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Re: CPS Review Comments

Brookfield Renewable¹ thanks the Department of Energy Resources (DOER) for the opportunity to submit these comments on the Clean Peak Standard (CPS). The request for stakeholder feedback is timely because the CPS is a cornerstone program for achieving the Commonwealth's emission reduction goals and because, for various reasons, development of eligible resources has encountered headwinds resulting in a slower pace of deployment than anticipated when the CPS was introduced in 2019. DOER thus has an opportunity to realign the Program with current market conditions during a critical window while maintaining a structure and framework that has proven it can drive beneficial market behaviors and contribute to the Commonwealth's goals.

As explained in more detail below, Brookfield Renewable has three core recommendations for improving the CPS:

1. DOER should implement a long-term procurement mechanism – as has been anticipated since the CPS was initially designed – to provide a more certain source of revenue for projects seeking to participate, which supports projects in obtaining financing and making operational commitments.
2. The “Minimum Standard,” the percentage of total retail sales required to be met with CPS certificates, should be adjusted downward for 2025 and 2026 to reflect the reality of current supply and maintain appropriate market signals and efficient program costs.
3. Declines in Alternative Compliance Payments (ACP) should be delayed to likewise reflect that the supply from eligible resources has not kept pace with 2019 expectations and that, while a pipeline of projects is poised to deliver, development of eligible resources has been delayed by challenges with interconnection, permitting, and supply chain disruptions. Reducing ACP in 2025, before the quantity of resources anticipated for 2025 when the Program was designed to have been built, could negatively affect this pipeline and undermine the Program.

¹ Brookfield Renewable is a leading owner, operator and developer of renewable power, delivering innovative renewable power solutions that accelerate the world towards a sustainable, low-carbon future. In Massachusetts, our facilities include a 660MW pumped hydropower storage facility (Bear Swamp), a 10MW hydroelectric facility (Fife Brook) and a large fleet of affiliate-owned existing and proposed distributed solar generation.

Brookfield Renewable's responses to the specific questions posed by DOER follow.

1. How could the Clean Peak Energy Standard ("CPS") Program be improved to better contribute to achievement of the 2050 Global Warming Solutions Act ("GWSA")² mandates? Please include details and any supporting data and analyses.

The path to achieving Massachusetts' legislative mandate of Net Zero by 2050 includes a targeted reduction in emissions from the electricity sector to reach a level of emissions at least 93% below 1990 levels.³ In tandem, significant emissions reduction requirements for transportation, as well as commercial and residential heating and cooling, will dramatically increase electricity demand in the decades ahead.⁴ Achieving the necessary deep reductions in emissions from electric power under increasing load growth scenarios will require more than 50 GW of new clean energy resources, which are expected to consist primarily of intermittent solar and wind resources. The reality of these policy aims means that there is a need for substantial annual increases in available energy storage resources to ensure policy goals are met without compromising the reliability of the electric system. Taken together, these objectives reinforce the significance of the CPS Program as a policy tool to support effective deployment of new energy storage, as well establishing signals that impact the behavior and performance of energy storage currently participating under the Program.

The CPS Program rightly includes eligibility of various energy storage technologies, provided the energy storage system is connected to the Massachusetts electricity grid and is new or incremental capacity at an existing energy storage facility that reaches commercial operations after January 1, 2019. The CPS Program further establishes a variety of ways in which a "Qualified Energy Storage System"⁵ may demonstrate it has charged and discharged renewable energy during specified periods, set by DOER to reflect benefits towards achieving emission reduction goals.⁶

Brookfield Renewable applauds the DOER for its approach to date in avoiding overtly prescriptive limitations on technology types that may participate, as well as by providing adequate flexibility for participating resources to demonstrate delivery of renewable energy during Program hours. Each of these design considerations should be maintained into the future to ensure the Commonwealth is promoting a variety of technologies, vintages, and energy storage durations, to deliver clean energy to the Massachusetts electricity grid during periods of

² Massachusetts Global Warming Solutions Act ("GWSA"), Acts of 2008, ch. 298
<https://malegislature.gov/Laws/SessionLaws/Acts/2008/Chapter298>.

³ See *Determination of Statewide Greenhouse Gas Emissions Limit and Sector Specific Sublimits for 2050*, December 21, 2022, available at <https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050>.

