



Enel's Response to Clean Peak Standard Straw Proposal

The Enel Group appreciates the opportunity to submit responses to the Department of Energy Resource's ("DOER") Clean Peak Standard ("CPS") Straw Proposal.

Enel Group Overview:

Enel, a global energy titan serving approximately 72 million customers in more than 30 countries, is powering the smart energy evolution in North America through an innovative, diversified approach to energy production and management. With approximately 1,200 employees in North America, Enel is the industry leader in both renewable energy and energy service solutions; it was the fastest growing renewable energy company in the U.S. and Canada in 2017 and is the leader in demand response through its acquisition of EnerNOC in 2017. Enel operates in the U.S. and Canada through two distinct business lines, Enel Green Power and Enel X North America, which provide services to different segments of the energy market. Through these two divisions, Enel integrates power, technology and services to design customized energy solutions for organizations of all sizes. Its energy solutions create an opportunity for companies to meet their business goals, from energy cost-savings to enhanced sustainability practices and operations that are more resilient.

Enel Green Power is a leading owner and operator of renewable energy plants in North America with projects operating and under development in 24 U.S. states and two Canadian provinces. Enel Green Power in North America operates more than 100 plants in wind, solar, hydropower and geothermal, with a managed capacity around 5 GW, enough to power the equivalent of every household in the City of Boston for four years. Enel has partnered with some of the world's most notable companies, including Google, Facebook, Adobe, Anheuser-Busch InBev, Bloomberg, General Motors and Kohler, to drive sustainable energy in North America.

Enel X is leading the transformation of the energy sector through harnessing the flexibility of energy storage, load curtailment, electric vehicles, and distributed generation sector. Enel X in North America has approximately 3,400 business customers, spanning more than 10,400 sites, representing more than 4.6 GW of demand response capacity and over 20 behind-the-meter storage projects, including their award winning Marcus Garvey Apartments micro grid, which incorporates solar PV, fuel cells, energy storage, and complex algorithms to provide both savings and resilience to the customer while also benefiting Con Edison. Enel X's e-mobility offerings has deployed 42,000 charging stations across its footprint, completed 12.7 million charging sessions, and currently provides Day-Ahead and Real-Time Energy as a demand response provider in the California ISO Market.

Introduction

Enel appreciates the opportunity to provide comments to DOER on the CPS Straw Proposal, and thanks DOER for their efforts in developing the Straw Proposal. The Straw Proposal represents an important step toward an effective program design, and Enel supports several of the elements of the Straw Proposal. In the comments below, Enel has noted the sections of the proposal that it supports, as well as areas where we think there is room for improvement. For areas where we have not

commented, DOER can assume that Enel either does not oppose that section or is still considering its position given the short timeframe for submitting comments.

Eligible Resources

Enel takes the following positions with respect to eligible resources:

1. We support the eligibility of transmission connected resources that are connected in the ISO-NE control area.
2. Enel recognizes that the statute requires standalone storage to operate “primarily to store and discharge renewable energy” but recommends that DOER provide clarity to stakeholders on how this determination will be made. We recommend that DOER provide standalone, front of the meter storage projects with the following options in order to comply with the statute:
 - a. Charge during designated off-peak periods (e.g. 12 AM – 6 AM), when emissions are lowest, when renewable energy production is high (e.g. midday during the summer,) or when renewable energy may need to be curtailed due to low load levels. While the curtailment of renewable energy production might not be a frequent issue now, by requiring charging during off-peak periods and creating load to be absorbed by renewable production, DOER can help drive renewable development in a cost-efficient manner and prevent curtailments from occurring in the future
 - b. Purchasing and retiring Massachusetts Class I Renewable Energy Certifications (RECs)
3. During the April 2 meeting, DOER expressed an interest in receiving feedback on how to perform measurement & verification of demand response. Enel provides greater detail on that in the following section.

Measurement & Verification of Demand Response

Enel supports DOER’s proposal that in order for demand response to be eligible it “must be able to measure and verify the reduction in load or energy delivered to a load or the grid for CPC generation.” We expect that in the near-term most DR participating in the Clean Peak will be storage-enabled DR, as a limited number of customers have the ability to curtail for a high number of hours. Over time, we expect Electric Vehicle Supply Equipment (“EVSE”) to have a greater contribution to DR.

For storage enabled DR, we recommend that DOER assess the performance of the storage by requiring participants to directly meter the battery. Any discharge from the battery during the peak hours could be used to generate CPCs. This is a straightforward, accurate approach that should be simple to administer.

For EVSE enabled DR, similar to the direct metering of behind the meter energy storage, Enel recommends that the DOER rules allow for direct metering of DR provided by EVSE through the technology’s revenue-grade embedded metering. This DR measurement methodology was recently approved by the California Independent System Operator (CAISO) Board of Governors in

September 2018 and will result in an amendment to its FERC Tariff. This measurement methodology for load curtailment enables CPC delivery from non-residential and residential consumption sources.

- For non-residential sources, direct EVSE metering allows for participation of EVSE on utility meters comingled with other sources of consumption. While the utility metering may or may not be enabled with interval metering, non-EVSE loads may be 1) unmanaged and 2) under different operational control than EVSE under the control of a third party EV service provider. To leverage the Clean Peak service provision of flexible EV charging, in many cases, the EVSE load curtailment must be identified distinctly, or else those DERs will neither participate nor deliver Clean Peak services.
- For residential sources, direct EVSE metering is essential since interval metering is not ubiquitous. As such, residential EV charging will primarily occur immediately upon plug-in following afternoon commutes, causing increased consumption within CPC hours 5:00PM and 8:00PM on a daily basis.

