

February 5, 2019

Judith Judson, Commissioner
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: Response to Clean Peak Standard Stakeholder Questions

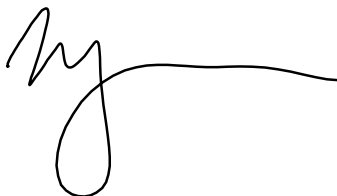
Dear Commissioner Judson:

The Energy Storage Association (“ESA”) appreciates the opportunity to provide these comments in response to the Clean Peak Standard (“CPS”) stakeholder questions issued on January 15, 2019.

ESA is the national trade association dedicated to energy storage, working toward a more resilient, efficient, sustainable and affordable electricity grid – as is uniquely enabled by energy storage. With more than 170 members, ESA represents a diverse group of companies, including independent power producers, electric utilities, energy service companies, financiers, insurers, law firms, installers, manufacturers, component suppliers and integrators involved in deploying energy storage systems around the globe.

In our comments below, ESA provides responses to questions related to technology eligibility, determination of peak periods, and minimum standard requirements. ESA proposes a technology-neutral path to demonstrating eligibility that aims to capture the benefits of a straightforward program design while meeting the policy objectives of the CPS program. ESA also provides initial comments on the process for determining the CPS program targets.

Respectfully,



Nitzan Goldberger
State Policy Director
Energy Storage Association

I. INTRODUCTION

ESA appreciates the opportunity to provide the following responses to the questions outlined by the Department of Energy Resource (DOER) on the development and design of the Clean Peak Standard (CPS) program as required by Chapter 227 of the Acts of 2018. ESA's responses to the questions on the implementation of the Clean Peak Standard are animated by the following key design principles:

- *Program design should be technology neutral to the extent possible.* A wide variety of resources are able to contribute to the stated goal of reducing greenhouse gas emissions and ratepayer costs during peak hours. As such, the program design should focus on those two key objectives, allowing all technologies to participate so long as they demonstrate they are supporting those objectives. This will ensure the lowest cost for ratepayers. In our comments, ESA provides some recommendations on how to advance a program design that can achieve this principle.
- *Initial program design should aim for simplicity.* While the Clean Peak Standard program is based on a complex and dynamic set of inputs, the design of the program should focus on creating a straightforward program. Program evaluation and review should be incorporated to the implementation, allowing for an assessment of the program every few years to determine whether any unintended consequences arise from the initial program design. At that point, it may be appropriate to introduce separate programs or reforms that can complement and correct any issues.
- *There are several ways to demonstrate clean peak eligibility without being co-located with a renewable generator.* The goal of greenhouse gas reductions will be met more effectively, along with other grid benefits such as clearing areas of congestion, if the program is designed in a way that provides resources with several ways to demonstrate they are reducing greenhouse gases, rather than exclusively narrowing the opportunity to co-located resources. This is particularly important considering ongoing uncertainty at the ISO-NE in terms of rules for co-located resources and metering requirements for certain programs. Limiting the eligibility to resources that charge directly from a renewable generator not only potentially compromise the greenhouse gas reduction objective of the program but will greatly reduce the number of resources participating in the program, leading to higher costs for ratepayers.

Finally, ESA notes that some for some of these questions, additional information and analysis is required before we can provide a robust response. ESA recognizes the time constraint imposed on the DOER by the statute, but respectfully submits that stakeholders will need additional data to make recommendations for some of the questions below. Most notably, additional information on which hours have the greatest greenhouse gas impact and highest ratepayer costs (and whether they are aligned or separated) will largely inform stakeholders in determining what the tradeoffs are and how to inform the development of the peak periods.

