



December 4, 2020

Sent via electronic correspondence to doer.aps@mass.gov

Eric Steltzer
Director, Renewable and Alternative Energy Division
Massachusetts Department of Energy Resources
100 Cambridge Street, 10th Floor
Boston, MA 02114

RE: Comments in Response to the Alternative Energy Portfolio Standard Program Review

Dear Mr. Steltzer,

The Medical Area Total Energy Plant (“MATEP”) appreciates the opportunity to provide comments relating to the Department of Energy Resources’ Alternative Energy Portfolio Standard Program review. Enclosed are MATEP’s comments and recommendations for your consideration.

Sincerely,

/s/ Sarah Bresolin Silver

Sarah Bresolin Silver
Director, Government and Regulatory Affairs
Engie North America, Inc.



**COMMENTS OF MATEP, LLC ON THE
MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES' REVIEW OF THE
ALTERNATIVE ENERGY PORTFOLIO STANDARD**

I. INTRODUCTION

MATEP, LLC is pleased to submit these comments in response to the Department of Energy Resources' (Department) November 5, 2020 request for public comment related to the Department's review of the Alternative Energy Portfolio Standard (APS).

The Medical Area Total Energy Plant (MATEP) facility, is a combined heat and power ("CHP") plant, electricity microgrid and district heating and cooling network serving the needs of six Harvard-affiliated hospitals in the Longwood Medical Area.¹ The facility is co-owned (with Axiom Infrastructure) and fully operated by ENGIE North America, Inc. (ENGIE), a global energy company and reference in low-carbon energy and energy services with a mission to accelerate the transition towards a carbon-neutral world. ENGIE is a principal player in sustainable heating networks fed from renewable sources or waste heat and in highly efficient cooling networks. Co-ownership and operation of MATEP is a testament to the work ENGIE is doing to accelerate the transition to carbon-neutrality in the Commonwealth.

The APS program was established in January 2009 pursuant to the *Green Communities Act of 2008* to provide businesses, institutions, and government entities in Massachusetts with an incentive for installing eligible alternative energy systems. These systems contribute to the Commonwealth's clean energy goals by "increasing energy efficiency and reducing the need for conventional fossil fuel-based power generation."²

Over the past ten years the APS program has, and continues to, fulfill its purpose by successfully incentivizing the development, investment and adoption of technologies that lower carbon emissions from energy generation in Massachusetts. This is particularly true for CHP facilities. ENGIE's ownership and

¹ The six medical institutions are Beth Israel Deaconess Medical Center, Boston Children's Hospital, Brigham and Women's Hospital, Dana-Farber Cancer Institute, Harvard Medical School and School of Public Health and Joslin Diabetes Center.

² "Alternative Portfolio Standard" DOER Website see <https://www.mass.gov/service-details/program-summaries>.

operation of the MATEP facility provides us with the experience to speak to the APS program's successes as well as make recommendations for program changes. For the reasons discussed below, it is essential that the Department retain CHP eligibility for participation in the APS program.

II. ABOUT MATEP

In 2018, ENGIE and Axium Infrastructure, operating jointly as Longwood Energy Partners ("LEP"), acquired MATEP. MATEP, a microgrid and district energy system is integral to the day-to-day operation of several world-renowned medical facilities, which are active in critical research initiatives and have approximately 2,000 hospital beds serving more than 100,000 inpatients and 2.4 million outpatients annually. District energy networks are ideal for the energy needs of critical institutions because they are among the most efficient, reliable, and cost-effective ways to provide energy security while improving sustainability.

ENGIE's 35-year service agreement provides central plant management for the six main facilities. The agreement includes the microgrid, with a capacity to produce 99 MW of electricity, 1,100,000 lbs./hr. of steam, and 42,000 tons of chilled water, serving an 11.2-million-square-foot district heating and cooling network in 74 buildings.

MATEP is vastly more efficient than the electricity MATEP customers would otherwise draw from the electricity grid. For example, the efficiency of MATEP is approximately 65 percent compared with the overall Independent System Operator for New England's ("ISO-NE") system efficiency of approximately 40 percent. Further, on the portion of MATEP that qualifies for APS treatment, MATEP produces 110 percent of the energy that it consumes. MATEP remains vital to the customers it serves and continues to be both deserving of and reliant on support from the APS program to maximize results for its investors, customers and for Massachusetts ratepayers.

III. RESPONSE TO QUESTIONS

Questions 1 and 2.

What are the benefits of the APS program to ratepayers, including but not limited to economic, environmental, and societal benefits?

What are the costs of the APS program to ratepayers, including but not limited to economic, environmental, and societal costs?

Over the past ten years the APS program has benefited ratepayers in several ways. Primarily, the APS program is reducing the amount of carbon in the environment by reducing electricity purchased from ISO-NE. The program achieves this goal by encouraging the development of innovative new technologies and supporting generation owners' investment in new technology adoption. The APS continues to successfully fulfill its mandate by incentivizing the development of improved technologies for CHP plants that both reduce costs and carbon emissions for ratepayers. The APS also provides CHP plants with an additional economic incentive to make significant financial investments to retrofit existing plants with more advanced technology.

