



Alternative Portfolio Standard

Massachusetts

Program Description

Massachusetts' Alternative Energy Portfolio Standard (APS) offers residents, businesses, institutions, and public entities incentives for installing alternative energy systems such as combined heat and power (CHP). Although not renewable, CHP and other alternative energy systems contribute significantly to the state's clean energy and greenhouse gas reduction goals by increasing energy efficiency and reducing the need for conventional fossil-fuel-based power generation. Eligible facilities must submit a request to join the APS program and install monitoring and verification equipment to receive alternative energy certificates (AECs). AECs are sold by the generating facility every quarter for extra revenue, thus incentivizing deployment of clean energy technologies like CHP.

Although the APS includes many technologies, CHP systems generate nearly 100% of AECs. As of 2019, the APS program required that at least 4.75% of Massachusetts' power be produced by APS-registered technologies. The percentage of power produced by APS-registered technologies must increase by 0.25% per year, indefinitely.

Program Development

Year	APS Minimum Standard	Est. MW of Installed CHP	APS ACP Rate
2009	1.00%		\$ 20.00
2010	1.50%	64	\$ 20.00
2011	2.00%	92	\$ 20.40
2012	2.50%	121	\$ 21.02
2013	3.00%	148	\$ 21.43
2014	3.50%	177	\$ 21.72
2015	3.75%	205	\$ 22.02
2016	4.00%	215	\$ 22.00
2017	4.25%	226	\$ 22.23
2018	4.50%	237	\$ 22.64
2019	4.75%	249	\$ 23.13
2020	5.00%	261	

Table 1. Minimum standard and cumulative CHP demand

Massachusetts' APS was established in 2008 to increase energy efficiency and the deployment of clean energy technologies like CHP that were ineligible under Massachusetts' Renewable Portfolio Standard (RPS). Whereas the RPS supports more traditional renewable energy sources such as solar, wind, and hydroelectricity, the APS supports efficiency gains in thermal and electric production. Hence, the APS and RPS are synergistic programs helping to create Massachusetts' clean energy future.

Between 2010 and 2014, the APS minimum standard (i.e., the percentage of power produced by APS-registered systems) grew at 0.5% per year from 1.5% to 3.5%, representing an increase of about 27 MW per year. The APS minimum standard will be 5% in 2020 and will continue to increase by 0.25% per year (or 12 MW per year). APS-registered systems receive financial incentives by selling AECs at the market price, which fluctuates based upon supply and demand. The AEC upper price limit equals that year's alternative compliance payment (ACP) rate, which increases annually with the Consumer Price Index, as shown in Table 1.

In December of 2017, Massachusetts modified the program to include renewable thermal, fuel cells, and waste-to-energy thermal as eligible technologies.

Summary of Program Results and Outcomes

The APS-registered CHP capacity has far exceeded APS requirements. For example, there were a total of 91 APS-registered CHP systems operating in 2018 with an installed capacity of 445 MW, which was 88% greater than the state's

237 MW requirement. While most CHP systems utilize a natural-gas-fired turbine or engine, the standard supports other CHP technologies (such as fuel cells, woody biomass, and biogas produced through anaerobic digestion). In total, approximately 30% of Massachusetts' 351 cities and towns have CHP installations.

Complementary CHP Enabling Programs

In addition to Massachusetts' APS program, Massachusetts offers two complementary CHP enabling programs: Mass Save® and net metering.

Mass Save: This program's CHP initiative provides incentives between \$750/kW and \$1,200/kW to help offset the capital cost of installing a CHP system. Incentives are based upon the facility's implemented energy efficiency improvements, CHP system size, and CHP efficiency. Minimum eligible CHP efficiencies range from 50% to 65%, with more efficient CHP systems being eligible for larger incentives. Mass Save CHP Program incentives are capped at 50% of the total project costs.

Net Metering: Massachusetts requires investor-owned utilities (IOUs) to pay CHP customers retail electricity rates for any excess power generated. This practice, known as "net metering," offsets a customer's electric bill and makes CHP more attractive to prospective customers. Net metering is available for traditional CHP systems up to 60 kW; net metering of anaerobic-digester-gas CHP systems is available up to 2 MW.

Net metering is capped at 7% and 8% of each IOU's highest historical load for private and public facilities, respectively. Current caps for private and public facilities for each IOU are shown in Table 2. Very small facilities (*1-phase, < 10 kW; 3-phase, < 25 kW*) are exempt from the cap.

Distribution Company	Private Cap (7%)	Public Cap (8%)
National Grid Massachusetts Electric Company	359.17 MW	410.48 MW
National Grid - Nantucket Electric Company	3.50 MW	4.00 MW
Eversource East	348.46 MW	398.24 MW
Eversource West	59.78 MW	68.32 MW
Unitil d/b/a Fitchburg Gas and Electric Light Company	7.14 MW	8.16 MW

Table 2. Massachusetts IOU net metering caps

Resources:

- [Massachusetts Department of Energy Resources](https://www.mass.gov/service-details/statutes-regulations-and-guidelines)
<https://www.mass.gov/service-details/statutes-regulations-and-guidelines>
- [Mass Save Program](https://www.masssave.com/en/learn/business/combined-heat-and-power/)
<https://www.masssave.com/en/learn/business/combined-heat-and-power/>
- [Massachusetts Net Metering Guide](https://www.mass.gov/guides/net-metering-guide)
<https://www.mass.gov/guides/net-metering-guide>

For More Information

U.S. DOE NEW ENGLAND CHP TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)

www.nechptap.org

Date produced: June 2019

MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES RENEWABLE AND ALTERNATIVE ENERGY DIVISION

Michael Judge, Director, Renewable and Alternative Energy Division

617-626-7368

Michael.Judge@mass.gov

<https://www.mass.gov/orgs/renewable-energy-division>