

Department of Energy Resources
100 Cambridge St., Suite 1020,
Boston, MA 02114
Phone: (617) 626-7300
Fax: 617-727-0030
doer.cps@mass.gov

Friday, April 12, 2019

Re: Comments of EDF Renewables on Massachusetts DOER's Clean Peak Standard Straw Proposal

EDF Renewables Inc. ('EDFR') appreciates the opportunity to submit these comments on the Massachusetts Department of Energy Resources' ('DOER') Clean Peak Standard Straw Proposal. EDFR applauds the Commonwealth and DOER for moving forward with this innovative program to assist the state in achieving its ambitious greenhouse gas reduction and clean energy objectives.

EDF Renewables Inc. (EDFR)

EDF Renewables Inc. is a renewable electricity market leader focused on wind, solar and storage development across North America. EDFR is a developer, owner, and operator of utility scale renewable energy and storage facilities and has an installed base of over 16 GW and operates 10 GW of wind and solar. EDFR employs over 1,112 employees, whom are active in development in every electricity market in the US.

EDFR via its Distributed Services group ('EDF DS') utilizing our Store and Forecast technology participates in the distributed energy markets, currently operating more than 330 megawatts (MW) / 824 megawatt-hours (MWh) of battery storage worldwide. In NE-ISO, EDFR has developed a portfolio of 96 MW distribution connected projects, representing an investment of nearly \$175 million. For example, Stafford Hill Solar+Storage was completed in 2014 - 2.5 MW solar + 4 MWs of battery storage located in Rutland, VT, near Rutland High School. According to the U.S. Department of Energy, the Stafford Hill Solar Farm is the first project to establish a micro-grid powered solely by solar and battery storage, with no fossil fuels. The project also utilizes land atop a closed landfill which was otherwise unsuitable for development.

EDFR is dedicated to building the lowest cost renewable electricity projects through competitive procurement processes that align with electricity market fundamentals. For example, EDFR has 1060 megawatts of energy contracted with private sector, commercial and industrial ('C&I') customers like Microsoft, Google, and Proctor & Gamble – more than any other company and, to date, no other

company in North America has a more diverse customer base. Our success is due to a strong corporate culture that focuses on financial rigor, support from local communities, and a strong portfolio of projects to offer an energy product that is both competitive and affordable.

Introduction

An Act to Advance Clean Energy directed DOER to promulgate regulations that would develop a Clean Peak Standard. On April 2nd, DOER held a stakeholder meeting at which it reviewed its Clean Peak Standard Straw Proposal ('[Straw Proposal](#)') and requested that comments on the Straw Proposal be submitted by April 12th

The Straw Proposal specifies that any eligible resource that generates, dispatches or discharges energy to the electric grid during a Seasonal Peak Period will generate Clean Peak Certificates ('[CPCs](#)'). Eligible Clean Peak Resources are identified as new Class I Renewable Energy Resources, Existing Class I/ Class II resources that are paired with an Energy Storage System, Qualified Energy Storage Systems, or Demand Response Resources. Like the Commonwealth's Renewable Portfolio Standard ('[RPS](#)'), CPCs can be sold to retail electricity suppliers, which would be required to purchase a certain amount each year, based on a percentage of their load obligation.

A Clean Peak Standard has been proposed to assist the state in achieving its aggressive greenhouse gas emission reduction goals and is a valuable companion to the RPS, which creates an obligation for retail electricity suppliers to purchase a portion of their electricity supplies from qualifying renewable energy resources. The RPS obligation is expressed in terms of energy output and with a significant portion of qualifying renewable energy resources having variable output, operating the electricity supply system with high proportions of these resources could present challenges. The Clean Peak Standard seeks to assist in addressing the high greenhouse gas emissions produced by generating units operating during peak periods by requiring qualifying clean energy resources to produce during defined seasonal peak periods, when the electricity supply system is often the most stressed.

