



April 12, 2019

Judith Judson, Commissioner
Department of Energy Resources
100 Cambridge St., Suite 1020
Boston, MA 02114

RE: Sunrun Inc. Comments on Department of Energy Resources' Clean Peak Standard Straw Proposal

Commissioner Judson:

Sunrun Inc. ("Sunrun") submits the following comments in response to the Department of Energy Resources ("DOER") April 2, 2019 Clean Peak Standard Straw Proposal ("Straw Proposal"). Sunrun appreciates the opportunity to provide these comments and looks forward to continued collaboration with DOER and stakeholders on the development of the Clean Peak Standard ("CPS").

I. Introduction

Sunrun is the largest residential solar, storage and energy services company in the country with more than 230,000 customers in 23 states, including Massachusetts, and the District of Columbia and Puerto Rico. Sunrun customers are rapidly adopting battery storage paired with solar to benefit from savings on their monthly electric utility bills, reduce their greenhouse gas and other air pollutant footprints and increase the resilience of their homes. Sunrun's systems also optimize battery storage and solar production for customers based on customer preferences and market opportunities for the system to provide grid services. These capabilities make Sunrun systems well-suited to participate as clean peak resources to meet the Commonwealth's CPS targets.

Sunrun applauds DOER staff for their work on the CPS Straw Proposal. The Straw Proposal provides a strong basis upon which to develop rules that establish the price signals and market participation pathways necessary to enable clean peak resources, and particularly energy storage, to deliver substantial emission reduction benefits and cost savings in the Commonwealth. Sunrun offers the following observations and recommendations on the Straw Proposal for DOER's consideration.

II. Eligible Clean Peak Resources

The Straw Proposal provides for four categories of "eligible clean peak resources." The Straw Proposal describes the eligible clean peak resources and associated eligibility criteria as follows:¹

1. New RPS Class I resources that began operation on or after January 1, 2019. Upon qualifying a new RPS Class I, all electricity delivered by the resource during Seasonal Peak Periods will be eligible to generate CPCs.
2. Existing RPS Class I/II resources paired with new qualified energy storage systems. For these resources, the energy storage system must be at least 25% of nameplate power of the Class I/II RPS resource and have at least a 4-hour duration of storage. Upon qualifying an existing RPS resource, all electricity delivered by the resources during the peak window is eligible to generate Clean Peak Certificates ("CPC").
3. Energy storage systems. These must meet the statutory definition of "energy storage system" and must commence commercial operation (or provide incremental new capacity at an existing energy storage system) after January 1, 2019 while operating primarily to store and discharge renewable energy.
4. Demand response resources. These may be an aggregate of multiple technologies from multiple locations so long as they are connected to the Massachusetts distribution system. The straw proposal indicates that demand response resources could include energy storage, electric vehicle charging infrastructure, and all other

¹ Straw Proposal at Slides 6-10.

responsive electric loads for which the response can be measured and verified.

These categories provide a sound foundational framework to allow a mix of resource capabilities to participate in the program. In addition to the category specific recommendations below, Sunrun encourages DOER to clarify program mechanics for energy storage systems that qualify as a clean peak resource under multiple categories. Specifically, Sunrun recommends DOER clarify that resource owners have the option to qualify these resources under any applicable category (*e.g.*, pursuant to the Straw Proposal energy storage could qualify under three of the four categories and resource owners should have the flexibility to elect which category to qualify and participate under). Sunrun offers the following recommendations to clarify and improve upon the individual categories' eligibility criteria.

A. Existing RPS Class I/II Resources Paired with New Qualified Energy Storage

Sunrun supports the Straw Proposal design that all electricity generated from an existing RPS resource that adds a new storage system is eligible to generate CPCs. Existing residential systems; however, should be exempt from the 25% sizing requirement for the new energy storage system. While most residential customers would likely meet the 25% threshold by adding a single energy storage system, some residential customers with larger RPS Class I resources may seek to add an energy storage system sized just large enough to, for instance, provide back-up power for critical loads to improve the resilience of their homes. For a larger residential Class I RPS resource, an energy storage system sized to provide home resilience may not meet 25% size threshold proposed in the Straw Proposal. This would preclude these customers from participating in the program, despite the fact that their combined solar and storage systems have significant capabilities to provide valuable CPS benefits.