⁴ See generally, *Clean Energy and Climate Plan for 2050*, December 2022, available at <https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050>.

⁵ See 225 C.M.R. § 21.02.

⁶ See 225 C.M.R. § 21.05(1)(a)(2).

peak demand – which may evolve over time – in the decades ahead. This approach signals efficient market behavior, benefiting ratepayers.

However, notably absent from the Program has been a formal procurement structure to allow suppliers to sell Clean Peak Energy Credits (CPEC) under long-term arrangements (10+ years). Although structured procurements were part of the implementing statute (*see* M.G.L. c. 25A, § 17(c), and DOER included a mechanism in its regulations (*see* 225 C.M.R. § 21.05(8)), the anticipated procurements were, to our knowledge, never fully implemented (notwithstanding what was proposed by the EDCs was a structure limited only to distribution-connected systems). Such procurements, inclusive of transmission-connected systems, could, however, support project financing and reinvestment at an adequate level to meet the ambitious long-term GWSA mandates. In addition to promoting system deployment and reinvestment, such a structure could provide compliance buyers a favorable hedge to ensure long-term price certainty and to reduce Program costs by decreasing future reliance on Alternative Compliance Payments (ACP).

To the extent structured CPEC hedges have been considered on a bilateral, voluntary basis, Brookfield Renewable's experience suggests interest from entities currently serving Massachusetts retail load is typically (although not always) limited to less than 3 years. Given the lack of significant bilateral interest in long-term arrangements, DOER should consider implementing a viable long-term procurement structure as a component of the CPS Program. A procurement framework would benefit from consideration of both new and currently-participating resources alike in light of the need to secure energy storage production at significant volumes through 2030 and beyond. And, while the Program should maintain a technology-agnostic approach, procurements may need to be bifurcated by system characteristics, and even distribution vs. transmission-connected systems, to ensure that long-term hedges include a mix of short-duration, mid-duration, and long-duration energy storage, all of which will be critical to achieving the Commonwealth's emission reduction goals. Such a procurement structure should be tied to a portion of future demand, however, rather than the entirety of expected demand, in order to maintain a viable "spot" CPEC market for suppliers and compliance buyers.

2. What are the costs and benefits of participating in the CPS program?

The ongoing direct costs to participating in the CPS include Program-specific metering equipment and third-party program reporting. These costs have proven to be relatively limited for larger systems and, in Brookfield Renewable's view, appropriate for adequate Program validation. However, these same requirements for smaller systems may be a limiting factor to certain resources.

In contrast, the opportunity costs of participating in the CPS – that is, the lost economic value due to operating in a way to generate CPECs rather than to maximize value from other markets – can be significant and should be considered by DOER in its program design. For dispatchable CPS resources that participate directly in ISO-NE wholesale electricity markets, there are opportunity costs that must be considered in resource offers and corresponding dispatch. Specifically, there may be periods when a CPS resource is not delivering stored energy, choosing

instead to deliver during specified Clean Peak hours. This requires that the opportunity cost of not delivering during otherwise economic hours is considered and outweighed by the expectation of value from CPEC generation. In some situations a CPS resource may even deliver during Clean Peak hours that, in the absence of CPECs, would otherwise be uneconomic due to insufficient Energy Market spreads. The ability to “chase the peak”, including obtaining multipliers during certain Seasonal Peak Periods, has proven sufficient to offset these costs and trade-offs, which indicates the Program can and does work as intended: it is driving the increased delivery of renewably generated electricity during peak periods.

In addition, as retirements of traditional generation sources increase, the potential exists for ISO-NE scarcity conditions and capacity events that threaten reliability and impact ratepayer costs. The increased availability of energy storage resources during system peaks, driven in part by the availability of Clean Peak Energy Credits and Multipliers, substantially mitigates these risks. By effectively incentivizing the transfer of clean energy to peak periods of demand, the CPS benefits ratepayers through lower cost peak generation and system readiness that limits the risk of capacity shortage events, while simultaneously contributing to the achievement of the 2050 GWSA mandates through reductions in peak emissions that may otherwise occur.

