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February 5, 2019

Via E-mail
Commissioner Judith Judson
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: DOER's Clean Peak Energy Standard Stakeholder Questions

Dear Commissioner Judson:

National Grid appreciates the opportunity to provide comment and responses to the questions issued by the Department of Energy Resources ("DOER") on the implementation of the newly enacted Clean Peak Standard ("CPS"). On August 9, 2018, Governor Baker signed into law An Act to Advance Clean Energy. Included in this statute was the addition of the Clean Peak Standard. This section of the law requires DOER to establish a baseline minimum percentage of kWh sales to end use customers that shall be met with Clean Peak Certificates ("CPCs"). Additionally, DOER must promulgate regulations to implement this section of the law. As part of the regulations DOER can include the following: (i) establishment of seasonal peak periods; (ii) methodology by which CPC values shall be established, which may include a process by which Electric Distribution Companies ("EDCs") competitively procure CPCs from Clean Peak Resources ("CPRs") and enter into Long Term Contracts, subject to approval from the Department of Public Utilities ("Department"); (iii) establishment of minimum percentage of CPCs that must be derived from demand response resources; (iv) an alternative compliance mechanism for retail electricity suppliers; and (v) procedures by which each retail electricity supplier shall annual submit for DOER's review and filing demonstrating its compliance with the requirement of this section. In developing these regulations, DOER issued 36 questions to which stakeholders may respond. National Grid is submitting responses to these specific questions in the attachment to this letter.

The CPS will establish a new focus on using renewable energy and demand resources during certain seasonal peak periods, in order to help reduce pollution and the higher costs of energy that can occur at those times. National Grid is committed to supporting policies in all of its national and local jurisdictions in which it operates that help to achieve the goal of the Global Warming Solutions Act in Massachusetts, that requires statewide emissions of GHG to be reduced by 25% below 1990 baseline level by 2020 and an 80% reduction by 2050. The CPS can and should be used to further that requirement.

As such, National Grid is supportive of implementing the CPS in such a way that will support three key principles, as follows:

1) Further increases in net customer bill impacts should be avoided: DOER should model its final program design and demonstrate that the added costs of CPS compliance for load serving entities ("LSEs") will be offset by expected customer bill reductions due to lower peak energy and capacity market prices, as well as other on-bill cost reductions, such that the bill impact for customers on average should be neutral or positive (e.g., bills would be expected to be lower).
2) The CPS should reduce total emissions: The design of the CPS regulations provide an opportunity to clean up the peak and reduce both GHG emissions and local pollutants overall. DOER should use the CPS to do so within the constraints of the existing tracking and allowance systems active in the Commonwealth for its energy supply. Cleaning up the peak while pushing those emissions to other periods would seem to be counter to the intent of the statute.
3) Electric Distribution Companies ("EDCs") procurement should be carefully designed to avoid new distribution customer burdens: If such procurement support is deemed beneficial, the National Grid would prefer to see periodic competitive procurements in a tariff based program at a scale that is not expected to exceed its load-served obligation under the CPS regulations, and take into account other sources of supply that the EDCs will already have available to them from utility-owned eligible resources and attributes to which it has title to through other tariffs, programs or contracts.

National Grid looks forward to engaging in additional stakeholder discussions and providing additional comments on conceptual proposals and draft regulations to implement the CPS program. The Company is committed to working in partnership with DOER, the other EDCs and other stakeholders in the CPS program design to help craft the CPS in such a way that it is beneficial for customers and the environment, and creates cost effective and flexible support for eligible CPS resources.

Sincerely,

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Enclosure

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Clean Peak Standard (CPS) Stakeholder Questions

Definitions of Key Terms

Clean Peak Resource

Clean peak resource is defined as "a qualified RPS resource, a qualified energy storage system or a demand response resource that generates, dispatches or discharges electricity to the electric distribution system during seasonal peak periods, or alternatively, reduces load on said system."

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?*

   In order to reduce Massachusetts locational peaks and locational emissions, and if the costs of such a program be recovered from distribution customers, National Grid believes that resources should be located within Massachusetts or the resources be required to deliver energy to a node within a service territory of a Massachusetts Electric Distribution Company ("EDC"), from either interstate transmission or federal to state-jurisdictional transmission lines (for offshore resources) in order to qualify under the statute. The regulations should allow resources connected to both distribution and transmission to qualify since both types of connections can help to reduce peak generation needs and peak emissions as long as they are delivered to and settled in a Massachusetts EDC service area.

