation of small projects.

“Solar thermal energy.” (Paragraph 2 of AEPS definition) – Electricity generated from solar thermal applications shall generate alternative energy credits. Eligible credits can be derived from a single project or by aggregation of small projects.

“Wind Power.”(Paragraph 3 of AEPS definition) – includes utility scale wind that provides electricity to the transmission grid as well as small scale systems that are utilized for net metering or that provide supplemental electricity to the distribution system.

“Low-impact hydropower”(Paragraph 5 of AEPS definition) – Is an eligible Tier 1 resource providing that it meets all of the requirements set forth in Paragraph (5) of the definition. Only *incremental* hydroelectric development that meets these requirements is eligible. Incremental

development includes new eligible facilities as well as improvements that increase electric output or capacity from existing hydroelectric sites. Only the additional generation from the incremental improvements shall be eligible for Tier I alternative energy credits. All other hydroelectric generation shall qualify as eligible Tier II generation.

Any hydroelectric resource seeking to qualify as “Low-impact” under Act 213 shall provide notification to the Department that it is seeking LIHI (Low Impact Hydroelectric Institute) certification at the time it submits its certification package to LIHI. The Department may consult with state natural resource agencies and the federal government to ensure that the requirements of Paragraph (5) are met in addition to LIHI certification.

“Geothermal energy.” (Paragraph 6 of AEPS definition) – includes only electricity derived from geothermal resources that provides electricity to the transmission or distribution system or is used for net metering. Geothermal energy for purposes of generating alternative energy credits does not include geothermal energy generated for heating and cooling.

“Biomass energy”(Paragraph 7 of the AEPS definition) – Biomass energy is defined as an eligible Tier I resource. This section seeks to further clarify Tier I biomass eligibility.

Paragraph (7)(i) pertains to bio-energy crops. Typical bio-energy crops include, but are not limited to, switchgrass and other warm season grasses, hybrid willow and hybrid poplar. Deployment of eligible crops shall not result in negative impacts to wildlife, water quality or soil erosion, as determined by the Department and on an annual basis. The Department shall allow for self-certification of these requirements but reserves the right to verify the accuracy of these reports, in person, and to request verification assistance from other state natural resource agencies and federal government as warranted.

Paragraph (7)(ii) refers to woody and other cellulosic biomass feedstock materials that are waste residues from other primary operations. It should be noted that “...by-products of the pulping process and wood manufacturing process including bark, wood chips, sawdust and lignin in spent pulping liquors” are considered Tier II resources. This section clarifies which related biomass resources qualify under Tier I. The Department has determined that bark, sawdust and clean, untreated wood chips from lumber mills, manufacturers or other producers that otherwise meet the definition of solid non-hazardous, cellulosic waste material that is segregated from other waste materials shall be considered as an eligible Tier I resource. Bark, sawdust and wood chips harvested in a manner certified as sustainable by the Forest Sustainability Council or a successor organization designated by the Department shall also be considered an eligible Tier I resource.

“Biologically-derived methane gas.” (Paragraph 8 of the AEPS definition) – examples of qualifying sources under this definition include electricity generation from landfill gas capture projects, farm-based methane digesters, and non-farm based methane digesters, including digesters employed at municipal solid waste treatment facilities.

“Fuel cells.” (Paragraph 9 of the AEPS definition) – fuel cells that produce electricity shall generate alternative energy credits regardless of fuel input. Most fuel cell applications will be

distributive and will either net-meter or provide electricity to the distribution grid. All electricity generated from fuel cells shall be considered eligible to generate alternative energy credits. Eligible credits can be derived from a single project or by aggregation of small projects.

“Waste Coal.” (Paragraph 10 of the AEPS definition) – This includes electric generating power plants that utilize waste coal as a fuel and meet the criteria set forward in Section 2(10). At a minimum, criteria include combined fluidized bed boiler technology, limestone injection system and fabric filter particulate removal system. The Department may develop alternative criteria by regulation.

“Coal-Mine Methane.” (Paragraph 11 of AEPS definition) – For purposes of qualifying as a Tier I fuel for electricity generation, coal-mine methane is fugitive methane which is released from its natural geologic sequestration as a result of coal-mining activity and would be vented to the atmosphere, or destroyed without useful energy recovery. It does not include commercially developed coal bed methane.

“Distributed Generation System.” (Paragraph 13 of AEPS definition) – Qualifying distributed generation systems shall be limited to generation derived from Tier II alternative energy sources.

“Municipal Solid Waste.” – Electricity generated through municipal solid-waste incineration at existing facilities that were permitted as of February 28, 2005, the effective date of the act, meet all of the environmental conditions set forth in this guidance and Act 213.

“Integrated Combined Gas Gasification Technology” (Paragraph 7 of AEPS definition) – Electricity generated from IGCC power plants shall generate alternative energy credits. IGCC uses a combined cycle format with a gas turbine driven by the combusted syngas, while exhaust gases are heat exchanged with water/steam to generate superheated steam to drive a steam turbine. Only electricity generated from IGCC power plants shall generate alternative energy credits. The use of IGCC to create feedstocks for manufacturing or liquid fuels is not eligible for the generation of alternative energy credits.

“Demand Side Management” (Paragraph 12 of the AEPS Definition) – Eligible demand-side management measures contribute the same benefits to the electric distribution system as “customer-generators” and should be eligible for Alternative Energy Credits under the Act.