For example, several years ago the APS program assisted the MATEP facility in making the decision to install a new state-of-the-art natural gas fired combustion turbine ("CT") generator. The CT is highly efficient and has significantly reduced the need to run MATEP's diesel engines. The steam byproduct has been put to productive use serving the thermal needs of the Longwood complex of hospitals and research facilities. MATEP's decision to invest in newer, cleaner technology at that time was predicated, in part, by the incentive support for the beneficial use of waste heat provided by the APS program. Ratepayers are receiving benefits in the form of more cost effective and cleaner energy generation which outweighs the cost burden of its AECs.

The APS program, like any renewable portfolio standard ("RPS") program or state incentive program imposes a financial burden on ratepayers. However, there is sound policy reasoning behind imposing certain types of financial burdens such as advancing the Commonwealth's climate goals and socializing costs across the ratebase given that the benefits accrue to the entire population. Without CHP facilities, communities would likely be relying on older, dirtier and less efficient generating equipment.

Further, the financial burden associated with the APS program is proportionately less than other RPS programs. There are currently eight RPS programs in the Commonwealth. The maximum RPS cost to ratepayers for all the RPS programs combined is approximately \$31.13/MWh. The APS program ranks as the third least expensive program in the Commonwealth. The maximum cost of the APS is approximately \$1.17/MWh,³ a fraction of the \$31.13/MWh ratepayer burden for all of the Commonwealth RPS programs. In comparison, the Solar Renewable Energy Credit Program (“SREC”) I and SREC II programs account for approximately \$18.20/MWh of the total \$31.13/MWh while another \$9.72/MWh is the burden for the various Class I RPS programs. These RPS programs are far more expensive than the APS program, costing nearly six times more than APS program as a percent of RPS load served.⁴ Thus the APS program provides a strong counterbalance to any burden borne by Massachusetts ratepayers and has successfully encouraged the development of CHP facilities.

Question 3. Do you believe the APS program should prioritize technologies which provide the most benefits, such as greatest greenhouse gas emissions reductions?

The APS program does not need to prioritize technologies to maintain its successful implementation. The program has effectively incentivized the adoption of many different technologies that reduce greenhouse gas (GHG) emissions. As the Commonwealth works towards meeting its 2050 climate goals it will become increasingly important that CHP facilities continue to operate and do so in an increasingly efficient and clean manner. CHP facilities will have a difficult time continuously improving operations without the support of the APS program.

Question 4. From 2015 through the present, what have been the average quarterly Alternative Energy Certificates (AEC) sale prices?

In Table 1 below, MATEP lists the average quarterly AEC sale prices from February 15, 2015 through November 15, 2020. The table shows that AEC prices tracked very closely to the ACP until the second quarter of 2018. During the second quarter of 2018 AEC prices dropped from 98.4 percent of the

³ \$1.17/MWh is the maximum cost burden that the APS could impose on ratepayers. Currently, due to the very low AEC price, hovering at about 12 percent of the ACP, the actual cost burden is closer to \$0.14/MWh.

⁴ The APS requirement covers 5% of the Massachusetts RPS load and cost \$1.17/MWh while these RPS programs cover 20% and costs \$27.92/MWh.

ACP to 67.5 percent of the ACP because of disruptions to the market. Revised APS regulations were promulgated in 2017 which expanded eligible technologies to include fuel cells, waste-to-energy thermal facilities, and a suite of heat transfer, combustion, and heat pump technologies. The most impact came from 420,000 AECs from liquid biofuels sources being minted in one quarter and that heat pumps receive 40 quarters of credit upon being placed in service.

A second market disruption occurred in 2019 and was due to the bankruptcy of multiple retail electricity suppliers. The residual effects of these bankruptcies continue to plague the market with many banked AECs.

Table 1. MA APS average quarterly AEC sale prices 2015-2020.⁵

Date	Price (\$)	ACP (\$)	Price As % of ACP	Compliance Year
2/15/2015	21.01	22.02	95.4%	2015 Year
5/15/2015	21.01	22.02	95.4%	
8/15/2015	21.01	22.02	95.4%	
11/15/2015	21.01	22.02	95.4%	
2/15/2016	21.01	22.02	95.4%	
5/15/2016	21.01	22.02	95.4%	
8/15/2016	21.25	22.00	96.6%	2016 Year
11/15/2016	21.25	22.00	96.6%	
2/15/2017	21.50	22.00	97.7%	
5/15/2017	21.50	22.00	97.7%	
8/15/2017	21.87	22.23	98.4%	2017 Year
11/15/2017	21.87	22.23	98.4%	
2/15/2018	21.87	22.23	98.4%	
5/15/2018	15.00	22.23	67.5%	
6/5/2018	14.50	22.23	65.2%	
8/15/2018	15.25	22.64	67.4%	2018 Year
11/15/2018	17.88	22.64	79.0%	
2/15/2019	18.50	22.64	81.7%	
5/15/2019	18.63	22.64	82.3%	

⁵ Source BGC Environmental Markets.

