



Alternative Energy Credits in Pennsylvania

Clean Power Markets, Inc.

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CPM PA AEPS Program

- PA AEPS program launched Feb. 28, 2007
- Clean Power Markets, Inc. designated as Program Administrator:
 - Alternative Energy System Qualification
 - Verification of EDC and EGS compliance with the portfolio standard requirements
 - Calculation of alternative compliance payments for EDCs and EGSs.
 - Verification of alternative energy system status and performance
 - Large Generators
 - Customer-generators
 - Demand-side management and energy efficiency
 - Calculation of Act 129 quarterly adjustments
 - Inspections
 - Support Services



CPM PA AEPS Program

- Generators submit the appropriate application through the website (www.paaeps.com)
- CPM reviews applications and issues state certification number
- Generator registers with GATS to earn AECs
- AECs are put on the bulletin board to find potential buyers or sold through aggregators



CPM PA AEPS Program

- All generators are subject to random inspection to assure that systems are sized and working as indicated in the application
- Output of generators is monitored through GATS readings and compared to application information



What is an AEC?

- An AEC is an Alternative Energy Credit which is also known as:
 - a REC (Renewable Energy Credit/Certificate)
 - White tag
 - Green tag
- A credit is representative of 1000kwh of generated power
- It is the “green attributes” of a renewable generator
- This is not to be confused with net metering
- There is no restriction on the number of years a generator can earn AECs.
- If a generator is less than 15kW, the facility owner can elect to use PV Watts estimates to earn AECs. However, if a revenue grade production meter is installed, it must be used.



Net metering vs. AECs

- The AEC is the measured output of the actual power generated by the system. The output is measured through
 - “e-total” on the inverter(s)
 - Meter
- Net metering is the usage of the “grid” power and the actual power generated by the alternative energy system
 - The bill from the utility is the difference between these two totals.
- If a generator is using PV Watts estimates, the estimates are calculated by the program administrator. The AECs are issued based on the estimates as submitted by the administrator to GATS



Alternative Energy Portfolio Standards Act of 2004

- Established the Program Administrator
- Established the guidelines for the program
- Created the percentage targets for each Energy Year
- Determined the technologies for Tier I and Tier II
- Established a Demand Response and Energy Efficiency program as part of Tier II resources
- Set Alternative Compliance Payments for Tier I and Tier II at \$45 per Megawatthour
- Set calculation for the Solar Alternative Compliance Payment



Alternative Energy Portfolio Standards Act of 2004

- The Act was updated through:
 - Act 35 – included:
 - Updated percentages for solar carve out
 - Expanded definitions of resources
 - Act 129 – included:
 - Expanded definition of low-impact hydro up to a capacity of 21MW
 - Expanded definition of biomass to include electricity generated utilizing byproducts of the pulping process, previously identified as Tier II to become Tier I (only for facilities located within PA)
 - Requires additional reporting of certificate sales and generation data to the program administrator in order to recalculate Tier I percentage requirements on a quarterly basis.



Alternative Energy Portfolio Standards Act of 2004 (cont.)

- Additional changes through proposed House Bill 80
 - Proposed changes include:
 - Only allowing solar credits from PA to be used for compliance
 - Changing the calculation of the Solar ACP
 - Changing the banking rules for certificates bought by utilities



Tier I and Tier II Technologies



Tier 1 - Energy derived from:

- Solar photovoltaic energy
- Solar thermal (as in solar collectors)
- Wind power
- Low-impact hydropower
- Geothermal energy
- Biologically derived methane gas (including landfill gas)
- Fuel cells
- Biomass energy
- Coal mine methane
- Black Liquor (PA only)
- Large scale hydropower (certain restrictions apply)

Tier 2 - Energy derived from:

- Waste coal
- Distributed generation systems
- Demand-side management
- Large-scale hydropower
- Municipal solid waste
- Generation of electricity utilizing by-products of the pulping process and wood
- Integrated combined coal gasification technology



Solar Alternative Compliance Payment (SACP)

- For noncompliance with the solar photovoltaic requirements identified in § 75.61, an EDC and EGS shall make an alternative compliance payment equal to the following:
 - The average market value for solar photovoltaic alternative energy credits sold during the reporting period in the RTO control area where the noncompliance occurred.
 - Add to value in subparagraph (i), the levelized up-front rebates received by sellers of solar renewable energy credits, (calculated as follows: total amount of rebates paid within the previous 20 years, divided by the total kilowatt capacity for which rebates were given in the previous 20 years, divided by 20 (the useful life of a solar photovoltaic system), multiplied by the percentage of alternative energy used during the reporting period originating from jurisdictions where rebates were given.
 - Multiply the value in subparagraph (ii) by 200%.
- This established an SACP of \$550.15 for the 2009 Energy Year