EDFR offers our comments from the perspective of a prospective CPS program and NE-ISO market participant that seeks to design a CPS program that can offer long-term market stability that aligns with market fundamentals and DOER program objectives:

1. Implement a clean peak program that aligns clean energy generation and zero emission demand resources with periods of peak electricity demand in the most cost-effective manner for Massachusetts customers possible while reducing emissions
2. Encourage co-location and/or co-operation of energy storage and clean generation
3. Incentivize and enable continued deployment of renewable generation by flattening the net electric load curve

General Comments

EDFR notes that if these objectives are to be realized then, from an electricity system operations or capital investment perspective, the program must incent resources to either:

- i. increase output during Seasonal Peak Periods; or
- ii. support the development of new clean energy resources that would produce during Seasonal Peak Periods.

EDFR believes that these two goals can be viewed as the program's 'underlying objectives', since without a change in system operations or additional investment in clean energy resources that can provide additional energy output during these Seasonal Peak Periods, then there will be no incremental benefit being realized by Massachusetts consumers. Conversely, the Clean Peak Standard should not just reward existing clean energy resources that are already producing during these Seasonal Peak Periods.

There are several aspects of the Straw Proposal that may impede the realization of these underlying objectives. First, DOER proposes to "establish the Seasonal Peak Periods in advance of the year in which they will be applied" and "to review and potentially revise the seasonal peak periods at least once every three years." EDFR recognizes that peak periods can change over time and that is particularly true of the net load peak period, which considers the output of variable clean energy and demand response resources that would be incented to operate during these Seasonal Peak Periods. However, DOER should recognize that if it retains the right to revise the Seasonal Peak Periods the following protections are needed to ensure that these changes do not unduly undercut investor certainty, which is essential to any required investment in Clean Peak Standard facilities. To this end EDFR offers the following recommendations regarding changes to the definition of the Seasonal Peak Periods.

- 1. At a minimum, DOER should, as proposed in the Straw Proposal, ensure that the Clean Peak Windows are no more than four hours each weekday.**

Energy storage projects are designed to provide a fixed amount of storage, which can be denominated in terms of the number of hours of storage relative to the facility's rated capacity. Increasing the duration of the Clean Peak Windows to more than four hours per day in the future as a program modification would likely reduce the revenues earned by energy storage projects that were developed to supply the four-hour Clean Peak Window.

If DOER reserves the right to revise the definition of Seasonal Peak Periods then it should recognize that the Clean Peak Standard will only promote the development of new energy storage and demand response projects. This is a reasonable outcome, but the goal of promoting the development of variable output clean energy resources that produce a higher proportion of their output during Seasonal Peak Periods (e.g., offshore wind) would be lost.

2. DOER should employ an “incremental investment test” to determine what types of resources will qualify as Clean Peak Standard resources.

New RPS Class I eligible resources must be in operation on or after January 1, 2019. EDFR notes that under this definition this could include RPS Class I resources that already have a long-term power purchase agreement (PPA) and presumably are unlikely to require incremental revenue to finance their project. In other words, these projects do not need any incremental revenue. Therefore, EDFR recommends that DOER specify that the output from New RPS Class I projects with a long-term PPA not be eligible to participate in the Clean Peak Standard, except to the degree that the output from that clean energy project has been shifted by new energy storage device to the identified Seasonal Peak Periods. In addition, under the SMART program solar projects that are paired with energy storage secure higher prices. EDFR believes that these projects shouldn't be eligible to participate in the Clean Peak Standard program and allowing these projects to participate in the program would reduce the amount of incremental energy storage development that the program enables.

Similarly, demand response resources that participate in the CPS should also be “new” demand response resources. Care is required when defining “new” demand response resources given that customers will not be new and demand response programs can be “re-purposed” to follow a higher value market. Allowing this would undercut the objectives of the program to promote the development of new Clean Peak resources.

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One of the program objectives specified by DOER is to implement a clean peak program in the “most cost-effective manner” for Massachusetts customers. In EDFR's extensive experience participating in a wide range of renewable energy programs across North America, the cost-effectiveness of programs can be enhanced by increasing the degree of competitive tension (e.g., relying on competitive procurements) and by providing greater certainty which enables a lower cost of capital and in turn reduces the effective cost of a project. EDFR notes that with a new program design the importance of certainty is heightened. The Commonwealth's and more broadly the region's experience with the Class I RPS program is illustrative: new RPS Class I resources require long-term contracts to provide sufficient revenue certainty for the projects to be financed under reasonable terms. Prior to the utilization of long-term contracts for the procurement of Class I RECs, the pricing for these RECs was close to the alternative compliance payment as supply was limited given the difficulty of financing these projects. This increased the costs to customers of the RPS program.

