

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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

Rulemaking 08-03 -008  
(Filed March 13, 2008)

**JOINT RESPONSE OF UTILITY SAVINGS & REFUND, LLC AND PRUDENT  
ENERGY INTERNATIONAL TO THE AMENDED JOINT PETITION OF THE  
CALIFORNIA CENTER FOR  
SUSTAINABLE ENERGY AND THE CALIFORNIA ENERGY STORAGE  
ALLIANCE FOR MODIFICATION OF D.08-11-044**

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September 3, 2009

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**I. INTRODUCTION**

We appreciate the permission granted by Administrative Law Judge Maryam Ebke to file this response past the deadline.

Pursuant to Rule 1.4 (a), (2) of the Rules of Practice and Procedure of the California Public Utilities Commission (Commission,) a person may become a party to a proceeding by filing a response or protest to a petition. We ask the Commission to accept this Response to the Amended Joint Petition of the California Center for Sustainable Energy and the California Energy Storage Alliance (Joint Petitioners) for Modification of Decision (D.) 08-11-044, dated August 7, 2009 (Petition) as timely filed and to accept Utility Savings & Refund, LLC (US&R) and Prudent Energy International (Prudent) as Parties to these proceedings.<sup>1</sup>

The Joint Petitioners seek an order modifying D.08-11-044 to limit the technical requirement that a qualifying advanced energy storage (AES) system must have the ability to

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<sup>1</sup> Prudent Energy International has authorized Utility Savings & Refund, LLC to sign and submit this filing on their behalf.

handle hundreds of partial discharge cycles each day,<sup>2</sup> to AES systems coupled with wind technologies only, and furthermore, that the ability to handle hundreds of partial discharge cycles each day should be eliminated entirely for AES systems coupled with all other eligible Self-Generation Incentive Program (SGIP) technologies.<sup>3</sup>

Prudent<sup>4</sup> and US&R<sup>5</sup> oppose this request for modification and request that any attempt at modification be considered only after sufficient opportunity for input from stakeholders, and only based upon actual experience with the technical parameters currently in place for AES and their effect upon applications with fuel cells and other potentially eligible SGIP technologies.

## **II. DISCUSSION**

The Commission, in D.08-11-044, allowed AES systems that meet certain technical parameters and are coupled with eligible SGIP technologies to receive SGIP incentive funds.<sup>6</sup> The Commission also required the SGIP Program Administrators to monitor AES applications and to report to the Commission if the technical parameters adopted in D.08-11-044 create unfair advantages or adversely impact the ability of qualified AES systems to participate in SGIP.<sup>7</sup> A revised SGIP Program Handbook was issued on May 8, 2009, and the SGIP Program Administrators subsequently began accepting SGIP applications for qualified AES systems.

The intent of the Working Group in proposing technical parameters as requirements for eligibility, including the Discharge Requirement, was to ensure that AES technologies would be capable of meeting the demands of coupling with SGIP-eligible generation technologies and to ensure that the resulting integrated technology solutions would deliver peak load reduction benefits to California ratepayers. These parameters were developed after months of discussion

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<sup>2</sup> D.08-11-044, p. 12

<sup>3</sup> Currently wind turbines and fuel cells

<sup>4</sup> Prudent is an energy storage technology developer, manufacturer and systems integrator, specializing in the patented VRB Energy Storage System (VRB-ESS™). Prudent Energy announced its acquisition of the assets of VRB Power Systems Inc. on 29th January 2009. This acquisition included the purchase of all patents, trademarks, know-how, equipment and most of the material owned or controlled by VRB Power. Additionally, the core technical team of VRB Power has joined the combined company.

<sup>5</sup> US&R was extensively involved with the original presentations to the Commission leading to D. 08-11-044, we were a sales affiliate for VRB Power, Inc, which requested the addition of AES to the SGIP program, we are now a sales affiliate for Prudent Energy International, and we are currently involved in several installations of the VRB-ESS which are eligible for SGIP incentives under D. 08-11-044.

<sup>6</sup> D.08-11-044, Conclusions of Law 10 and 11, adopted technical parameters to define AES in the context of SGIP.

and evaluation. The Joint Petitioners propose to dispose of these requirements based on three assertions: (i) that they unnecessarily limit AES system eligibility for incentives under the SGIP to a small subset of eligible technologies; (ii) that it is unnecessary for AES applications coupled with fuel cells; and (iii) that it will create unnecessary additional administrative burdens on the Program Administrators. However, the Joint Petitioners fail to adequately support their assertions.

### **III. UNNECESSARILY LIMIT AES SYSTEM ELIGIBILITY FOR INCENTIVES**

The Joint Petitioners wish to open the SGIP incentives to a broader set of technologies. However, based on the stated membership of one of the Joint Petitioners, the California Energy Storage Alliance (CESA)<sup>8</sup>, we fail to see which technologies represented by CESA will benefit from this request for modification, or how this will increase the subset of eligible technologies. Of the ten members listed<sup>9</sup>, we understand that some are not technology vendors<sup>10</sup> and others would not qualify<sup>11</sup> under the other SGIP provisions requiring more than 4 hours of electric energy storage.<sup>12</sup> Of the remaining members, ZBB Energy and Xtreme Power Solutions both advertise that their technologies are applicable to wind power<sup>13</sup>. The Joint Petitioners argue that hundreds of daily cycles are necessary for wind energy<sup>14</sup>. Therefore, if the remaining two members meet the requirements for wind applications, then they also meet the requirements for fuel cell applications. The question remains as to how the cycling requirement unnecessarily limits AES technologies.

The Joint Petitioners bare the burden of showing that the current technical parameters unnecessarily restrict application to a small subset of technologies. However, they fail to show how removing the cycling requirement will expand the set of applicable technologies.