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

Yes. Brookfield Renewable has made significant investments in existing in-state energy storage resources that has resulted in increased energy storage capacity that supports system reliability and additional clean energy deliveries. Indeed, the Program has impacted how Brookfield Renewable offers its in-state energy storage into the ISO-NE markets as CPEC generation potential is taken into account when creating an optimal economic dispatch strategy. Because there may be times when resources are otherwise out-of-merit but for CPEC potential, this is an example of policy success as behaviors have been altered to ensure resources are providing electricity to the system during the peak periods targeted by the CPS.

Brookfield Renewable has explored opportunities for investing in new standalone greenfield energy storage deployment throughout Massachusetts. In each case, the CPS Program has been a key metric in determining project viability. However, a lack of long-term contracting opportunities for project attributes, including CPECs, has been a limiting factor for supporting investment and financing (see the responses to Questions 1 and 9 regarding long-term procurements).

4. Please describe the portfolio of projects you have that you anticipate are within 4 years of commercial operation and that you intend to enroll in CPS. Include as many details as possible, including your projects' anticipated Commercial Operation Dates, power and energy capacities, interconnection level (i.e., front-of-the-meter, behind-the-meter), durations, technology types, intended use cases, locations, and any other pertinent information.

Brookfield Renewable does not currently have a pipeline of CPS resources but, as a leader in renewable energy and energy storage, is continually reviewing new opportunities for Program participation.

5. Are the CPS Resource eligibility criteria appropriate? If any criteria pose a barrier, please describe and provide recommended mitigation strategies.

No comment at this time.

6. Are CPS application processes and requirements clear? Is communication between applicants, the CPS Program Administrator, and DOER clear and effective? Please describe any improvements you believe could be made to the CPS application process.

Brookfield Renewable has found the Program requirements and processes to be relatively straightforward to navigate, notwithstanding the unique Program design. To the extent issues have been identified during the resource SOQ Application and ongoing metering and data reporting processes, staff at MassCEC and DOER have been extremely responsive in providing answers and support, which Brookfield Renewable greatly appreciates.

7. Are CPS Program compliance requirements clear prior to program enrollment? If any requirements are unclear, please describe and recommend clarifying language.

Program compliance requirements are generally clear. We do not have clarifying recommendations at this time.

8. What modifications to CPS Multipliers, Minimum Standard, ACP Rate, and Seasonal Peak Periods as currently set forth in 225 CMR 21.00, if any, are needed? Please describe in detail and provide any supporting data and analyses.

Brookfield Renewable generally supports the core Program features as currently established. Participating resources have been optimized, and development projects have been advanced, based on the current Program design. That said, Brookfield Renewable recommends consideration of two structural changes in the near-term to support Program viability and certainty for developers.

First, in recognition of delays to new development and the importance of ensuring that ratepayer costs are used efficiently, we recommend that Program's Minimum Standard be adjusted downward for 2025-2026 to the level of the 2021 Program requirements (3% of annual demand) in each year. This change would limit potential reliance on the ACP due to the lack of eligible resources and reduce overall costs for Program compliance, while balancing an adequate market for current and planned Program participants. This would not conflict with the statutory requirement that the CPS Program demand increase by no less than .25% annually, as the aggregate demand would exceed required minimum annual increases since Program inception.⁷

⁷ The statutory authority for the program required that the program begin in 2019 and that the percentage of total sales to be met with CPEC be set by DOER for 2019 and increase at a pace thereafter not less than a 0.25% annually. Because DOER set the 2019 minimum at 0%, the minimum percentage required for 2025 and 2026 is well

Reducing and temporarily pausing annual increases to Program demand through 2026 would recognize the significant volume of likely CPS resources currently under development that, while forthcoming, may not be available to the market until as late as 2027, once permitting and interconnection delays, in particular, are navigated (and, potentially, long-term procurement mechanisms have been implemented to support build-out).

Second, with available supply of eligible resources is expected to increase over the next several years, it would be appropriate to delay the current backwardation of the ACP rate, which is set to decline starting in 2025. *See* 225 C.M.R. § 21.08(3). Reductions in the ACP, like increases in the Minimum Standard, were set on the presumption that quantities of eligible resources would come online during the first four years of the Program at a pace that has not been realized. Retaining the current ACP rate before annual declines set in would reflect that development of eligible resources has proceeded more slowly than anticipated, provide developers additional certainty of CPS revenues that will be available, and address the current mismatch between declining ACP rates and delays to new resource development. This is especially important as developers face increased project costs driven by interconnection, permitting and supply chain factors simultaneously with the prospect of declining CPEC values.

