



CALPINE CORPORATION

February 5, 2018

Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114
(submitted via email to doer.cps@mass.gov)

Re: Clean Peak Standard Stakeholder Questions

To Whom It May Concern,

Calpine Corporation (“Calpine”) submits the following in response to Massachusetts Department of Energy Resources (DOER) stakeholder questions regarding a Clean Peak Standard (CPS). Pursuant to *An Act to Advance Clean Energy*, DOER is required to develop a program requiring retail electricity providers to meet a baseline minimum percentage of sales with qualified clean peak resources that dispatch or discharge electricity to the electric distribution system during seasonal peak periods, or, alternatively, reduce load. We offer responses to these questions in light of this statutory requirement.

Calpine operates the largest fleet of natural gas combined cycle (NGCC) and combined heat and power facilities in the U.S. Calpine is also the nation’s largest producer of electricity from renewable, base-load geothermal resources. Overall, Calpine is capable of delivering approximately 26,000 megawatts (MW) of clean, reliable electricity to customers and communities in 17 U.S. states and Canada, with 79 power plants in operation or under construction. In Massachusetts, Calpine operates the Fore River Energy Center, a natural gas combined cycle plant (NGCC) with baseload capacity of 750 megawatts (MW). In addition, through its subsidiary, Calpine Energy Solutions, Calpine serves as a licensed retail energy provider in every deregulated state in the U.S. This includes providing electricity in seventeen states, including Massachusetts (approximately 1,670,000 megawatt-hours (MWh)) and several others in ISO-New England (ISO-NE), as well as Washington, D.C.

General Comments

Recognizing that DOER is using these stakeholder questions to help design the CPS, our comments are submitted in the context of our current understanding of how the program may function. The Act requires that each retail electric supplier obtain clean peak certificates to meet an annual minimum percentage of kilowatt-hour sales with clean peak resources. This percentage increases by an additional 0.25 percent each year. Clean peak resources generate certificates based on their qualifying generation or reduction in load during the clean peak periods as defined by DOER. We envision that any clean peak certificate can be used to satisfy an electric supplier’s annual obligation. We would have concerns with the implications for energy markets if a clean peak certificate was tagged with certain peak periods and could only be used to satisfy certain peaks, thereby, limiting its use and value.

To the extent that the CPS can function similar to the REC markets, we offer these five overall principles to be considered as the regulatory framework is developed:

1. The Massachusetts CPS should be a market-based program that allows Massachusetts load to manage its own price and compliance risk. The program should not result in electric distribution companies imposing a non-bypassable charge.
2. The CPS regulations should include long-term targets to provide the regulatory certainty needed for retail load customers.
3. ISO-New England is a well-functioning energy market and, to the extent possible, the CPS program should utilize the market's price signals to optimize costs and reduce emissions.
4. In order for the CPS program to be successful in achieving the goals of the Act, verification of any clean peak certification is critical, and appropriate metering must be required to verify generation or load reduction during peak periods.
5. The CPS program should not favor or create incentives for one clean peak resource over another. Thus, clean peak certifications should be fungible regardless of the resource that created the certificate.

Therefore, Calpine urges DOER to ensure that any final regulations create incentives for resources to participate in the ISO-New England market, provided those resources can measure and verify their delivery of the resource value. DOER should propose regulatory language that requires qualified resources to register with the New England Power Pool Generation Information System (NEPOOL GIS). Ensuring that all stakeholders have the regulatory certainty to make reasonable investment decisions about load pricing based on clear requirements will be essential for this program. Certainty regarding a reasonable alternative compliance payment is also important.

The following respond to several of the questions posed by DOER (included in *italics*) with the numbers referring to DOER's numbered list.

Stakeholder 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?*

Clean peak resources should be eligible to qualify regardless of their point of connection to the grid provided that they are metered and their contributions to meet or reduce demand during the defined peak periods are verifiable.

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?*

We see benefits of interpreting the term "electric distribution system" to mean that only facilities on the electric distribution system in the Commonwealth should qualify as clean peak resources. We also see benefits in allowing distribution- and transmission-level resources connected in the ISO-NE control area to be eligible to qualify as clean peak resources. We will look to comment on the proposed approach; however, we oppose including any generation from imported resources outside of ISO-NE such as from the New York Independent System Operator (NYISO) or Canada.

Demand Response Resource

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

To extent that these resources are able to produce a guaranteed and validated drop in energy load during the clean peak period, demand response resources should include both dispatchable and non-dispatchable demand response resources. However, Calpine would urge DOER to ensure that credited resources result in load reductions that would not otherwise occur during the peak period.

4. *Should electric vehicles (EVs) qualify?*

EVs should not qualify as a demand response resource unless their storage capabilities are available during peak hours and any contribution to meet peak load can be metered and verified.