Exempting residential customers from the size threshold would ensure that such unintended consequences are avoided while encouraging customers to adopt technologies to enhance resilience. Because residential RPS resource size is constrained by the host site, there is little to no risk that these resources could add only a small amount of energy storage and thereby generate a disproportionately large amount of CPCs from the existing RPS resource and associated storage resource. While Sunrun appreciates the policy basis behind the 25% energy storage size threshold, exempting residential systems from this requirement will encourage residential customers to adopt resiliency measures and contribute to greater resource participation without compromising program integrity.

B. Energy Storage Systems

Energy storage systems are flexible, dispatchable and easily measurable clean peak resources. Sunrun recommends DOER interpret the statutory requirement that energy storage systems operate “primarily to store and discharge renewable energy” to mean that the storage system is an eligible clean peak resource if the system is charged by a renewable energy system more than 75 percent of the time. Alignment with the federal ITC requirement should be the benchmark for energy storage systems to qualify as a clean peak resource. Sunrun further recommends that DOER clarify that behind the meter (“BTM”) energy storage systems as well as front of the meter (“FTM”) systems qualify as an energy storage system for clean peak resource eligibility, pursuant to otherwise applicable criteria.

C. Demand Response Resources

Sunrun supports the Straw Proposal definition of demand response resources as aggregations of different technologies from multiple locations, including energy storage, electric vehicles and other responsive loads. Sunrun emphasizes; however, that BTM solar generation

and energy storage systems have different operating characteristics than, for instance, behavioral responsive loads, and therefore justify different measurement and verification methods. BTM generating capacity, such as combined solar and energy storage systems, are controllable resources and should be measured directly based on their operation. This is in contrast to how load reduction is measured for behavioral demand response, which is generally a backward looking baseline methodology. For behavioral resources, baselines are useful for measuring load reduction potential because these resources are typically limited to reducing the responding customer's grid supplied load; but they are not "dispatchable" or able to export onto the grid. In contrast, energy storage can both reduce customer's grid supplied load and also be dispatched to reduce the grid supplied load of other customers within a localized area by injecting energy to the grid. These distinctions are of critical importance when developing the measurement and verification methodologies to determine the capability of different demand response technologies to generate and deliver CPCs.

Moreover, because energy storage systems are able to provide numerous market services in addition to generating CPCs, traditional baseline methodologies will likely provide an inaccurate representation of the full value potential of storage systems. In other words, storage is a dispatchable resource that can be managed to meet different needs on a day-to-day basis, and even on an hour-to-hour basis. As such, the measurement and performance evaluation for storage systems generating CPCs as a demand response resource should be based on the storage system's actual performance during the peak window and include both the load reduction and export value that the system delivers. The performance valuation should not be discounted because the storage system operated, for instance, the prior day in response to another program; or be limited only to the storage system's ability to reduce the host customer's load.

D. CPS Program Design Should Support Value Stacking

Sunrun strongly urges DOER to explicitly state that a clean peak resource's participation in the CPS under any eligible category does not preclude the resource from participating in a separate program. Ensuring that CPS resources are able to participate in other programs ensures that additional value streams are available for technologies that might not otherwise have access to longer term financing or where multiple value streams are necessary to support the business case for adoption.² This is especially important for energy storage systems, where the ability to “stack” values from participating in multiple programs is critical to financeability.³ Designing the CPS to allow resources to stack the CPC value with other programs promotes increased deployment of energy storage resources in Massachusetts to provide greater CPS benefits. If multi-program participation is disallowed, or technically difficult, developers will have to choose between programs, resulting in more expensive deployment, program inefficiencies, and reduced effectiveness across programs. Sunrun strongly encourages DOER to ensure that the CPS program allow DER assets, particularly energy storage, to maximize their use-case potential across multiple programs.