As previously described, the CPS Program and energy storage, specifically, will be critical for achieving 2030 and 2050 emission reduction goals. But as the ISO-NE system mix rapidly changes energy spreads are expected to decline, which will negatively impact the traditional business model and use cases for energy storage during this critical policy timeline. Faced with an evolving grid, the CPS Multipliers, Minimum Standard, ACP Rate, and Seasonal Peak Periods conjoin to form a market with the potential to enable clean peaking energy to dispatch when most beneficial to the grid despite energy spreads that are moving towards a situation where they will often be less than a storage system's efficiency, so insufficient to encourage this beneficial operation. In addition, a relatively limited market for ancillary services today means that new energy storage systems have the potential to negatively impact the market for existing supply, which can challenge new deployment in addition to existing resources, since they will be unable to rely on significant anticipated revenues from this source.

To ensure adequate dispatchable, clean supply, wholesale market products will need to evolve to provide revenue streams that recognize a broader suite of energy storage capabilities. However, policy support like the CPS Program, as currently designed, will remain critical, especially through the next decade as New England experiences significant system changes related to load growth and shifting load patterns as well as resource retirements.

9. Please provide any comments on the necessity of, Resource eligibility for, and structure of a CPEC procurement. If in favor of a CPEC procurement, please comment on its timing, in particular if it should occur in parallel with the CPS Review or after, and any considerations DOER should make about the CPEC procurement in light of the CPS Review.

below 3%. *See* M.G.L. c. 25A, § 17(a). DOER was also clear in its regulations that the minimum standards would be reviewed in 2024 and might be modified at that time. *See* 225 C.M.R. § 21.07(3).

As noted above, a long-term procurement structure would help facilitate near-term targets and long-term policy mandates. A limited, initial procurement in parallel to CPS Review may be appropriate given the likelihood of resources in advanced stages of development that would benefit from a long-term arrangement (10+ years). As ISO-NE implements changes to its interconnection study process, as well as Capacity accreditation and Capacity procurement, timing delays and added revenue uncertainty are likely to impact new buildout in the near-term. A procurement later this year for resources not yet operational may therefore mitigate certain project risks.

An initial procurement should be sized based on a portion of anticipated demand through 2030 and should seek the purchase of CPECs at a fixed price for a period of at least 10 years. Specified targets should be considered for transmission-connected resources that do not participate in separate policy programs and procurement. Given growing Program demand it may be appropriate to limit an initial procurement to resources operational after 2024. However, future procurement should evolve to consider existing CPS resources, in addition to new resources, to ensure procurement outcomes benefit Program goals and ratepayer interests.

10. How well does the CPS align with other Commonwealth programs, such as SMART and ConnectedSolutions, to incentivize the deployment of peak reducing resources, and how could program alignment be improved?

No comment at this time.

11. Are there any Commonwealth policies (e.g., renewable energy goals, land use priorities, codes and standards, etc.) that you believe the CPS program inadvertently conflicts with? Please describe any potential modifications to CPS that would alleviate these conflicts.

No comment at this time.

12. Please describe any factors outside of the CPS Program that impact the ability of Resources to enroll or participate in the CPS Program, and any mitigation recommendations you have for DOER.

No comment at this time.

13. Is there any additional information you believe DOER should consider in its 2024 CPS Review?

Nothing additional at this time.

14. Would any Clean Peak Resources or specific use cases for such Resources be better incentivized by a different program than CPS? If yes, please describe the proposed program and justify why the particular Clean Peak Resources and associated use cases would be better incentivized by such a program, with particular attention paid to added ratepayer benefits.

The CPS Program should remain a key pillar to support continued clean energy and energy storage expansion on the timelines currently considered. To the extent certain use cases or project technologies require additional policy support, Brookfield Renewable recommends this be considered in addition to the CPS program to allow continued certainty for current, and planned, Program participants. Stable and predictable programs create a better environment for financing resources in the Commonwealth. As mentioned above, the current CPS Program has ensured clean generation is run in place of additional, potentially more expensive, non-renewable generation, lowering costs to ratepayers during peak hours and reducing emissions.

Brookfield Renewable appreciates the Department's consideration of our comments. Please don't hesitate to contact me directly to discuss any of these issues further.

Sincerely,



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