

2012 Annual Report

Alternative Energy Portfolio Standards Act of 2004



*Prepared by the
PA Public Utility Commission
in cooperation with the
PA Department of Environmental Protection*





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Alternative Energy Portfolio Standards Act of 2004

Published by the
Pennsylvania Public Utility Commission
P.O. Box 3265, Harrisburg, PA 17105-3265
www.puc.pa.gov

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October 2013

Cover photo: Aqua Pennsylvania/ Pickering Plant Schuylkill Township, Chester County
Back cover: Ruth Baranowski / NREL/ Wind turbines at the Forward Wind Energy Center in Fond du Lac and Dodge Counties, Wisconsin.

EXECUTIVE SUMMARY

INTRODUCTION

The Alternative Energy Portfolio Standards (AEPS) Act of 2004 (Act) requires electric distribution companies (EDCs) and electric generation suppliers (EGSs) to supply 18 percent of electricity using alternative energy resources by 2021.¹ The percentage of Tier I, Tier II and solar alternative energy credits that must be included in sales to retail customers gradually increases over this period.² The solar photovoltaic requirement is a component of the Tier I obligation. EDCs and EGSs meet their AEPS requirements through the purchase of alternative energy credits (AECs) in amounts corresponding to the percentage of electricity that is required from alternative energy sources. One AEC represents one megawatt hour (MWh) of electricity generated from a qualified alternative energy source and can be purchased separate separately from the electricity.

Section 7(c) of the AEPS Act requires that the Pennsylvania Public Utility Commission (PUC) and the state Department of Environmental Protection (DEP) work cooperatively to monitor the performance of all aspects of the Act and prepare an annual report to the chairman and minority chairman of the Senate Environmental Resources and Energy Committee and the chairman and minority chairman of the House Environmental Resources and Energy Committee. Act 35 of 2007 included an additional reporting requirement at Section 2 F(5).³

¹ See generally 73 P.S. § 1648.1 *et seq.*

² Tier I sources include solar photovoltaic and solar thermal energy, wind power, low-impact hydropower, geothermal energy, biologically derived methane gas, fuel cells, biomass energy (including generation located inside Pennsylvania from by-products of the pulping process and wood manufacturing process including bark, wood chips, sawdust and lignin in spent pulping liquors) and coal mine methane. Tier II sources include waste coal, distributed generation systems, demand-side management, large-scale hydropower, municipal solid waste, generation of electricity outside of Pennsylvania utilizing by-products of the pulping process and wood manufacturing process including bark, wood chips, sawdust and lignin in spent pulping liquors and integrated combined coal gasification technology.

³ See 73 P.S. § 1648.3(f)(5)

OVERVIEW

For the 2012 reporting year (June 1, 2011 – May 31, 2012), all EDCs and EGSs complied with the AEPS requirements by retiring the required number of Tier I, Tier II, and Solar AECs needed to meet their obligations. No alternative compliance payments were required from any EDC or EGS.

AECs retired by EDCs and EGSs for the 2012 reporting period originated from alternative energy resources located inside and outside of Pennsylvania. For the 2012 reporting year, 67 percent of solar AECs, 45 percent of Tier I and 56 percent of Tier II AECs originated from generation facilities located in Pennsylvania.

Recent analysis of proposed and existing resources indicates sufficient Tier I resources are available through 2014 and Tier II through 2021. Sufficient solar capacity exists and is planned to meet AEPS obligations through 2015. Pennsylvania EDCs are permitted to obtain AECs from within the entire PJM Interconnection, LLC (regional transmission organization) region.

In the last two AEPS reports, the Commission recommended the program be updated by eliminating the quarterly adjustment requirement imposed by Act 129. The Commission recognizes and greatly appreciates state Rep. Robert W. Godshall's efforts in addressing this recommendation by introducing House Bill 208 on January 22, 2013.

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SECTION 1 INTRODUCTION

PURPOSE

Act 213 of 2004 was signed into law on November 30, 2004, establishing alternative energy portfolio standards for Pennsylvania. The law took effect on February 28, 2005, and required that an annually increasing percentage of electricity sold to retail customers in Pennsylvania by EDCs and EGSs should be derived from alternative energy resources.

The PUC is responsible for carrying out and enforcing the provisions of the law. DEP is charged with rendering determinations of resource eligibility and ensuring compliance with all environmental, health and safety laws and standards relevant to the law's implementation. The PUC and DEP are charged with monitoring compliance with the Act, the development of the alternative energy market and the costs of alternative energy, and to conduct an ongoing alternative energy planning assessment. The PUC and DEP are to report their findings and any recommendations for changes to the Act to the General Assembly via an annual report.

The law establishes a 15-year schedule for complying with its mandates. The percentage of Tier I, Tier II and solar alternative energy resources that must be included in sales to retail customers gradually increases over this period. Compliance is monitored for successive 12-month reporting periods that begin on each June 1 and conclude on the following May 31. The law provides for a true-up period, during which EDCs and EGSs may acquire any additional alternative energy credits needed for compliance, at the conclusion of each reporting period. This three-month true-up period runs from the conclusion of each reporting period until September 1 of the same calendar year. After the conclusion of the true-up period, the PUC verifies compliance and imposes alternative compliance payments (ACPs) as appropriate after providing notice and opportunities for hearings for affected parties.

On July 19, 2007, Act 35 of 2007 was signed into law. It amended Act 213 by changing the compliance schedule related to solar photovoltaic (PV) energy. Act 35 also amended other provisions of the law, including definitions for customer-generator and net metering. On December 20, 2008, a PUC rulemaking based on the Act 35 changes became effective.

The final rule provides clarification of the solar PV obligation and includes the revised 15-year schedule for solar PV requirements. The clarification for solar PV obligation affirms that the percentage requirement is a percentage of all retail sales and that the solar percentage is a part of the total Tier I obligation. Table 1 provides an overview of the AEPS percentage sales requirements with the revised solar PV schedule.

TABLE 1 – OVERVIEW OF AEPS PERCENTAGE SALES REQUIREMENTS

Year	Period	Tier I			Tier II
		Total	Solar PV	Non-Solar	
1	June 1, 2006 – May 31, 2007	1.50%	0.0013%	1.4987%	4.20%
2	June 1, 2007 – May 31, 2008	1.50%	0.0030%	1.4970%	4.20%
3	June 1, 2008 – May 31, 2009	2.00%	0.0063%	1.9937%	4.20%
4	June 1, 2009 – May 31, 2010	2.50%	0.0120%	2.4880%	4.20%
5	June 1, 2010 – May 31, 2011	3.00%	0.0203%	2.9797%	6.20%
6	June 1, 2011 – May 31, 2012	3.50%	0.0325%	3.4675%	6.20%
7	June 1, 2012 – May 31, 2013	4.00%	0.0510%	3.9490%	6.20%
8	June 1, 2013 – May 31, 2014	4.50%	0.0840%	4.4160%	6.20%
9	June 1, 2014 – May 31, 2015	5.00%	0.1440%	4.8560%	6.20%
10	June 1, 2015 – May 31, 2016	5.50%	0.2500%	5.2500%	8.20%
11	June 1, 2016 – May 31, 2017	6.00%	0.2933%	5.7067%	8.20%
12	June 1, 2017 – May 31, 2018	6.50%	0.3400%	6.1600%	8.20%
13	June 1, 2018 – May 31, 2019	7.00%	0.3900%	6.6100%	8.20%
14	June 1, 2019 – May 31, 2020	7.50%	0.4433%	7.0567%	8.20%
15	June 1, 2020 – May 31, 2021	8.00%	0.5000%	7.5000%	10.00%

On October 15, 2008, Act 129 of 2008 was signed into law, which, among other things, included additional energy sources in the definition of Tier 1. To accommodate the newly added Tier I alternative energy sources, Act 129 directed the Commission, on a quarterly basis, to increase the percentage of Tier I requirements for EDCs and EGSs to reflect the amount of generation from the new resources added by the Act. On May 28, 2009, the Commission approved a Final Order that established procedures to increase the non-solar PV Tier I percentage requirement on a quarterly basis to account for the new resources.

CHRONOLOGY OF EVENTS

Table 2 provides a snapshot of the key chronology of events to date.