With these lessons in mind, EDFR offers the following recommendations:

3. The Straw Proposal indicates that “preference would be to establish compensation via a tariff-based mechanism if deemed feasible (e.g. SMART), however, could require standard form contracts to be signed with each selected project (e.g. CT LREC/ZREC programs).

EDFR notes that contracts have less regulatory risk and as a result provide greater certainty, which as discussed, can reduce the effective costs of Clean Peak projects. Therefore, EDFR believes that a contract structure such as offered by the Connecticut LREC and ZREC programs would produce the most cost-effective program design. The LREC and ZREC programs were also characterized by a high degree of competitive tension, which further enhanced the cost-effectiveness of these programs. DOER could avoid the high attrition rates that characterized these programs by specifying qualification criteria that would ensure more mature proposals.

4. To enhance the cost-effectiveness of the program DOER should promote value stacking, where possible.

While the proposed Clean Peak Windows would require daily cycling of the energy storage devices, there may be opportunities to provide other services recognizing that these Seasonal Peak Periods will be known. For example, these energy storage projects should be able to participate in the Forward Capacity Market; secure a Capacity Supply Obligation and realize these revenues. This would reduce the effective cost of the Clean Peak program, consistent with DOER's objectives.

5. Promoting participation by larger-scale new renewable energy resources could also enhance the value that the program offers to Massachusetts customers.

In its Straw Proposal, DOER proposes that procurements of clean peak resources "focus on facility types that may not have other sources of long-term financing available to them." EDFR agrees. Market evidence demonstrates that large-scale wind and large-scale solar are the least cost form of new clean energy resources and competitive with new natural gas-fired resources. However, there appears to be no additional procurement authority under Massachusetts law to support the award of long-term power purchase agreements that are essential to securing capital under reasonable terms.

The Clean Peak program presents an opportunity to enable the development of new clean energy resources. However, EDFR believes that new RPS Class I resources will only elect to participate in the Clean Peak program, if DOER agrees to fix the Clean Peak Windows for an extended period. EDFR expects that DOER will want to maintain the flexibility to modify these Clean Peak Windows to ensure that the program focuses clean energy production to periods when it is most valuable.

Therefore, if DOER seeks to promote the development of lower cost large-scale new RPS Class I resources it should consider establishing an additional type of eligible resource: the pairing of new Class I RPS and energy storage projects. While the Straw Proposal identifies existing RPS Class I & II resources that are paired with a qualified energy storage system as eligible resources, the Clean Peak Standard program design should recognize that such projects don't add to the supply of clean energy resources, they just redirect existing clean energy to Clean Peak Periods. In essence Clean Peak projects that rely on existing resources offer a different and lower value, which the program design should recognize. One way to recognize this difference in value without establishing a

different class of resource, which would add undue complexity, would be to allow new RPS Class I resources that are paired with any energy storage device to participate in a procurement process that would award long-term PPAs to successful participants.

For these large-scale new RPS Class I resources paired with storage, DOER could leverage its existing procurement approaches. Using existing mechanisms will ease the administrative burdens on both DOER and developers. As these approaches are proven to developers and financiers, they will lower project risk which lowers finance costs. Procurements for large-scale new RPS Class I resources paired with storage could be held annually and under a schedule several years into the future to induce developers to build a pipeline of projects to ensure robust competition and ensure an adequate supply to meet CPS objectives.

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EDFR appreciates the opportunity to provide comments on this innovative program to complement the RPS EDFR is available at any time to discuss our comments.

EDFR also looks forward to further consultation. The timeline to respond was compressed. However, we wanted to keep to your stakeholder engagement timelines to demonstrate our interest in CPS program development.

Cheers,

David Thornton
Manager, Regulatory and Public Affairs
EDF Renewables Inc.
David.Thornton@edf-re.com