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 stated above, qualified CPS resources should only be located in Massachusetts, or delivered to a node that is within the service territory of a Massachusetts EDC.

Demand Response Resource

Demand response resource is defined as "changes in electric usage by end-use customers in the commonwealth from their normal consumption patterns in response to: (i) changes in the price of electricity over time, including, but not limited to, time-of-use rates for residential and small commercial and industrial customers; or (ii) incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized."

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

   Resources included in this definition must reduce electric load of the customer at peak, be measurable and verifiable, and meet the clean resource standards set

out above, and should otherwise be technology neutral. "Changes in the price of electricity over time" could include a tariff rate offered by an EDC or a commodity rate plan offered by a competitive supplier. DOER should avoid double counting and free-ridership with resources that are also being paid by ISO-NE as demand response resources in the Forward Capacity Market. As an additional consideration, the EDCs' Demand Response programs funded through Energy Efficiency charges on customer bills are currently not designed to reduce demand during specific times of high market prices or when reliability is jeopardized. Rather, they are focused on system peak reduction without regard to those other goals.

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

   In order for an EV to qualify, the control of charging would need to meet the principle presented in the response to question 3 above. If it does not meet the principle, the EV should not qualify.

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

   As demonstrated in the assessment of National Grid's Worcester Smart Energy Solutions Program (aka Smart Grid Pilot), time-varying rates ("TVR") combined with Advanced Metering Functionality ("AMF") can effectively reduce residential peak usage and overall energy usage. Commercial customers currently have some incentive when they are on a demand rate that is time-varying, or on competitive supply that is structured as a TVR. DOER should assess the effectiveness of specific rate designs, and allow those that can show demonstrated reduction in peak usage by customers to qualify for the CPS. If AMF and TVR structures are adopted for such customer classes by EDCs, the certificates should be provided to the EDC to the extent evaluations can show that reductions in peak energy use occurred due to the rate structure. This would be an effective monetization of a benefit of TVR with AMF, and thus increase the Benefit-Cost ratio in the assessment of AMF going forward.

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

   At this time, National Grid believes this should apply only to active demand response. While National Grid is open to considering the application to passive demand reduction, it is unclear what problem the CPS could remedy for passive demand reductions. Passive demand reduction, traditionally energy efficiency, already has multiple incentive mechanisms and currently account for roughly 10% of Massachusetts gross load forecast, or 1,485 MW[1].

7. *Should standalone energy storage resources (i.e. not directly connected to another resource type) be eligible to qualify as demand response resources? What*

[1] [1] 2018 CELT – NE ISO.

requirements, if any should standalone energy storage resources face in order to qualify as demand response resources?

Standalone energy storage resources should not be eligible to qualify as demand response resources.

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?*

   If a facility such as a thermal storage facility meets the principle set forth in the response to question number 3 above, then it would be able to qualify. If it does not meet the principle, then it should not qualify.

Qualified Energy Storage System

Qualified energy storage system is defined as "an energy storage system, as defined in section 1 of chapter 164, that commenced commercial operation or provided incremental new capacity at an existing energy storage system on or after January 1, 2019; provided, however, that such system operates primarily to store and discharge renewable energy as defined in said section 1 of said chapter 164."

9. *How should DOER define what constitutes "incremental new capacity at an existing energy storage system"?*

   DOER should interpret this phrase to mean that only the incremental capacity added to an energy storage system that would otherwise comply with the CPS should be qualified. This definition of energy storage system should exclude pumped hydro-electric generation capacity or additions thereto.

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

    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?*

       Given the design of the NEPOOL GIS to track all generation and its attributes, and how this design allows attributes of energy to be exchanged outside of the physical delivery of energy in real time, National Grid believes that the title to a REC for each MWh of energy used to charge a battery is key to proving that it is "primarily charged by renewable energy". The use of the IRS code minimum of 75% of energy charging the battery storage device to be renewable would be a supportable, minimum level of such supply to the storage system, but each of the MWh would need to be matched by a REC, and should be matched by a REC upon discharge. Any non-renewable power used to charge the storage device that is also to be dispatched during peak periods should be matched by Regional Greenhouse

Gas Initiative ("RGGI") allowances at the appropriate level to represent the ISO-NE system mix emissions level in CO2-equivalent per MWh. This will insure that there is some additional impact on overall regionally allowed emissions, which will help to increase the impact of the Clean Peak Standard in reducing peak emissions periods for GHG as well as more local pollutants such as NOx, SO2, and particulate matter.