TABLE 2 – CHRONOLOGY OF EVENTS: 2004-12

Event	Date
Act 213 of 2004	November 30, 2004
Act 213 of 2004 Effective Date	February 28, 2005
PUC Adopts Implementation Order I (M-00051865)	March 23, 2005
PUC Adopts Implementation Order II (M-00051865)	July 14, 2005
PUC Adopts Order: Standards for Demand Side Management (DSM) Resources (M-00051865)	September 25, 2005
PUC Adopts Order: Designates PJM Generation Attribute Tracking System (GATS) Registry (M-00051865)	January 27, 2006
Final Net Metering/Interconnection Regulations in the <i>Pennsylvania Bulletin</i>	December 16, 2006
PUC Contracts with Clean Power Markets as Program Administrator	March 28, 2007
Compliance Required for Pennsylvania Power Co. & UGI Utilities Inc.	May 31, 2007
Act 35 of 2007	July 19, 2007
Compliance Required for Citizens' Electric Co., Duquesne Light Co., Pike County Light & Power, and Wellsboro Electric Co.	January 1, 2008
PUC Adopts Final Rulemaking Implementation Order (L-00060180)	September 25, 2008
Act 129 of 2008	October 15, 2008

Event	Date
Final Omitted Rulemaking Order (Net Metering) – Published in <i>PA Bulletin</i> (L-00050174)	November 29, 2008
PUC Adopts Act 129 Implementation Order – Relating to AEPS	May 28, 2009
Compliance Required for PPL Electric Utilities	January 1, 2010
PUC Adopts Solar Policy Statement	September 16, 2010
Compliance Required for PECO Energy Co., Pennsylvania Electric Co., Metropolitan Edison Co., and West Penn Power Co.	January 1, 2011
PUC Adopts Policy Statement, Net Metering – Use of Third Party Operators	March 29, 2012

SECTION 2 STATUS OF COMPLIANCE

2012 COMPLIANCE SUMMARY

Table 3 provides a summary of compliance for all EDCs and EGSs subject to AEPS requirements during the 2012 reporting period (June 1, 2011 – May 31, 2012). Included in Table 3 are the combined MWhs sold, the number of AECs reserved for compliance, the weighted average credit price for each of the tiers, the cost of purchased credits and the number of ACPs paid. An ACP is required for each AEC lacking when an EDC and/or EGS is deficient in meeting its compliance obligation. The solar requirement is a percentage of retail sales and is included in the Tier I requirement. The Tier I requirement also is adjusted as required by Act 129.

TABLE 3 2012 AEPS COMPLIANCE REPORT BY SOURCE

Reporting Period / MWhs	Alternative Energy Requirement		Number of Credits Reserved	Weighted Average Credit Price*	Cost of Purchased Credits	Alternative Compliance Payments
	Tier	Percent of Total Energy Sold				
2012/142,977,002	Solar	0.0325	46,492	\$180.39	\$8,165,092.16	none
	I	3.5	4,966,236	\$5.23	\$22,027,392.45	none
	II	6.2	8,864,759	\$0.17	\$1,030,664.71	none
	Total	9.7	13,877,487	N/A	\$31,223,149.32	none

*The Weighted Average Credit Price is calculated using data for credits that have a known cost. Some credits that are retired to meet obligations are self-generated or purchased bundled with the electricity and a cost for those credits is not available. Therefore, dividing the Cost of Purchased Credits by the Number of Credits Reserved will not yield the Weighted Average Credit Price reflected in Table 3. The weighted average credit price is used to calculate the solar ACP. Solar ACP is: the weighted average credit price of solar AECs, sold during the reporting year, plus a calculated value that accounts for non-Pennsylvania solar rebates and that sum is multiplied by 200 percent. The ACP for Tier I and Tier II is \$45.

For the 2012 reporting period, the base obligation for non-solar Tier I was 3.4675 percent. The Tier I quarterly adjustment added quarterly increases of: 0.0029059 percent; 0.0041733 percent; 0.0042722 percent; and 0.0043664 percent, respectively. This resulted in 5,544 AECs added to the nearly 5 million credits that were retired without the adjustment.

Table 4 presents 2012 reporting period data on the number of AECs retired by tier in the EDC territories. All EDCs and EGSs were in compliance for their AEPS obligations through the purchase of the requisite number and/or retirement of Solar, Tier I, and Tier II AECs. Several EGSs retired excess credits beyond their required AEPS obligation and the overage is evident in Table 4. Because specific EGS sales information is considered proprietary, their numbers were combined and are shown with the appropriate EDC.

During the 2012 reporting period, 11 EDCs and 72 EGSs had compliance obligations for the entire 12 month reporting period. This is the first reporting period, since the beginning of the AEPS, when the compliance obligations of EDCs and EGSs spanned the full 12 month reporting period for all EDC territories. Two EDCs, Citizens' and Wellsboro, did not have EGSs providing service in their territories for the 2012 reporting year. Many EGSs provide services in more than one EDC territory. When an EGS retires too few or too many AECs, the excess or deficiency is not always connected to a specific EDC service area.

TABLE 4 2012 AEPS COMPLIANCE REPORT BY EDC SERVICE TERRITORY

Distribution Service Territory	Total Energy Sold (MWhs)	Alternative Energy Requirement	Credits Required	Credits Retired	Compliance Status
Citizens' Electric	159008				
Solar		0.03%	52	52	In Compliance
Tier I		3.47%	5520	5520	In Compliance
Tier II		6.20%	9858	9858	In Compliance
Duquesne Light and EGSs	14088586				
Solar		0.03%	4580	4589	In Compliance
Tier I		3.47%	489067	492000	In Compliance
Tier II		6.20%	873493	873513	In Compliance
Met Ed and EGSs	13797547				
Solar		0.03%	4487	4490	In Compliance
Tier I		3.47%	478967	478968	In Compliance
Tier II		6.20%	855448	855449	In Compliance
PECO and EGSs	38514602				
Solar		0.03%	12508	12519	In Compliance
Tier I		3.47%	1336978	1337001	In Compliance

Distribution Service Territory	Total Energy Sold (MWhs)	Alternative Energy Requirement	Credits Required	Credits Retired	Compliance Status
Tier II		6.20%	2387913	2388069	In Compliance
Penelec and EGSSs	14323278				
Solar		0.03%	4656	4656	In Compliance
Tier I		3.47%	497218	497218	In Compliance
Tier II		6.20%	888043	888043	In Compliance
Penn Power and EGSSs	4489260				
Solar		0.03%	1461	1461	In Compliance
Tier I		3.47%	155841	155841	In Compliance
Tier II		6.20%	278334	278344	In Compliance
Pike County and EGSSs	68772				
Solar		0.03%	23	23	In Compliance
Tier I		3.47%	2387	2387	In Compliance
Tier II		6.20%	4263	4263	In Compliance
PPL and EGSSs	36688066				
Solar		0.03%	11931	11931	In Compliance
Tier I		3.47%	1273590	1273591	In Compliance
Tier II		6.20%	2274652	2274652	In Compliance
UGI Electric and EGSSs	973073				
Solar		0.03%	318	318	In Compliance
Tier I		3.47%	33780	33780	In Compliance
Tier II		6.20%	60330	60330	In Compliance
Wellsboro Electric	118919				
Solar		0.03%	38	38	In Compliance
Tier I		3.47%	4128	4128	In Compliance
Tier II		6.20%	7372	7372	In Compliance
West Penn Power and EGSSs	19755891				
Solar		0.03%	6415	6415	In Compliance
Tier I		3.47%	685801	685801	In Compliance
Tier II		6.20%	1224865	1224865	In Compliance

COMPLIANCE START DATE FOR THE ELECTRIC DISTRIBUTION COMPANIES

The following table highlights the year compliance obligations began for each EDC. The 2012 reporting year was the first year with a full 12 month AEPS obligation for all EDCs.

TABLE 5 OVERVIEW OF EDC OBLIGATION STARTING YEARS

Electric Distribution Companies	Year Obligation Began
Penn Power	2007
UGI Electric	2007
Duquesne	2008
Citizens'	2008
Pike County	2008
Wellsboro	2008
PPL	2010
West Penn Power	2011
Met-Ed	2011
Penelec	2011
PECO	2011

AEPS GENERATORS CERTIFIED

The Pennsylvania AEPS website⁴ maintains a summary of qualified generation facilities and qualified energy efficiency and demand-side management (EE/DSM) resources. There were 9,213 qualified generation facilities and 12 EE/DSM resources listed on May 31, 2012. Of those qualified generation facilities, 6,989 facilities (76 percent) are located in Pennsylvania and 2,224 facilities are located outside of Pennsylvania.

For the 2012 reporting period, 67 percent of solar AECs, 45 percent of Tier I and 56 percent of Tier II AECs retired by EDCs and EGSs originated from generation facilities located in Pennsylvania. See Appendix C for more detailed information about the origin of retired AECs.

⁴ <http://paaeps.com/credit/>

AEPS CERTIFICATES/CREDITS CREATED

Table 6 shows the number of AECs by tier and eligible for use in Pennsylvania, created in PJM Environmental Information Services, Inc. (PJM-EIS)⁵ for reporting years 2005 through 2012. The data in Table 6 reveals a trend whereby the total number of AECs created has increased each year. While the number of solar and Tier I credits have shown an increase each year, the number of Tier II credits has fluctuated.

When comparing the number of credits created to the estimated number of credits needed in 2021, Table 6 shows that more Tier II credits were created in each year from 2005 through 2012 than will be needed in 2021. Based on past results, it is anticipated that Tier II credits will continue to be over-subscribed and more of these credits will likely be created in any given year than are needed to meet the annual requirements to and including 2021.

AECs eligible for use in Pennsylvania may also be eligible to meet alternative energy requirements in other states. However, limitations are in place to ensure credits are used only once.

