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SENT VIA ELETRONIC SUMBISSION

Ms. Samantha Meserve
Deputy Director, Renewable and Alternative Energy Division
Department of Energy Resources
100 Cambridge St., Suite 1020
Boston, MA 02114

RE: APS Review and Stakeholder Questions

Dear Ms. Meserve,

SRECTrade would like to provide commentary as it relates to the regulatory review of the Alternative Portfolio Standard (“APS”) Program in Massachusetts.

Leveraging our experience within the SREC and REC markets, SRECTrade has been heavily involved with the APS Program for distributed renewable thermal technologies. Since its effective date in January of 2018, SRECTrade has worked with renewable thermal system developers, owners, and installers on their participation in the APS. Throughout this time, we have also been communicating our experiences and observations with the Massachusetts Department of Energy Resources (“DOER”).

SRECTrade provides cloud-based services to the clean energy industry with an expertise in managing, transacting, and processing environmental incentives. The Company’s mission is to accelerate the adoption of renewable energy by providing services and technology that minimize the time, cost, and risk associated with achieving benefits and compliance in clean energy markets. SRECTrade provides agency management and technology solutions to 2.3 Gigawatts (GW) of renewable energy assets across more than 150,000 projects. With nearly half of its asset base located in Massachusetts, SRECTrade has experience operating within the state in tandem with market participants including electricity suppliers and energy utilities, clean energy project developers, installation companies, and individual commercial and residential asset owners.

SRECTrade applauds the DOER’s continued efforts to develop an effective incentive program to catalyze the decarbonization of heating and cooling throughout the Commonwealth. We are of the strong opinion that the APS program, if structured and implemented effectively, has the ability to become as robust and extensively utilized as the highly successful Solar Carve Out programs in the Commonwealth. That being said, our experiences with the APS program have shown that there remain significant adjustments necessary to bolster the efficacy and stabilize pricing in this incentive program.

Please see our answers to the questions proposed by the DOER below:

Do you believe the APS program should prioritize technologies which provide the most benefits, such as greatest greenhouse gas emissions reductions?

We believe the APS program should prioritize technologies that have measurable GHG emission reduction benefits, but that the DOER should also evaluate the economic impact of the adoption of a particular technology and the long-term viability of that technology. It is important to evaluate which technologies are most likely to survive in the marketplace long term, even when incentive levels are dropped.

SRECTrade firmly believes in the power of widespread, small-scale adoption leading to large environmental benefits. We saw this play out in the solar photovoltaic residential market over the past decade. With the help of a strong SREC program in the Commonwealth from 2010 to 2018, nearly 75,000 residential homeowners in the state installed solar on their homes, accounting for over 32% of the solar installed across the state and a similar portion of the environmental benefits. With a strong APS program in place, small-scale renewable thermal technologies can play an even bigger role in emission reductions. With the relatively strong AEC pricing we saw in 2018 and early 2019, the heat pump industry saw substantial business growth across the residential sector. The financial incentive provided by the APS coupled with the logistical ease of installation, allowed for rapid growth. There should be a more qualitative evaluation of different renewable thermal technologies and which ones have characteristics that allow for widespread adoption, such as minimal structural upgrades and other barriers to adoption. For example, is it more likely that ASHPs will dominate the heating and cooling market, or will solar thermal become the norm? If the conclusion is ASHP, then the incentive structure should accelerate the transition to that technology more than an existing technology which is unlikely to scale.

Is the current APS minimum standard and the annual rate of increase adequate? Please include details and any data supporting why or why not, where possible.

The market has been fundamentally oversupplied over the past 18-24 months and will remain so unless the DOER provides a meaningful change to supply eligibility or minimum standard stringency. We strongly recommend the omission (or carve out) of CHP and other large biogas projects in the program to help relieve supply-side pressure, but more so, recommend a restructuring of the minimum standard itself to ensure market and pricing stability for years to come. The primary reason why the market became oversupplied and pricing dropped is because of a select few, large projects that came online in late 2018 and 2019. This market oversupply was not driven by the investment decisions of a collective market, but rather a select few who decided to build large projects. This inefficiency sheds light on the importance of a minimum standard carve out and focus on small, disparate assets that represent a large and diverse group of investors and homeowners across the state. This focus will allow for a more predictable credit supply and would be more compatible with a fixed minimum standard schedule. It will also lead to more widespread adoption and geographically diverse emission reductions.