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?*

As described above, the best solution will be the use of RECs for tracking renewable energy into and out of electric storage devices. This could be established in several ways: a physical connection between the two devices owned by the same entity, with an accounting for all renewable energy used to charge the storage device in a single or multiple NEPOOL GIS accounts, and RECs sold upon discharge that would be matched with CPCs in the appropriate time windows; a contract path from a REC producer to the storage device owner for RECs matched to the imports and exports of the storage device; and purchase of spot market RECs, so long as the storage device is in Massachusetts or meets the delivery requirements set forth in response to questions 1 and 2 above. DC-coupled solar plus storage systems would by default fall into the first category, and it would be incumbent on DOER to ensure that the storage device in such scenario was also not charged with more than 25% of its energy from non-renewable sources by comparing the input and export channels of the facility's generation measurement meter, provided by a reliable third-party source.

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

National Grid has no additional comments aside from the responses provided in the questions above.

<u>Qualified RPS Resource</u>

Qualified RPS Resource is defined as "a renewable energy generating source, as defined in subsection (c) or in subsection (d) of section 11F that has: (i) installed a qualified energy storage system at its facility; or (ii) commenced commercial operation on or after January 1, 2019."

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)?*

   Yes, the size of the electric storage device should align with the storage guidelines and requirements of the SMART program or be larger. A value of 25% should be used as a minimum capacity of the storage in MW (and duration for at least one MWh/MW), as compared to the nameplate capacity of the renewable resource.

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)?*

    As the concept of the CPS is to match certificates with a percentage of load delivered, the Company sees the CPS as a MWh-based program. As such, if a facility qualifies based on the statutory requirements, it will only be able to generate, offset, or release a given amount of energy during the CPS hourly windows based on it physical capabilities, and thus would limit the effective capacity available by the effective capacity factor of the facilities at those times. This is another reason why there should be clear safeguards against double counting of energy from RPS resources and energy stored in a battery that should be sourced from renewable resources; they should be matched by RECs for the requisite amount of energy charging the battery to meet the renewable requirement that were generated in off-peak times, and each MWh released should then be accompanied by a REC during the on-peak periods if it is to be considered renewable, and potentially create a CPS certificate.

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.)?*

    Yes, DOER should require any such facilities that generate or provide renewable energy stored in an electric storage device to emit less pollution than resources that would be offset during the peak hours which DOER sets for the CPS performance windows. This should be established in marginal emissions thresholds in the regulations to qualify under the CPS as a renewable generator by referencing recent marginal emissions rates during the peak windows in Massachusetts. Specifically, particulate matter and other local pollutants should be considered and specifically limited from any gas, solid or liquid fuel-based resource allowed under sections (c) or (d) of M.G.L. c. 25A, § 11F. Overall, the final regulations should be modeled appropriately to demonstrate that the program as designed will reduce local, regional, and global/uniform pollution emissions, and by how much, during the peaks and as a percentage of overall annual emissions for the various pollutants.

Seasonal Peak Periods

Establishing Seasonal Peak Periods

DOER is required to establish seasonal peak periods, which are defined by that statute as "the daily time windows during any of the 4 annual seasons when the net demand of electricity is the highest; provided however, that a seasonal peak period shall be not less than 1 hour and not longer than 4 hours in any season, as determined by the department."

