PENNSYLVANIA ALTERNATIVE ENERGY PORTFOLIO STANDARD SUMMARY

A. **SUMMARY:** Pennsylvania's Alternative Energy Portfolio Standard (AEPS), enacted on November 30, 2004, requires all load-serving energy companies in the state to provide 18 percent of their electricity using alternative sources by the year 2020. As is the case for several other states' renewable electricity standards (RES), the law provides for a solar energy set-aside mandating a certain percentage of PV solar generated electricity. Pennsylvania's AEPS includes demand-side management as an eligible measure in a separate tier. In addition, Pennsylvania is the first state to include waste coal, coalmine methane, and coal gasification in its portfolio standard. The AEPS includes a certificated tracking and trading program using the PJM Generator Attribute Tracking System.

B. AUTHORIZING LEGISLATION/REGULATION

1. **Part of Broader Energy Package?** No. However, Pennsylvania enacted a restructuring law in 1996, and although that law did not create an RES program, renewable energy requirements were placed on several utilities providing default service as a result of settlement cases in 1998 following the 1996 restructuring. The 1996 law also required utilities to establish funds to support the development and use of renewable energy and clean energy technologies, energy conservation and energy efficiency, renewable energy business initiatives and T&D related environmental improvement projects. These for-profit funds were generally being built through utility funding over a five- to seven-year period, and were then expected to become self-sustaining. The AEPS enacted in 2004 replaces the settlement cases and “fund” approach.

2. **Legislative/Regulatory Intent:** The AEPS provides for the sale of electric energy generated from renewable and environmentally beneficial sources, for the acquisition of electric energy generated from renewable and environmentally beneficial sources by electric distribution and supply companies and for the powers and duties of the Pennsylvania Public Utility Commission.

3. **Applicable Legislation/Regulation:**
   12/04 – Act 213, Alternative Energy Portfolio Standards Act (SB 1030)

   7/07 – Act 35 (HB 1203)

4. **Date Enacted:** 12/7/04

5. **Date Effective:** 3/7/05

C. RULEMAKING

1. **Implementing/rulemaking Authority:** Pennsylvania Public Utility Commission (PUC) and the Department of Environmental Protection (DEP).

2. **Rulemaking Completed to Date:**
   3/05 – PUC issues AEPS Implementation Order (Docket No. M-00051865)

   7/05 – PUC issues AEPS Implementation Order II (Docket No. M-00051865), amending initial order from March 2005.

   10/05 – PUC issues Order Implementing AEPS Standards for the Participation of Energy Efficiency/Demand-Side Management Resources (Docket No. M-00051865)

   1/06 – PUC issues Final Order on Designation of Credits Registry for AEPS; and Tentative Order on Standards for Alternative Energy System Qualification and Credit Certification (Docket No. M-00051865)

   6/06 – PUC issues Final Order for AEPS Customer Generators on Net Metering (Dockets No. L-00050174 & No. M-00051865)

   7/06 – PUC issues Decision on the Ownership of Alternative Energy Credits from Qualifying Facilities under Contract (Docket No. P-00052149)

   7/06 – PUC issues Proposed Rulemaking Order (Docket No. L-00060180)

   12/06 – PUC issues final rules for AEPS customer generators on Net Metering (Dockets No. M-00051865 and L-00050174), and Interconnection Standards (Dockets No. L-00050175 & No. M-00051865)

D. TARGETS AND TIMETABLES

1. **Brief Overview:** The AEPS splits energy sources into two tiers: Tier 1 includes mostly renewable energy resources such as wind, solar, etc., while Tier 2 includes some renewable energy resources along with waste coal, coal gasification, and demand-side management (see Section E below for more information). Within the Tier 1 category there is a separate set-aside percentage requirement for solar generation. The Tier 1 requirement starts at 1.5 percent in 2007 and increases by 0.5 percent annually until it reaches eight percent by 2020. In addition, the AEPS includes a solar set-aside requirement (not additive to the Tier 1 requirement) that gradually increases to 0.5 percent by 2020. The Tier 2 requirement ramps up from 4.2 percent in 2007 to 10 percent by 2020.

