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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering.

Rulemaking 14-07-002

**ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT
ON USE OF ENERGY STORAGE BY CUSTOMERS
ON VIRTUAL NET METERING TARIFFS**

Summary

Staff recently became aware of apparent conflicts between portions of the Net Energy Metering (NEM) tariffs relating to NEM-paired energy storage systems and those related to Virtual Net Energy Metering (VNEM). This ruling describes the apparent conflict between these different tariff provisions, and seeks party comment on ways to revise the provisions to make paired storage more accessible to customers on VNEM.

Parties may file comments on the proposals contained in this ruling, or may propose their own solutions to this issue, not later than August 30, 2017. Parties may file reply comments not later than September 6, 2017.

1. Background

1.1. NEM-Paired Storage (NEM-PS) Tariff Provisions

Customers that pair an energy storage system to their NEM generation system qualify for the NEM-Paired Storage (NEM-PS) conditions of the NEM tariff. As described in Decision (D.) 14-05-033, energy storage systems that are: 1) paired with NEM-eligible generation facilities, and 2) meet the Energy Commission's RPS Guidebook requirements to be considered an "addition or enhancement"¹ to NEM-eligible systems are exempt from interconnection application fees, supplemental review fees, costs for distribution upgrades, and standby charges when interconnecting under the current NEM tariffs. In this way, D.14-05-033 conferred a considerable benefit on storage systems paired with renewable generation.²

In order to ensure the integrity of the NEM program, D.14-05-033 placed certain limitations on storage system sizing and implemented metering requirements. Under this decision, customers with systems over 10 kW in size are limited to a maximum output power no larger than 150% of the NEM generator's maximum output capacity, and are subject to specific metering requirements. Those metering requirements were derived from the pre-existing

¹ Specifically, D.14-05-033 considers any energy storage system paired to a NEM generator behind the same customer meter to be "directly connected energy storage" as described in the seventh edition of the RPS Guidebook and therefore eligible as an addition or enhancement to the NEM generator. (D.14-05-033 at 7.)

² Subsequent to D.14-05-033, the NEM Successor Tariff Decision (D.16-01-044) established rules for NEM successor tariff customers, including rules related to interconnection fees, payment of non-bypassable charges and use of TOU rates. Pursuant to D.16-01-044, D.16-04-020 held that small storage devices paired with generating facilities are not exempt from interconnection fees.

NEM Multiple Tariff (NEM-MT) requirements, which were used to differentiate NEM and non-NEM generation behind the same customer meter. D.14-05-033 noted that “[w]e find that such metering requirements [for NEM-paired storage] will effectively ensure that only NEM-eligible generation receives NEM credit.”³ The specific metering requirements adopted by the Decision require large NEM-PS systems to: 1) install a non-export relay on the storage device(s); 2) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling; or 3) install interval meter directly to the NEM-eligible generator(s).

While not explicitly stated in the Decision, the effect of imposing these metering requirements on large NEM-PS systems is to prohibit the discharge of energy from the storage device at a level that exceeds on-site load. The language of the requirement draws a distinction between the storage device (subject to metering option #1) and the NEM-eligible generator (subject to metering options #2 and #3). The storage device is, therefore, not a NEM-eligible generator and the customer may not receive NEM credit for the storage device’s output. These metering requirements effectively treat a NEM-paired energy storage device as a non-NEM generator, and preclude customers from getting NEM credits for energy exported from the storage device. As a result of this, the economic rationale for installing an energy storage system as a NEM-PS system is limited to 1) taking advantage of the reduced interconnection costs available through the NEM-PS structure and 2) serving on-site load with stored energy to avoid retail energy charges.

³ D.14-05-033 at 20.

D.16-04-020 resolved the methodology to be used to calculate the NEM credits for NEM-PS systems sized 10kW and smaller.⁴ Generally speaking, a customer is not required to use the NEM-MT metering structure (although they may choose to do so). Instead, the total exports from their customer meter that are eligible for NEM credit are capped at the estimate of the maximum monthly export possible by their specific NEM generation system. This estimation methodology is not available to non-solar small NEM-PS customers, who are required by D.16-04-020 to use the NEM-MT metering method as applicable to large NEM-PS systems.

1.2. VNEM Tariff Provisions

As part of the virtual NEM (VNEM) tariff established pursuant to D.08-10-036, the CPUC required that each utility's VNEM tariff must allow for the allocation of net energy metering benefits from a single solar energy system to all meters on an individually metered multifamily affordable housing property, without adversely impacting building tenants.⁵ D.11-07-031 expanded the scope of VNEM to include any multi-tenant and multi-metered complex that was behind a single service delivery point. D.11-07-031 also expanded the scope of VNEM for multifamily affordable housing properties to include those properties in a complex with multiple service delivery points. D.16-01-044

⁴ On April 17, 2017, PG&E, SCE, and SDG&E filed a *Petition For Modification Of Decision 16-04-020 To Simplify The Net Energy Metering Bill Credit Estimation Methodology For Generating Facilities Paired With Small Storage Devices* in Commission Rulemaking 12-11-005. The April 17, 2017 Petition for Modification is currently pending in that proceeding.