TABLE 6 CREDITS ELIGIBLE FOR USE IN PENNSYLVANIA AND ESTIMATED 2021 REQUIREMENTS

	Solar	Tier I	Tier II
2005	33	555,563	11,092,421
2006	132	1,936,120	29,559,094
2007	428	3,329,693	33,230,598
2008	933	4,884,342	32,418,756
2009	5,102	7,331,547	29,810,548
2010	19,975	9,296,693	31,675,042
2011	88,260	12,631,467	30,514,281
2012	224,773	14,793,783	29,615,459
Estimated 2021 Requirement	831,309	12,469,635	16,626,180

STATUS OF CUSTOMER-GENERATOR INTERCONNECTIONS

EDCs are required to review interconnection requests using one or more of four review procedures.⁶ Level 1 is used for inverter-based small generator facilities with a nameplate capacity of 10 kilowatts (kW) or less and the customer's interconnection equipment is certified.

Level 2 is used for small generation facilities with a nameplate capacity of 3 megawatts (MW) or less. The small generator facility uses an inverter for interconnection and the interconnection equipment is certified. The proposed interconnection is to a radial distribution

⁵ The PJM-EIS database is available at <http://www.pjm-eis.com>. Data as of August 8, 2013.

⁶ See 52 Pa. Code §75.34

circuit, or a spot network limited to serving one customer. The small generator facility was reviewed under Level 1 review procedures but not approved for interconnection.

Level 3 is used for evaluating interconnection requests to connect small generation facilities with an electric nameplate capacity of 3 MW or less which do not qualify under Level 1 or Level 2 or that were reviewed under Level 1 or Level 2, but were not approved for interconnection.

Level 4 is used for interconnection customers that do not qualify for Level 1 or Level 2 and do not export power beyond the point of common coupling. Customers may request to be evaluated under Level 4 review procedures, which provide for a potentially expedited review.

PUC regulations for net metering and interconnection require EDCs to submit annual reports to the Commission on June 30. The reports contain the number of customer-generators interconnected to the EDC's distribution system as well as the status of interconnection requests processed by the EDC within the past year.

As of May 31, 2013, Pennsylvania's EDCs reported 7,595 Tier I and 12 Tier II customer-generators were interconnected to the distribution system. Those customer generators represented 186,344 kW of generation capacity. Solar PV accounted for 96 percent of the Tier I customer-generators and 92 percent of Tier I generation capacity.

Of the 7,607 customer-generators, the EDCs processed 841 interconnection requests between June 1, 2012, and May 31, 2013. There were four denials. The average time for EDCs to finalize an interconnection request was: Level 1 – six days; Level 2 – 11 days; Level 3 – 18 days; and Level 4 – 11 days. Interconnection application review timelines as provided in 52 Pa Code § 75.37- § 75.40: Level 1-- 15 business days, Level 2-- 20 business days, Level 3-- 15 business days and Level 4-- 20 business days.

TABLE 7 NUMBER OF CUSTOMER-GENERATORS INTERCONNECTED: 2011-2013

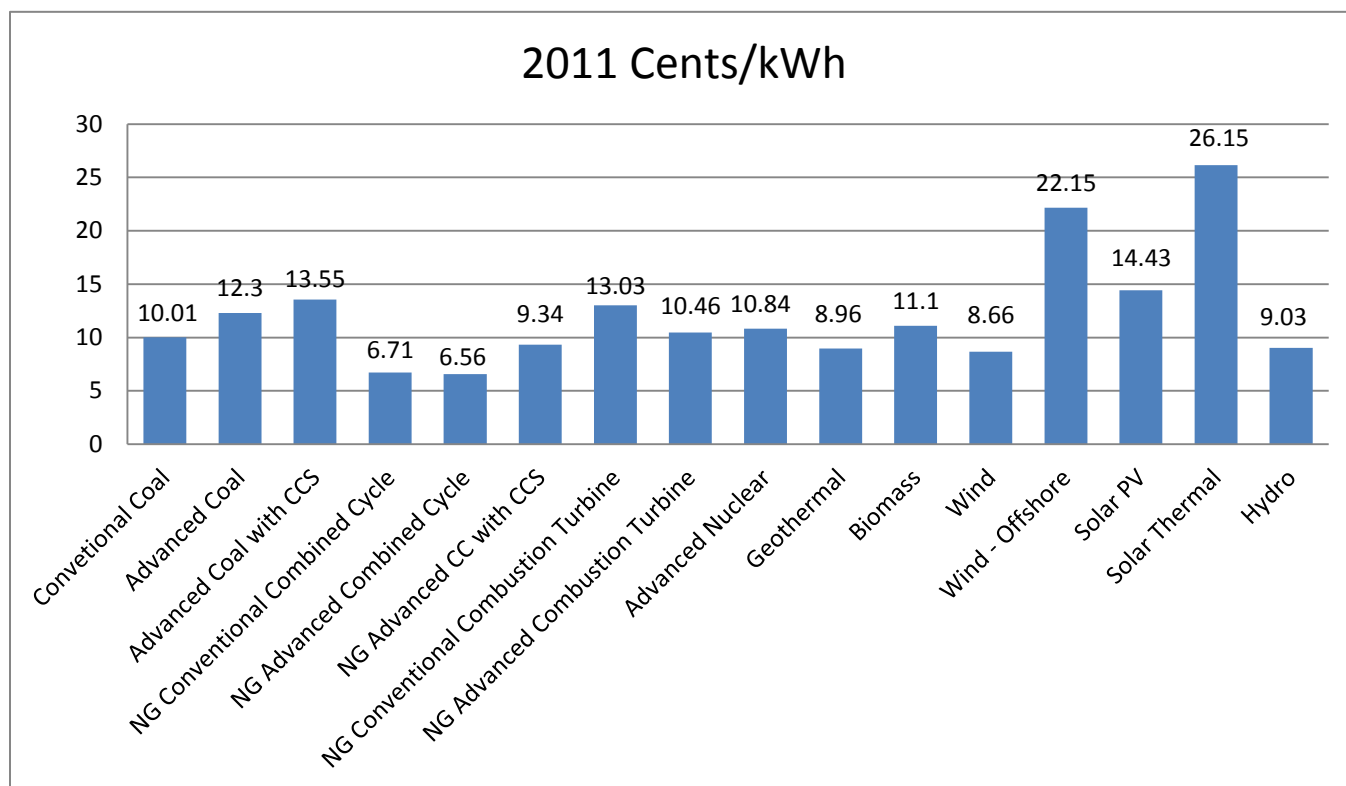
	Data as of May 31, 2011 (2010 AEPS Annual Report)				Data as of May 31, 2012 (2011 AEPS Annual Report)				Data as of May 31, 2013 (2012 AEPS Annual Report)			
	Tier I		Tier II	Total	Tier I		Tier II	Total	Tier I		Tier II	Total
	Total	Solar PV			Total	Solar PV			Total	Solar PV		
Number of Customer Generators	4,435	4,201	7	4,442	6,953	6,667	18	6,971	7,595	7,327	12	7,607
Estimated Generation Capacity in kW	75,397	71,780	8,481	83,878	152,293	146,156	15,198	167,491	172,911	158,381	13,433	186,344

*Solar PV is a Tier I resource. The Solar PV column separately identifies the Solar PV component of Tier I.

SECTION 3 CURRENT COSTS OF ALTERNATIVE ENERGY GENERATION

The Energy Information Administration (EIA) provided cost estimate data for the construction and operation of utility scale generation plants that will be brought on line in 2018.⁷ The year 2018 was selected to account for the lead time needed by some technologies to be brought on line. Graph 1 compares levelized costs for differing generation technologies on a per-kWh basis over an assumed financial life and duty cycle of the plant. Levelized cost components include overnight capital costs, building and operation costs, and an assumed utilization for each plant type. Operating costs include items such as fuel costs, maintenance, insurance and taxes and do not include state or federal incentives. EIA notes that actual plant investment decisions are affected by the specific technological and regional characteristics of a project and levelized costs are a convenient summary measure of overall competitiveness of generation technologies. Other considerations for plant investment include projected utilization rate and the existing resource mix in the region.⁸

GRAPH 1 ESTIMATED LEVELIZED COST OF NEW GENERATION RESOURCES



⁷ See EIA document titled *Levelized Cost of New Generation Resources in the Annual Energy Outlook 2013* from EIA Annual Energy Outlook 2013 with Projections to 2040, April 2013, DOE/EIA-0383(2013). Available at <http://www.eia.gov/forecasts/aeo/index.cfm>

⁸ *Id.*

SECTION 4 COSTS ASSOCIATED WITH THE ALTERNATIVE ENERGY CREDITS PROGRAM

ESTIMATED STATEWIDE AEPS COST OF COMPLIANCE

For analytical purposes, the Commission provided estimates of the statewide costs of AEPS for the 2015 and 2021 compliance years. These cost projections are presented in 2012 dollars, using a 6 percent discount rate. Holding projected credit costs flat, the projected total compliance costs will increase each year as the percentage requirements of alternative energy increase. As shown in the charts below, the estimated cost of AEPS compliance is approximately \$35 million for AEPS year 2015 and \$65.5 million for AEPS year 2021. To put these figures in perspective, the average annual statewide expenditures on electric service total approximately \$15.5 billion.⁹ The cost estimates were broken down by the types of AECs, namely Solar, Tier I and Tier II. The AEC prices used in this analysis are based on historical pricing as reported by the AEPS Program Manager¹⁰ as well as the results of EDC default service solicitations, with preferential weighting given to more recent solicitation results.

