

**RESPONSE OF BROOKFIELD RENEWABLE PARTNERS**  
**L.P. TO REQUEST FOR WRITTEN COMMENTS ON**  
**DEVELOPMENT AND DESIGN OF THE CLEAN PEAK**  
**ENERGY STANDARD**

In response to the Department of Energy Resources' ("DOER") request for written comments on the above referenced stakeholder process, Brookfield Renewable Partners L.P. ("Brookfield Renewable") is pleased to submit the following written comments.<sup>1</sup>

Brookfield Renewable has a strong presence in New England, including over 1,300MW of carbon-free resources in ISO-NE and a further 1,000MW that can be imported to New England from New York and Quebec. Our renewable hydro, wind and pumped storage resources are available to help meet the energy needs and environmental objectives of Massachusetts and the region. In Massachusetts, our facilities include a 600MW pumped storage facility (Bear Swamp) and a 10MW hydroelectric facility (Fife Brook), as well as our North American System Control Center in Marlborough. Brookfield Renewable is also affiliated with TerraForm Power, Inc., which owns and operates approximately 217MW of wind and 135MW of distributed solar resources in New England.

Brookfield Renewable strongly supports Massachusetts' efforts to reduce greenhouse gas emissions and to promote clean electricity sources. We are encouraged by the state's interest in further incentivizing investments in new and existing renewable and energy storage resources to ensure non-emitting energy is delivered during times most necessary to the electricity grid, as the Clean Peak Energy Standard ("CPS") is intended to do.

**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?**

Brookfield Renewable strongly urges DOER to establish eligibility for resources connected to the transmission system in the CPS. Simply put, Brookfield Renewable does not think the Legislature intended the term "electric distribution system" to exclude the transmission system. Limiting eligibility to distribution-connected resources alone would therefore conflict with the intent of the legislation. The statute is clear with regards to what constitutes eligible technologies and includes definitions of a "Qualified Energy Storage System"<sup>2</sup> and a "Qualified RPS Resource," neither of which prescribe location or

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<sup>1</sup> Brookfield Renewable has not responded to all questions listed by DOER; the comments instead focus feedback on questions most critical to ensuring the CPS is designed to achieve its intended goals in the most efficient and cost-effective manner.

<sup>2</sup> Chapter 164, Section 1 of the Massachusetts General Laws defines an Energy Storage System as: a commercially available technology that is capable of absorbing energy, storing it for a period of time and thereafter dispatching the energy and which may be owned by an electric distribution company; provided, however, that an energy storage system shall: (i) reduce the emission of greenhouse gases; (ii) reduce demand for peak electrical generation; (iii) defer or substitute for an investment in generation, transmission or distribution assets; or (iv) improve the reliable

voltage limitations. By limiting resource eligibility to the distribution level, DOER would prevent the participation of many transmission-connected resources that the Legislature intended to qualify, including i) certain existing Class I and Class II RPS qualified resources with the potential to install new energy storage on site, ii) certain Class I RPS qualified resources commencing commercial operation on or after January 1, 2019, and iii) certain existing energy storage systems capable of providing “incremental new capacity” – renewable generating and energy storage projects that, due to location and scale, have historically been interconnected to the transmission system. Including transmission-connected resources ensures that Massachusetts benefits from the full suite of resources able to generate electricity and reduce emissions during seasonal peak periods. Moreover, the inclusion of typically larger transmission-connected resources would also contribute to lowering program costs. In contrast, excluding these resources is likely to increase program costs and produce sub-optimal outcomes.

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?**

As discussed above, Brookfield Renewable does not think the Legislature intended the term “electric distribution system” to exclude the transmission system. The statute is explicit in its inclusion of existing Class I and Class II RPS resources with on-site energy storage and RPS resources commencing commercial operation on or after January 1, 2019. Given the statute’s clear connection to RPS eligibility, it is straightforward and reasonable to establish geographic restrictions consistent with the current RPS program. Currently, both the Class I and Class II RPS programs establish geographic eligibility for transmission-connected resources located within the ISO-NE Control Area or an adjacent Control Area, including NYISO and Quebec. Brookfield Renewable supports the same geographic eligibility criteria for the CPS. This would also be consistent with the manner in which the regional New England electric grid operates.