II. Peak Seasons and Seasonal Peak Periods

The Straw Proposal defines the Peak Seasons as Spring: March 1 to May 14; Summer: May 15 to September 14; Fall: September 15 to November 30; and Winter: December 1 to

² See Straw Proposal at Slide 29 (allowing value stacking is also aligned with the basis for DOER's proposed procurement mechanisms “to provide long term revenue certainty, enabling reduced cost financing and increased technology deployment at lower program cost”).

³ See, e.g., Massachusetts DOER and MassCEC, *State of Charge: Massachusetts Energy Storage Initiative* at 79, 115, 121, 123, 157 available at <http://www.mass.gov/eea/docs/doer/state-of-chargereport.pdf> (“State of Charge”) (describing the value propositions of energy storage and the need to close the “revenue gap” for energy storage project owners who are currently unable to monetize all of an energy storage system's benefits by creating market participation pathways to access multiple revenue streams).

February 28. The Straw Proposal defines the Seasonal Peak Periods as: Winter and Fall: 8-9 am and 4-7 pm; Spring: 8-9 am and 5-8 pm; and Summer: 2-6 pm.⁴

Sunrun supports DOER's proposal to capture multiple peak periods in a single day over shorter duration periods as proposed for the Winter, Spring and Fall Peak Seasons. Capturing the split daily peaks through smaller windows will enable resources with limited duration to maximize their contribution to peak emission reductions and achieve greater efficiencies of scale.

The Straw Proposal also indicates that while the Seasonal Peak Periods capture the highest daily peak, they are closely aligned with the highest energy spend and emissions peak in the Summer Peak Season and align with the highest energy spend and the emissions peak in the Winter Peak Season.⁵ Sunrun supports the alignment of the peak periods with the emissions peak, as well as the highest energy spend periods as closely as possible. The CPS is fundamentally aimed at achieving "clean" system peaks by incentivizing peak demand reduction or the use of clean resources during peak system demand. The implication being that peak emissions correlate closely with peak demand and therefore reducing system peak demand, or integrating more clean generation during peak demand periods, emissions from costly fossil fuel based peak generation resources will be displaced. Ensuring close alignment between the daily peak, the hours with the highest GHG-emissions embedded in the fuel mix, and the hours that carry the highest proportional cost to Massachusetts' ratepayers will deliver the highest emission reduction value and cost savings to Massachusetts ratepayers under the CPS. As such, Sunrun urges DOER to define the value proposition of CPCs as a peak emission reduction value; or to

⁴ Straw Proposal at Slide 11.

⁵ *Id.* at Slide 13

otherwise ensure that the program design does not create value-stacking complications with capacity, transmission, or other programs.

III. Clean Peak Certificate Multipliers

The Straw Proposal identifies 2 core program design multipliers: the Seasonal Multiplier and the Actual System Peak Multiplier; and 3 potential program policy enhancement multipliers: the Resilience Multiplier, Minimum Load Negative Multiplier, and Distribution Circuit Multiplier.⁶ Each of these multipliers would function as an enhancement or reduction to the value of CPCs. Sunrun offers the following observations and suggestions for multiplier design and adoption.

A. Seasonal Multiplier

DOER proposes the Seasonal Multiplier as a core program design element that would apply a 3X multiplier to CPCs generated during the Summer and Winter Seasonal Peaks and a 1X multiplier to CPCs generated during the Spring and Fall Seasonal Peak.⁷ DOER indicates the intent of the multiplier is to provide a price signal to reflect the value of the relative impact of clean resource participation in a particular Peak Season. Sunrun supports the Seasonal Peak multiplier and agrees it will assist participants in prioritizing resource operation and CPS participation.