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?*

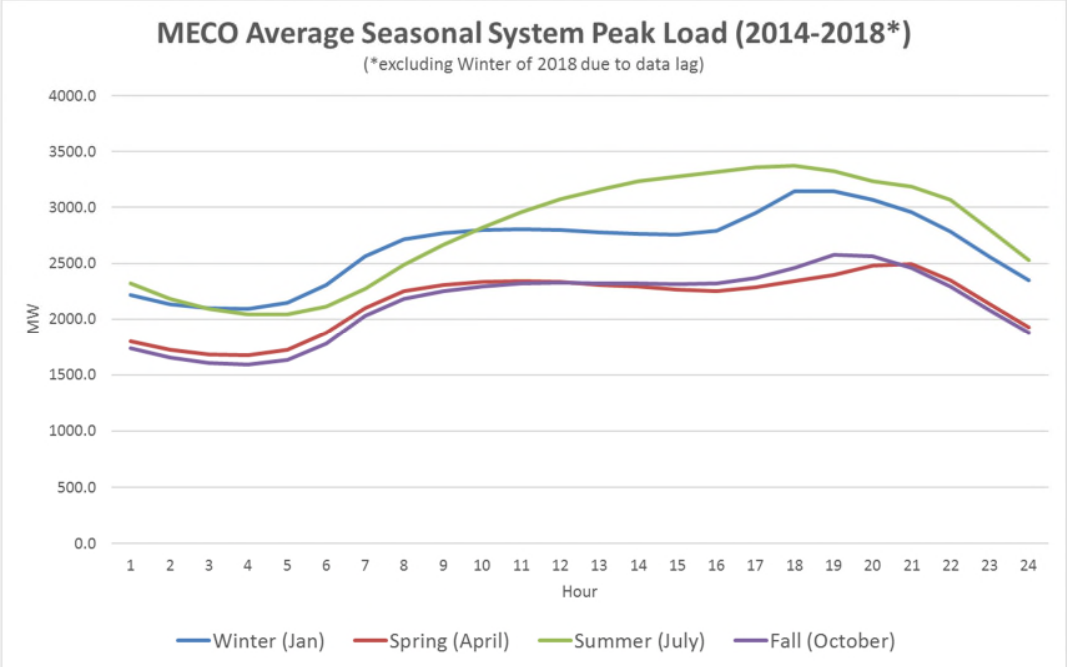
Given the "4 annual seasons" language of the statute, DOER should break down annual seasons into the following:

- Winter (4 months): December, January, February, March
- Spring (2 months): April, May
- Summer (4 months): June, July, August, September
- Fall (2 months): October, November

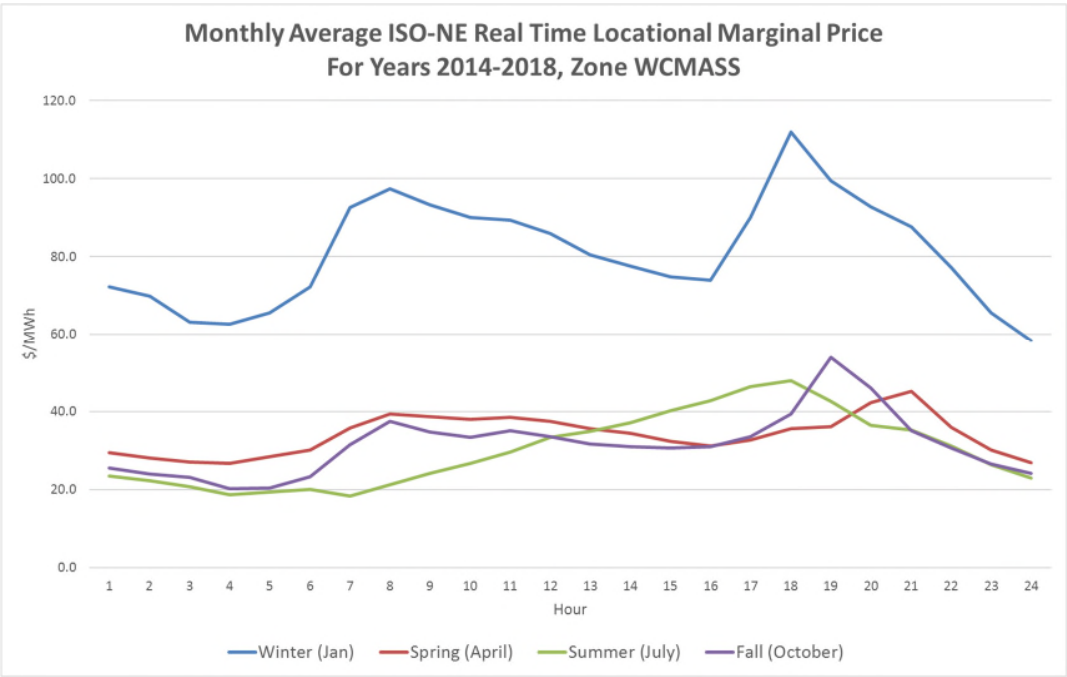
DOER should clearly define when "net demand of electricity is the highest." National Grid believes the CPS seasonal peak period should be based on at least five years of historical EDC system load data, and CPS compliance should be measured using gross system load going forward, reconstituted with eligible resources as National Grid expects EDC peak to stay relatively stable, while net peak is shifted due to the impact of CPS eligible resources.