“Energy Efficiency” -- Citation – S.2(12)(i) energy efficiency technologies, management practices or other strategies in residential, commercial, institutional or government customers that reduce electricity consumption by those customers. Energy Efficiency for purposes of this section refers to reductions in overall electricity usage (i.e. number of kWhs). The program should contain the following elements:

1. Eligible customer sectors – residential, commercial, industrial and government. The program should also allow for aggregation of small, individual projects.
2. Measurement and Verification – electric energy customers (“customers”) shall apply to the system administrator to qualify projects. “Customers” must show project costs and measures implemented, energy modeling or engineering results from project

- implementation, and show verifiable measurements or estimates that can be confirmed empirically. To be eligible, measures must identify a verifiable starting baseline. For manufacturing facilities this baseline should be based, in part, on units of output. For other customers the baseline will be based, in part, on energy use per square foot compared to the relevant building energy code for new construction. The baseline should be based upon (weather-normalized, when appropriate) energy usage in the year prior to the implementation of the act. At the end of the reporting year, reductions from the base year shall count towards the generation of alternative energy credits. Reductions will be evaluated based on overall customer demand.
3. Unit of measure – one MWh of reductions from the baseline shall equal one alternative energy credit, which shall qualify as eligible for meeting tier II compliance. Credits earned through energy efficiency shall be effective for one year with new credits earned, based on reductions from the base year (with potential for annual adjustments for technology improvements), each year the act is in effect.
 4. Reporting requirements, customers seeking to earn credits shall provide electricity utilization data to the system administrator.
 5. Credit ownership – the customer owns the rights to all alternative energy credits and may sell them on the open market to a system aggregator or an EDC or EGC, unless the customer makes other arrangements, such as agreeing to sell the rights to alternative energy credits to an investor that has provided funding to install and/or implement demand-side management measures.

Energy efficiency shall include new construction and major energy system retrofits. The following recommendations should govern the generation of alternative energy credits for new building construction or major retrofits that significantly improve the operating efficiency of the building energy system. Energy reduction for the purposes of this program refers to reductions in total energy usage (i.e. kWh). The program should contain the following elements:

1. Eligible Customers – residential, commercial and industrial. Buildings that are constructed to standards such as LEED, Energy Star, or other rigorous architectural and engineering standards where energy savings can be easily documented shall be eligible.
2. Measurement and Verification –Qualifying buildings would earn alternative energy credits by comparing typical electricity usage with a conventionally constructed and engineered building’s energy consumption based on watts per square foot. Credits earned in one reporting period can be sold for use in the following reporting period. Credits can be earned and sold on an annual basis.
3. Unit of measure – one MWh or electricity reduction compared to the regional square foot building average shall equal one alternative energy credit.
4. Reporting Requirement – owners seeking to earn credits shall provide verified electricity utilization data to the system administrator. The system administrator shall annually update average building usage figures and make that data available to the public.
5. Credit Ownership – the owner of the qualifying building shall own all alternative energy credits and may sell them on the open market to a system aggregator or an

EDC or EGC, unless the customer makes other arrangements, such as agreeing to sell the rights to alternative energy credits to an investor that has provided funding to construct the building.

Load management or demand response – Citation S.12(ii) -- The following recommendations should govern the generation of alternative energy credits related to load reductions and demand response. We recommend that the PUC consider requiring EDCs to provide real-time pricing technology to any customer requesting it. EDCs could recover any costs of providing this technology, over and above the benefits to the EDC of real-time pricing, as part of the cost recovery provisions of Act 213.

1. Eligible customer sectors – should focus on larger industrial users with at least 1 MW of load at time of load shift. Only users shifting load voluntary (i.e. that are not part of an RTO or utility compensation plan for interruptible load shifting) can qualify for alternative energy credits under the act.
2. Eligible activities – credits earned through this section shall accrue only through load shifting, load reductions and energy efficiency shall generate credits per the rules set forward above. *Shifting load by switching to local backup generation that is more polluting than the generation otherwise displaced (such as uncontrolled diesel generation) shall not be eligible for credits.*
3. Measurement and Verification – to be eligible, load shifts must occur during periods of mandatory interruptions. The customer shall provide billing information to the system administrator verifying load shifts to cope with periods of peak demand.
4. Unit of measure – One MWh of voluntary load shifting during a period of mandatory interruption shall count as one alternative energy credit. Alternative energy credits generated through voluntary load shifting shall be aggregated at the end of the reporting period.
5. Credit ownership – The customer owns the rights to all alternative energy credits and may sell them on the open market to a system aggregator or an EDC or EGC, unless the customer makes other arrangements, such as agreeing to sell the rights to alternative energy credits to an investor that has provided funding to install and/or implement load shifting/demand response technologies.

Industrial By-product/Energy Reuse -- Citation – S.2(13)(iii) industrial by-product technologies consisting of the use of a by-product from an industrial process, including the reuse of energy from exhaust gases or other manufacturing by-products that are used in the direct production of electricity at the facility of a customer.

The program should contain the following elements:

1. Eligible Resources – electricity generated from the capture of waste heat or industrial exhaust gases shall generate alternative energy credits.
2. Measurement and Verification – each customer shall provide the system administrator with a record, based on a conventional meter, of the number of MWh generated in each reporting period.

3. Unit of measure – one MWh shall equal one alternative energy credit.
4. Credit ownership – Customers shall own all alternative energy credits, unless other contractual arrangements have been made.
5. Environmental Compliance – The customer must possess all necessary environmental permits and may not have major compliance violations. That customer shall certify on annual basis that it has all required environmental permits and is does not have a major compliance violation. For instances of non-compliance with this section, the customer shall be treated under the guidelines set forth by DEP in the Section 2 Technical Guidance document. The Department may verify compliance records with other state environmental agencies or the relevant federal agencies.