B. Actual System Peak Multiplier

DOER proposes the Actual System Peak Multiplier as a core program design element that would apply a 15X multiplier to the number of CPCs generated coincident with actual monthly regional peak.⁸ DOER anticipates that the retroactive application of the multiplier will

⁶ *Id.* at Slide 21.

⁷ *Id.* at Slide 22.

⁸ *Id.* at Slide 23.

incent project owners to “chase the peak” and will increase the likelihood that resources operate at times when they can provide the highest value.⁹

Sunrun supports this innovative design element as it would incentivize DER aggregators and other program participants to manage resource dispatch over a peak period event by maximizing dispatch during the predicted “actual” peak hour. DOER may also consider designing this multiplier to allow participating resources to respond to a utility’s peak forecasting. Generally, non-utility companies do not currently engage in this sort of system forecasting and it would require costly investments to duplicate the system operator and coordination function that is currently a utility-based function. Because utilities manage and operate their distribution systems, have access and the resources to analyze customer usage patterns, and have other system data and information necessary to accurately forecast system peaks, leveraging this core utility competency could increase the likelihood of achieving the “actual” system peak multiplier goals.¹⁰ Within this construct DOER could also consider a mechanism to reward utilities for accurate peak forecasting.¹¹

C. Resilience Multiplier

DOER proposes the Resilience Multiplier as a potential policy enhancement that would increase the number of CPCs generated by a facility that also provides a resilience benefit of delivering power to a load during external outage conditions.¹² The Straw Proposal correctly notes that some peak reduction technologies can enable resilient provision of electricity and

⁹ *Id.* at Slide 23.

¹⁰ *See, e.g.,* New Hampshire Pub. Utils Comm’n Docket No. 17-189, Closing Statement of Sunrun Inc. and ReVision, Inc. at 7-8 (discussing the shortcomings of requiring DER aggregators to predict system peaks as a precondition for bring-your-own-device (“BYOD”) participants to participate in Phase 1 of the Liberty Utilities peak reduction program).

¹¹ *See, e.g., id.*, Direct Testimony of Justin R. Barnes, Attachment 2 “Concept Bring-Your-Own-Device Program Design” at 3-4 (May 2, 2018).

¹² Straw Proposal at Slide 24.

Sunrun notes that solar paired with energy storage are likely technology candidates with the most potential and appeal to customers. The multiplier would allow participating resources that demonstrate the added ability to provide electricity to load during an external outage to receive the Resilience Multiplier on all eligible CPC generation. Sunrun supports the addition of the Resilience Multiplier and recommends DOER work to incorporate it in the initial rollout of the CPC rules.

The concept of resiliency in electrical system planning has gained significant attention in recent years in the context of electrical infrastructure and the provision of essential services in the wake of extreme weather events.¹³ For instance, following Hurricane Irene in 2011 and Superstorm Sandy in 2012, both of which caused substantial damage and left thousands without power in Massachusetts and along the East Coast, federal and state government agencies gave close attention to incorporating resiliency into the electric system.¹⁴ Indeed, the incorporation of distributed energy resources (“DER”), particularly solar and energy storage, have the unique advantage of being located closer to load centers and have the ability to maintain key loads to contribute to system and host customer resilience.¹⁵

Integrating clean system resilience resources into Massachusetts’ electric system provides multiple benefits, including greenhouse gas emission reduction as a climate *mitigation* strategy,

¹³ See, e.g., J. Van Nostrand, *Keeping the Lights on During Superstorm Sandy: Climate Change Adaptation and Resiliency Benefits of Distributed Generation*, 23 NYU Env’tl. L. Journal 92, 112-14 (2015) (“Van Nostrand”) (discussing various federal and state agency reports and utility proceedings assessing resiliency value and incorporating concepts of resiliency into electric system planning and operation).

¹⁴ See, e.g., Executive Office of the President, *Economic Benefits of Increasing Electric Grid Resilience to Weather Outages* (2013) (“Executive Office of the President”), available at https://www.energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf; New York Pub. Serv. Comm’n, Case No. 13-E-0030, Order Approving Electric, Gas and Steam Rate Plans in Accord with Joint Proposal (Feb. 21, 2014), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={1714A09D-088F-4343-BF91-8DEA3685A614}>.