Compliance Percentages



* The “Base” Tier I is increased quarterly due to Act 129 requirements. Solar PV is a carve-out from the Base Tier I percentage requirement

		Percent of Total Electric Sales		
Reporting Year	Time Period	Base Tier I*	Solar PV	Tier II
1	2/28/07 - 5/31/07	1.50%	0.0013%	4.20%
2	6/1/07 - 5/31/08	1.50%	0.0030%	4.20%
3	6/1/08 - 5/31/09	2.00%	0.0063%	4.20%
4	6/1/09 - 5/31/10	2.50%	0.0120%	4.20%
5	6/1/10 - 5/31/11	3.00%	0.0203%	6.20%
6	6/1/11 - 5/31/12	3.50%	0.0325%	6.20%
7	6/1/12 - 5/31/13	4.00%	0.0510%	6.20%
8	6/1/13 - 5/31/14	4.50%	0.0840%	6.20%
9	6/1/14 - 5/31/15	5.00%	0.1440%	6.20%
10	6/1/15 - 5/31/16	5.50%	0.2500%	8.20%
11	6/1/16 - 5/31/17	6.00%	0.2933%	8.20%
12	6/1/17 - 5/31/18	6.50%	0.3400%	8.20%
13	6/1/18 - 5/31/19	7.00%	0.3900%	8.20%
14	6/1/19 - 5/31/20	7.50%	0.4433%	8.20%
15	6/1/20 - 5/31/21	8.00%	0.5000%	10.00%



Act 129 Calculations for Tier I

- Newly defined Tier I resources report generation and certificate sales data on a monthly basis
- EDC and EGS report MWH sales on a quarterly basis
- Tier I percentage is increased based on the ratio of new available Tier I certificates to total quarterly EDC/EGS MWH sales
- The new Tier I calculation is added to the existing Tier I percentage
- This does NOT affect the solar percentage requirements



Act 129 Tier 1 Percentages

- New Tier 1 % for Q1 of EY2010
 - **2.5124027%** (inclusive of .012% solar)
- New Tier 1 % for Q2 of EY2010
 - **2.5168795%** (inclusive of .012% solar)



Demand Response and Energy Efficiency



- Demand Response and Energy Efficiency projects are reviewed on a case by case basis
 - An application is submitted to the program administrator with project details
 - The project is then reviewed and the number of certificates the project is worth is determined
 - Any additional documentation required will be requested



Solar hot water

- Solar Hot water only qualifies as an Energy Efficiency measure and is therefore a Tier II AEC
 - Must be replacing an electric hot water heater
 - Must have a way to measure the kwh saved as opposed to the BTUs



Aggregators vs. brokers

- Aggregators can represent facility owners to accrue and sell their AECs.
 - An aggregator will have an account in GATS
 - Each facility registered to the aggregator will have an individual certification number issued by the administrator
 - The certification number is then taken to GATS by the aggregator eliminating the need for the facility to have a GATS account
 - The facility owner or aggregator will submit a “Recognition of Assignment” through the website to demonstrate their contractual agreement
- Brokers represent owners but do not manage a facility
 - The broker matches up buyers and sellers
 - The facility owner will have a GATS account



Pricing as of EY 2009

Tier	Weighted Average Price	Price Range
Solar	\$260.19	\$225 - \$690
Tier I	\$3.65	\$0.50 - \$23
Tier II	\$0.36	\$0.20 - \$1.75

- Pricing as shown is per Megawatthour
- Variation in price is due to the market
- Each technology in Tier I and Tier II are given the same weight and are not treated as separate technologies.



Energy Year and true-up period

- The Energy Year runs from June 1 to May 31.
- The “true-up” period is from May 31 to Sept. 1
- On Sept. 1 all compliance documentation is shown to the state and the energy year is closed
- At the end of the true up period, the program administrator determines if all required AECs have been purchased and will determine any ACP payments



FAQs

- What makes a company need to comply with the Act?
- If I live in an area still under Rate Caps, can I still participate in the program?
- How many years can I generate credits and when do I need to sell them?
- Where can I find pricing information for Solar credits?



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