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10-17-13

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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.

Rulemaking 12-11-005
(Filed November 8, 2012)

ASSIGNED COMMISSIONER'S RULING REGARDING THE INTERCONNECTION OF ENERGY STORAGE SYSTEMS PAIRED WITH RENEWABLE GENERATORS ELIGIBLE FOR NET ENERGY METERING

1. Summary

On April 30, 2013 the California Energy Commission (CEC) adopted the seventh edition of the Renewables Portfolio Standard Eligibility Commission Guidebook (Guidebook). This latest edition of the Guidebook includes a new section on energy storage technologies that clarifies the conditions under which a storage device may be considered an addition or enhancement to a renewable electrical generation facility per Public Resources Code 25741(a)(1). The new section has led to confusion among the electric utilities regarding the treatment of storage devices under their Net Energy Metering (NEM) tariffs. This ruling seeks comment on a proposal to give storage devices meeting the Guidebook requirements the same benefits available to renewable generating facilities under NEM tariffs until, at a minimum, December 31, 2015. Specifically, such storage devices would be exempt from standby charges, interconnection application and review fees and would not be required to pay for any distribution system upgrades triggered by the storage devices.

Beginning with the current cohort of pending storage interconnection requests, the utilities would record data on the lost revenue resulting from this treatment of renewable-paired storage disaggregated into three categories: 1) interconnection application fees, 2) supplemental study fees, and 3) distribution upgrades necessitated by the presence of the storage devices. On or before July 1, 2015, the utilities would submit a report on the lost revenues attributable to storage devices interconnected through March 31, 2015. Based on the information in the report, the Commission may choose to extend or amend this policy. After the parties file comments and reply comments on this ruling, the assigned Commissioner will issue a proposed decision.

2. Background

The NEM program was created by Assembly Bill 656¹ and has been modified numerous times. NEM is an electricity tariff billing mechanism designed to facilitate the installation of renewable distributed generation by offering customers retail-rate billing credits for energy exported to the grid at times when generation exceeds onsite energy demand. Participation in NEM also exempts customer-generators from any costs associated with interconnection studies, application review fees, distribution system modifications, and standby charges.² In 2011, Senate Bill 489³ expanded the technologies eligible for the NEM tariff to include all Renewables Portfolio Standard Eligibility Commission (RPS)-eligible technologies.⁴

¹ Ch. 369, Statutes of 1995.

² Pub. Util. Code § 2827(g) and D.02-03-057.

³ Ch. 593, Statutes of 2011.

⁴ Pub. Util. Code § 2827(b)(5).

On April 30, 2013 the (CEC) adopted the seventh edition of the RPS Eligibility Commission Guidebook (Guidebook). This latest edition of the Guidebook includes a new section on energy storage technologies, Section III.G, that clarifies the conditions under which a storage device may be considered an addition or enhancement to a renewable electrical generation facility per Public Resources Code 25741(a)(1).⁵

Section III.G establishes two categories of energy storage that “may be considered an addition or enhancement to a renewable electrical generation facility”: “integrated” and “directly connected.” Integrated energy storage is described as “[m]ethods of storing energy from a renewable energy resource that are integrated into the renewable electrical generating facility as part of the generation process...” For battery-based storage, the Guidebook further elaborates that “the storage device must only be capable of storing energy from the renewable generator” to considered “integrated.”⁶ For a storage device to be deemed “directly connected” it must be both directly connected to the renewable generator via an internal power line (i.e. power may not be transmitted from the renewable facility to the energy storage via an external distribution line) and the storage device must be operated as part of the RPS eligible facility.⁷

⁵ The RPS Eligibility Guidebook (7th Edition, April 2013) is available at <http://www.energy.ca.gov/renewables/documents/#rps>.

⁶ Guidebook, at 64.

⁷ *Ibid.*, at 65.

3. Discussion

3.1. NEM Interconnection Eligibility for Storage Devices Paired with NEM Generation Facilities

Decision (D).11-09-015, which significantly modified the Self-Generation Incentive Program (SGIP), spurred a large surge in applications to interconnect customer-sited storage devices, many coupled with new or existing solar PV systems. As of July 1, 2013, there were 667 active incentive applications in the SGIP queue for storage systems, totaling 33 MW of capacity. Of these, 319 applications, totaling 10 MW of capacity, are for storage paired with RPS-eligible generating facilities, primarily rooftop solar PV.⁸ While the incentives provided by SGIP have supported increased storage deployment, the majority of these paired storage and generation applications have stalled during the interconnection process due to the lack of clear policy guidance on their eligibility for the NEM tariff schedule, which describes the NEM billing credits, exemptions from various charges, and metering arrangements. Electric Tariff Rule 21 (Rule 21) governs the interconnection process and requirements of these paired storage and generation systems.