II. RESPONSES TO QUESTIONS

Clean Peak Resource

1. **Should only resources interconnected to the electric distribution system be eligible to qualify, or should resources connected to the transmission system also be eligible to qualify?**

ESA respectfully submits that eligible clean peak resources should include transmission connected resources in addition to distribution connected resources. The Clean Peak Standard in its very design aims to facilitate deployment of resources that are able to increase clean energy deliveries during peak hours, and both transmission-

connected and distribution-connected resources can serve the purpose of reducing emissions during peak hours. In fact, the CPS program is intended to compliment and supplement the *Commonwealth's* Renewable Portfolio Standard (RPS) and mirrors the program by applying to electric resource providers. RPS Class I resources, which are eligible resources under the CPS, can be transmission-connected as well as distribution-connected. In addition, there is a sound public policy reason for allowing resources connected to both the distribution and transmission system to participate in this program. The greater number of resources available for this program, the less the cost of compliance for ratepayers will be and therefore the greatest greenhouse gas and cost reduction benefits.

2. Should DOER interpret the use of the term “electric distribution system” to mean that only facilities on the electric distribution system in the Commonwealth should be eligible to qualify as clean peak resources under the CPS? Should the CPS also include all distribution and/or transmission level resources connected in the ISO-NE control area? Should it include adjacent Control Areas such as NYISO, Quebec, or New Brunswick?

Since the peak the CPS program aims to address is based on system peak, resources qualification should be limited to resources within the footprint of the peak. As such, it is appropriate to limit participation to resources within the ISO-NE, and not adjacent control areas such as NYISO, Quebec, or New Brunswick.

Demand Response Resource

3. What types of resources should be included in this definition?

The treatment of eligibility for demand response should be like that of other resources. ESA respectfully urges the DOER to take on a technology neutral approach, allowing resources that meet the definition of demand response to demonstrate that they are meeting the greenhouse gas emissions goals of the program. Standalone energy storage resources and thermal storage are able to behave like demand response and should therefore be included under the definition. It may be appropriate to create a baselining methodology for certain resources seeking to participate as demand response to understand their impact on cleaning the peak and therefore their ability to receive compensation through the form of clean peak certificates.

Just like qualified energy storage resources, ESA believes that a simple and straightforward approach should be taken to ensure that participating demand response resources are reducing greenhouse gas emissions at the time of the peak while not adversely impacting emissions at other times. Each eligible resource should be able to meet *one* of the following three criteria in order to obtain a clean peak certificate for 1 MWh of avoided load or discharged electricity.

- (1) The resource is co-located with a renewable energy generator.* For demand response, ESA proposes that any technology be able to demonstrate that it charged or used the same number of MWhs from the renewable generation during that billing period as the MWh of clean peak certificates it is receiving, and that those RECs are being retired without compensation. It may be appropriate at a later time to introduce more granular metering and reporting requirements, but ESA contends that for the initial program design, simpler reporting requirements are appropriate.
- (2) Retire an eligible REC without payment to demonstrate eligibility.* ESA proposes that any demand response resource that can retire a Class I RPS eligible REC without compensation for every 1 MWh of clean peak certificates it obtains is just as effective from a greenhouse-gas emissions perspective as a co-located resource (plus additional MWhs to account for roundtrip efficiency losses for energy storage).
- (3) Demonstrate that the resource was charged at low emissions hours.* Since the purpose of the CPS program is to ensure that the emissions profile of the peak period is reduced and to reduce overall emissions, a

resource that can demonstrate that it charged during low emissions hours should be considered eligible. ESA contends that the long-term goal of the CPS program should be to facilitate greater information about the hourly emissions profile of the grid and develop programs and price signals that facilitate charging during low emissions hours.

4. Should electric vehicles (EVs) qualify?

ESA supports a technology neutral approach and as such, EVs should be able to qualify as an eligible resource, as long as they are subject to the same criteria.

5. How should DOER interpret the inclusion of different types of rate designs in this definition?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

6. Should this definition only be limited to active demand response?

ESA encourages the DOER to provide an opportunity for the widest set of resources to participate in the CPS program, including both active and passive demand response. As we noted in our response to question #4, it may be appropriate to create a baselining methodology for certain resources seeking to participate as demand response to understand their impact on cleaning the peak and therefore their ability to receive compensation through the form of clean peak certificates.

7. Should standalone energy storage resources (i.e. not directly connected to another resource type) be eligible to qualify as demand response resources? What requirements, if any should standalone energy storage resources face in order to qualify as demand response resources?