DOER should seek to optimally balance cost reductions for EDC customers and emissions reductions for the Commonwealth. The two graphs below highlight the differences between the distribution system load and real-time locational marginal prices ("LMPs").

In looking at the historical system net load (for years 2014 through the Fall of 2018) of Massachusetts Electric Company ("MECO"), it shows that the distribution system experiences the highest loads during the summer in late afternoons and early evenings.



In comparison, on the supply side, the average of ISO-NE real-time LMP indicate a morning surge in the winter[2]. Please note that the graph does not capture the peaky nature of actual peaks, especially in the summertime.



[2] Hourly average of ISO-NE Real-Time Energy Market Hourly Locational Marginal Price Report generated for zone WCMASS (Location ID number 4007) for all days in January, April, July, and October for years 2015, 2014 to 2018. This graph does not show the peaks. https://www.iso-ne.com/isoexpress/web/reports/pricing/-/tree/final-lmp-by-node

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?*

    National Grid believes that DOER should consider at least five years of historical data, as shorter time frames do not capture longer term trends in weather and market conditions, including load shape, market price, capacity, retirements and other changes. In order to reflect real-time operating conditions, they should be based on day-ahead ISO-NE zonal LMP prices – the average of the last five years, and rolling averages moving forward.

    This forecast, based on the historical information, should then be reconstituted going forward for any CPS resources that are qualified in a year prior and available during the peak periods.

    b. *What data sources should DOER use to determine seasonal peak periods?*

    DOER should use the hourly zonal ISO load data (as reconciled with the load serving entities), day-ahead zonal LMP prices, and generation emissions on a monthly and hourly basis.

    c. *What time period(s) should each of the 4 annual peak periods cover?*

    With "not less than 1 hour and not longer than 4 hours in any season," CPS should apply to the following hours: 4 hours for summer, 3 hours for winter, and 1 hour each for spring and fall, as the shoulder months peaks do not necessarily reflect system peaks and have little value in lowering emissions or the cost to ratepayers. These hourly periods should only be on-peak days, meaning that CPS certificates would not be produced for generation on weekends or holidays.

    Assuming an average of 20.9 non-holiday weekdays per month (365 days of year – 104 (number of weekends per year) – 10 federal holidays per year = 251 working days per year. 251/12 = 20.92). The following breakdown allocates 669 out of 8760 hours to represent time of peak load (~8%).

Season	Month	# Non-holiday Weekday	# CPS Hours/ Weekday	# CPS Hours/ Month
Winter	1	20.9	3	62.8
Winter	2	20.9	3	62.8
Winter	3	20.9	3	62.8
Spring	4	20.9	1	20.9
Spring	5	20.9	1	20.9
Summer	6	20.9	4	83.7
Summer	7	20.9	4	83.7
Summer	8	20.9	4	83.7
Summer	9	20.9	4	83.7
Fall	10	20.9	1	20.9
Fall	11	20.9	1	20.9
Winter	12	20.9	3	62.8
Total		**251**		**669**
%/Year		68.77%		8%

If using actual system peak hours for MECO from (2014-2018), *hours ending*:

- Winter (3 hours): 18-20 (5pm-8pm)
- Spring (1 hour): 21 (8-pm-9pm)
- Summer (4 hours): 16-19 (3pm-7pm)
- Fall (1 hour): 19 (6pm-7pm)

d. Should seasonal peak periods be different lengths depending on the season?

Yes. As discussed above in response to question 16(c), seasonal peak periods should 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?

Seasonal peak periods are relatively stable overtime; it took over 15 years for summer peaks to shift from occasional June peaks to occasional September peaks. Over the last 15 years the overwhelming majority of summer peaks have remained either in July or August and the overall load shape absent the impact of behind-the-meter distributed energy resources has remained relatively stable. DOER should monitor seasonal peaks on a regular basis (e.g. bi-annually). Once established, the CPS peak period and hours should be stable for four years, with a review to be completed during year three of each commitment period.

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

Please see the answer above to question 16 regarding reconstituted/gross peaks.

Atypical Peak Events

Not all system peaks occur within the same 1-4 hour window throughout the course of a season (e.g. a 95 degree day on a weekday in May will almost certainly not have a peak that occurs at a similar time of day as the bulk of peak periods in the same month).

