

Small Solar Hot Water Systems in the Massachusetts Alternative Portfolio Standard

The Alternative Energy Portfolio Standard (APS) provides an incentive to Massachusetts homeowners and businesses to install eligible alternative energy systems that lower greenhouse gas emissions and increase energy efficiency across the Commonwealth. The APS is a market based program that requires a portion of the electric load in Massachusetts be met via eligible technologies. Generation Unit owners receive an incentive by selling Alternative Energy Certificates (AECs), which they accrue based on their energy generation, to entities in Massachusetts with a compliance obligation.

Small (residential scale) Solar Hot Water (SHW) systems are classified as any system with a collector surface area of less than 660 sq ft

Solar Hot Water in the Alternative Portfolio Standard

SHW systems that meet all eligibility requirements determined by the Department of Energy Resources can become qualified to receive Alternative Energy Certificates based on the alternative energy their system generates.

Multipliers for Small SHW Systems

- A “multiplier” increases the number of AECs generated and allows all renewable thermal technologies to have a meaningful incentive
- SHW systems used only for domestic hot water needs receive a multiplier of 3
- SHW systems used for domestic hot water and space heating needs receive a multiplier of 1



What are Alternative Energy Certificates (AEC)?

- AECs represent the environmental attributes of energy generated by a renewable or alternative Generation Unit
- Every AEC represents 3,412,000 British thermal units (or 1 MWh equivalent) of net useful thermal energy
- Typically through an aggregator, system owners can sell AECs generated by their system in the market to receive a monetary incentive



How to Participate in the APS:

1. Have your system installed
2. Work with your installer and/or an aggregator to submit a Statement of Qualification to DOER*
3. Once approved, the AECs will be available to be sold into the market. An aggregator typically will sell the AECs for you and will send you a check based on the current market price for AECs

*Using an aggregator greatly simplifies the APS process and may help owners receive better prices for their AECs. Aggregators typically take a share of the AEC proceeds. Systems owners that opt to manage the APS process themselves should read the full regulations and guidelines.

Pre-Minting of AECs for Small SHW Systems

- While most systems qualified under the APS receive AECs on quarterly basis, small SHW systems qualify for pre-minting, which means each system owner will receive 10 years worth of AECs in the first quarter they are qualified
- The number of pre-minted AECs given to qualified systems is calculated based on the number of collectors installed, OG-100 or OG-300 rating, and the shading and orientation of the system
- The pre-minting of AECs allows the system owner to monetize all of the AECs upfront, rather than quarterly over the 10 years

Performance Ratings: OG-100 and OG-300

- All SHW systems qualified under the APS must be rated to either OG-100 or OG-300 performance standards
- OG-100 is for *individual* solar collectors and is reported in kWh/panel/day
- OG-300 is for solar collector *systems* and is reported in kWh/year for a specific geographic location

Example of the APS Incentive for a Small SHW System

Number of Collectors	Estimated Number of AECs per Year (including 3x multiplier)	Total AECs Generated (10 year value)*
2	14.7	147
3	22	220
4	29.3	293

AEC prices vary based on the market conditions. As of 2017, the estimated price of an AEC is \$20. Future price of AECs is subject to change. For a more in-depth assessment, please find our AEC calculator tool on the DOER website.

*The AEC generation will vary depending on site specific conditions such as number of collectors, orientation to the sun, and shading. These estimates are based off of systems installed at optimal azimuth and tilt with no shading.

For more information on the process of installing and receiving certificates for renewable thermal generation units contact: Thermal.DOER@State.ma.us or visit

<https://www.mass.gov/guides/aps-renewable-thermal-statement-of-qualification-application>