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<sup>7</sup> D.08-11-044, p. 13.

<sup>8</sup> Footnote 2 on page 1 of the Joint Petition

<sup>9</sup> Although not listed, Prudent is also a member of CESA, and has advised CESA of their opposition to this modification.

<sup>10</sup> Chevron Energy Solutions, Debenham Energy and StrateGen Consulting.

<sup>11</sup> A123 Systems, Inc., Beacon Power Corporation, Fluidic Energy Inc., Ice Energy, Inc., and PVT Solar

<sup>12</sup> D.08-11-044, page 12

<sup>13</sup> For example, ZBB issued a press release on Dec. 10, 2008 regarding an installation with wind energy: <http://www.zbbenergy.com/pdf/121008.pdf>, and Xtreme Power touts wind power applications on their website: <http://www.xtremepowersolutions.com/wind.php>.

<sup>14</sup> Page 4, Joint Petition

#### **IV. THE CYCLING REQUIREMENT IS UNNECESSARY FOR FUEL CELL APPLICATION.**

The Joint Petitioners assert that applications to wind generation require hundreds of daily cycles, but fuel cells and all other SGIP-eligible technologies<sup>15</sup> only require one cycle per day.<sup>16</sup> They go on to persuasively argue the need for multiple cycles for wind, with illustrations and data from actual installations with the VRB-ESS. However, they then use an unidentified industrial facility in PG&E territory to illustrate, “the interaction of site load, 1MW of steady base-load fuel cell generation, and a 1MW 8-hour electrical AES system for a typical summer day”.<sup>17</sup> In fact, this does not appear to be an actual installation, but only a proforma application with no actual measured data.

In contrast, US&R has partnered with the University of California, Irvine, under a grant application to the California Energy Commission (CEC), to conduct a study of the benefits of associating fuel cells with AES. One of the issues to be explored will be the potential to install fuel cell capacity beyond the typical baseload capacity of a host. Multiple daily cycling will be vital to this application.

Fuel cells are not able to “turn down” or reduce their power output if the host demand drops below the fuel cell capacity. Thus, fuel cell installations must be sized below the minimum demand of a facility, preventing the fuel cell from meeting much of the on-site requirements of the host, and requiring peak power from the utility. However, an AES is able to absorb power from the fuel cell when it generates more than is required and then follow the load as it peaks and dips. This allows for the potential of installing fuel cell capacity in excess of baseload and resulting in greater penetration of fuel cell DG than is currently possible. But, in order to follow the load and maximize the fuel cell generating capacity, the AES must be able to cycle multiple times per day, perhaps hundreds of times per day. For example, we will be investigating the potential of increasing fuel cells beyond the baseload capacity of a waste water treatment plant in PG&E territory. This will allow the plant to convert more of its biogas to

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<sup>15</sup> Petition page 1

<sup>16</sup> Petition page 3-4.

<sup>17</sup> Petition page 4

power instead of flaring it to the atmosphere. To maximize the amount of energy generated by the fuel cells, the AES will need to follow the spikes and dips in demand caused by the hourly fluctuations in waste water received by the plant, and the minute by minute demands of large motor starts, compressors, and water pumps.

Without actual measurement and verification of an AES application with fuel cells, the assertion by the Joint Parties that multiple cycling is unnecessary for fuel cell installations is unsupported. Any modification to the technical parameters should be based on actual implementation and testing of those parameters, not on conjecture.

#### **V. UNNECESSARY ADDITIONAL ADMINISTRATIVE BURDENS ON THE PROGRAM ADMINISTRATORS**

Finally, the Joint Petitioners argue that unnecessary additional administrative burdens will result on the Program Administrators if the multiple cycling requirement is not removed.<sup>18</sup> We did not find any support for this position in their petition.

On the contrary, removal of this requirement may cause confusion and increase the administrative burden on the Program Administrators. The single modification they seem to be requesting is the removal of the hundreds of partial discharge cycles, but they do not substitute an alternate standard. Is it the intention of the Joint Petitioners that minimal cycling technology be acceptable for SGIP incentives? The example cited is for a single discharge cycle per day – is that the alternate standard recommended by the Joint Petitioners, or do they expect the Program Administrators to determine a new standard? Or is it to be determined on a case by case basis? Would it be possible to demonstrate to the Program Administrator a technology that could provide 4 hours continuous discharge<sup>19</sup>, but limited in cycling to only a few times per year? Or could a technology with the “potential” for daily cycling be acceptable, but which is not used for daily cycling in practice?

It seems clear to us that changing the technical parameters, without substantial stakeholder input, will result in additional burdens to the Program Administrators, as they discover and attempt to deal with the unintended consequences of an apparently unnecessary and

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<sup>18</sup> Petition page 3.

<sup>19</sup> 2009 SGIP Handbook, page 9, March 3, 2009.

potentially confusing modification.

**IV. CONCLUSION**

For the reasons stated herein, US&R and Prudent urge the Commission to deny the Amended Petition of the Joint Petitioners.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'C. Toca', with a large, sweeping flourish extending from the top of the signature.

Charles R. Toca  
Manager  
Utility Savings & Refund, LLC

Date: September 3, 2009

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of this *Joint Response of Utility Savings & Refund, LLC and Prudent Energy International to the Amended Joint Petition of the California Center for Sustainable Energy and the California Energy Storage Alliance for Modification of D.08-11-044* on all known parties of record in proceeding R.08-03-008 by delivering a copy via email to the current service list or by delivering a copy via U.S. First Class mail to those members of the current service list with no or undeliverable email addresses.

Executed on September 3, 2009, in Santa Ana, CA.



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