2. **Schedule:**

Compliance Year (June 1 – May 31)	Tier 1 Generation Requirement (includes Solar PV requirement)	Tier 2 Generation Requirement	Solar PV Generation Requirement
2006	1.5 %	4.2 %	0.0013 %
2007	1.5 %	4.2 %	0.0030 %
2008	2.0 %	4.2 %	0.0063 %
2009	2.5 %	4.2 %	0.0120 %
2010	3.0 %	6.2 %	0.0203 %
2011	3.5 %	6.2 %	0.0325 %
2012	4.0 %	6.2 %	0.0510 %
2013	4.5 %	6.2 %	0.0840 %
2014	5.0 %	6.2 %	0.1440 %
2015	5.5 %	8.2 %	0.2500 %
2016	6.0 %	8.2 %	0.2933 %
2017	6.5 %	8.2 %	0.3400 %
2018	7.0 %	8.2 %	0.3900 %
2019	7.5 %	8.2 %	0.4433 %
2020 & thereafter	8.0 %	10.0 %	0.5000 %

3. **Treatment of Existing Capacity:** Renewable energy generation from new or existing facilities counts toward AEPS; except in the case of municipal solid waste, where only existing capacity is eligible.

4. **Sunset Clause:** None. The annual requirements for 2020 continue each year thereafter, unless otherwise altered by the Pennsylvania General Assembly.

E. DEFINITION OF ELIGIBLE RESOURCES AND TECHNOLOGIES

1. **Eligible Resources:** Eligible energy sources are divided into two tiers as follows.

   a. Eligible Tier 1 Energy Sources:
   - Solar photovoltaic
   - Solar thermal
   - Wind power
   - Low-impact hydropower, "consisting of any technology that produces electric power and that harnesses the hydroelectric potential of moving water impoundments, provided such incremental hydroelectric development: (i) does not adversely change existing impacts to aquatic systems; (ii) meets the certification standards established by the Low Impact Hydropower Institute and American Rivers, Inc., or their successors; (iii) provides an adequate water flow for protection of aquatic life and for safe and effective fish passage; (iv) protects against erosion; and (v) protects cultural and historic resources."
   - Geothermal energy

- Biologically derived methane gas, which shall include "methane from the anaerobic digestion of organic materials from yard waste, such as grass clippings and leaves, food waste, animal waste and sewage sludge. The term also includes landfill methane gas."
- Fuel cells
- Biomass energy, which shall mean "the generation of electricity utilizing the following: (i) organic material from a plant that is grown for the purpose of being used to produce electricity or is protected by the Federal Conservation Reserve Program (CRP) and provided further that crop production on CRP lands does not prevent achievement of the water quality protection, soil erosion prevention or wildlife enhancement purposes for which the land was primarily set aside; or (ii) any solid nonhazardous, cellulosic waste material that is segregated from other waste materials such as waste pallets, crates and landscape or right-of-way tree trimmings or agricultural sources, including orchard tree crops, vineyards, grain, legumes, sugar and other crop by-products or residues."
- Coal mine methane

b. Eligible Tier 2 Energy Sources:

- Waste coal
- Distributed generation systems, which means "the small-scale power generation of electricity and useful thermal energy."
- Demand-side management, which includes energy efficiency technologies, load management or demand response technologies, or "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."
- Large-scale hydropower, which shall mean the production of electric power by harnessing the hydroelectric potential of moving water impoundments, including pumped storage that does not meet the requirements of low-impact hydropower.
- Municipal solid waste (MSW)
- Generation of electricity utilizing by-products of the pulping process and wood manufacturing process including bark, wood chips, sawdust and lignin in spent pulping liquors
- Integrated combined coal gasification technology

2. **Specific Incentives:** Generation from solar PV technologies is given a separate set-aside requirement as part of the Tier 1 schedule.

3. **Exclusions:** New MSW facilities are not eligible to meet the Tier 2 AEPS requirements.

4. **Treatment of Self Generation:** Self generation is eligible under the AEPS. In June 2006, the PUC issued final rules regulating the use of net metered systems by

customer generators. Final rules have also been issued for interconnection standards for non-utility owners of distributed generation systems.

5. **Rules governing Location of Generating Facilities:** Alternative energy sources located in the PJM region is eligible to fulfill compliance obligations of all Pennsylvania electric distribution companies and electric generation suppliers. Energy derived from alternative energy sources within the Midwest Independent System Operator (MISO) region is only eligible for electric distribution companies and electric generation suppliers in Pennsylvania whose service territory falls within MISO.

6. **Eligibility of Green Pricing Programs:** An electric distribution supplier or electric generation company is not permitted to satisfy its AEPS requirements using alternative energy credits that have already been purchased by individuals, businesses, or government bodies that do not have an AEPS compliance obligation unless the individual, business or government body sells those credits to them.