TABLE 8 ESTIMATED STATEWIDE AEPS COST OF COMPLIANCE

Projected 2015 AEPS Year Cost of Compliance in 2012 Dollars						
EDC	Solar Credits		Tier I Credits		Tier II Credits	
	Number of Required Credits	Cost with Credits Priced \$75.00	Number of Required Credits	Cost with Credits Priced \$3.00	Number of Required Credits	Cost with Credits Priced \$0.25
Duquesne	21,134	\$1,330,861	712,697	\$1,795,183	909,951	\$191,003
Met Ed	21,469	\$1,351,956	723,994	\$1,823,639	924,375	\$194,031
Penelec	24,920	\$1,569,226	840,346	\$2,116,711	1,072,929	\$225,213
Penn Power	7,203	\$453,578	242,898	\$611,826	310,125	\$65,097
PECO	57,264	\$3,606,004	1,931,073	\$4,864,099	2,465,538	\$517,528
PPL	57,005	\$3,589,673	1,922,328	\$4,842,070	2,454,372	\$515,185
UGI	1,425	\$89,717	48,045	\$121,019	61,342	\$12,876
West Penn	33,360	\$2,100,706	1,124,962	\$2,833,619	1,436,319	\$301,490
Citizens	262	\$16,522	8,848	\$22,286	11,297	\$2,371
Pike	110	\$6,944	3,718	\$9,366	4,748	\$997
Wellsboro	160	\$10,104	5,411	\$13,629	6,908	\$1,450
Aggregate	224,313	\$14,125,290	7,564,320	\$19,053,447	9,657,905	\$2,027,241

⁹ See U.S. Energy Information Association - http://www.eia.gov/electricity/sales_revenue_price/pdf/table3.pdf

¹⁰ See AEPS Program Manager- <http://paaeps.com/credit/pricing.do>

Projected 2021 AEPS Year Cost of Compliance in 2012 Dollars

EDC	Solar Credits		Tier I Credits		Tier II Credits	
	Number of Required Credits	Cost with Credits Priced \$75.00	Number of Required Credits	Cost with Credits Priced \$3.00	Number of Required Credits	Cost with Credits Priced \$0.25
Duquesne	76,427	\$3,392,798	1,146,412	\$2,035,679	1,528,550	\$226,187
Met Ed	78,898	\$3,502,464	1,183,468	\$2,101,478	1,577,957	\$233,498
Penelec	93,595	\$4,154,886	1,403,919	\$2,492,932	1,871,891	\$276,992
Penn Power	25,797	\$1,145,210	386,962	\$687,126	515,949	\$76,347
PECO	214,758	\$9,533,624	3,221,371	\$5,720,174	4,295,162	\$635,575
PPL	210,677	\$9,352,452	3,160,154	\$5,611,471	4,213,539	\$623,497
UGI	5,185	\$230,182	77,778	\$138,109	103,703	\$15,345
West Penn	123,991	\$5,504,238	1,859,859	\$3,302,543	2,479,812	\$366,949
Citizens	962	\$42,716	14,434	\$25,630	19,245	\$2,848
Pike	411	\$18,265	6,172	\$10,959	8,229	\$1,218
Wellsboro	607	\$26,953	9,107	\$16,172	12,143	\$1,797
Aggregate	831,309	\$36,903,790	12,469,635	\$22,142,274	16,626,180	\$2,460,253

SECTION 5 STATUS OF PA'S ALTERNATIVE ENERGY PORTFOLIO STANDARDS MARKETPLACE

This section discusses renewable generation capacity both in Pennsylvania and in the PJM region. The analysis compares the amount of renewable generation available and that which will be needed to meet the AEPS requirements.

RENEWABLE GENERATION CAPACITY IN PENNSYLVANIA AND PJM

Table 9 provides a summary of the existing installed capacity by fuel type in Pennsylvania as of January 1, 2013, wind capacity as of June 6, 2013 and solar capacity as of May 31, 2013.¹¹

TABLE 9 EXISTING CAPACITIES IN PENNSYLVANIA

Fuel Type	MW	% of Total Capacity
Coal (non-waste)	15,216	33.9%
Waste Coal	1,422	3.2%
Nuclear	9,649	21.5%
Natural Gas	10,024	22.3%
Hydro	2,222	5.0%
Diesel	1,714	3.8%
Oil	2,765	6.2%
Municipal-Solid Waste	322	0.7%
Wind	1340	3.0%
Solar	196	0.4%
Total	44,870	100.0%

¹¹ See PJM 2012 Regional Transmission Expansion Plan, Monitoring Analytics 2012 State of the Market Report, American Wind Energy Association and Solar MW info from Clean Power Markets.

PJM manages grid interconnection requests in construction queues. Not all projects submitted to PJM for interconnection are constructed. Approximately 25 percent of the interconnection requests from 2005 to 2012 led to projects that were actually built.¹² Table 10 summarizes the renewable generation in the queue for Pennsylvania as of December 31, 2012.¹³ Withdrawn projects and projects that are in service are not included in the table below.

TABLE 10 RENEWABLE GENERATION IN THE PJM CONSTRUCTION QUEUE FOR PENNSYLVANIA

Fuel Type	Name Plate MW
Wind	2,438
Solar	274
Biomass	18
Hydro	147
Landfill Gas	34
Total	2,911

AEPS allows Pennsylvania EDCs and EGSs to purchase AECs from the entire PJM region and not just those generated in Pennsylvania. PJM has substantial existing and proposed renewable generation capacity as detailed in Table 11.

TABLE 11 INSTALLED AND PROPOSED RENEWABLE CAPACITY IN PJM

Fuel Type	Installed Capacity Name Plate MW ¹⁴	Proposed Capacity Name Plate MW ¹⁵
Wind	7,159	27,118
Solar	1,359	2,646
Hydro	8,115	1,157
Landfill Gas	877	487
Total	17,510	31,408

PJM states with renewable portfolio standards include Pennsylvania, Michigan, Ohio, North Carolina, Illinois, Delaware, District of Columbia, Maryland, West Virginia, and New Jersey. Virginia and Indiana have RPS goals and Tennessee and Kentucky do not yet have a final renewable portfolio standard (RPS). In states with RPS requirements, the requirements range from 10 percent of retail sales of electricity in North Carolina and Ohio to 25 percent in Illinois, Delaware and West Virginia by 2025.

The RPS requirements of the PJM states and the District of Columbia vary considerably regarding generation resources eligible to meet the requirements. Differences are found in the types of renewable and/or alternative energy generation resources that qualify. Some states

¹² See PJM 2012 Regional Transmission Expansion Plan.

¹³ See PJM 2012 Regional Transmission Expansion Plan.

¹⁴ See 2012 State of the Market Report for PJM, Detailed Analysis, Volume II, Monitoring Analytics, LLC., 2013.

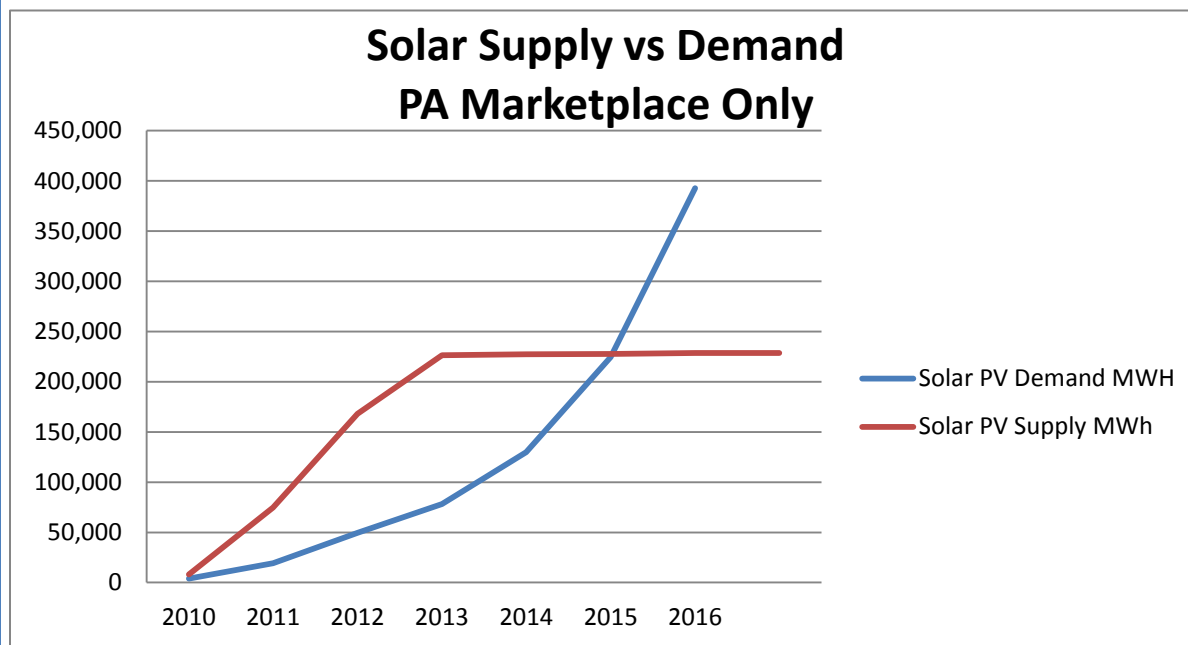
¹⁵ See PJM 2012 Regional Transmission Expansion Plan, 2013.

allow resources that are not permitted by other states. Also, some states use credit multipliers for certain generation resources, allowing certain resources to earn double or triple the amount of credits per MWh of generation. Generation facility location is another matter where the states differ. Some states require acceptable generation facilities to be located within that state. Other states allow resources originating from within PJM and others allow resources outside of PJM to qualify. Also, within some states, EDCs, EGSs and municipal utilities have different requirements under their state RPS.