¹⁵ See, e.g., Van Nostrand at 113-114.

but also improved resiliency as a climate *adaptation* strategy, which is particularly important in the face of increased frequency of extreme weather events. Incorporating a Resiliency Multiplier into the CPS would provide an additional value stream to incentivize the adoption of clean peak resources to further CPS goals, and enhance climate mitigation and adaptation capabilities. Moreover, a higher Resilience Multiplier could be correlated with the requirement that electric utilities in Massachusetts identify areas on “the electric distribution system most vulnerable to outages due to high electricity demand, lack of local electric generating resources and extreme weather events.”¹⁶ Incorporating this multiplier into the core program design is important for resiliency technology financeability, particularly energy storage systems, as adding a backup function to a home or business can add significant increased costs to the installation and operation of certain resources.

DOER may find helpful in developing the Resilience Multiplier recent reports on the economic benefits of grid resiliency and studies on reliability valuation that have also been used to estimate resiliency values. On a broad scale, the U.S. Department of Energy and the President’s Council of Economic Advisors examined the economic benefits of grid resiliency in a 2013 report. That report found the annual cost of weather-related outages ranged from \$18 billion to \$33 billion, with much higher costs in years with major storms.¹⁷ According to the report, grid outages resulted in significant economic losses, including “lost output and wages, spoiled inventory, delayed production, inconvenience, and damage to the electric grid.”¹⁸

¹⁶ Act to Advance Clean Energy, Section 18 (requiring electric distribution companies to file annual electric distribution system resiliency reports that (i) show the electric load on the electric distribution system, including electric loads during peak electricity demand time periods; (ii) highlight the most congested or constrained areas of the electric distribution system; and (iii) identify areas of the electric distribution system most vulnerable to outages due to high electricity demand, lack of local electric generating resources and extreme weather events).

¹⁷ Executive Office of the President at 23.

¹⁸ *Id.* at 24.

Other studies have taken broad economic impact data such as that discussed above and developed methodologies to quantify more granular monetary valuations of reliability and resiliency benefits, or termed another way, the benefit of uninterrupted power supplies.¹⁹ The valuation estimates the cost per kWh of power outage as a “value of lost load” (“VoLL”), which estimates the costs of supply interruptions for energy customers. A recent report titled “Energy Storage: the New Efficiency” (“Report”) discussed recent studies that evaluated VoLL in the reliability and resilience context. Among other things, the Report estimated Massachusetts non-energy benefits of storage using Lawrence Berkeley National Laboratory’s VoLL estimates for residential customers.²⁰ The Report’s findings provide a useful guide for DOER to determine monetary values of resilience for developing a Resilience Multiplier. A summary table from the Report estimating costs to customers from lost power is reproduced below.

Table 5: Estimated cost per event, average kW and unserved kWh, residential (2018\$)²¹

	Momentary	30 Minutes	1 Hour	4 hours	8 Hours	16 Hours
Cost Per Event	\$4.19	4.83	5.47	10.20	18.46	34.77
Cost per Average kW	\$2.49	\$3.11	\$3.54	\$6.65	\$12.13	\$22.75
Cost per Unserved kWh	\$33.16	\$6.33	\$3.54	\$1.72	\$1.50	\$1.40

¹⁹ See Clean Energy Group, *Energy Storage: The New Efficiency, How States can use Energy Efficiency Funds to Support Battery Storage and Flatten Costly Demand Peaks*, Appendix B (Apr. 2019) (“Energy Storage: The New Efficiency”).

²⁰ *Id.*, Appendix B at 15.

²¹ *Id.* (the Report adopted LBNL data estimates for a VoLL of \$1.72 per kWh for residential customers and noted that U.S. EIA data indicates that 4 hours is the average duration of power outages in the United States across all utility types).