Presently, the electric utilities require that storage devices paired with NEM-eligible facilities interconnect under the Multiple Tariff Facilities provision of their NEM tariffs. Under this provision, storage devices are treated as distinct non-NEM-eligible generators and are therefore not exempted from a variety of charges that do not apply to NEM generating facilities. These charges include the \$800 interconnection application fee, supplemental review fees for facilities

⁸ <http://energycenter.org/self-generation-incentive-program/business/document-library>

that do not qualify for fast track interconnection, standby charges, and the costs of any distribution system upgrades triggered by the addition of the generating facility to the local circuit. Parties previously argued that the combination of application fees and threat of additional fees and expenses required for interconnection render the project economics for these systems unattractive and create significant uncertainty for households and businesses considering the addition of storage to their renewable generating facilities. This Ruling seeks to address the lack of clarity regarding the proper treatment of storage devices under the NEM tariff.

In order to provide market certainty for storage vendors, I propose that storage devices paired with NEM-eligible generation facilities and meeting the Guidebook requirements be exempt from interconnection application, supplemental review, distribution upgrade, and standby charges as additions or enhancements to renewable NEM-eligible systems. These exemptions would apply to any storage device connected behind the same billing meter as the NEM generating system because this configuration meets the conditions of the “directly connected energy storage” category as described in the Guidebook.

3.2. The Need to Preserve NEM Integrity

At the CPUC’s July 15 workshop on storage interconnection, the utilities hypothesized that NEM customer-generators could use storage devices to store off-peak grid energy and generate additional credits at full-retail value during high-value time periods. Preserving the integrity of NEM is an important goal, and to that end, NEM-paired storage systems that qualify for this proposal should be configured and metered in order to ensure that NEM credit can only be generated by the eligible renewable electric generation facility. To achieve this goal, the metering requirements in the NEM Multiple Tariff, the tariff

applicable to customers that install NEM-eligible and non-NEM eligible technologies behind the same utility revenue meter, serve as an effective standard to ensure that only NEM eligible generation receives NEM credit.

Under the NEM Multiple Tariff provision, the customer-generator must 1) install a non-export relay on the non-NEM generator(s) 2) install Net Generation Output Metering (NGOM) for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling, or 3) install interval NGOM directly to the NEM-eligible generator(s). Although I propose exempting NEM-paired storage devices from various charges as additions or enhancements under the NEM tariff, paired generation and storage devices should generally continue to adhere to the metering requirements stipulated in the Multiple Tariff portion of the NEM schedule. Some exceptions to this general may be desirable as discussed below.

One challenging issue that has arisen during the past several months is ensuring NEM integrity when both the storage and NEM generating systems are located behind a single inverter. In these cases, parties have asserted that NGOM cannot be installed directly to the generator because direct current meters meeting the NGOM requirements do not exist; therefore, it cannot be determined if the energy storage system is contributing to exports to the grid during a given time period.

Parties may respond to following questions regarding NGOM requirements in their comments on this ruling:

1. For single inverter systems, or other system configurations that do not allow NGOM, should the Commission consider estimated NEM generation as a means to limit NEM export credits during peak periods?

2. Storage devices sized below a certain limit could pose a de minimis risk of harming NEM integrity. Should the Commission consider a threshold storage capacity below which NGOM is not required for the NEM generator? If so, what is an appropriate threshold and should the threshold be based on absolute capacity or in relation to customer load and the NEM generator capacity?
3. Because storage devices increase total consumption, customers on non-time-varying rates have no financial incentive to export energy for NEM credit, should NGOM be required for customers who are not on time-varying rates?