⁵ D.08-10-036 at 38.

further expanded VNEM to allow multiple service delivery points at a single site for all property types.⁶

In general, D.08-10-036 is silent with respect to whether a VNEM system may serve on-site load, however, the language in the Decision seems to indirectly prevent VNEM generators from directly serving on-site load. That decision states that under VNEM “the electricity produced by the system would be net-balanced against total building electricity consumption, as if the building had a single, or ‘virtual,’ master meter. Credits for solar energy system production would be allocated to all units (both tenant units and common areas) in a predetermined proportion.”⁷ D.08-10-036 goes on to state that the VNEM concept “allows the output of a single solar energy system to be shared with tenants in multifamily housing, without master metering hardware or site-specific infrastructure upgrades...”⁸

These references to a NEM system’s production or output as the baseline against which to compare the sum of consumption across several meters strongly suggests that the baseline must be measured independent of these other meters. Without independent metering of the output, it would be difficult to establish a baseline not influenced by another meter’s load. The text of D.08-10-036 states that under VNEM, “the utility would be required to meter solar system output separate and apart from metering of individual tenant and common area consumption.”⁹ That decision also defines as a requirement of the VNEM tariff

⁶ D.16-01-044 at 99.

⁷ D.08-10-036 at 31.

⁸ D.08-10-036 at 33.

⁹ D.08-10-036 at 34.

that “[t]he building owner/manager shall be responsible for, and shall bear all costs associated with, installing a generator output meter capable of recording solar energy system output in fifteen minute increments, if required, to insure appropriate customer credits.”¹⁰ This metering requirement would only establish an appropriate baseline if there were no load behind the output meter to decrease the measured production of the NEM generator.

2. Implications for VNEM Generation Paired with a Storage System

When a VNEM generator is combined with a NEM-PS storage system, this means that a NEM-PS storage unit must only export rather than serve any load at the multi-tenant, multi-metered property. However, as described above, a NEM-PS storage system may not export to the grid at times the NEM-eligible generator is not producing energy.¹¹

Furthermore, while for a usual NEM-PS customer this prohibition on exports is dealt with by serving on-site load with the storage system and therefore avoiding retail energy costs, a VNEM customer does not have that option. For a VNEM customer, directly serving on-site load behind the VNEM output meter is prohibited.

Taken together, the NEM-PS “no export” rule and the VNEM “no load” rule seem to preclude VNEM customers from receiving any economic benefit to support the installation of energy storage systems, and as a result, it is unlikely that VNEM customers would install choose to install paired storage. As NEM-paired storage becomes more common and we expand access to VNEM, it

¹⁰ D.08-10-036 at 39.

¹¹ We presume most VNEM systems are 10kW or larger and are thus covered by the NEM-PS metering requirements for such systems.

is reasonable to consider whether to modify these rules to facilitate the use of on-site storage by VNEM customers.

3. Proposed Alternatives

This ruling proposes two alternatives to address this issue and provide an economic incentive for storage devices to be paired with a VNEM generator:

Alternative #1

Under this alternative, the Commission could adjust the VNEM tariff such that both the VNEM generator and the storage device would be located behind the same output meter, which would be required to include a physical non-import relay to prevent grid power from flowing toward the battery. This would ensure that any exports to the grid are produced by the NEM generator, therefore ensuring the integrity of the NEM system.

Alternative #2

Adjust the VNEM tariff such that storage paired with a VNEM system is limited to discharge up to the aggregate customer demand of all the customers participating in that VNEM arrangement in that interval, with all charging and discharging allocated to benefitting customers in proportion to the VNEM allocation and debited/credited at each customer's full retail rate. This approach mimics the metering requirements for larger paired systems under the standard NEM tariff, and effectively prevent storage systems from generating NEM credits from grid-delivered electricity.

4. Comment Opportunity

Parties are encouraged to comment on these two alternatives, or may propose other alternatives that they feel are appropriate to address the policy issue outlined above. Comments and proposals shall be filed not later than

August 30, 2017, with reply comments due by September 6, 2017.

IT IS RULED that:

1. Parties may file comments on the proposals contained in this ruling, or may propose their own solutions to this issue in comments, not later than August 30, 2017.
2. Parties may file reply comments not later than September 6, 2017.

Dated August 14, 2017, at San Francisco, California.

 /s/ JESSICA T. HECHT
Jessica T. Hecht
Administrative Law Judge