It is important to note the Report’s findings regarding health and safety related benefits of resiliency. The Report noted that more resilient power supplies enable providers of safety and health services—like hospitals or community health centers—to continue to provide services that are highly valuable to society during outages associated with natural disasters, and noted this as “a distinct non-energy benefit that may not be adequately accounted for in VoLL.”²²

The report also noted the “additional value of avoided power outages for customers who are elderly, disabled or have serious health conditions and rely on electronic devices are more vulnerable to power outages than the average customer.”²³ The Report cited research finding that “in the United States—among the 175 million people covered by employer-sponsored health insurance—approximately 218 per 100,000 people are “electricity dependent residing at home.”²⁴

Further emphasizing the non-energy benefits of improved resilience, the Report cited Massachusetts investor-owned utilities’ obligation “to maintain lists of health critical customers (called “life support customers” in Massachusetts) who cannot have their power shut off, and are prioritized in power restoration efforts, because they are reliant on electrical medical devices, and to be without power would be harmful or life threatening.”²⁵ The adoption of resilient technologies by vulnerable populations would provide critical electricity service during power outages, and potentially life-saving benefits.

Moreover, there are many difficult to quantify or potentially non-quantifiable benefits to having secure, indefinite, clean back-up power. The experience of Puerto Rico following Hurricanes Irma and Maria provide a tragic case study about the importance of resilient power to

²² *Id.* at 14.

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

peoples' livelihoods and well-being. In addition to substantial lost economic activity and thousands of lost lives, there has also been a spike in mental health issues, outmigration, and chronic illness following these natural disasters. Resilient power systems can help mitigate these impacts during and after a catastrophic storm.

System resilience should be a central pillar to the Commonwealth's modern electric grid and Sunrun encourages DOER to consider relevant reports and studies on the value of resiliency, including those referenced herein, to develop a Resiliency Multiplier for inclusion in the initial CPS rollout.

D. Minimum Load Negative Multiplier

DOER proposes the Minimum Load Negative Multiplier for production of CPCs during periods when clean energy generation may cause hosting capacity concerns coincident with minimum-daytime loads.²⁶ The Straw Proposal states that currently DOER is considering negative peak generation coincident with periods of low demand on Spring weekends and Spring Holidays from 12 - 4 pm.²⁷

Sunrun appreciates the grid management challenges posed during periods of low demand and high renewable generation and supports a mechanism to send price signals to incentivize operations to reduce renewable generation exports during these low load periods. However, as Sunrun understands the Straw Proposal, this multiplier would apply as a penalty on renewables exports during the defined periods. A penalty mechanism is unwarranted and would penalize resources for what would otherwise be considered "normal" or "business as usual" operations. Moreover, DER operational changes under low load circumstances provide a *benefit* to the grid and should be rewarded. Imposing the proposed negative multiplier could discourage

²⁶ Straw Proposal at Slide 25.

²⁷ *Id.*

participation in the CPS program and Sunrun urges DOER to reject the negative multiplier proposal and instead develop this policy enhancement as a positive multiplier. Sunrun further encourages DOER to consider an “actual minimum load” multiplier, similar to the Actual Peak Multiplier, that would incorporate utility “actual minimum load” period forecasting; which would allow CPS participants to more effectively “chase” the actual minimum load period. Similar to Sunrun’s suggestion for the Actual Peak Multiplier, DOER may consider an incentive mechanism for utilities that accurately forecast “actual” minimum load periods.

E. Distribution Circuit Multiplier

DOER proposes the Distribution Circuit Multiplier as a utility established circuit-specific multiplier to account for distribution specific locational values.²⁸ Sunrun appreciates the Straw Proposal’s forward thinking proposal and welcomes the opportunity to work with DOER, utilities and other stakeholders to explore this policy enhancement further. Sunrun urges DOER to clarify; however, that this multiplier would not displace utility obligations to pursue NWA solicitations²⁹ or otherwise preclude resources that participate in an NWA solicitation on a particular circuit from being eligible to receive the Distribution Circuit Multiplier at that same circuit, or otherwise preclude resources from participating in other programs.