At the end of the day, the DOER should either aim for a slightly undersupplied market to ensure stable market value or increase the Alternative Compliance Payment (ACP) such that the value will remain relatively high even with a slightly oversupplied market.

Are there modifications to the APS program that could be made to reduce the volatility of the APS market?

In addition to the supply side changes mentioned and an increase in the minimum standard, there are several options for reducing volatility. One of the most straightforward options is to extend the eligibility of AECs from 1 to 3 years. This simple change would allow for oversupplied years to carry forward into years with higher minimum standards, eliminating the end of year “dumping” of AECs at the end of energy years. The current dynamic results in unnecessary price swings from one year to the next and is especially harmful to APS participants who receive pre-minted credits. Many participants have even held off on registering their APS assets to wait for a more lucrative energy year, further distorting the market. Another consideration to reduce volatility would be to establish a more dynamic minimum standard, much like the SREC-I and SREC-II programs, although this would likely need for a defined methodology to predict AEC supply each year (as was done in the SREC programs).

Has the APS incentive had an impact on the decision of system owners to invest in APS eligible technologies? Why or why not.

While there are some technologies like GSHPs which utilize the value to drive adoption, the vast majority of participants treat AEC revenue as a “bonus” and is not considered in the initial sale. Specifically, in the ASHP sector many participants are not aware of the APS program, or feel the value is not high enough to justify work needed to enroll. With a higher AEC incentive, investors would begin to incorporate this value into the decision-making process leading to more robust adoption.

How could the APS program be improved to better influence residential or commercial purchasing behaviors?

With a more valuable and stable market, residential and commercial entities will start incorporating APS values into their proposals and sales processes. In addition, eligibility and application requirement adjustments must be adjusted to expand eligibility and reduce the administrative burden. These are the two major hurdles industry participants site when choosing not to participate.

Are there currently eligibility criteria in the APS program that you believe are a barrier to participation in the program? How would you address these barriers?

Air Source Heat Pumps (ASHP)

For context, there are a few important factors to understand about the ASHP industry and its role in the APS market:

- Generally, ASHP installers are smaller companies with less resources and experience in incentive programs.
- A large majority of homeowners who install ASHPs keep their backup furnaces or boilers for emergency purposes.
- ASHPs are relatively non-intrusive installations with substantial efficiency benefits making them a very popular option for homeowners looking for more efficient thermal systems.

There are a few specific eligibility criteria for air source heat pump technologies that have hindered participation among ASHP installers and owners. We strongly recommend that the DOER consider amending these criteria to create a more efficient and accessible program to ASHP owners.

- 1. Non-renewable heating source must be removed when ASHP supplies 100% of building heat load & ASHP must have a capacity at 5 degrees Fahrenheit that is at least 50% of the name-plate capacity of the existing heating source equipment.**

Problem: This criteria has caused a great deal of uncertainty among ASHP installers and homeowners looking to take advantage of the APS program. As mentioned above, a vast majority of ASHP owners keep their backup heating system as an emergency during extreme weather days during the winter even when their ASHP heats 100% of the space in their home in all other instances. SRECTrade's installer partners have experienced a great deal of hardship in convincing homeowners to disconnect or fully remove their backup heaters in order to receive the full value of the APS program.

The true barrier to entry comes from the second portion of the backup system criteria in which it cannot be more than 2x the capacity of the ASHP. From SRECTrade's experience, over 90% of homes with ASHPs and a backup *do not* meet this size threshold requirement. Nearly all residential backup heating systems are oversized as outlined by one of our largest ASHP installer partners below:

Many homes aren't sized properly. In fact, nearly all homes we install systems into are improperly sized on the high end because of 2 reasons. Older systems are less efficient so they need higher BTU ratings to provide the heat necessary. For example, 100,000 btu system that's 72% efficient is putting out 72,000 btu's to the home. If you were to replace an old 20 year system with a new high efficiency system you'd be able to replace it with an 80,000 btu system in this same situation and get the same amount of BTU's into the home. The second reason is nearly every home we work in has insulation work done as we are a Mass Save Partner and we do the insulation work for the customer to save more money & environmental resources.

