

**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

**OPENING COMMENTS ON THE PROPOSED DECISION REGARDING NET ENERGY
METERING INTERCONNECTION ELIGIBILITY FOR STORAGE DEVICES PAIRED WITH
NET ENERGY METERING GENERATION FACILITIES**

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May 2, 2013

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Pursuant to Rule 14.3(a) of the California Public Utilities Commission's (CPUC's) Rules of Practice and Procedures, Elke Brazel submits Opening Comments on the Proposed Decision Regarding Net Energy Metering Interconnection Eligibility for Storage Devices Paired with Net Energy Metering Generation Facilities.

The proposed decision (PD) addresses a lot of issues, but still leaves a few problematic points unresolved. I would like to try to pinpoint those, which I believe will require some more thought.

1. On page 4 the PD refers to the California Energy Commission's RPS Eligibility Guidebook, Section III.G, which supposedly clarifies the conditions under which a storage device may be considered an addition or enhancement to a renewable electrical generation

facility. The guidebook distinguishes between “integrated” and “directly connected” storage devices.

This whole section needs to be clarified. The utility, which refused my NEM interconnection, used the April 30, 2013 edition to argue in a roundabout fashion with our installer and the equipment manufacturer that our solar electric system with battery backup does not qualify for NEM interconnection. Maybe there should be real-world products listed as examples for “integrated” and “directly connected”, or the definitions need to be cleaned. For off-the-shelf products, like the ones offered by Outback Power Technologies and Schneider/Xantrex it should be easy to identify which category they fall into. If it is not easy, then the definitions should probably be adjusted and refined.

2. Throughout the PD, and especially the sections about sizing and metering, the units, which are used to describe system sizes (most often the unit 10kW appears) need to be cleaned up to avoid any further confusion and arbitrary interpretation. “Storage devices sized at 10kW” is not a clear description, since storage is typically measured in kilowatt-hours and not in kilowatts. Using kilowatts to describe storage would be similar to someone describing the tank capacity of his car in horsepower. When adding the duration over which the horsepower are exerted plus some additional information about the size of the engine, one can eventually deduct the gallons of gasoline in the tank, however it would not be immediately and unambiguously clear to everybody. Depending on the party’s interests and background, this inaccuracy could be used for different interpretations, which can potentially lead to further delays in the NEM

approval process. For example, one installer interpreted the 10kW storage system as a 10kW solar array plus any reasonable size storage device. Or it could describe an inverter with 10kW maximum output connected to some size storage device. As it is written, it is just not totally clear.

3. I welcome the clarification of the PD that storage itself is not a generator. This was another point of contention with my utility.
4. In section 6 'NEM Integrity and Metering Requirements' something must have gone amiss. Either the proposed locations of metering are not quite right or the equation has lost a part. As it is right now, a smaller NEM generator with storage device, like the ones readily available off-the-shelf from Schneider/Xantrex or Outback Power Technologies could easily produce a very small or even negative de-rate factor even though no stored energy was ever passed through to the grid. These systems supply critical loads panels which provide uninterrupted power to certain important loads in a household. They function like a UPS. This electricity would be thrown into the same bucket as previously stored electricity from the storage device, and under the proposed metering scenario and calculation the two uses could not be separated.
5. The PD suggests the use of a non-utility grade meter associated with the data acquisition systems (DAS) for small systems, which can be read via internet. I see a couple of issues here. Frequently, smaller systems are located on homes without

permanent internet connection. The homeowner uses a mobile device when present, but the home (e.g. vacation home, time share, weekend condo) has no working internet connection. Requiring internet connection to get NEM approval seems a bit much. Secondly, in this time of paranoia, no utility is going to accept data from a device which can be tampered with by the owner. My utility wanted the manufacturer of my equipment to permanently disable certain features of my equipment so they cannot be misused by the owner. It did not matter, that the exact features were not even available in the first place. But in a time when customers believe that the utilities tamper with SmartMeter data, who can blame the utilities for thinking similarly of their customers? I just don't think non-utility grade meters with internet connection will be the hit.

6. On page 21 the PD states "This modified tariff shall apply to all NEM-paired storage systems, even those currently interconnected." I am wondering who is going to pay for the metering upgrades, whether it is under the multi tariff scenario or a small DAS. Some of the systems are either so integrated or so old that it is virtually impossible to connect a DAS to the required spot. In this case, is the customer then required to buy a new NEM generator, which permits the new metering scheme or, alternatively, shut down his equipment, if metering is not feasible?
7. The consideration of additional costs brings up another question: Because of this ongoing discussion and the utility's refusal, I have not been allowed to operate my new

solar electric system with battery backup for one year. The batteries, which are designed to be kept at full charge at all times have not been maintained properly and gradually discharged over time. Batteries' lifetime degrades more quickly if not properly maintained or left to discharge for longer periods of time. Lifetime degrades also when they are cycled. The batteries in a battery backup system are really designed to stay fully charged until there is an emergency. And after the emergency is lifted, they should be charged completely as quickly as possible. There is no warranty on my batteries anymore, they are not new. Nobody knows how they will perform when they are needed, because they could not have been maintained as they should. They did cost me \$4,000, and they are potentially not much more than hazardous waste on my property, which requires extra fees to dispose off. Can I just drop them off at my utility's local office for a refund and for them to dispose of?

I don't know why there is this paranoia about rigging the NEM system. If I cycled the batteries as it has been suggested by the utilities, I would reduce their lifetime so quickly, that I would have to buy a new set of them before the buy-low-sell-high scenario returned any profit. I already wasted money on this emergency battery power, which has now become unreliable. A diesel generator would have been the better choice.

8. I would like to propose a different approval route for small off-the shelf NEM generators with storage systems. I am talking about systems like the ones manufactured by Schneider/Xantrex and Outback Power Technologies. The manufacturers could (with

oversight from the CPUC, CEC and utilities, if necessary) measure electricity in and out of a sample system and determine typical de-rate factors for their makes and models of equipment which have NEM approval. Anytime one of these systems is installed, this de-rate factor would be known beforehand and would be applied. Any time one of these makes and models is used beyond what is usual and customary, or when other brands without preapproval are used, then apply NEM-MT requirements. This preapproval strategy could also take into account that currently utilities do not approve residential solar electric systems with a capacity significantly larger than the customer's demand. So in reality, how much over-selling from a storage device could there actually be under these conditions, even in a worst case scenario – not much!

9. I am wondering what exactly is the obsession with preserving the integrity of NEM? What if the customer hooks up a diesel generator to his existing renewable energy generator and inadvertently backfeeds the grid? Or a big RV with generator backfeeding to the grid? Is distributed energy production or the fact that it all has to be from renewable sources the important point to consider? Or is it both?

10. I welcome the PD's comment that the IOUs should be more proactive and collaborative. It is OUR energy future.

In closing, I would like to comment, that the proposed decision and these proceedings in general remind me a lot of our current tax code - pages and pages have been added to even

more pages and pages, which require careful examination, re-examination and interpretation, and pretty soon not even the so-called experts can agree anymore. At this point it may be necessary to rethink what the intent of the original NEM program was. In light of new technologies and better understanding of what renewable energies and distributed energies can do, it might be time to start over with a clean slate. If we continue on the current path I fear a scenario in which each meter will have to be doubled up by yet another meter so all parties involved can eventually agree on how many milli-watthours exactly have passed from one side to another, at each point of interconnection within a system and between systems and without any cheating and rigging by any of the parties. To accomplish this, I bet, we will need at least six heavy duty utility grade meters!

Dated: May 2, 2013

Respectfully submitted,

/s/ Elke Brazel

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