IV. CPC Procurement Mechanisms

The CPS is a forward thinking policy with significant potential to reduce greenhouse gas emissions and other air pollutants while delivering ratepayer savings to the Commonwealth. The CPS enabling statute allows DOER to establish and require the use of procurement mechanisms for the electric distribution companies to meet CPS requirements³⁰ and Sunrun supports DOER’s

²⁸ *Id.* at Slide 26.

²⁹ *See* An Act to Advance Clean Energy, Section 18 (2018).

³⁰ *Id.*, Section 17.

proposal to adopt a procurement mechanism.³¹ Sunrun agrees with DOER’s assessment that a procurement mechanism “would provide long-term revenue certainty, which enables lower cost financing and increased technology deployment at a lower program cost”³² and strongly encourages DOER to develop a tariff-based procurement mechanism for residential customers, at minimum. A tariff structure for the CPS could be designed to provide a simple mechanism for customers to enroll in the program through a “bring-your-own-device” (“BYOD”) participation model.³³ A BYOD model allows customers to participate in various programs through DER aggregators and “stack” the value streams derived from delivering services under each program. As DOER has previously emphasized, value stacking is essential for the financibility of energy storage systems.³⁴ Adopting a tariff structure for the CPS program would allow DOER to build on other programs structured around a BYOD model and create a simple participation pathway for customers.

A BYOD modeled tariff would offer a cost-effective and administratively simple framework to encourage clean peak resource deployment. DER developers and DER aggregators have direct and ongoing relationships with customers, starting with the DER sale and installation and continuing through delivery and managing the customer experience for the life of the asset, which would include the customer’s participation for the term of a CPC tariff, and other programs. Leveraging the customer relationships of DER developers will provide substantial customer outreach and enrollment efficiencies. Utility leadership and participation in customer

³¹ Straw Proposal at Slide 29.

³² *Id.*

³³ For addition information on BYOD models, *see* New Hampshire Pub. Utils Comm’n Docket No. 17-189, Direct Testimony of Justin R. Barnes, Attachment 2 “Concept Bring-Your-Own-Device Program Design”. Sunrun welcomes the opportunity to provide additional information to DOER and stakeholders about how a BYOD tariff model could be incorporated as a core element of the CPS program.

³⁴ *See*, State of Charge.

education and marketing is also essential to assisting DER developers engage with customers at the point of sale and is a critical element to customer engagement and participation. In Sunrun's experience, when utilities work in conjunction with DER developers and DER aggregators to educate customers about new program opportunities, customer knowledge and interest in participation increases. Providing customers a simple pathway for participation is a critical next step and a tariff modeled on the BYOD design provides a simple mechanism for enrolling new customers' in the CPS program at the initial point of sale of an eligible clean peak resource.

Moreover, while a BYOD based tariff would be technology agnostic (*e.g.*, any eligible clean peak resource could enroll in the CPS program under the tariff), the tariff would provide certain targeted technologies, including energy storage systems (as the Straw Proposal notes), with upfront price signals correlated with a set participation term, both aspects being critical to financeability. A tariff mechanism would also simplify the enrollment processes by creating a structure for DER aggregators to enroll (or remove) customers (with the appropriate customer authorizations) in the program thereby reducing transaction costs for all parties. This is an especially important program design element for smaller resources, particularly residential class resources. Sunrun offers the following additional recommendations for designing a BYOD based tariff procurement mechanism for CPCs.

- 1) The tariff should allow DER aggregators to enroll or remove customers from the tariff and dispatch customer-sited resources on an aggregated basis. This simplifies the enrollment process for customers as well as the administration of the program for utilities. For example, DER aggregators would manage a fleet of clean peak resources for dispatch during the peak events and provide a centralized point of contact and information for performance verification and payment settlement. This would reduce

transaction costs for the selected third party verification entity³⁵ and the utility by reducing the number of parties to the transaction from many individual customers to a small number of DER aggregators. To further facilitate the tariff structure, customers should be provided a simple mechanism in the tariff to assign CPC title to their chosen DER aggregator. This will better facilitate the transaction process in instances where the customer owns the eligible clean peak resource or would otherwise hold title to the CPC (*i.e.*, for certain behavioral demand response generated CPCs) and allow DER aggregators to interface with the verification entity and utility for verification and payment settlement purposes.

