

December 4, 2020

Ms. Samantha Meserve

Department Of Energy Resources

100 Cambridge Street, Suite 1020

Boston, MA 02114

**RE: 2020 APS Minimum Standard Review Stakeholder Questions**

Dear Ms. Meserve,

I would like to take this opportunity to provide you with answers and back-up information to the Stakeholder Questions in support of continuing and extending Massachusetts DOER’s Alternative Energy Portfolio Standards (APS) program. The Alternative Energy Credits that are currently available mean great deal to clean, alternative electricity producers like ourselves that provide power either as a demand response, peak shaving for municipal electric operating utilities or as a base load, market asset on the grid itself. We are very focused on clean and efficient ways to produce energy.

ESG Clean Energy is a high-tech thermodynamic company that specializes in developing clean energy systems for distributed power generation. Thermodynamics is the study of converting energy from one form into another. ESG’s projects generate clean electric power for the electric grid while recovering waste heat to produce low-cost, low carbon commodities, and capturing the vast majority of the carbon dioxide (CO2) emissions.

ESG Clean energy develops distributed power generation projects to help meet growing demand for reliable, low-cost energy, while working to protect the environment. With a distributed power grid we reduce the risk against man-made or natural disasters, and our investment strategy provides investors with a socially responsible investment option with compelling returns.

Our business principles are based on the notion that environmental, social and governance (ESG) issues, such as climate change and human rights, can affect the overall business performance of generating energy, protecting the environment and manufacturing products that are essential to our everyday life. As we embrace new and exciting methods of creating energy, storing energy, manufacturing commodities and reducing the carbon footprint, we hope that in some small way, we are doing our share to protect the environment and stave off climate change for generations to come.

**Questions and Answers**

1.What are the benefits of the APS program to ratepayers, including but not limited to economic, environmental, and societal benefits? **As power producer selling electricity “behind the meter”, the “utility” can better forecast both residential and commercial rates, allowing for rate stabilization to drive economic development. Also, we create good paying local jobs. In all instances our 5MW plants create 12-16 jobs across two shifts per day. From an environmental impact, during the production and generation of up to 60MWs of electricity and commodity manufacturing, we capture and sequester close to 100% of the Carbon Dioxide (CO2) from the exhaust. “Net Zero Carbon Footprint” We focus on being stewards of the environment and use patented technologies and “off-the-shelf equipment” to stave off climate change and reduce the carbon footprint of both the power generation and manufacturing processes.**

2. What are the costs of the APS program to ratepayers, including but not limited to economic, environmental, and societal costs? **Please refer to the attached “Commodity Production Synopsis”.**

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

4. From 2015 through the present, what have been the average quarterly Alternative Energy Certificates (AEC) sale prices? **The average sales price going back to 2009 was $20.00 to approximately $23.00 in FY 2019.**

5. Is the current APS minimum standard and the annual rate of increase adequate? **Yes** Please include details and any data supporting why or why not, where possible. **The % Minimum Standard provides revenue to help offset investment in technologies that makes CHP and the like more efficient.**

6. Do you anticipate a growth or decline in the supply of AECs in the APS program over the next 5 years? 10 years? **We, ESG Clean Energy would anticipate steady growth for the next 10 years**. If so, how would you quantify this increase in growth rate? **There are new technologies that are being implemented across a variety of Natural Gas/Diesel/Heavy Fuel Oil Reciprocating Internal Combustion Engine (RECIPs) generators and natural gas turbines that substantially reduce green-house gas emissions.** Please include details and any data supporting your conclusions**. Please refer to the attached “Commodity Production Synopsis.”**

7. Are there modifications to the APS program that could be made to reduce the volatility of the APS market? **No, let the market drive the price and maintain the current percentage of minimum standard index through 2029 and beyond until 2040.**

8. Has the APS incentive had an impact on the decision of system owners to invest in APS eligible technologies? Why or why not. **Yes, without a doubt. GE, SEIMENS, Caterpillar, Wartsila and a whole host of engine generator manufacturers and ancillary equipment manufacturers have been investing resources on making their equipment more efficient. Power producers then purchase that equipment with a keen eye on raising efficiency and cutting emissions. While renewables (solar & wind), fuel cells and battery storage technology rely heavily on taxpayer and government subsidy to make their projects viable and recoup investment.**

9. How could the APS program be improved to better influence residential or commercial purchasing behaviors? **By showcasing off-the-shelf, new or emerging equipment and technologies that have a combined efficiency greater than 60 - 70% and a reduced carbon footprint.**

10. Are there currently eligibility criteria in the APS program that you believe are a barrier to participation in the program? **No** How would you address these barriers? **N/A**

11. What revisions to the existing APS eligibility criteria would you propose to improve and simplify the APS program, if any**? None at this time, however increasing the sunset provision out to 2040 would increase investment for those looking to build new or upgrade existing electrical generation and power plant capacity.**

12. Is there any additional information you believe DOER should consider in its 2020 APS Minimum Standard Review? **Yes, keep the overall efficiency greater than 60%, show rate stabilization, extend a “bonus” for the capture and sequestration of close to 100% of the CO2, focus on the reduction of the carbon footprint for the production/generation of electricity, call for job creation and sustained job growth, call for “brownfield” rehabilitation and the overall use as an economic development driver to attract business and industry to a given locale. Also, the possible implementation or expansion of Carbon Tax Credits for power producers that burn natural gas, diesel or heavy fuel oil for their reduction of CO2 emissions.**

ESG Clean Energy, uses traditional Combined Heat & Power (CHP) methods to produce power for the grid. Unlike, most CHP systems where the load follows the need of the user, we run wide open, in a steady state that maximizes efficiency 16 hours a day, 340 days a year, selling the electricity behind the meter or as an asset on the grid. We capture and use 100% of the waste heat, and from the exhaust we condense distill water and sequester close to 100% of the Carbon Dioxide (CO2). ESG Clean Energy is a clean energy electricity produces with close to a “net zero” carbon footprint. That same waste heat is used to produce a variety of products, all of which maintain a “net zero” carbon footprint.

For any additional information on our technology, please refer to our website [www.esgcleanenergy.com](http://www.esgcleanenergy.com). You will find information regarding our “Inverted Brayton Cycle” patent. There is also a white paper published by Bath University which validates our technology.

I hope this information is found to be useful and answers your questions.

If you have any questions, please contact me at your earliest opportunity. ESG Clean Energy is available to answer any questions and offer both written and verbal testimony.

Be well and stay safe.

Regards,

Olen

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