6/5/2019		15.50		22.64		68.5%	
8/15/2019		N/A		23.13		N/A	2019 Year
11/15/2019		13.00		23.13		56.2%	
2/15/2020		5.25		23.13		22.7%	
5/15/2020		2.38		23.13		10.3%	
6/5/2020		1.90		23.13		8.2%	
8/15/2020		5.50		23.50		23.4%	2020 Year
11/15/2020		3.00		23.50		12.8%	

Questions 5, 6 and 7.

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.

Do you anticipate a growth or decline in the supply of AECs in the APS program over the next 5 years? 10 years? If so, how would you quantify this increase in growth rate? Please include details and any data supporting your conclusions.

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

The APS market has experienced volatility over the last few years largely for the reasons discussed in MATEP's response to Question 4 above. Additionally, however, the lack of regular reporting continues to weaken the fundamental understanding, transparency and health of the program.

MATEP recommends that the Department consider several modifications to the APS program to reduce the volatility and increase the effectiveness of the APS market and program.

1. Increase the Minimum Standard annual percentage rate. Currently the Minimum Standard increases by 0.25% per Compliance Year. The Department should consider raising the annual increase by 0.25% to 0.5%, which would be in line with the Minimum Standard annual increase rate in place from 2009 to 2014. In addition, the Department should adjust the Minimum Standard annual percentage rate if new technologies are qualified to participate in the program. Finally, in years of surplus the Department should consider raising the required compliance percentage for the subsequent year.⁶ In the last two recommendations, as long as regulations are

⁶ A similar feature to that of the SREC programs.

applied prospectively and do not impact pre-existing electricity supply contracts, both consumers and suppliers can prepare for the regulatory changes.

2. Qualify new resources with minimal impact on the APS market. The Department should prioritize the health of the APS market and maintain market predictability by not qualifying or disqualifying large numbers of resources all at once.
3. Implement APS compliance mechanisms akin to those in the SREC I and II programs. The Department should consider adopting several aspects of the SREC I and II programs. For example, the Department should allow for the carryover of AECs into the subsequent year if the current year is oversupplied.
4. Set a floor price for AECs. The Department should consider setting a floor price at a value that is sufficient to structure a sustainable market.
5. Publish the Annual Compliance Reports for the APS program in a timely manner. MATEP believes that timely reporting of the prior Compliance Year results to LSEs and Generators is critical to making the APS and the other RPS programs function better.

Any consideration of changes to the APS program must keep the interests of both consumers and APS resource providers in mind. While interest in renewable and alternative resource contributions to carbon reduction initiatives continue to evolve, a gradual glide path to implementing any changes to market structures would be used. A transparent and multi-year schedule of requirements and costs is critical for both sides to budget and support the Commonwealth's sustainability goals.

MATEP is available to discuss any of the above recommendations further and looks forward to engaging with the Department to enhance the APS program.

Question 8. Has the APS incentive had an impact on the decision of system owners to invest in APS eligible technologies? Why or why not?

The APS incentive has been instrumental to the investment decisions made regarding the acquisition and operation of the MATEP facility. MATEP continues to rely on and make investment decisions based on the continued existence of the APS program and the ability to generate and sell AECs.

Likewise, for others, with the APS program providing a reliable financial incentive, CHP facility owners can more successfully implement technological upgrades and remain key partners in the Commonwealth's transition to zero net carbon.

The report conducted by Daymark Energy, LLC ("Report"), which the Department commissioned in 2019 to obtain an independent analysis of the APS program, appears to assume that CHP facilities in the Commonwealth would have been developed and built without the APS program. The Report also challenges the rationale behind valuing CHP facilities as part of the APS program. However, the Report's assumption that CHP facilities would have been built and upgrades made without the APS is categorically incorrect. MATEP's responses to the above questions demonstrate that the APS program has played a pivotal role in the deployment and continuous upgrading of CHP facilities.

The APS program resulted from sound policy making by state legislators to move to cleaner, more efficient power generation facilities. Industry responded to the legislators' policy choices and priorities by developing CHP plants that support the Commonwealth's climate goals. Any changes to the APS program that would undermine current and future investments will have a drastic impact, not only on the ability to roll out technological and other upgrades, but threaten the investment that investors and ratepayers, alike, have already made developing this highly effective, carbon-efficient method of generating energy.

IV. CONCLUSION

MATEP thanks the Department for the opportunity to comment on the APS program's successes and to make reasonable and sensible recommendations to improve the program. The APS program's support of CHP facilities has been both a policy and an environmental triumph for ratepayers and facility owners alike and should be not only preserved but strengthened in the next phase of the program.