3.3. Distribution System Impacts

At the July 15 interconnection workshop, the utilities also expressed concern about the impacts that storage devices may have on distribution systems. These concerns merit some consideration, but it is important to facilitate the market for distributed storage during this nascent stage of its development. Until the utilities gain more experience interconnecting storage and more data are available, these concerns remain speculative. It is possible that substantial upgrades may be necessitated by the increasing uptake of customer-sited storage. Thus, I propose exempting NEM-paired storage on a provisional basis for systems connecting by December 31, 2015, similar to the exemption from distribution upgrades costs that the Commission granted to owners of electric vehicles.⁹

During the interim period, the utilities should record data related to the foregone revenues due to this exemption and provide this information to the Commission. Beginning with the current cohort of pending storage

⁹ See D.13-06-014.

interconnection requests, the utilities should record data on the lost revenue resulting from this treatment of renewable-paired storage disaggregated into, at minimum, the following three categories: 1) interconnection application fees, 2) supplemental review fees, and 3) distribution system upgrades triggered by the presence of the storage devices. The report should include information on storage devices interconnecting through March 31, 2015, and the utilities should serve their reports on the service list of this proceeding or its successor no later than June 30, 2015. Once the Commission has had an opportunity to review the reports and parties' comments, the Commission may decide to end, extend, or modify the exemption provided to NEM-paired storage devices under the NEM tariff. If the Commission has not acted by December 31, 2015, the exemption will remain in effect.

3.4. Safety Considerations

To ensure safety during parallel operation with the utility distribution system, eligible storage devices must continue to meet the technical and safety standards required for participation in SGIP and interconnection under Rule 21. This includes evaluation under the same technical interconnection standards currently applied to generating facilities not paired with storage.¹⁰ National standards-setting bodies are considering changes to their requirements for interconnected storage devices that will enable more operational flexibility. At the same time, the Commission in its Rule 21 rulemaking (R.) (R.11-09-011) is engaging in a process to balance the potential for advanced capabilities with the

¹⁰ The definition of "generating facility" in Rule 21 includes storage. Fast track engineering review is set out in Rule 21, Section G.

continuing need to ensure safety for utility personnel and customers, and reliability of the distribution network.

3.5. Storage System Sizing Limits

A customer primarily interested in installing a storage device could abuse the proposed interconnection cost exemption by installing a large storage system paired with a much smaller NEM-eligible generating facility. To ensure that storage systems are appropriately sized to legitimately provide a back-up or integration service that complements the NEM generator, the system sizing requirements outlined in the SGIP Handbook should apply to storage devices that interconnect as additions or enhancements to NEM generators. Section 4.4.3 of the SGIP Handbook, regarding system sizing for energy storage, states:

“Advanced Energy Storage [AES] projects coupled with generation technologies must be sized no larger than the rated capacity of the PV or SGIP eligible technology it is operating in concert with. When coupled with a PV system, the rated capacity of the AES system can be no larger than the CEC-AC rating of the PV system, which is the rated AC output of the PV system including inverters.”

This requirement shall apply to all storage projects seeking interconnection under the NEM tariff regardless of whether they receive SGIP incentives.

3.6. SGIP Interconnection Deadlines

Among the hundreds of storage interconnection applications pending, there are many projects whose SGIP applications may expire during the time required for the Commission to approve a final decision on this matter. Because the addition of the section on storage in the latest version of the Guidebook has created policy uncertainty regarding the proper interconnection treatment of NEM-paired storage, the utilities should extend application termination

deadlines for affected SGIP projects until 14 days after the issuance of the final decision.

4. Service

This ruling will be distributed to the service list of the Rule 21 proceeding, R.11-09-011. Parties to R.11-09-011 who are not parties R.12-11-005 and who wish to comment on the issues put forth in this ruling may file motions for party status in R.12-11-005 concurrently with their opening comments.

IT IS RULED that:

1. Parties may submit comments on the proposals and questions included in this ruling. Comments should address the exemption from interconnection charges, the contents and timing of the electric utilities' cost reports, safety considerations, system sizing requirements and metering requirements.

Opening comments, not to exceed 15 pages, must be filed by October 25, 2013. Reply comments, not to exceed 10 pages, must be filed by November 1, 2013.

2. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company must extend the Self-Generation Incentive Program termination deadlines for NEM-paired storage devices with pending interconnection requests until 14 days after the issuance of a final decision on this matter.

Dated October 17, 2013, at San Francisco, California.

/s/ MICHAEL R. PEEVEY

Michael R. Peevey
Assigned Commissioner