That [requirement] makes the assumption that every HVAC installation out there had a manual J heat load calc done when installed, and in the past 30 years there's been no energy efficiency work done in the home.

As a consequence of this barrier to entry, nearly half of otherwise eligible, small ASHPs do not participate in the program.

Recommendation: SRECTrade strongly recommends the DOER strike the 50% capacity requirement altogether. While the DOER's desire to eliminate fossil fuel heating systems from these homes is reasonable given the macro-level mission of the program, this requirement is misaligned and misguided. Those homeowners that have taken strides to become more energy efficient and install ASHP systems in their homes should be rewarded. Even if their backup system still exists and does not meet the 50% requirement, they should not be treated the same as their counterparts who have declined to make that same environmentally conscious investment. SRECTrade also recommends that the DOER allows ASHP homeowners to qualify as a 100% heating load provider, even if they have a backup system. This rewards the initial ASHP investment and allows for a simplification of the process for resource-strapped ASHP installation companies.

- 2. Be used as a primary heat source, providing at least 90% of the total annual heating load.**

Problem: As stated previously, ASHP installations are much less sophisticated and technical than some other renewable thermal technologies. As outlined by our installer partner above, very few residential ASHP installations include a Manual J load calculation and, as such, an exact load assessment of the home is hard to quantify. This has led to a more qualitative approach to home load evaluations, as the only means to determine ASHP supply and qualification for APS.

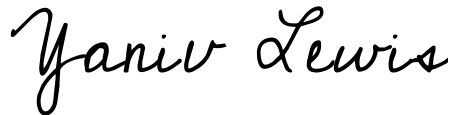
Solution: SRECTrade recommends the DOER create a more simple and inclusive mechanism for determining ASHP load supply multipliers. We recommend the DOER determine a ratio of rated capacity to conditioned square footage which acts as the threshold to meet for qualification to meet the 90% requirement. If the ratio is within a certain deviation below that threshold, the system can submit further data which can be evaluated on a case-by-case basis. This will allow for an easy rule-of-thumb that ASHP installers can easily use to determine whether their customer qualifies for the APS program.

Is there any additional information you believe DOER should consider in its 2020 APS Minimum Standard Review?

1. SRECTrade would like to make note that a large number of homeowners have made the decision to postpone their application to the APS application over the past two years in hopes that AEC pricing appreciates due to a regulatory review. We would like to remind the DOER of this to ensure that these folks remain eligible for the APS program regardless of any additional requirements or timing thresholds that come about as a result of the review process. If there are specific steps that these system owners would need to take to ensure their eligibility, we strongly suggest the DOER communicate this with the market beforehand so that these individuals can retain eligibility within the program.
2. SRECTrade has worked extensively with residential heat pump installers to participate in the APS program and offer the incentive to their customers. The most notable hurdle we have encountered is the apathy amongst installation companies to participate in the administrative components of the program and offer its benefits to their customers. Based on conversations with an array of different installers, there are a few simple and correlated explanations for this complacency:
 - ***Time Constraints*** - Many of these HVAC (heat pump) installation companies are small firms employing only a few people, with much of their time devoted to field work and physical installs. These firms do not have the resources to process additional paperwork.
 - ***Incentive Value*** – Installation companies do not have enough monetary incentive, themselves, to participate in the APS program and expend the additional resources necessary to complete application paperwork.
 - ***Education/Communication*** – Nearly all HVAC installation companies in Massachusetts participate in the Mass Save Loan Program and MassCEC Rebate Program and have incorporated the accompanying application paperwork into their workflow. Many firms confuse the APS program for one of the other two and dismiss the APS program as a redundant or irrelevant opportunity.

If the DOER worked with MassCEC to leverage data from rebate applications to shorten the APS application, renewable thermal installers would be much more inclined to submit APS applications and participation rates would increase substantially.

Respectfully,

A handwritten signature in black ink that reads "Yaniv Lewis". The script is fluid and cursive, with the first letters of each word being capitalized and prominent.

Yaniv Lewis
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SRECTrade, Inc.

A handwritten signature in black ink that reads "Tom MacKenty". The script is fluid and cursive, with the first letters of each word being capitalized and prominent.

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