### **Qualified Energy Storage System**

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

Brookfield Renewable recommends that DOER define “incremental new capacity at an existing energy storage system” to mean the discharging capabilities associated with

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operation of the electrical transmission or distribution grid; and provided further, that an energy storage system shall: (1) use mechanical, chemical or thermal processes to store energy that was generated for use at a later time; (2) store thermal energy for direct heating or cooling use at a later time in a manner that avoids the need to use electricity at that later time; (3) use mechanical, chemical or thermal processes to store energy generated from renewable resources for use at a later time; or (4) use mechanical, chemical or thermal processes to capture or harness waste electricity and to store the waste electricity generated from mechanical processes for delivery at a later time.

additional nameplate capacity at an existing standalone energy storage resource, including pumped storage hydropower resources (pursuant to Chapter 164, Section 1), resulting from equipment upgrades at, or the replacement of, energy storage applications. Such a definition would incentivize and recognize meaningful investment or re-investment in existing energy storage resources, promoting expansions and further optimization of existing energy storage resources in strategic locations, as well as enhancements to the flexibility of these resources.

Furthermore, Brookfield Renewable suggests that eligibility for the CPS (whether new or incremental resources) be tied to either energy dispatch or the provision of ISO-NE reserves during applicable clean peak windows. Whether a unit is discharging or being positioned for dispatch during specified windows, the result serves the intent of the program: the displacement of and reduced reliance on emitting resources during peak periods.

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

- a. 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?**

Brookfield Renewable recommends that DOER measure the storing and discharge of renewable energy from standalone energy storage systems by requiring that standalone energy storage owners demonstrate the purchase of renewable energy output (MWh) in an amount consistent with the sale of Clean Peak Certificates. Because the statute is clear to separate the sale of RECs from Clean Peak Certificates, the exclusive purchase of energy, rather than RECs, should be the determining factor. Furthermore, eligible renewable resources should include any *non-emitting* technology included in the definition of renewable energy in Chapter 164, Section 1 of the Massachusetts General Laws, regardless of Massachusetts RPS qualification.

**Generation of Certificates**

**Some clean peak resources may only be capable of generating clean peak certificates during a portion of a seasonal peak period. For example, a solar resource trying to deliver energy for the duration of a summer seasonal peak period that lasts from 6-9 PM may generate a significant number of certificates in the early part of that window compared to the latter.**

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

Brookfield Renewable believes it unnecessary to limit the generation of certificates to only those resources capable of providing value for the entire peak period. In cases where

resources are limited to generating clean peak certificates during a portion of a seasonal peak period, eligibility and compensation should be determined on a pro-rata basis.

- 2. 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?**

Resources capable of guaranteeing performance (energy and reserves) during critical windows should be procured and priced distinctively. Therefore, the Department should consider certain value distinctions for intermittent and non-intermittent clean peak resources/credits.

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

The Department should implement monthly netting requirements, including negative credits, to prevent instances where a resource receives payment inconsistent with aggregate performance (energy plus reserves) during clean peak windows.

### **Value of Certificates**

**DOER must establish an alternative compliance payment rate and potentially other mechanisms that will help establish the value of clean peak certificates. Please describe in as much detail as possible:**

- 1. How should DOER establish these values?**

Brookfield Renewable recommends the establishment and implementation of annual demand curves to determine the price at which load serving entities would be required to procure clean peak certificates. Furthermore, establishing this on a forward basis can help provide the price certainty necessary for resource owners and developers to commit capital to develop clean peak resources.

### **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.”**

- 1. 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)?**

Brookfield Renewable strongly urges DOER to establish long-term procurements that remain as open to all eligible project vintages, technologies and sizes as practicable.

Such procurements would allow all clean peak resources to compete to satisfy the established need, as determined by the peak windows and procurement targets, rather than predetermining a particular outcome, which might be less efficient. If necessary, however, DOER may wish to consider separating procurements into targeted tranches for small-scale resources (1 MW and under) and large-scale (1 MW and above) resources. In addition, as discussed above, procurements could be segmented for intermittent and non-intermittent products.

**b. How frequently should solicitations take place?**

Brookfield Renewable recommends annual solicitations to allow the market predictability for planning and development, while also limiting administrative burden.

**c. How large should the procurements be (e.g. percentage of total load or annual requirement)?**

Brookfield Renewable recommends establishing annual requirements in order to provide the market with clearly defined targets that are less subject to adjustment.

**d. How should the contract price be established? Pay as bid? Reverse auction mechanism with a single clearing price for all resources? Other?**

Brookfield Renewable recommends pricing established through the implementation of annual demand curves with corresponding auctions resulting in a single clearing price. For long term contracts, the Department could allow for a “lock in” of the clearing price, subject to escalation as appropriate, for each of the contract years.

**Post-2019 Minimum Standard Requirements**

**DOER has established a baseline Minimum Standard requirement of 0% for 2019. Each year after 2019, DOER is required to establish a Minimum Standard requirement for retail suppliers that increases at a rate of at least 0.25% of total retail sales annually.**

**1. 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)?**

Brookfield Renewable recommends DOER utilize fixed annual requirements for program simplicity. However, it may be prudent to require program reviews every 3-5 years to confirm future requirements remain in line with system needs and consumption trends. The program could be modified if deemed necessary during such a review.