F. COVERED UTILITIES

1. **Covered utilities:** The AEPS applies to both electric distribution companies and electric generation suppliers. However, electric distribution companies and sales from electric generation suppliers within electric distribution companies' territory are exempt from meeting the annual requirements until they reach the end of their cost-recovery period established during restructuring. In no case shall the deferred compliance extend past December 31, 2010. At the end of each cost recovery period, compliance shall be required at the percentage in effect in that time. Cooperatives and municipal utilities are exempt, but encouraged to comply voluntarily and must offer energy efficiency programs to customers.

2. **Share of State Sales/capacity/Delivered Power Covered:** When all utilities reach the end of their cost recovery period (by 12/31/10), approximately 97 percent of the state's total electric sales will be covered by the AEPS requirements.

3. **Apportionment of obligation among utilities:** The annual AEPS requirements are apportioned separately among the electric distribution companies and electric generation suppliers on the basis of the total electric energy sold to retail electric customers.

4. **Exemptions by customer class:** None.

G. COST PROVISIONS

1. **Cost Cap for retailers:** The alternative compliance payment (ACP) mechanism serves as de facto cost cap for retailers.

   In addition, the PUC has the authority to determine if alternative energy resources are reasonably available in the marketplace in sufficient quantities for electric distribution companies and electric generation suppliers to meet the AEPS requirement. If alternative energy resources are not reasonably available, the PUC can invoke force majuere and modify the AEPS requirement.

2. **Cost Cap for Consumers:** None specified.

3. **Cost Recovery Mechanisms:** The costs of implementing the AEPS will be recovered on rate-payers' bills through the automatic energy adjustment clause as a cost of generation supply. If a provider voluntarily generates or purchases alternative energy credits during exemption from the standard under a cost recovery period, those costs are deferred as a regulatory asset and recovered during the first year after the cost recovery period ends. However, in Implementation Order II, the PUC ruled that the costs of alternative compliance payments cannot be recaptured.

4. **Supply Contract Requirements:** Act 213 does not specify any supply contract requirements. However, the PUC is reviewing the need to require long-term contracts as part of the implementation and rulemaking process. The issue was raised in an order issued by the PUC in November 2005, which requested public comment. A final ruling has not been made by the PUC.

5. **Special Funds:** As a result of Pennsylvania's December 1996 electricity restructuring law, individual settlements with the state's major distribution utilities led to the creation of sustainable energy fund programs. Each fund supports the development and use of renewable energy and other clean energy technologies, energy efficiency, and sustainable energy businesses. Through 2004, a total of approximately $55 million has been collected by the five separate funds.

   In addition, alternative compliance payments shall be paid into a special fund of the Pennsylvania sustainable energy board, established by the PUC and made available to the regional sustainable energy funds under procedures and guidelines approved by the Pennsylvania energy board.

H. COMPLIANCE AND ENFORCEMENT

1. **Certification, tracking, and trading mechanism[s]:** Act 213 requires the PUC to develop an alternative energy credits certification, tracking, and reporting program to implement the AEPS, and to designate an independent entity to serve as administrator of that tracking and trading system. In a January 2006 order, the PUC designated PJM Environmental Information Services, Inc.'s Generation Attributes Tracking System (GATS) as the credits registry.

   One credit counts for one MWh of generation, and may be counted towards meeting the generation requirements set forth in the AEPS. The PUC has concluded that a credit only includes the alternative energy source attributes necessary to satisfy AEPS compliance, and not any other associated environmental or emission attributes. Credits produced by energy efficiency, load management, and demand-side management are to follow a depreciation schedule established by the PUC in a September 2005 order.

Unless a contractual provision explicitly assigns credits in a different manner, the owner of the alternative energy system or a customer-generator owns any and all credits associated with or created by the production of electric energy by the facility or system.

2. **Flexibility Mechanisms:** The legislation offers utilities several avenues of flexibility in meeting the standards.

   Cost Recovery Period: As part of the transition to deregulation, the PUC established a period for recovering costs through competitive transition charges for electric distribution companies and sales from electric generation suppliers within electric distribution companies' territory, or in some cases, a PUC-approved rate plan. Retailers obliged to meet the AEPS are exempt for the duration of their cost recovery period, but for no longer than December 31, 2010. At the end of the cost recovery period, these retailers must comply at the percentage level currently in effect.

   Alternative energy credits generated or purchased in excess of the requirement for a given year may be banked for later use for up to two subsequent reporting years. Retailers who are in compliance but who have been exempted from the standard during the cost recovery period may also bank credits, and use them for the first two years after their exemption ends. In addition, the AEPS provides for a three-month true-up period at the end of each reporting year, which give obligated utilities an opportunity to make up for any deficiencies in compliance.

