



**Environment, Energy, and Open Space  
CITY OF BOSTON**

August 7, 2017

Samantha Meserve  
Department of Energy Resources  
100 Cambridge Street  
Boston, MA 02114

Re: Proposed Revisions to the Alternative Energy Portfolio Standard Regulations;  
225 CMR 16.00

Dear Ms. Meserve:

The City of Boston is committed to the fight against climate change. Over half of the greenhouse gas (“GHG”) emissions that contribute to climate change from within our borders come from heating and cooling buildings. To meet Boston’s goal of becoming carbon neutral by 2050, as a community, we need to find ways to decarbonize our heating and cooling systems, and our electricity supply.

Boston is a designated Green Community, the American Council for an Energy-Efficient Economy #1 city in energy efficiency, and an early U.S. signatory of the Global Covenant of Mayors for Climate & Energy. For years, Boston has promoted residential energy-efficiency through Renew Boston program, and commercial energy efficiency through the Building Energy Reporting and Disclosure Ordinance and Mayor’s Carbon Cup. Boston is also an active participant in the Carbon Neutral Cities Alliance’s ‘Bringing Renewable Thermal Solutions to Scale in New England’ project, along with four other New England cities, exploring ways to promote technologies like air source heat pumps (“ASHP”) in the community.

Inclusion of ASHPs in the Alternative Portfolio Standards (“APS”) will help to accelerate the adoption of these technologies, as the Renewable Portfolio Standard has done for solar PV. State support for these technologies through the APS will be essential for implementing the necessary changes in our energy supply and use to achieve the City’s climate goals, which align with the state GHG reduction targets laid out in the Global Warming Solutions Act.

**Eligibility Criteria for Small Air Source Heat Pumps; 225 CMR 16.05(4)(e); draft p. 22<sup>1</sup>**

Of the renewable thermal technologies included in the draft APS regulation, ASHPs are particularly applicable for Boston, the most densely populated city in New England. For new construction, the draft regulations require that ASHPs classified as small generation units supply

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<sup>1</sup> 225 CMR 16.00. Draft APS Regulation. Retrieved through  
<http://www.mass.gov/eea/docs/doer/renewables/thermal/225-cmr-16-draft-aps-regulation-redline.pdf>.

100% of the building's total annual heating to be eligible for the APS. For retrofit applications, ASHP must supply at least 90% of total annual heating. 225 CMR 16.05(4)(e).

As we move towards strengthening our renewable energy mix, Boston supports incentivizing the full electrification of heating systems. We also recognize that partial systems may be a transition tool, building awareness and comfort with technology. Accordingly, we urge DOER to consider lower minimum percentages, at least initially, to help speed the adoption of ASHPs.

### **Heat Pumps Providing Cooling Energy; 225 CMR 16.05(1)(a)(6)(a)(i); draft p. 11 - 12**

The draft regulations provide that air-source and ground-source heat pumps will receive APS Alternative Energy Attributes ("Attributes") only when "operating in a heating mode." 225 CMR 16.05(1)(a)(6)(a)(i). Boston recently conducted a vulnerability assessment<sup>2</sup> that revealed Boston will face increased frequency and intensity of heat events in the summer. This will certainly lead to increased air conditioning usage in the summer, increasing the pressure on the electric grid absent high-efficiency cooling systems.

Boston encourages the DOER to make Attributes available for operation in cooling mode as well, although perhaps with a lower multiplier. While the ultimate goal may be heating electrification, providing Attributes for cooling energy would create an additional incentive to install heat pumps, which would then be used for both heating and cooling. Use of heat pumps for cooling increases energy efficiency when they replace window air conditioning units. As climate change progresses, Massachusetts will see a decrease in heating degree days and an increase in cooling degree days, placing more importance on the efficiency of cooling systems.

### **Bonus Multipliers for Installation in Efficient Buildings; 225 CMR 16.05(1)(a)(6)(b)(ii); draft p. 15**

Boston strongly supports the use of bonus multipliers for heat pumps installed in highly efficient residential buildings and Net Zero Energy commercial buildings. 225 CMR 16.05(1)(a)(6)(b)(ii). DOER should consider Passive House as another standard for bonus multipliers. To incentivize on-site production and resilience, bonus multipliers could also be given to buildings that install solar PV or storage along with heat pumps.

### **Advanced Minting of Attributes; 225 CMR 16.05(4)(d); draft p. 22**

Boston supports the option of advanced minting of Attributes for small systems. 225 CMR 16.05(4)(d)(1). This will remove the hurdle of metering for small system owners and also provide the option for an up-front rebate. However, discounting advance-minted Attributes based on the ratio of settled Attributes to the APS compliance obligation, 225 CMR 16.05(4)(d)(2), would be very confusing for small system owners and create uncertainty. DOER should modify these provisions to provide more certainty regarding the number of Attributes for which systems will be eligible.

### **Outreach and education**

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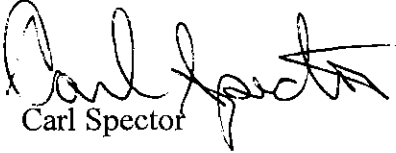
<sup>2</sup> City of Boston, *Climate Ready Boston* (Page 19 - "Extreme Heat")  
[https://www.boston.gov/sites/default/files/imce-uploads/2017-01/crb\\_-\\_focus\\_area\\_va.pdf](https://www.boston.gov/sites/default/files/imce-uploads/2017-01/crb_-_focus_area_va.pdf)

Even though ASHP technology has been widely adopted throughout the world, it has not yet penetrated the New England market and consumer knowledge of ASHP is relatively low. DOER should provide clear guidance to building owners regarding the incentive level available for different ASHP configurations. The APS regulation should be finalized in an expedient manner to support the needed transition to renewable thermal sources. To effectively support this transition, DOER should provide significant outreach and education to consumers, contractors, public officials, and other stakeholders so that the incentives can be clearly applied to technologies and building owners can make good decisions about their investments.

These comments were prepared in coordination with the City of Cambridge and the City of Somerville.

Thank you again for the opportunity to provide comments.

Sincerely,



Carl Spector

Commissioner of Environment Department

City of Boston