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

The Act authorizes DOER to allow demand response resources to qualify if the electric usage by end-use customers responds to changes in electricity prices including, but not limited to, time-of-use-rates. Consistent with the responses above, in order for a demand response resource to be credited in response to different rate structures, it will be important for DOER to ensure that the any resulting reduction in load can be measured and verified at such peak periods. This verification of load reduction is essential regardless of the policy tool that contributed to the incentive for such demand response resource.

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

Yes, the definition of “demand response resources” should be limited to active demand response resources that can provide measurable and verifiable reductions in load. DOER’s regulations should expressly exclude more passive demand response activities, like energy efficiency. However, if DOER elects to allow energy efficiency actions, such actions must be able to demonstrate quantifiable drops in load and each action should have an associated expiration date.

Qualified Energy Storage System

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

Calpine agrees that one option for DOER to consider is aligning the requirement to operate primarily to store and discharge renewable energy with the federal investment tax credit (ITC) requirement that requires battery storage systems to be charged by the renewable energy system more than 75 percent of the time on an annual basis. As noted above, verification of meeting such a requirement would also be important.

Additionally, the purchase and retirement of renewable energy credits (RECs) is another appropriate method to demonstrate that a storage unit operates primarily to store and discharge renewable energy. An additional option to consider is allowing entities to demonstrate compliance with this requirement through contracts with renewable resources.

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

Provided that thermal storage facilities can demonstrate measurable reductions in demand during peak periods, such facilities should qualify.

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)?*

Calpine supports DOER proposing to establish a minimum percentage threshold on the ratio of the size of the energy storage to the size of the renewable resource in order for the resource to qualify as a “Qualified RPS resource”. However, it will also be important that DOER propose regulations that implement a regulatory review process to update this minimum ratio requirement on a regular basis (such as every three years). This review can help to ensure that any minimum percentage threshold appropriately reflects the quantity and capabilities of intermittent resources and storage.

13. *With respect 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)?*

Assuming credits are based on megawatt-hours, any eligible RPS resources should be valued and compensated for the energy supplied to the grid during the peak periods.

Seasonal Peak Periods

15. *Given these limitations, how should DOER establish different seasonal peak periods to both optimize cost reductions for ratepayers and emissions reductions for the Commonwealth?*

One option DOER could propose is establishing different seasonal peak periods based on periods that have the highest hourly carbon emission rate. Peak energy demand is usually met by adding units that have a relatively higher emissions rates and higher costs. Thus, DOER could propose to establish different seasonal peak periods based on emissions rates. Requiring dispatch of clean peak resources during these periods would be expected to correspond to lower costs for ratepayers.

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?*

As noted above, regulatory certainty regarding the program requirements is a critical factor for retail load customers. If DOER were to establish additional peak periods other than seasonal peak periods, it would be important to ensure and any Clean Peak Certificates remain fungible so that entities can use any certificate for compliance purposes.

Generation of Certificates

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

Given that new RPS resources (commencing commercial operation on or after January 1, 2019) are not required to operate with storage, requiring that they be able to provide value for the entire duration of the peak period in order to generate certificates would undermine the value of these (often intermittent) resources during peak periods. Thus, Calpine supports DOER proposing regulatory language that would

provide credit for resources that generate certificates for a portion of the peak period provided such generation can be metered and verified.

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

Yes, accountability and supporting the predictability of grid dispatch is essential for this program, and a penalty structure supports both objectives.

Metering

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

We support DOER's proposal that all clean peak resources be registered with NEPOOL GIS as Non-NEPOOL participants. As noted throughout our comments, accurately verifying generation or load reduction during a peak period is critical.

Long-Term Contracts

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?*

It is critical that DOER ensure that entities have the authority to manage their obligation rather than having the cost allocated through, for example, a specific load distribution company (LDC) charge.

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)?

We recommend that DOER establish a methodology that results in fixed annual requirements that provides the needed regulatory certainty for retail electric suppliers to effectively price and hedge retail load. A supply reactive formula would make the requirement difficult to predict and could lead to customers paying increased risk premiums and/or pass-through costs. Additionally, DOER should establish the fixed annual requirements in the regulations for as long into the future as possible (i.e., for at least ten years).

Conclusion

Calpine looks forward to continuing to provide feedback to DOER as the regulations are developed, and please do not hesitate to contact me at Matthew.Suhr@calpine.com or (713) 820-4099 if you have any questions or need any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Suhr". The signature is fluid and cursive, with the first name "Matthew" and last name "Suhr" clearly distinguishable.

Matthew Suhr
Director of Fundamental Analysis
Calpine Corporation