The AEPS Marketplace for Pennsylvania is quite complex due to numerous factors that must be considered, such as those previously referenced. To meet the RPS requirements, EDCs and EGSs can purchase AECs from sources outside of Pennsylvania but within the PJM region. Based on existing resources within PJM, staff estimates that adequate Tier I resources exist into 2014 and Tier II supply through 2021.

Graph 2 indicates sufficient solar PV supply is likely to exist for Pennsylvania from PV generation within Pennsylvania through 2015. This includes the existing 196 MWs of Pennsylvania sited solar PV and the Pennsylvania sited solar PV in the PJM construction queues. The data is based on the assumption that 25 percent of what is in the PJM queues actually is constructed. The PJM queue does not include planned solar projects beyond 2017 and consequently limits the scope of the graph. The PJM queue is also not a good indicator of future solar PV installations, since many installations are small, behind the meter systems not tracked in the PJM queues.

GRAPH 2 SOLAR MARKETPLACE IN PA ONLY



Note: Solar PV supply in Graph 2 includes existing supply and 25 percent of the new capacity in the PJM construction queues and does not account for small, behind the meter systems.

Projected solar demand for Pennsylvania is summarized in Table 12. Please note that a capacity factor of 12 percent was used for this table.

TABLE 12 SOLAR DEMAND FOR PENNSYLVANIA

Year	Generation Requirement (MWh)	Estimated Needed Capacity (MW)
2012	49,536	47.12
2013	78,173	74.37
2014	129,836	123.51
2015	224,313	213.39
2016	392,792	373.66
2017	464,039	441.44
2018	544,620	518.09
2019	631,720	600.95
2020	729,448	693.92
2021	831,309	790.82

RENEWABLE ECONOMY BENEFITS - JOBS, EXPORTS, WAGES

AEPS is one of the policies that helps to shape Pennsylvania's economy through goods and services related to renewable and alternative energy production. The Federal Bureau of Labor Statistics (BLS) initiated a Green Jobs¹⁶ Initiative to develop information on (1) the number of and trend over time in green jobs; (2) the industrial, occupational, and geographic distribution of the jobs; and (3) the wages of the workers employed in these jobs. Final data from the BLS

¹⁶ BLS defined green jobs as either jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources or jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.

for 2011,¹⁷ the most recently available data at the time of this report, indicated Pennsylvania was home to 160,494 green goods and services jobs, making up about 2.9 percent of total employment in Pennsylvania. Not surprisingly, the majority of these green goods and services jobs (about 136,557) were in the private sector. Approximately 26.3 percent of all private sector green goods and services jobs were in the manufacturing sector. Using a different metric, 20.7 percent of all utilities sector jobs were classified as green goods and services jobs.

According to the Mid-Atlantic Solar Energy Industries Association (MSEIA), 54 MW of solar-electric generating capacity was installed in Pennsylvania in 2012, ranking it 11th nationally in terms of installed capacity. These installations at private residences, businesses and institutions resulted in \$171 million of investments that help sustain the 4,000 person workforce spread across more than 365 companies, including 50 manufacturing facilities, located in Pennsylvania. These companies include all aspects of the value chain including manufacturing, sales, installation and support services.

Similarly, the American Wind Energy Association (AWEA) reports the total number of direct and indirect jobs supporting the wind industry in 2012 in Pennsylvania was in excess of 3,000, ranking the Commonwealth among the top 10 states in the country. Twenty-nine in-state manufacturing facilities contributed to many of the aforementioned jobs. Additionally, six Pennsylvania wind farms came online in 2012. Construction of these wind farms employed hundreds of people and each requires a small, permanent crew of up to 15 people going forward to oversee the maintenance and continued operation of the turbines. Annual school tax, property tax and landowner lease payments from wind farm developments in Pennsylvania conservatively exceed several million dollars.

The hydropower industry is also well represented in Pennsylvania with two of the world's largest turbine manufacturers, Voith Hydro and Weir American Hydro, located here. According to the National Hydropower Association, at least 18 Pennsylvania businesses are engaged in some aspect of hydropower electricity generation. The largest of these businesses is Voith Hydro whose York County manufacturing facility employs more than 550 people. While little hydropower development has been occurring in-state, this trend could change with the recent passage of federal legislation that aims to streamline and improve the federal review and permitting process for smaller hydropower generation. Two studies completed by U.S. Department of Energy national laboratories points to the potential for small power generating opportunities as well as generation opportunities from existing infrastructure. Specifically, the Oak Ridge National Laboratory released a report in 2011¹⁸ that estimates the potential for 12,600 MW of electric generating capacity by tapping into existing locks and dams on Pennsylvania waterways that currently have no generating capacity onsite. Additionally, the

¹⁷ U.S. Bureau of Labor and Statistics, *Green Goods and Services Supplemental Tables, 2011*
http://www.bls.gov/web/ggqcew/ggqcew_supple_table6.pdf

¹⁸ *An Assessment of Energy Potential at Non-Powered Dams in the United States, 2011*
<http://nhaap.ornl.gov/content/non-powered-dam-potential>

Idaho National Engineering and Environmental Laboratory released a report in 2004¹⁹ estimating that Pennsylvania could develop 4,000 MW of hydroelectric generating capacity from low head/low power opportunities, defined as those with less than 30 feet of head and having less than 1 MW of generating capacity.

The state continues to play an integral part in supporting and encouraging the investment in renewable and alternative energy projects that qualify for consideration under the AEPS. In 2012, DEP provided \$15.8 million in rebate funding to residents and small commercial customers under the state's PA Sunshine Solar Program. These funds stimulated the private investment of \$80.1 million for a total investment in this industry sector of nearly \$96 million in 2012. The Commonwealth Financing Authority (CFA) also provided significant investment dollars for solar and other qualifying AEPS resources. The CFA provided \$3.7 million in solar energy program grants to Pennsylvania institutions and businesses with the prospects of adding 300 new jobs. These funds leveraged approximately \$24 million in private funding. The CFA also committed \$14.3 million in grants towards total project costs exceeding \$288 million to a host of AEPS qualifying projects such as small hydro, combined heat and power, anaerobic digestion and wind. These public-private investments anticipate the creation of nearly 200 additional jobs.

¹⁹ *Water Energy Resources of the United States with Emphasis on Low Head/Low Power Resources, 2004*
<http://hydropower.inel.gov/resourceassessment/index.shtml>

SECTION 6 RECOMMENDATIONS FOR PROGRAM IMPROVEMENTS

ELIMINATION OF THE QUARTERLY ADJUSTMENT

In the 2010 Annual Report, the Commission recommended the elimination of the Act 129 quarterly adjustment that applies to non-solar Tier I AEC obligations. As explained earlier in this report, Act 129 of 2008 added additional energy sources in the definition of Tier I alternative energy sources. It also directed the Commission to increase the percentage of Tier I requirements for EDCs and EGSs to reflect the amount of generation from the new resources on a quarterly basis. On May 28, 2009, the Commission established the procedures to increase the non-solar PV Tier I percentage requirement quarterly.

The Commission recognizes and appreciates state Rep. Robert W. Godshall's effort in addressing this recommendation by introducing House Bill 208 on January 22, 2013 and House Bill 1962 in the previous legislative session. The Commission advocates the passage of HB 208. Eliminating the quarterly adjustment will remove an administrative burden on EDCs, EGSs, and the AEPS Program Administrator that results in an insignificant increase of Tier I non-solar AECs. During the 2013 reporting year, the quarterly adjustment added only 5,235 AECs to the 5,687,595 credits retired without the adjustment. The adjustment added less than one-tenth of one percent of the Tier I credits retired for compliance and thus has no meaningful impact on the Tier I AEC market.

APPENDIX A BACKGROUND

ALTERNATIVE ENERGY CREDIT

One AEC represents one megawatt hour (MWh) of qualified alternative electric generation from within the PJM footprint, whether self-generated, purchased along with the electric commodity, or purchased separately through a tradable instrument. The AEC does not represent the purchase of renewable energy, only the confirmation of the generation of renewable energy. The generators are permitted to use generation on site or sell the energy by contract or participate in net metering if the facility is a customer-generator.

Generation output is confirmed by the PJM market settlement process or by metering of the generation system except for some small solar PV (<15 kW). AECs for solar PV systems that are not based on meter recordings of the generation output are calculated via the use of the National Renewable Energy Laboratory's (NREL's) PVWattsTM software to determine the energy production from the system. The PVWattsTM calculator works by creating hour-by-hour performance simulations that provide estimated monthly and annual energy production in kWh and energy value. Users can select a location and choose to use default values or their own system parameters for size, electric cost, array type, tilt angle and azimuth angle. In addition, the PVWattsTM calculator can provide hourly performance data for the selected location. There are two versions of PVWattsTM available. Pennsylvania uses Version 1 for the purposes of calculating estimates for solar generators participating in the PA AEPS program.