18. Should DOER establish peak periods other than the seasonal peak periods during which clean peak resources are eligible to generate clean peak certificates?

In favor of reducing the complexity of setting and providing certificates during peak periods, National Grid does not believe other periods should be used.

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?

As stated above, National Grid does not believe peak periods other than seasonal should be used. However, if DOER was to do so it, and if allowed by the statute, should consider setting Spring and Fall (shoulder months) peak periods hours at zero as the loads during those seasons reflect system baseload demand. There is generally little seasonal heating or cooling that drives up energy demand in these shoulder periods. Further, the ISO LMP prices during the shoulder months are significantly lower than peak months. If this is not possible under the statute, then a one-hour peak period for the spring and fall months would minimize customer costs for periods with very little benefit.

b. Should DOER specifically target ISO system peaks?

No. DOER should focus on local EDC system peaks and generation emissions within the Commonwealth.

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.

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

No. Eligible facilities should be able to generate certificates during the peak hour periods for as long and as much as they are able, even if for only a portion of the period or a portion of the facility's nameplate capacity.

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?*

    DOER should not set different prices for when the Clean Peak Certificates ("CPCs") are created, but it is possible to incent dispatchable resources to discharge in later hours to offset the intermittent availability or diurnal cycle of some renewable generation. This could be achieved by using factors. For example, 1 MWh in the last hour of summer peak, or any time in the winter peak, could be deemed to create one CPC, while 1 MWh in daylight hours could create 0.25 CPCs.

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

    No. National Grid's interpretation of the statute is that this is not a capacity-focused program that is seeking to maintain system reliability, and as such there should not be penalties associated with any non-performance based on any expectation of availability. There may be performance expectation in contracts between private parties or included in tariff language proposed by EDCs for tariff-based payment programs, but these do not need to be reflected in the program regulations.

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

    As discussed above, the EE DR programs are developed to meet slightly different goals than as set forth in the definition of an eligible demand response resource, and other forms of EE are already incentivized. Any inclusion of EE resources would transfer the cost of the incentives from the EE recovery factor to the commodity rates customers pay or a CPS recovery factor, should one be created. In addition, EE-funded passive demand reduction may not meet the definition in the statute for Demand Reduction under the CPS.

    Other resources supported by tariff or contracting programs, such as SMART and Section 83C procurements that meet the requirements of the law should be eligible to participate, but should be required to be located in and connected to an EDC's distribution system, or delivered to an EDC supply point.

    Within the SMART program, energy from solar facilities that is generated during the peak hour periods should qualify for these attributes, as do the RECs from such facilities under the approved SMART tariff. These attributes should also be transferred to the EDC with which the system is enrolled. Any use of that energy and the RECs to charge a storage device to create storage-based CPCs from co-

located storage in the SMART program would also belong to the EDCs, or otherwise cannot be created. The EDCs are provided title to RECs from SMART solar facilities. This includes behind-the-meter solar plus storage deployments, as the EDCs will have title to the RECs from all enrolled systems, and the energy in a co-located storage device should not be considered renewable and thus qualifying as "charged primarily from renewable resources" without taking title to the REC from the solar output.

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?*

Energy storage systems will maximize their profits by charging during the lowest priced hours within the parameters of being charged "primarily from renewable resources" which typically correspond with the lowest load hours. Therefore, National Grid does not see value in making this a program feature.

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.*

National Grid does not support this proposal. To the extent EDCs own and operate some of the meters, that data should be allowed and EDCs approved as Third Party Meter Readers. If the meters are customer-owned and reported directly to ISO-NE for participation purposes, those meter reads should be allowed. For behind-the-meter systems an independent third party may be useful.

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?*

At a minimum a third-party meter reader should have a proven record in utility-grade revenue metering, adhere to ANSI C12 metering and testing standards, prove that their testing lab is certified with traceability to the National Institute of Standards and Technology – Advanced Manufacturing Series (NIST AMS) standards.

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

National Grid does not support a single entity being selected for all meter reading or reporting for the CPS. Any services of a third party meter reader should be charged to specific end-users by the authorized entities.

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

Please see the response above to question 25a.

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.*

Meters used for CPS reporting should have at least 15-minute interval data recording or reporting capability, at accuracy levels acceptable to the Department of Public Utilities, and tested and testable through a standard traceable to NIST AMS.