   Alternative Compliance Payments: If at the end of a reporting year the PUC determines that an electric distribution company or electric generation suppliers has not met the AEPS requirements, the PUC may impose an alternative compliance payment. For all except the solar generation requirement, the alternative compliance payment will be $45 times the number of additional credits needed to meet the requirement. For the solar requirement, alternative compliance payments will be 200 percent of the average market value of solar energy credits sold during the year, including, where applicable, the levelized up-front rebates received by sellers of solar renewable energy credits in other PJM jurisdictions. The PUC is required to review the alternative energy market annually, and may recommend changes to the value of ACPs. Any changes to the ACP must be enacted through the General Assembly. Alternative compliance payments must be deposited into the Pennsylvania Sustainable Energy Fund, and may only be used for developing additional alternative energy sources. Alternative compliance payments are not recoverable by companies in customer rates.

3. **Penalties, Procedures, Powers, and Sanctions:** The PUC shall impose alternative compliance payments in the event that a provider does not meet the requirements of this act at the end of a reporting year. Alternative compliance payments are not

recoverable by companies in customer rates.

4. **Treatment of emission allowance or reduction credits:** In its January 2006 order, the PUC ruled that alternative energy credits do not include any associated environmental or emission attributes unless otherwise defined by a buyer and a seller. An alternative energy credit simply represents the alternative energy source attributes associated with AEPS compliance.

5. **Escape Clauses:** "Force Majeure" - Upon the request of an electric distribution company or an electric generator supplier, or of its own will, the PUC can investigate whether alternative energy resources are reasonably available in sufficient quantities to meet the requirement for that reporting period. In making its determination, the PUC is required to consider whether electric distribution companies or electric generation suppliers have made a good faith effort to acquire sufficient alternative energy to comply with their obligations, which can include banking credits during transition periods, seeking credits through competitive solicitations and seeking to procure credits or alternative energy through long-term contracts. The PUC must also assess the availability of credits in GATS, and the availability of credits generally in Pennsylvania and PJM. The PUC can also require solicitations for credits as part of default service before requests of force majeure can be made.

   If a force majeure determination is made, the PUC has the authority to modify the underlying obligation of the electric distribution company or electric generation supplier or recommend to the General Assembly that the underlying obligation be eliminated. A modification of the annual requirement is for that compliance period only. The PUC also has the authority to require the electric distribution company or electric generation supplier to make up the difference in the reduced target during subsequent years, if sufficient credits exist in the marketplace.

I. ADMINISTRATION

1. **Administering Entities,** Duties, Powers, and Contact Information: The Pennsylvania PUC is responsible for developing regulations, and administering and enforcing the AEPS. The Pennsylvania Department of Environmental Protection is responsible for ensuring that all qualified alternative energy sources meet all applicable environmental standards. Contact information is:

   Pennsylvania Public Utility Commission
   P.O. Box 3265
   Harrisburg, PA 17105-3265
   Phone: 717-787-1031
   Web site: http://www.puc.state.pa.us
   AEPS web site: http://www.puc.state.pa.us/electric/electric_alt_energy.aspx

   Pennsylvania Department of Environmental Protection
   Rachel Carson State Office Building

400 Market Street
Harrisburg, PA 17101
Phone: 717-783-2300
Web site: http://www.depweb.state.pa.us/dep/site/default.asp

2. **Source and Amount of Administrative Funding:** For funds to administer a certificate and trading system, the PUC may impose an administrative fee on an alternative energy credit transaction. The amount of this fee may not exceed the actual direct cost of processing the transaction by the alternative energy credits administrator. The PUC is authorized to utilize up to five percent of the alternative compliance fees for administrative expenses directly associated with the AEPS.

J. REPORTING REQUIREMENTS

1. **Reporting Requirement for Retailers:** None specified.

2. **Reporting Requirements for Administrating Entities:** The PUC and the Department of Environmental Protection are jointly required to submit a report annually to the Environmental Resources and Energy Committees of the both the House and Senate. This report should cover the status of AEPS compliance, current costs of alternative energy sources and costs associated with the alternative energy credits program, including the number of alternative compliance payments, the status of the alternative energy marketplace, and recommendations for program improvements.

   The PUC shall annually review the alternative energy market and may recommend to the General Assembly changes to the value of alternative compliance payments.

   In addition, the PUC is required to conduct a comprehensive review of the AEPS in 6 years (by 2011) with recommendations for adjusting the targets beyond 2020.

3. **Cost Information:** No actual cost data is available. However, Black & Veatch released a report on of the potential costs and benefits of an earlier version of the Pennsylvania AEPS (not Act 213 as passed) in March 2004. The report, entitled "Economic Impact of Renewable Energy in Pennsylvania".