ALTERNATIVE ENERGY CREDITS REGISTRY

On January 27, 2006, the PUC designated PJM Environmental Information Services Inc.'s (PJM-EIS) Generation Attribute Tracking System (GATS) as the alternative energy credits registry.²⁰ GATS provides an unbundled, certificate-based tracking system for use by electricity suppliers and other energy market participants to comply with state policies and regulatory programs. The GATS database contains information about each megawatt hour of electricity generated, including megawatt hours produced, emissions data, fuel source, location, state program qualification and ownership of attributes. Each certificate is given a unique serial number for tracking purposes. Varying levels of information in the registry are available to EDCs, EGSs, state regulators and the public.

GATS is not an online trading platform where potential buyers can bid for and purchase AECs. The actual sale of alternative energy certificates or credits, and any of its associated attributes, such as the emissions' attributes associated with carbon dioxide, nitrogen oxides and sulfur dioxides, takes place outside of GATS between a buyer and seller. GATS simply records, after the fact, the ownership transfer of certificates representing certain attributes between two GATS subscribers.

²⁰ www.pjm-eis.com

In April 2007, the PUC contracted with Clean Power Markets (CPM), a subsidiary of Enerwise Global Technologies,²¹ to be the AEC Program Administrator in Pennsylvania. CPM verifies EGS and EDC compliance with requirements of the AEPS Act. On June 3, 2010, the Commission entered into a new contract with the company until December 31, 2013, with the option for two one-year contract extensions. The Commission issued a purchase order to CPM August 23, 2013 to extend the contract until December 31, 2015.

CPM works with DEP to administer the process of reviewing and qualifying alternative energy systems. CPM also tracks alternative energy credit prices, calculates ACP amounts, verifies data from behind-the-meter and energy efficiency/demand-side management AEC resources, and confirms that the same alternative energy is not being claimed for compliance with another state's portfolio requirements. The company provides regular reports to the PUC and maintains a public website at <http://paaeps.com>.

NET METERING

The PUC regulations governing net metering for customer-generators became effective December 16, 2006, upon publication in the *Pennsylvania Bulletin*.²² Net metering is defined as “the means of measuring the difference between the electricity supplied by an electric utility and the electricity generated by a customer-generator when any portion of the electricity generated by the alternative energy generating system is used to offset part or all of the customer-generator’s requirements for electricity.”²³ The net-metering requirements apply to EDCs that have customer-generators intending to pursue net-metering opportunities in accordance with the AEPS Act. EGSs may offer net metering to customer-generators under terms established in agreements between the EGS and the customer-generator taking service from the EGS.²⁴

On July 17, 2007, Act 35 of 2007 was signed into law and amended a number of provisions of the AEPS Act, including the definition of net metering to include a restriction on virtual meter aggregation.

VIRTUAL METER AGGREGATION

Virtual meter aggregation involves the combination of readings and billings for all meters, regardless of rate class, on properties owned or leased and operated by a single customer-generator, by means of the EDC’s billing process, rather than through physical rewiring of the customer-generator’s property for a physical, single point of contact. Virtual meter aggregation on properties owned or leased, and operated by a customer-generator, shall be allowed for purposes of net metering. Virtual meter aggregation shall be limited to meters located within two miles of the customer-generator’s property and within a single EDC’s territory.

²¹ www.cleanpowermarkets.com, www.enerwise.com

²² See 36 Pa. Bull. 7562 and 52 Pa. Code Ch. 75

²³ 73 P.S. §1648.2

²⁴ See 52 Pa. Code § 75.13

INTERCONNECTION STANDARDS

The PUC's regulations establishing interconnection standards for customer-generators became effective December 16, 2006.²⁵ The regulations promote onsite generation by customer-generators using alternative energy systems and eliminate barriers which may have previously existed regarding interconnection.

The interconnection regulations govern the process by which a customer-generator may interconnect onsite generation equipment to an electric utility's distribution lines. The regulations set forth specific levels of, and criteria for, review depending on the rated generation capacity of the generation equipment. The regulations also provide for a dispute resolution process to manage disputes which may arise during the interconnection process. The application forms and associated fees were not included in the regulations, but were developed through a stakeholder process. The Commission's Interconnection Standards Working Group developed a set of standard application forms for use by customer-generators that wish to interconnect to an EDC's distribution network.²⁶ The application forms cover Level 2 through Level 4 projects.²⁷

Level 1 application reviews require a flat fee of \$100 per application. Level 2 applications establish a base fee of \$250 plus \$1 per kW of nameplate capacity rating of the customer-generator's facility, plus other review costs that may not exceed \$100 per hour. Level 3 applications specify a base fee of \$350 plus \$2 per kW of the nameplate capacity rating of the customer-generator's facility, plus other review costs that may not exceed \$100 per hour. For a Level 4 application, when the Level 4 application is processed using the Level 1, Level 2 or Level 3 review process, the fees set forth for those particular review levels should apply. No fee shall be assessed for an area network impact study conducted under Section 75.40. A Level 4 application reviewed under Section 75.40(d) is subject to a base fee of \$350 plus \$2 per KW of nameplate capacity rating of the customer-generator's facility.

Act 35 amended a number of provisions of the AEPS Act, including revising the definition of "customer-generator" to increase the capacity limit on non-residential projects from 1 MW to 3 MW and from 2 MW to 5 MW for those projects that operate in parallel with the grid during emergencies or where a microgrid is in place for maintaining critical infrastructure.

²⁵ See 36 Pa. Bull. 7574, and 52 Pa. Code Ch. 75

²⁶ 52 Pa. Code §§75.21-75.5.

²⁷ On February 26, 2009, the forms were adopted by Commission Order and the associated application fees were adopted by Policy Statement. See 52 Pa. Code §§69.2101-69.2104.

APPENDIX B AEPS REGISTERED GENERATORS

AEPS Generators Registered for Pennsylvania certification as of May 31, 2013:

- 9,213 certified generators
- 6,989 certified generators located in Pennsylvania
- 2,224 certified generators located outside of Pennsylvania
- 6,869 certified solar facilities in Pennsylvania with a capacity of 196.2 MW
- 2,063 certified solar facilities outside of Pennsylvania with a capacity of 112.5 MW

Table 13 summarizes the certified Alternative Energy Resources by type and the capacity of each type inside and outside of Pennsylvania. Generator facilities using biomass are included within the Tier I Wood/Wood Wastes Solids resource type.