- 2) The CPS program should be designed solely as an incentive-based program in order to encourage the deployment of clean peak resources for the generation of CPCs. The program should not subject participants to risk of penalty or other liability for not participating during a particular Peak Season or Seasonal Peak Period; whether for resource optimization purposes, resource operational or technical reasons, or otherwise. Sunrun's understanding of the Straw Proposal is that it is DOER's intent to allow maximum flexibility in the operation of eligible clean peak resources and that non-participation for any reason would not subject participants (either customers or DER aggregators) to penalty or liability; however, the tariff should be explicit in this regard.
- 3) The tariff should be structured to allow for fixed CPC price "lock-in" over the term of the tariff. Sunrun recommends a 10-year tariff term with the fixed CPC price over the term set at the time of enrollment. As the Straw Proposal notes, "the intent of the procurement would be to provide long term revenue certainty, enabling reduced cost financing and

³⁵ Straw Proposal at Slide 31 (stating that DOER anticipates selecting a sole entity to track and verify all metered data).

increased technology deployment at lower program cost.”³⁶ This is critical for financing energy storage systems in particular and this structure would provide the necessary transparency and predictability essential for forecasting revenue potential.

- 4) The tariff should be available on an open enrollment basis. While the CPS sets minimum CPC procurement requirements for utilities to meet in a given compliance year,³⁷ CPCs are tradable commodities. This provides utilities flexibility if there is over- or under-procurement in a given year to sell or buy CPCs to or from another utility. DOER may also consider a “banking” system to allow for CPCs procured during one compliance year to carry over for compliance in subsequent compliance years. Facilitating this market flexibility in the early years of the CPS rollout will stimulate clean peak resource deployment and provide valuable learnings that DOER can incorporate into program revisions in later years, as necessary.

V. Metering and Reporting Requirements

The Straw Proposal states that DOER anticipates selecting a sole entity to track and verify all metered data by receiving hourly interval performance from each qualified Clean Peak Resource.³⁸ The Straw Proposal further states that the vendor shall validate the number of CPCs each qualified Clean Peak Resource can generate and report monthly on the preceding month’s total CPC production and hour of actual monthly peak.³⁹

As discussed above, because solar co-located with energy storage is capable of providing clean peak benefits from both the solar and the storage resource, Sunrun urges DOER to ensure that the metering configurations required to deliver metered data received by the verification

³⁶ *Id.* at Slide 29.

³⁷ An Act to Advance Clean Energy, Section 13.

³⁸ Straw Proposal at Slide 31.

³⁹ *Id.*

entity are clearly defined and allow for the separate metering of co-located clean peak resources, as appropriate. This will ensure that all resources are accurately measured for determining the amount of CPCs generated by each resource individually. Sunrun also encourages DOER to develop guidance documents on program mechanics. In particular, Sunrun encourages DOER to define how measurement and verification will occur for different types of eligible resources. For example, see above discussion regarding the differences between energy storage and behavioral demand response resources and the need for different measurement methodologies. This guidance should also discuss how different types of resources are measured for certain multipliers. For instance, pursuant to Sunrun's recommendation to structure the Minimum Load Multiplier as a positive multiplier, DOER should clarify that the solar resource would generate CPCs by shifting generation delivery from the grid to a co-located energy storage system and whether the energy storage system would also generate CPCs for acting as a load sink during the low load period.

VI. Conclusion

Sunrun appreciates the opportunity to provide these comments and looks forward to continued collaboration with DOER and stakeholders on the development and design of the CPS.

Respectfully submitted,

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