Please see our response to question #3. Standalone energy storage should be eligible as a demand response resource and subject to the same requirements as other resources. The three options for demonstrating qualification as a resource are outlined by ESA in our earlier response.

8. Should the DOER view thermal storage facilities as a Demand Response Resource? What requirements, if any, should thermal storage facilities face in order to qualify as demand response resources?

Please see our response to question #3. Thermal storage facilities should be eligible as a demand response resource and subject to the same requirements as other resources. The three options for demonstrating qualification as a resource are outlined by ESA in our earlier response.

Qualified Energy Storage System

9. How should DOER define what constitutes “incremental new capacity at an existing energy storage system”

ESA proposes that any existing energy storage device should be able to increase its nameplate capacity to participate in the CPS program. Under such circumstances, only the incremental capacity of the energy storage system would be eligible to receive clean peak certificates.

10. How should DOER interpret the requirement that a Qualified Energy Storage System operate “primarily to store and discharge renewable energy”?

As we noted earlier, we propose the same, straightforward approach for determining eligibility of qualified energy storage systems as we do for demand response resources. It is our contention that under these three eligibility scenarios, the resource is exclusively using low emissions electricity or renewable generation and therefore meets the statutory requirements that the resource be “primarily” operated to store renewable energy. ESA notes that qualified resources will likely be participating in the CPS program in addition to several other programs, markets or applications. As such, the focus for determining the qualification of the system should not be the configuration of the system but the mechanisms by which the DOER can determine that the resource charged during low emission hours or used a renewable resource (either co-located or virtually) for the hours for which it seeks to receive a clean peak certificate.

ESA’s eligibility criteria are outlined again below. Each eligible energy storage resources should be able to meet *one* of the following three criteria in order to obtain a clean peak certificate for 1 MWh of avoided load or discharged electricity.

- (1) *The resource is co-located with a renewable energy generator.* ESA proposes that any technology be able to demonstrate that it charged or used the same number of MWhs from the renewable generation during that billing period as the MWh of clean peak certificates it is receiving (plus additional MWhs to account for roundtrip efficiency losses for energy storage). It may be appropriate at a later date to introduce more granular reporting requirements, but ESA contends that for the initial program design, simpler reporting requirements are appropriate.
- (2) *Retire an eligible REC without payment to demonstrate eligibility.* ESA proposes that any energy storage resource that can retire an eligible REC without compensation for every 1 MWh of clean peak certificates it obtains is just as effective from a greenhouse-gas emissions perspective as a co-located resource (it is appropriate to require additional percentage beyond the 1:1 ratio to account for roundtrip efficiency losses for energy storage).
- (3) *Demonstrate that resource was charged or used energy at low emissions hours.* Since the purpose of the CPS program is to ensure that low emission resources are discharged during peak periods to reduce overall emissions, a resource that can demonstrate that it charged during low emissions hours should be considered eligible. ESA contends that the long-term goal of the CPS program should be to facilitate greater information about the hourly emissions profile of the grid, and develop programs and price signals that facilitate charging during low emissions hours.

a. Would alignment with the federal ITC requirement that storage is eligible for a credit as long as the battery is charged by a renewable energy system more than 75 percent of the time be appropriate?

ESA believes that the program design should be focused on clear mechanism to ensure that the clean peak certificates are only being provided for resources that can demonstrate that they were charged during low emitting hours or paired (through co-location or retirement of eligible RECs) with renewable resources. ESA contends that the configuration and commercial construct of the resources should not be relevant, nor should the behavior of the system when it is participating in other programs or through other applications. Leaning on the framework for federal investment tax credit is not challenging, but also unnecessary to achieving the objectives and statutory requirements of the program. ESA contends that the three options for resources to demonstrate eligibility outlined by ESA in earlier comments resolves concerns around demonstration of “primarily” per the statute requirements.

b. If not directly physically or electrically connected to a renewable energy resource, how can the qualified energy storage system demonstrate that it operates primarily to store and discharge renewable energy? Purchase and retirement of RECs? Some other means?

Please see our response to question #10.