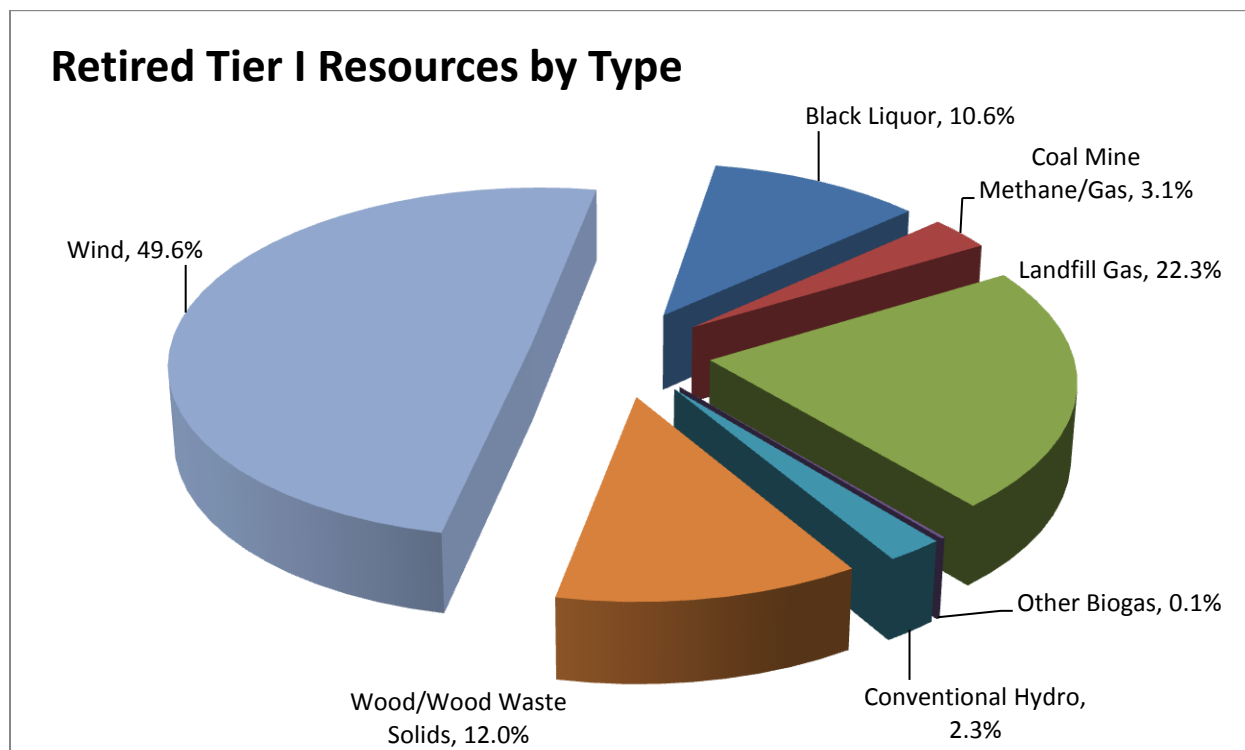
TABLE 13 – AEPS RESOURCE SUMMARY

AEPS Tier	Alternative Energy Resource Types (s)	Nameplate Capacity of Facilities in PA (MWs)	Nameplate Capacity of Facilities Outside of PA (MWs)	Total Nameplate Capacity (MWs)
I	Black Liquor	54.0	0.0	54.0
I	Coal Mine Methane	0.8	88.0	88.8
I	Hydro	42.2	0.0	42.2
I	Landfill Gas	1,566.6	1,042.7	2,609.3
I	Other Biomass Gas	1.6	1.8	3.4
I	Other Gas	0.7	0.0	.7
I	Solar	196.2	112.5	308.7
I	Wind	1,304.6	4,200.5	5,505.1
I	Wood/Wood Waste Solids	18.0	827.1	845.1
I	Wood/Wood Waste Solids & Black Liquor	109.5	0.0	109.5
I	TOTAL of Tier I	3,294.2	6,272.6	9,566.8
II	Black Liquor	0.0	65.0	65.0
II	Blast Furnace Gas	0.0	67.0	67.0
II	Blast Furnace & Other Gases	52.5	0.0	52.5
II	Distributed Generation	5.0	0.0	5.0
II	Hydro	2,219.8	4,297.7	6,517.5
II	Municipal Solid Waste	252.4	464.2	716.6
II	Other Gases	31.0	0.0	31.0

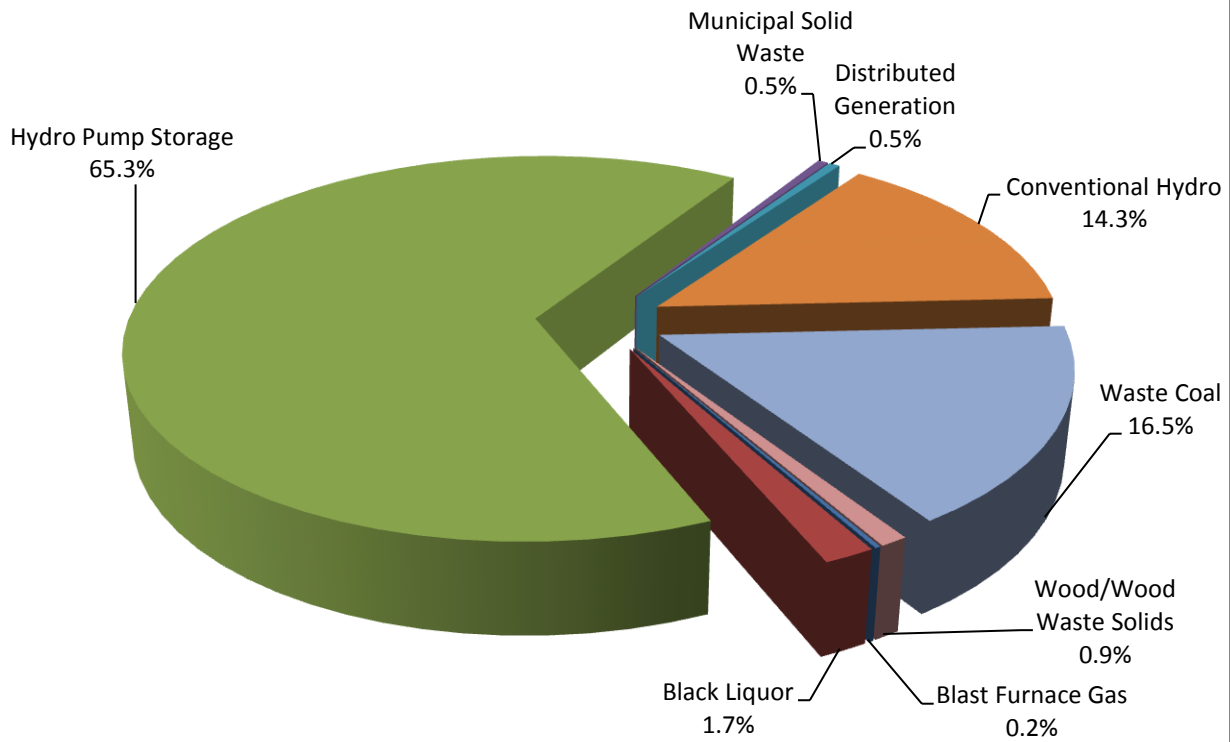
AEPS Tier	Alternative Energy Resource Types (s)	Nameplate Capacity of Facilities in PA (MWs)	Nameplate Capacity of Facilities Outside of PA (MWs)	Total Nameplate Capacity (MWs)
II	Waste Coal	1,636.9	244.6	1,881.5
II	Waste Heat	5.0	0.0	5.0
II	Wood/Wood Waste Solids	12.5	0.0	12.5
II	Wood/Wood Waste Solids & Black Liquor*	0.0	438.9	438.9
II	TOTAL of Tier II	4,215.1	5,577.4	9,792.5
I & II	TOTAL of Tiers I & II	7,509.3	11,850.0	19,359.3

* Several facilities have the capability of generating electricity utilizing multiple fuel sources that include both Tier I and Tier II resource types, those facilities are accounted for as Tier II Wood/Wood Waste Solids & Black Liquor.

The following charts indicate alternative energy types that were retired to meet the Tier I and Tier II obligations for the 2012 Reporting period.



Retired Tier II Resources by Type



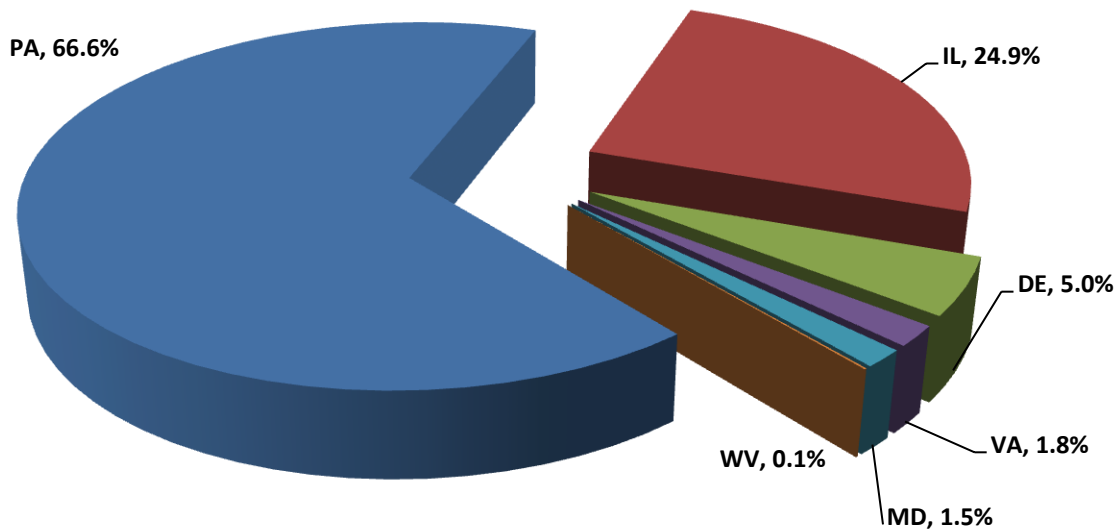
APPENDIX C RETIRED AECS - STATE OF ORIGIN

Table 14 shows the state of origin for AECs retired by EDCs and EGSs to meet their AEPS obligations.

