

Renewable Thermal Technologies 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.



What are Alternative Energy Certificates (AECs)?

- AECs represent the environmental benefits 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
- Certificate prices are based on the market conditions and may fluctuate over time

Eligible Technologies

The following are the Renewable Thermal Generation Unit technologies eligible under the APS. Size thresholds are used to determine metering practices, multiplier values, and other programmatic details.

Technology	Summary	Size Thresholds
Solar Hot Water	Flat plates or evacuated tubes absorb sun-light and transform it into heat which is then added to the water, and this influx of heat warms it.	Small: Collector surface area < 660 sq ft Intermediate: Collector surface area 660—4,000 sq ft Large: Collector Surface Area > 4,000 sq ft
Solar Hot Air	Transpired Solar Air Collectors (TSAC) capture and transfer the sun's solar energy to heat a building.	Intermediate: Collector surface area < 10,000 sq ft Large: Collector Surface Area > 10,000 sq ft
Air Source Heat Pumps	An air source heat pump Generation Unit uses compression and evaporation to transfer thermal energy from the ambient outdoor environment to a thermal load as Useful Thermal Energy.	Small: Output Capacity < 0.134 MMBtu Intermediate: Output Capacity 0.134—1.0 MMBtu Large: Output Capacity > 1.0 MMBtu
Ground Source Heat Pumps	A ground source heat pump Generation Unit uses compression and evaporation to transfer thermal energy from the ambient underground or water environment to a thermal load as Useful Thermal Energy.	Small: Output Capacity < 0.134 MMBtu Intermediate: Output Capacity 0.134—1.0 MMBtu Large: Output Capacity > 1.0 MMBtu
Eligible Biomass Fuel	An advanced wood heating boiler or furnace utilizes eligible biomass fuel to provide heat. These systems are highly efficient, with low emissions, and support the use of local fuel sources.	Intermediate: Output Capacity < 1.0 MMBtu Large: Output Capacity > 1.0 MMBtu

How to Qualify for the APS:

1. Review your heating and cooling needs, budget, and existing heating and cooling infrastructure
2. Decide what technology is right for you and find an installer that is familiar with the APS and eligibility criteria
3. Install your system and begin generating clean heating and cooling energy
4. Find an aggregator or broker to complete your APS application and have your system qualified
5. Begin generating and selling AECs

Renewable Thermal Multipliers

- A “multiplier” increases the number of AECs generated and allows each renewable thermal technology to have a meaningful incentive
- Multipliers depend on system type and size
- AECs = Useful Thermal Energy (MWh) * Multiplier

Technology	APS Renewable Thermal Generation Unit multiplier		
	Small	Intermediate	Large
Active solar hot water systems used for domestic hot water	3	3	3
Active solar hot water systems used for domestic hot water, space conditioning, or process loads	1	1	1
Active solar hot air systems	-	5	5
Ground source heat pumps	5	5	5
Air source heat pump supplying less than 100% of building heating load	2	-	-
Air source heat pump – all other	3	3	3

**Biomass, biogas, and biofuel Generation Units are not considered non-emitting and are therefore are not eligible to receive a multiplier per M.G.L. Chapter 25A, Section 11F½(e) **

Key APS Program Terms

- **Generation Unit Owner:** The person who owns a qualified heating and cooling system and receives an APS incentive
- **Minted:** The term used for when an AEC is created
- **Aggregator:** A person or company who handles the process of qualifying Generation Units and manages the buying/selling of certificates on behalf of Generation Unit Owners (it is recommend that Generation Unit Owners work with an aggregator to simplify the APS process and receive the best price for their certificates)
- **Independent Verifier:** A person or entity who reviews and verifies all metering information to determine the number of AECs generated (Massachusetts Clean Energy Center is the pre-selected Independent Verifier for small Generation Units)
- **Production Tracking System (PTS):** An application hosted by the Massachusetts Clean Energy Center that is used to track renewable energy across the Commonwealth
- **NEPOOL GIS:** An online tool where AECs are minted and traded

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>