11. How should DOER view thermal storage facilities with respect to eligibility as a qualified energy storage system?

As ESA notes in opening remarks and in the demand response qualification section, the CPS program eligibility requirements should be aimed at creating a technology neutral framework. Thermal storage should be allowed as an eligible resource for both a qualified energy storage system and qualified demand response resource. The guidelines for proving eligibility for thermal storage should be no different than that of other demand response resources or other energy storage resources.

Qualified RPS Resource

12. Given the requirement that RPS resources that commenced commercial operation prior to 2019 must be paired with a qualified energy storage system in order to qualify for the CPS, what, if any, requirements should DOER adopt regarding how much energy storage needs to be installed? a. Should there be a minimum percentage threshold on the ratio of the size of the energy storage to the size of the renewable resource (e.g. minimum installed storage capacity equal to 25% or more than installed renewable capacity)?

ESA believes additional information is needed to answer this question. If all the existing RPS resources that were able to generate electricity during the designated peak period were captured in the 2018 baseline as determined by the DOER on December 31, 2018, then there would be no need to create a threshold for energy storage installation to qualify as a CPS resource. Under that situation, any RPS resource that installs an energy storage system after January 1, 2019 would be eligible regardless of the energy storage size or ratio relative to the size of the system. With those resource in the baseline, there would need to be a programmatic element to ensure that those baseline electrons are not eligible for a clean peak certificate. Finally, ESA notes that any consideration of eligibility must also consider the duration of the energy storage system and not just the capacity as it relates to the renewable resource.

13. With respect to the quantity of its capacity that a Qualified RPS Resource can qualify under the CPS, should the DOER discount a Qualified RPS Resource's eligible capacity based on the capacity it can supply through the duration of each seasonal peak period (e.g. a 2 MW solar resource that can only provide 50% of its capacity value over the peak period would qualify as a 1 MW facility)?

As discussed further below under the "Seasonal Peak Periods" section, ESA contends that the peak is determined as a window and that each hour in that window is of equal value. The operational profile of the system (i.e. whether it is operating at full or less than full capacity) is entirely for the resource owners to determine. The CPS program sets the value of one megawatt hour for each hour of the peak period, and the power capacity of the system will determine how much value the system receives.

14. Should DOER adopt any additional requirements regarding the CPS eligibility of renewable energy generating sources as defined in subsection (c) or in subsection (d) of section 11F (e.g. emissions thresholds, fuel sourcing, etc.)?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Seasonal Peak Periods

15. How should DOER establish different seasonal peak periods to both optimize cost reductions for ratepayers and emissions reductions for the Commonwealth?

Additional information on which hours have the greatest greenhouse gas emissions impact and highest ratepayer impact (and whether they are aligned or separated) could help inform ESA's position on this question.

- 16. DOER is considering announcing seasonal peak periods on an annual basis based on 1 to 3 years of historical data. a. What formula should DOER use to set the seasonal peak periods to reflect real time operating conditions?**
- b. What data sources should DOER use to determine seasonal peak periods?**
- c. What time period(s) should each of the 4 annual peak periods cover?**
- d. Should seasonal peak periods be different lengths depending on the season?**
- e. How often should the seasonal peak periods be examined and/or adjusted to reflect changes in seasonal peak demand over time? What should be the trigger and/or the process for making such adjustments?**

ESA respectfully submits that the peak period must be forward looking in its design but done so in a way that includes consideration of resources that will qualify in the program. As such, backward looking analysis should only be one component of determining the peak period.

While ESA appreciates the importance of building flexibility into the CPS program in order to ensure that the resources participating in the program are able to provide cleaner and lower-cost electricity during the peak periods, ESA notes that program design must balance the needs for adjustment with the reality of project economics and financing. The statute recognizes the need for long term certainty to attract a diverse pool of resources by including guidance for the DOER to consider developing a process for the competitive procurement clean peak resources through long-term contracts.

17. Are there alternative methods of establishing seasonal peak periods the DOER should consider?

Please see our response to the above question.