For DR that is enabled by load curtailment or management, there are two potential options:

- Similar to how ISO-NE evaluates Active DR (i.e. dispatchable) performance, each participating customer could have a baseline that represents what the customer would have consumed if not for Clean Peak (in the case of ISO-NE, it's what the customer would have consumed if not for dispatch). The baseline could be calculated by averaging the customer's load (as measured at the Retail Delivery Point) over the previous 10 weekdays for that clean peak interval where the customer did not reduce its energy for a clean peak dispatch. The performance or CPCs for the customer would be the difference between the last 10 non-event days (the baseline) and that day's usage during the clean peak hours.

One challenge of this approach is guarding against incidental performance, where customers are credited for reducing energy when they already planned to shut down. One possible solution is to have a day-of adjustment to the customer's baseline (as is done in wholesale markets), so that if a customer had shut down their facility for the entire day, the customer's baseline would be low and they would not receive credit for performance. The adjustment should be symmetrical, so that if on a hot day the customer is running at high energy usage prior to the Clean Peak window, it is reflected in the baseline.

If energy storage is co-located with load curtailment resources, the direct metering of storage can be subtracted from the metering at the Retail Delivery Point for purposes of measuring the load curtailment. This measurement methodology exists in the CAISO as well.

- For non-dispatchable DR that is more like demand management, or demand reductions as a result of energy efficiency type measures, DOER could consider the ISO-NE methodology for crediting "Passive Demand Response" measures.

Finally, DOER should clarify how a Demand Response Provider or BTM Storage Service Provider can "register" a site or device for delivery of CPC initially and on a month-to-month basis, and collaborate with ISO-NE to harmonize the CPS program and the wholesale DR/DER program.

Clean Peak Windows

Enel does not oppose having four clean peak hours each day, but by setting the maximum number of hours for the year as allowed by the statute, it reduces the number of MW and therefore the number of projects that will be eligible for Clean Peak.¹ The total MWh number for the year is fixed by multiplying the target for that year by total retail sales, and therefore as the amount of CPS hours increase, the number of MW that can generate CPCs in an hour decreases. DOER must factor this into consideration when determining the percentage targets for each year, as discussed further below. Additionally, Enel supports crediting CPCs based on average output across the Clean Peak hours.

Clean Peak Certificates Multipliers

Enel strongly supports the inclusion of a resilience multiplier, and looks forward to working with DOER on the design of such a multiplier. We recommend that DOER convene a working group to develop an effective design. With superstorms increasing, resilience will be increasingly valuable. Adding resilience to a project can meaningfully increase the cost of the project, and a multiplier would help recover that investment. We recommend a tiered multiplier, with the highest tier for mission critical facilities that serve the public (e.g. police stations, schools, hospitals, etc).

Also, a negative multiplier likely exceeds DOER's authority in the statute which requires it implement a program for the dispatch or discharge of electricity during peak periods. The law makes no provision for addressing low demand in off-peak periods.

CPC Procurement

Large clean energy projects require upfront, fixed capital costs. The uncertain revenues from the energy and the capacity market are insufficient to recover the costs associated with developing large projects. While H4738 didn't authorize DOER to enter into long-term contracts for energy, capacity, and CPCs, it did authorize DOER to enter into long-term contracts for just CPCs. A long-term contract for CPCs for large projects 5 MW or more will provide some revenue certainty decreasing some of the risk to project developers. Also, the electric distribution companies can choose to voluntarily enter into long-term contracts for energy, capacity, and CPCs. As evidenced by the recent bids submitted pursuant to Sections 83C and 83D, procurements result on extremely competitive prices which advantages ratepayers in their wallet and in associated environmental and health benefits. DOER procurements for large-scale resources should be held annually and the schedule should be announced several years in advance to induce developers to build a pipeline of projects to ensure robust competition and ensure an adequate supply to meet CPS objectives.

Any competitive procurement should not be limited by a cost cap. However, if DOER imposes a cost cap then it should reflect the direct cost of the program as well as the benefits that will offset that dollar amount.

¹ Although Enel does not oppose setting a peak hour window from 8-9 in certain seasons, we think greater explanation is needed for DOER choosing this hour.

Regarding projects less than 5 MW, Enel supports DOER's proposal to include a tariffed program or similar predictable procurement structure that provides the revenue certainty over the project life necessary to stimulate development.

Targets, Requirements, and Impacts

As outlined above in the Clean Peak windows section, Enel recommends that DOER set a significantly more ambitious target than the .25% minimum allowed by statute, which translates to only 7.5% by 2050. Given that DOER is proposing four clean peak hours each day, a .25% target only equates to approximately 110 MW per hour.² Although not all projects will have full output in every clean peak hour, the 110 MW seems well below the potential for Clean Peak Resources. 110 MW could easily be met by one transmission connected project, and the ISO-NE queue has several hundred MW of potential clean peak resources. Additionally, projects participating in the 1600 MW SMART program could all be eligible for Clean Peak. Given how rapidly the SMART buckets have been filled, the Clean Peak targets could be quickly met by these < 5 MW resources. A 0.25% target will likely flood the market with CPCs resulting in low value and no new development. Moreover, the MW number may be smaller in the beginning years due to existing retail contracts that will be excluded.

Therefore, Enel recommends at least a 1.5% annual target that could be revisited by DOER every few years and be adjusted if necessary. This will help stimulate new investment.

Anticipated Implementation Schedule

Enel recommends that DOER implement the CPS and procure CPCs no later than the summer of 2020.

Conclusion

We thank DOER for all their work on the CPS Straw Proposal and look forward to collaborating with DOER and other stakeholders on a successful design.

Sincerely,

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² Assuming 46,000,000 MWh per year of retail sales, a .25% target would result in 115,000 MWh of total requirement. Dividing this by 1,043 Clean Peak hours per year yields 110 MW per hour.