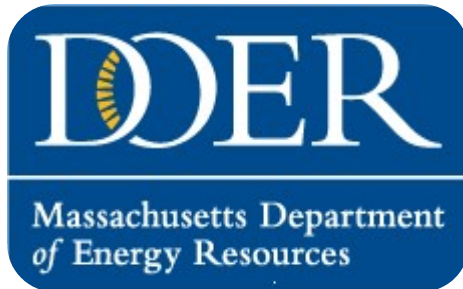


Creating A Cleaner Energy Future For the Commonwealth



COMMONWEALTH OF MASSACHUSETTS

Charles D. Baker, Governor

Karyn E. Polito, Lt. Governor

Matthew A. Beaton, Secretary

Judith Judson, Commissioner

**Massachusetts Clean
Energy Conference**

Worcester, MA

September 22, 2016

Renewable Thermal in the Alternative Portfolio Standard (APS)

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What is a Portfolio Standard?

- State program requiring a certain percentage of the in-state load served by Load Serving Entities (LSEs) come from renewable energy
- LSEs meet their yearly obligations by procuring Renewable Energy Certificates (RECs)
- One REC = 1 MWh
- Obligation typically expressed as percent of total electric load

Example:

Utility serves 1,000,000 MWh of load in 2016 and has an obligation to procure 10% of that through the purchase of RECs

$1,000,000 \text{ MWh} \times 0.10 = 100,000 \text{ MWh}$ (number of RECs they must procure)

Market Pricing

- Market driven
- State usually sets two variables:
 - Minimum Standard
 - Alternative Compliance Payment (ACP) Rate
- Minimum Standard refers to yearly percentage obligations placed upon compliance entities
- ACP rate is the price LSEs must pay for every MWh they are short of meeting their obligation

Renewable Thermal Energy in APS

- An Act Relative to Credit for Thermal Energy Generated with Renewable Fuels (S1970) was signed into law in August 2014
- Added to the Alternative Portfolio Standard:
 - “any facility that generates useful thermal energy using sunlight, biomass, bio-gas, liquid bio-fuel or naturally occurring temperature differences in ground, air or water”
 - 3,412,000 BTU = 1 MWh = 1 Credit (AEC)
 - DOER is writing standards for verification, efficiency, air emissions and sustainability

Eligible Technologies

- Air-source heat pumps
- Ground-source heat pumps
- Solar thermal
- Woody biomass
 - Pellets
 - Chips
- Liquid biofuel
- Biogas



Certificate Values

- Current market prices for Alternative Energy Certificates (AECs) are in the \$20/MWh range
- Credit multipliers have been proposed for the following technologies:
 - Air-source heat pumps (3x multiplier)
 - Ground-source heat pumps (5x multiplier)
 - Solar thermal (3x multiplier)
- Statute does not permit multipliers for biomass, biogas, or biofuels

APS Renewable Thermal Rulemaking

- Regulations filed on May 20th
- Public comments received through June 30th
- DOER is completing its review of comments
- Expects that amended regulation will be released for a second round of comments next month
- Following second revision to the regulation, DOER will file the regulation with the joint TUE committee for their review and comment
- Final regulation expected to be promulgated this winter