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Additional submitted attachment is included below.

February 22, 2022

California Energy Commission
Docket # 21-RPS-02
Renewable Portfolio Standard 10th Edition Guidebook Update

IN THE MATTER OF: Renewables Portfolio Standard Requirements for Energy Storage Devices

Thank you for the opportunity to provide comments on the California Energy Commission's (CEC) update to the Renewable Portfolio Standard 10th Edition Guidebook. NextEra Energy Resources, LLC (together with our affiliated entities, "NextEra Energy Resources"), is a clean energy leader and is the world's largest generator of renewable energy from the wind and sun and a world leader in battery storage with over 2100 megawatts of storage capacity operating or under contract to serve California.

We respectfully offer the following responses to the guiding questions included in the CEC's February 8, 2022, workshop presentation.

1. How is the energy landscape changing as a result of energy storage?

Energy storage serves as the foundation to reliably achieve California's renewable energy and greenhouse gas emission reduction targets.

Energy storage enables deployment of more renewable energy to be generated by renewable resources when renewable energy is of low value or is in excess of CAISO's needs. It can be stored and used later when renewable generation by itself is not possible or is insufficient to meet the CAISO's needs.

As a result of the retirement of fossil-fueled generators, energy storage is also essential for the reliability of the CAISO grid.

Energy storage provides a valuable and needed function that should be fully supported by the CEC policy. As energy storage is critical to helping California meet its RPS goals, the policy should be clear and free from unequal treatment or potential disincentives that could undermine system reliability.

2. What does procurement look like for renewable facilities paired with energy storage? Do contracts account for energy losses from storage?

Contracting for storage paired with renewable resources is supported, and largely determined, by two market participation models developed over the past 6-8 years through the cooperative efforts of many stakeholders, including CAISO, CPUC, IOUs, POU's, CCA's and Developers/Owners. One is the "co-located resources" model and the other is the "hybrid resource" model.

- 1. Co-located Resources. Co-located resources operate in the CAISO's markets as separate and independent resources. Although co-located resources are located at the same generating facility from an interconnection perspective, they are treated as separate market entities, with separate Resource IDs, separate bids, separate market dispatches, and separate meters. As such, for co-located resources, the renewable generator and*

the storage facility settle separately with the CAISO, in which case the metering point of the renewable generator is prior to the energy storage metering point. The result is all of the metered output of the renewable energy is assumed to be delivered to the grid with necessary adjustments being taken for electrical losses from the metering point to the point of interconnection with the grid. Since the metering point is upstream of the energy storage, it does not include storage efficiency losses. Under this model, the metered renewable energy is the same whether renewable energy is used to charge energy storage or delivered directly to the interconnection point with the grid. The energy storage resource also settles separately with the CAISO market for charging energy and for discharging energy. The storage energy is measured at a metering point that adjusts for electrical losses from the storage metering point to the interconnection point with the grid the same way a standalone energy storage resource settles with the CAISO market. Efficiency losses are inherent in the storage energy charge/discharge settlement.

- a. In this co-located resource contracting model, the renewable energy and environmental attributes (renewable energy credits (RECs)) are sold together, consistent with the State's renewable portfolio standard category rules, with quantities based on the total renewable energy metered using the same contractual mechanisms as a standalone renewable power purchase agreement (PPA).*
 - b. The co-located model served several salutary purposes. First, it allowed energy storage to be added at existing renewable projects with a new, separate contract that would not result in material impact to an existing renewable energy PPA and its related financing. Existing renewable PPAs generally have material change covenants with investors and lenders that would otherwise likely have precluded the addition of most energy storage added at existing renewable sites. Second, it provided the necessary flexibility to add storage at existing renewable resources without triggering a lengthy interconnection process and potentially prohibitive costs by sharing existing interconnection facilities. Doing so has not only been critical to addressing California's urgent capacity shortage, but also in minimizing cost impacts to ratepayers by allowing added storage to realize the benefits of renewable energy-related investment tax credits. Without the co-located model and the existing contracts developed around that mode, the majority of storage projects that were negotiated with IOUs and CCAs pursuant to the CPUC mandate in August of 2019 would never have been possible in the mandated time frame.*
- 2. Hybrid Resources. Under the hybrid resource model, different fuel types or technologies are combined into a single generation facility with a single Resource ID. The CAISO views the hybrid resource as a single generator with a single bid-curve and single market dispatch. However, with a single resource ID, both the renewable generator and energy storage settle as a single resource. Although co-located models are currently dominant, there are potentially some practical advantages to the hybrid model, especially in light of continuing technological improvements. The CAISO has actively prepared for this future by developing tools and market rules that lay the foundation for greater participation in the California market by hybrid resources.*

NextEra Energy Resources strongly urges the CEC to adopt rules that provide equal treatment to both market participation models with respect to REC accounting. We specifically recommend that the CEC support the co-located resource contracting model by not imposing differential REC accounting treatment on renewable resources depending on whether they do, or do not have co-located storage. Indeed, in its mid-term reliability procurement order (D.21-06-035), the CPUC requires procurement of 2500 MW of zero-emissions resources to replace Diablo Canyon. The order expressly allows for contractual pairing of the renewable resource and the storage resource at different locations. In that scenario of contractually paired resources, the storage will charge with grid energy from a renewable resource that is not subject to punitive REC counting rules. The CEC guidebook rules should not distort the development of the zero-emission product and otherwise mute the many potential benefits offered by co-located resources.