Atypical Peak Events

- 18. Should DOER establish peak periods other than the seasonal peak periods during which clean peak resources are eligible to generate clean peak certificates?**
- a. If so, what criteria should DOER use to establish these periods and what mechanism(s) and should be used to trigger and announce these events in advance of them occurring?**
- b. Should DOER specifically target ISO system peaks?**

ESA proposes that if the DOER believes that atypical peak events need to be addressed in the Commonwealth, that this be done through a separate mechanisms or program rather than incorporating it into the CPS program. If the CPS program is designed to provide an eligible resource with the opportunity to participate in other programs, a developer can determine whether it wants to participate in the CPS program or an atypical peak event program if they so choose.

Generation of Certificates

19. Should only resources that can provide value for the entire duration of a peak period be able to generate certificates?

A clean peak certificate is the equivalent of one megawatt hour of clean energy provided during a designated peak period. ESA does not believe that there is any justification in requiring that those values be provided for the entire duration of the peak period and contends there is not statutory justification for doing that. A seasonal peak period is intended to be a period of between one (1) to (4) hours where the net demand of electricity is the highest. By virtue

of designating the peak (assuming it is greater than one hour), each of the hours of the peak have been designated the priority. ESA does not believe there is any justification for creating penalties or incentives for systems that can provide resources during the entirety of the peak. If in later years when the program's efficacy is reviewed it is determined that there are certain hours of the peak that receive lower deliveries of CPS resources, it may be appropriate to consider incentives or program design elements to address that deficiency.

20. Should there be different values provided to resources that can provide value for a portion of a peak period versus the entire peak period? If so, how should DOER differentiate these value streams?

Please see our response to question #19.

21. Should there be a penalty (i.e. negative credits) if a resource under-produces during the actual monthly peak?

Please see our response to question #19.

22. How should resources participating in other state programs (e.g. section 83 procurements, SMART, EE programs, etc.) interact with the CPS?

A clean peak certificate is likely going to be one of many value streams needed to drive the economics of resources participating in the CPS program. As such, determining the right guidelines for eligibility in a way that provides resources with the ability to value stack while ensuring the best use of ratepayer funds and the greatest amount of new steel in the ground is critical. Resources should be eligible to participate in other programs, so long as they are not being compensated more than once for the behavior and benefits that are intended to be captured in the clean peak certificate. Having said that, certain controls are appropriate to ensure that one resource type, particularly larger projects, do not dominate the program.

23. Should qualified energy storage systems that can demonstrate they were charged during minimum load windows be provided additional incentives or benefits under the CPS? If so, how should these be structured and how should minimum load windows be established?

In the answers above on eligibility criteria, ESA notes that one of the three options that resources should have to demonstrate that they are eligible for clean peak certificates is to create a mechanism whereby resources can demonstrate that they were charged during low emission hours. In that sense, charging during low emissions hours is not an added benefit that should receive additional compensation in the CPS program, but rather one of several options for resources to demonstrate eligibility. There are, of course, benefits to the grid that can be achieved by aligning charging time with minimum load windows. ESA contends that those kind of incentives and behaviors should be kept out of a CPS program, and be developed through a separate program, since the goals of charging during minimum load windows is outside of the stated scope and purpose of a CPS program. ESA respectfully submits that this approach – developing a parallel but complimentary program to enhance the benefits of the CPS program – should be adopted as much as possible during the design implementation of the CPS.

Metering

Verification of Metered Data

DOER proposes that all clean peak resources be registered with NEPOOL GIS as Non-NEPOOL participants. This would mean that, as required by the NEPOOL GIS operating rules, all resources would be required to report their eligible output to NEPOOL GIS by a DOER approved Independent Third-Party Meter Reader. This entity would be

responsible for verifying the accuracy of the reported data before uploading it to NEPOOL GIS for the creation of certificates.

To ensure that all data is collected, reviewed, and reported to NEPOOL GIS in a consistent manner, DOER would select a single entity to act as the Independent Third-Party Meter Reader, similar to the process used under the SREC programs, in which the Production Tracking System at the Massachusetts Clean Energy Center serves in this role.