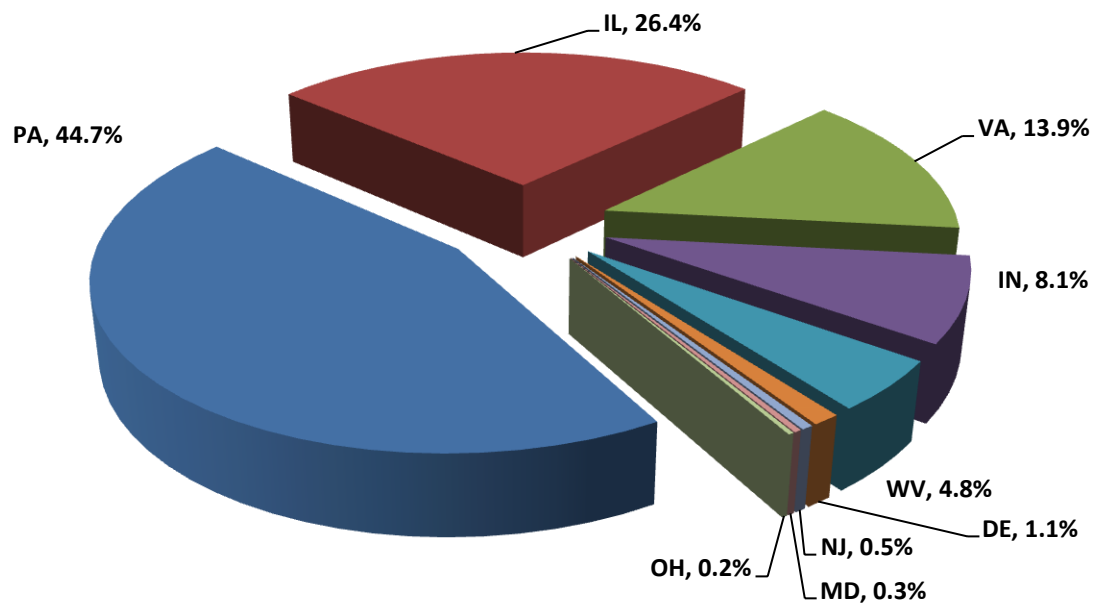
TABLE 14 AEC State of Origin

Tier/State	PA	NJ	DC	MD	VA	WV	IL	OH	DE	MN	NC	IN
Solar	30949	3	18	716	837	41	11568	5	2339	3	13	0
Tier I	2220486	22550	0	14362	691182	239325	1310526	11011	53587	0	0	403206
Tier II	4940238	86155	0	623027	3144617	53872	0	16849	0	0	0	0
Total	7191673	108708	18	638105	3836636	293238	1322094	27865	55926	3	13	403206

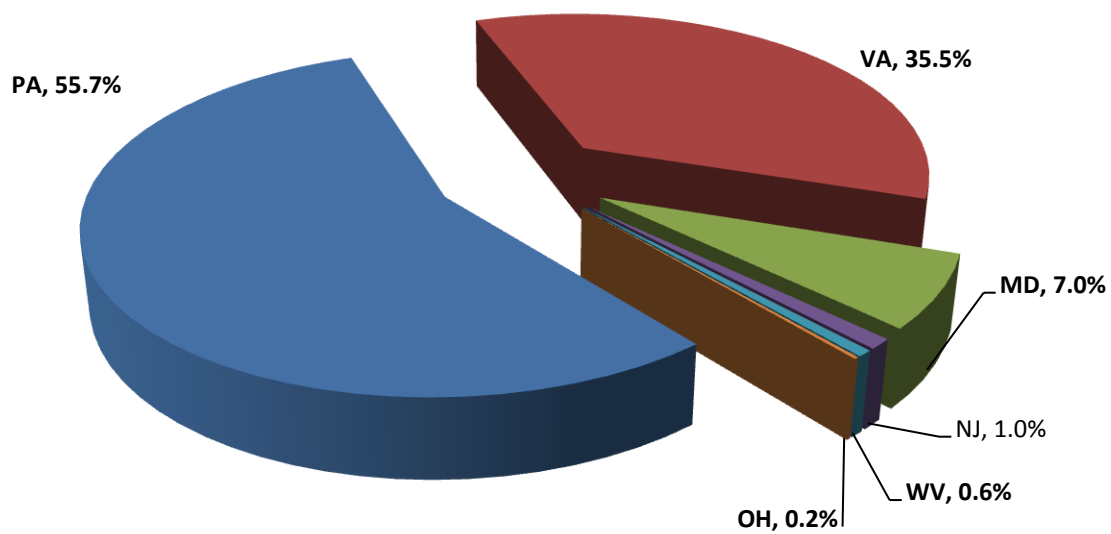
Solar - State of Origin %



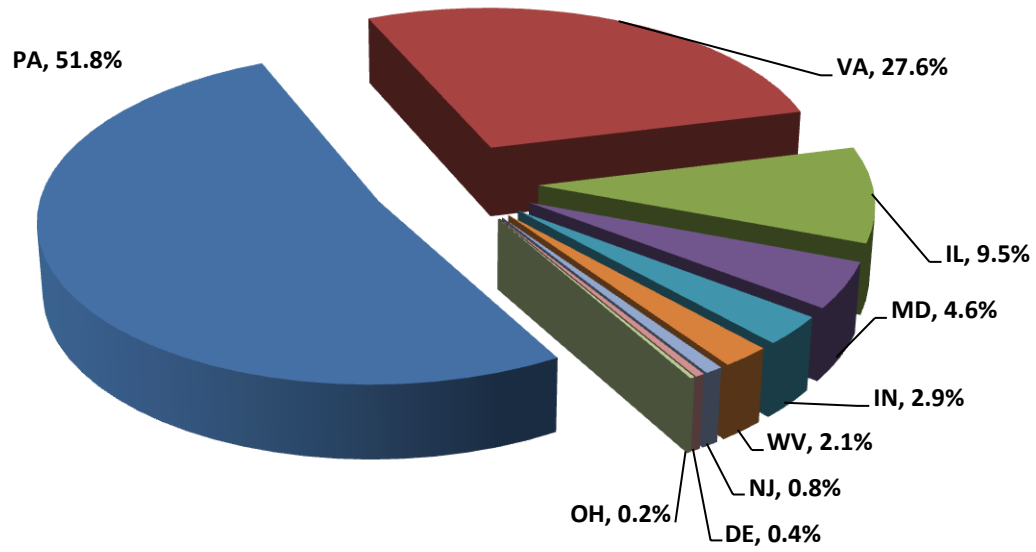
Tier I - State of Origin %



Tier II - State of Origin %



Total AECs - State of Origin



APPENDIX D PUC ORDERS

Orders are available on the PUC website at www.puc.pa.gov, click Electricity, Alternative Energy. Information is also available at <http://paaeps.com>.

Implementation of the Alternative Energy Portfolio Standards Act of 2004 (Implementation Order I), Docket No. M-00051865, PUC Public Meeting on March 23, 2005, entered March 25, 2005

Implementation of the Alternative Energy Portfolio Standards Act of 2004 (Implementation Order II), Docket No. M-00051865, PUC Public Meeting on July 14, 2005, entered July 18, 2005

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources, Docket No. M-00051865, PUC Public Meeting on Sept. 29, 2005, entered Oct. 3, 2005.

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Designation of the Alternative Energy Credits Registry, Docket No. M-00051865, PUC Public Meeting on Jan. 27, 2006, entered Jan. 31, 2006.

Final Rulemaking regarding Net Metering for Customer-generators pursuant to Section 5 of the Alternative Energy Portfolio Standards Act, 73 P.S. §1648.5, Docket No. L-00050174, and Implementation of the Alternative Energy Portfolio Standards Act of 2004: Net Metering, Docket No. L-00050175, PUC Public Meeting on June 22, 2006, entered June 23, 2006.

Implementation of the Alternative Energy Portfolio Standards Act of 2004, Docket No. L-00060180, PUC Public Meeting on July 20, 2006, entered July 25, 2006.

Final Rulemaking regarding Interconnection Standards for Customer-generators pursuant to Section 5 of the Alternative Energy Portfolio Standards Act, 73 P.S. §1648.5, Docket No. L-00050175, and Implementation of the Alternative Energy Portfolio Standards Act of 2004: Interconnection Standards, Docket No. M-00051865, PUC Public Meeting on Sept. 15, 2006, entered Sept. 19, 2006.

Implementation of the Alternative Energy Portfolio Standards Act of 2004, Docket No. M-00051865, PUC Public Meeting on Nov. 30, 2006, entered Dec. 5, 2006.

Petition for Declaratory Order Regarding Ownership of Alternative Energy Credits Associated with Non-Utility Generating Facilities Under Contract to Pennsylvania Electric Company and Metropolitan Edison Company, Docket No. P-00052149, PUC Public Meeting on Dec. 21, 2006, entered Feb. 12, 2007.

Petition for Declaratory Order Regarding Ownership of Alternative Energy Credits Associated with Non-Utility Generating Facilities Under Contract to Pennsylvania Electric Company and Metropolitan Edison Company, Petition for Reconsideration of Viking Energy of Northumberland, Docket No. P-00052149, PUC Public Meeting on May 30, 2007, entered May 31, 2007.

Implementation of Act 35 of 2007; Net Metering and Interconnection, Docket No. L-00050174, PUC Public Meeting on May 22, 2008, entered July 2, 2008.

Implementation of the Alternative Energy Portfolio Standards Act of 2004, Docket No. L-00060180, PUC Public Meeting on Sept. 25, 2008, entered Sept. 29, 2008.

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standard Interconnection Application Forms, Docket No. M-00051865, PUC Public Meeting on Feb. 26, 2009, entered Feb. 27, 2009.

Implementation of Act 129 of 2008 Phase 4 – Relating to the Alternative Energy Portfolio Standards Act, Docket No. M-2009-2093383, PUC Public Meeting on May 28, 2009, entered on May 28, 2009.

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual Update, Docket No. M-00051865, PUC Public Meeting on May 28, 2009, entered on June 1, 2009.

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual Update, Docket No. M-00051865, PUC Public Meeting on June 3, 2010, entered on June 8, 2010.

Policy Statement in Support of Pennsylvania Solar Projects, Docket No. M-2009-2140263, entered Sept. 16, 2010.

Policy Statement regarding Net Metering – Use of Third Party Operators, Docket No. M-2011-2249441 entered March 29, 2012.



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