Based on the foregoing, we recommend that the CEC expressly provide that energy storage installed at renewable sites, based on the co-located resource contracting model, have the explicit option not to register the energy storage component as part of the RPS- eligible resource and be treated the same as standalone storage, which is not considered to be an RPS- eligible resource subject to potential registration requirements or options.

We believe that this can be accomplished by adding minor clarifying language in Chapter 3 Section F. of the current RPS Guidebook (9th edition) as follows:

5F. Energy Storage

Energy storage technologies, including pumped storage hydroelectric, are not inherently renewable as they are not dependent on the use of a renewable energy resource. However, an energy storage device ~~may be considered an addition or enhancement~~ **will be considered as RPS qualified storage to the extent registered with the CEC as an addition or enhancement** to an eligible renewable facility, consistent with Public Resources Code Section 25741, subdivision (a)(1), and the device is either:

- a) Integrated into the facility, such that the energy storage device is capable of storing only energy produced by the facility, either as an intermediary form of energy during the generation cycle or after electricity has been generated.
- b) Directly connected to the facility, such that electricity is delivered from the renewable generator to the energy storage device behind the metering point used for RPS purposes and any electricity from a source other than the renewable generator is included as an energy input to the facility. The energy storage device must be operated as part of the facility represented in the application and not in conjunction with any other facility, renewable or otherwise.

All applicable energy resource eligibility requirements and facility requirements must comply with the metering requirements and be met by the facility as a whole, including the **RPS- qualified** energy storage device. Energy storage devices or facilities not falling into one of these two classifications are not eligible for the RPS as part of a facility and may not receive RPS certification. Moreover, **RPS qualified energy storage devices are not certified for RPS separately but as part of a facility and do not increase the renewable generation of a facility**. Only generation attributable to the eligible renewable energy resource may be eligible to produce RECs. Any losses from RPS- qualified energy storage must be subtracted or netted from the generation of an eligible renewable facility.³⁵ An eligible renewable facility using **RPS qualified** energy storage devices shall accurately measure the contribution of each energy resource used at the facility.

*Footnote 35. A facility that has an **RPS qualified** energy storage device may count only the generation that is exported to the grid. If there are losses from the **RPS qualified** energy storage, the amount of generation will be subtracted from the generation produced by the facility. For example, a facility that generates 100 MWh a day but loses 1 MWh from the **RPS qualified** energy storage will count only 99 MWh for the facility.*

Hybrid resources are also capable of equal treatment. Hybrid resources that are able and willing to provide telemetry and metering to verify the total energy generated by the renewable resource (before it goes to the energy storage resource or directly to the interconnection point with the grid) should be treated similarly to other renewable resources for WREGIS reporting and compliance purposes. Such hybrid resources should have the option but not the requirement to register as RPS qualified energy storage (provided the renewable energy metering adjusts for the electrical losses between the renewable energy metering point(s) and the point of interconnection with the grid in a similar manner to metering adjustments required by CAISO for colocated resources). For example, if the renewable energy metering point(s) include DC metering, DC measured or calculated values should be adjusted by DC/AC conversion losses in addition to voltage transformation losses and line losses between the metering point(s) and the point of interconnection with the grid.

Apart from the changes recommended above, no further modifications to the current RPS Guidebook should be necessary for the energy storage component of a hybrid resource to be treated equally with the energy storage component of co-located resources and with stand alone storage in respect of REC counting.

3. What impacts do current RPS requirements have on storage development?

We agree with the stakeholder feedback related to the current RPS requirements summarized at the CEC's Feb 8th Workshop presentation:

- *Current categories do not reflect the configurations being planned and developed*
- *Unclear alignment with CAISO configurations and treatment*
- *Losses due to energy storage should not be deducted from renewable generation*

4. Should the CEC develop energy storage loss accounting requirements for specific technology types, configurations, or scale?

Apart from the proposed changes above, no other loss accounting requirements should be necessary.

Should you have any questions regarding our responses, please contact Cara Martinson, Senior Director of Regulatory and Political Affairs, NextEra Energy Resources at cara.martinson@nexteraenergy.com, or 916-267-5536.