24. Do you support this proposal? If not, please describe why.

25. If DOER procures the services of a single Independent Third-Party Meter Reader:

a. What criteria should DOER use to evaluate the capabilities of the entity that is selected to act as the Independent Third-Party Meter Reader?

b. Do you support the establishment of a fee structure to support the ongoing services provided by the Independent Third-Party Meter Reader?

c. How should this Third-Party verification take place?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Metering Specifications and Requirements

Because clean peak certificate creation is dependent not just on the quantity of energy output, but also its timing, more sophisticated metering will be required than that which is required for many RPS eligible systems, which only require monthly meter reads.

26. Describe in as much detail as possible the metering standards and requirements (type, accuracy, etc.) that DOER should employ to ensure the accurate collection of data.

27. Should different standards apply to different sizes and types of facilities? If so, please describe your recommendations in as much detail as possible.

28. What other verification mechanisms could be deployed to simplify the process, particularly for small-scale systems for which some types of metering solutions may be cost-prohibitive?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Value of Alternative Compliance Payments

29. How much value is likely needed on a per MWh basis to incentivize different types of existing resources to operate during peak windows and/or new resources developed or financed using CPS revenue streams?

ESA recommends that the Alternative Compliance Payment be based on the cost of providing a CPS-eligible resources for the entire duration of the longest seasonal peak.

30. How should DOER establish these values?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Long-term Contracts

In establishing certificate values, DOER “may include a process by which electric distribution companies competitively procure clean peak certificates from clean peak resources and enter into long-term contracts, subject to the approval of the department of public utilities.”

31. If DOER does require competitive procurements:

- a. What types of facilities should be able to participate in solicitations? Should it be limited to certain types of facilities (e.g. facilities that are either new and/or not already supported by another type of long-term contract or financing tool)?**
- b. How frequently should solicitations take place?**
- c. How large should the procurements be (e.g. percentage of total load or annual requirement)?**
- d. How should the contract price be established? Pay as bid? Reverse auction mechanism with a single clearing price for all resources? Other?**

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Post-2019 Minimum Standard Requirements

32. What methodology should DOER use to establish post-2019 Minimum Standard requirements (e.g. fixed annual requirements in a published schedule, supply reactive formula, other)?

ESA respectfully recommends that once initial stakeholder comments and analysis is conducted to determine the peak periods and resource eligibility, that the DOER consider revising its initial assessment for the baseline of existing resources as of 12/31/2018.

ESA suggests that analysis should be conducted to determine the optimal percentage that the state would like to achieve by 2030 (for example, 30% clean peak) based on estimated cost and savings to do with the program and alignment with the state's greenhouse gas emissions reductions goals. Once that goal is determined, the existing baseline should be reduced and the difference between those two should be divided by the number of years to reach the annual targets.

33. How large should the minimum standard be?

The statute provides the DOER with the authority to require an annual increase great than 0.25%. As noted above, ESA believes that the annual targets should be determined following an initial analysis that demonstrates what overall CPS levels are needed to be achieved by 2030 to support the state's broader greenhouse gas reduction goals and an initial cost-benefit analysis of ratepayer benefits from the reductions in costs that the CPS will achieve.

Demand Response Resource Carve-out

Separate from the total Minimum Standard requirement, DOER is required to establish "a minimum percentage of clean peak certificates that must be derived from demand response resources."

34. How should DOER interpret this requirement?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

35. What methodology should DOER use to establish this carve-out of the larger Minimum Standard?

ESA does not offer a response at this time but would appreciate the opportunity to provide input at a later date.

Other

36. Please discuss any other implementation issues not addressed above.

ESA respectfully suggests that additional discussion is needed regarding the banking and roll over provisions to the regulations governing the CPS program. Much like the RPS program, the ability to meet the exact requirements of the CPS can be done with greater certainty and cost-effectively when compliant entities can apply certificates that are over-procured in one year to another.

Additionally, there are a number of important issues that may need to be addressed over a longer period of time but that are important to begin discussing as stakeholders. First, facilitating more granular information on the greenhouse gas profile on an hourly basis, and creating appropriate price signals and programs to reflect that data, would enable resources to ensure that they are charging in low emissions periods. Further stakeholder discussions on how to facilitate this and incorporate it into the CPS program is imperative.