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

For resources that do not have utility-owned interval meters installed to measure their generation/output, reporting of data from customer-owned metering that meets the above standards to a third-party meter reader for verification and reporting to NEPOOL GIS would provide an acceptable means of reporting for CPS certificate creation.

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?

For eligible solar resources that are below 60 kW-AC in nameplate capacity, if interval metering data is not available, an average load curve should be adopted to create CPS certificates based on monthly generation data that is aggregated.

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:

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?*

There appears to be a large array of potential resources that may participate as eligible sources for CPS certificates, with a wide array of cost and financial structures. Moreover, the installed costs for some of the eligible technologies are expected to decline, but by non-uniform rates. DOER should develop an analysis of these costs, cost expectations, financial requirements, development potential, and other sources of revenue for different CPS eligible resources as part of its program design, and seek public comment on those findings. However, aside from setting an alternative compliance or ceiling price, prices should be set by an open market for these certificates or by competitive procurement, the prices should be determined irrelevant of the technology, and should allow the lowest marginal cost facility that qualifies for the program to determine the actual price.

30. How should DOER establish these values?

National Grid believes the principles set forth in these responses should be used by DOER in establishing these values and development of the program, especially regarding customer bill impacts. DOER should, as suggested, model the potential contribution from CPS certificates to participating projects, and then model those costs in terms of overall net bill impact, and overall societal benefit versus cost. In both comparisons, the benefit/cost ratios should be positive at the maximum value for CPCs that DOER would propose, and ideally the costs would be a small fraction of the overall benefits.

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?

In general, National Grid does not support additional requirements to enter into any long-term, out of market commitments for new resources. Any above market costs associated with such procurements will either be embedded in supply costs, as SREC costs are today, or will need to be recovered through delivery rates, as will the above market costs for the SMART program and the Section 83 procurements. However, to the extent that a proposed program structure is shown to have positive bill impacts (e.g., it lowers customer bills through forecast decreases in peak energy and capacity prices), National Grid would consider supporting tariff-based competitive procurements for CPS certificates from new RPS generation, new storage associated with pre-CPS RPS generation, and standalone storage. The amounts procured through such a process should be less than an EDCs expected energy load share, and should take into account other sources of CPS certificates utilities may already be set to receive, such as from SMART and Section 83 projects, as well as utility-owned CPS resources.

Specific responses to the lettered questions are provided below:

a. These procurements should only seek to source CPS certificates and should not be segregated in any way or limited to specific types of facilities/resources that are eligible.
b. The procurement solicitations should occur annually or biannually. Technology and market supply does not significantly change over a few months.
c. Procurements should not be a percentage of total load or an annual requirement. The solicitation amount should be determined annually to make up any shortfall going forward from a particular year. The shortfall will be the annual requirements minus any known CPCs estimated from other resources.
d. DOER should consider using a Reverse Auction with single clearing price, with any established Alternative Compliance Price as the *de facto* ceiling price.

<u>Post-2019 Minimum Standard Requirement</u>

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.

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)?

DOER should develop a baseline of expected resources to be developed that would meet the CPS requirements in 2019, and then consider both the trajectory of such deployment and established policy goals of the Commonwealth, and then set a schedule of CPS requirements for not more than four years, with a commitment to review and set an additional four years of requirements by the end of the third year.

33. How large should the minimum standard be?

DOER should consider several factors and ways of setting the minimum standard. First, DOER should determine if the standard should be a percentage of all load delivered or expressed as a percentage of the energy served only during the peak hour periods. Second, DOER should determine whether a potential minimum standard schedule will consistently provide substantially greater benefits than costs. Finally, DOER should design a program that substantially reduces emissions of pollution during peak periods, and slow or cease increases in that minimum standard when additional reductions are not possible or not beneficial. That is, when the marginal benefit of increasing clean energy during the peak is valued less than the marginal cost of increased requirements under the CPS, DOER should phase down any additional increases in the minimum standard.

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?

DOER should set this requirement as minimally as possible. Carve-outs segment and distort markets and lead to less efficient outcomes. DOER should let its analysis of different resource costs and financial structures inform how DR resources should be treated overall. It is possible that with other income streams available, or costs in decline, that such DR resources do not need CPS support. This should be reflected in the design of the carve-out.

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

At this time, National Grid has no further comments on a DR carve-out.

Other

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

National Grid has no additional implementation issues aside from the ones addressed above in the responses.