BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations	Rulemaking R-11-10-023

COMMENTS OF THE GREEN POWER INSTITUTE ON WORKSHOPS AND ENERGY DIVISION PROPOSALS

February 18, 2014

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Pursuant to the August 2, 2013, *Phase 3 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge*, in Rulemaking R.11-10-023, the **Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations**, the Green Power Institute (GPI), the renewable energy program of the Pacific Institute for Studies in Development, Environment and Security, respectfully submits these *Comments of the Green Power Institute on Workshops and Energy Division Proposals*. Our interest in this proceeding is focused on developing the means to derive as much capacity and flexible-capacity value as possible out of the fleet of preferred resources that are supplying power to the grid, thereby limiting the need to provide these services using conventional generating sources. Our *Comments* address the RA proposals for intermittent resources, and for storage resources.

The January 16, Staff Proposal on methodologies for intermittent generating resources is thoughtful and thorough. We do have several concerns, though. Our first concern is that the system-wide approach that is being proposed (resource-in vs. resource-out) is different than, and more rigorous than the criteria that are applied to conventional fossil resources. We prefer equal treatment, which means either apply the same system-wide approach to the determination of the RA valued of conventional resources, or modify the way that the RA value of intermittents is being determined in order to achieve equivalency.

We are also concerned about the level of detail that is being modeled for intermittent generators. By the Staff Proposal's own reckoning, staff will be determining 1,080 distinct ELCC values in the course of executing the methodology on an annual basis, which the Staff Proposal points out is far fewer than would be needed if the same

methodology was applied on an individual-facility basis. Our concern is that the level of detailed analysis proposed may not be consist with the quality of the input dataset that is being employed, a situation that can lead to an illusory sense of accuracy. At best, what the effort is attempting to accomplish is to establish a probabilistic relationship between the expected output profile of an aggregated set of intermittent generators, and the expected load curve of a given section of the grid. In our opinion, focusing on establishing this relationship during key periods might produce a simpler methodology that better serves the needs of the proceeding.

The Staff Proposal correctly points out that the marginal capacity value of a new MW of a given generating resource declines as the installed capacity increases. Our concern is that all intermittent generators, old and new, should be treated equally with respect to how costs and cost responsibilities are allocated. We also wish to point out that the modeling effort described in the Staff Proposal does not give credit for regional diversity of a given type of generating resource. This effect counteracts, to some extent, the diminishing marginal capacity value that comes with capacity growth.

The January 16, Staff Proposal on methodologies for energy storage and demand response appears to be at an earlier stage of development than the Staff Proposal on intermittent generating resources. The GPI will limit our remarks on this document to the sections of the document that deal with energy storage. We note that the state has had far less operating experience with energy-storage resources than it has with intermittent-generating resources. This presents a considerable technical challenge to modelers.

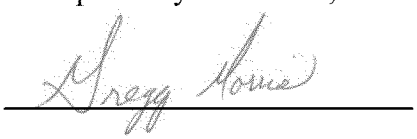
Current RA regulations require that energy storage resources be capable of operating for four consecutive hours in order to participate in RA markets. As the final paragraph on page 3 of the Staff Proposal, labeled point no. 4, notes, many storage resources with less than a four-hour operating capability can probably provide valuable RA services in their own right. We encourage the Commission to move quickly to find ways to give appropriate value to storage resources for RA-service duties of less than four hours duration.

We also note that flexible RA resources are different than sustained-duty RA resources, and deserve to have distinct qualification criteria. According to current rules, flexible RA resources must meet all of the requirements for sustained RA resources, as well as additional requirements related to flexibility. We believe that flexible RA resources should not have to also meet all of the qualifying criteria for sustained-duty RA resources, and in particular they should not have to meet the four-hour specification for conventional RA resources. They should simply be given appropriate credit for the services they can indeed provide.

Finally, we note that the Staff Proposal on storage resources does not address the topic of mobile energy storage systems, which are the batteries in plug-in electric vehicles (PEV). At some point in the not too distant future there will be a critical mass of PEVs on the road and connected to the power grid for purposes of charging. This aggregate storage capacity may be able to contribute to system flexible RA needs via the mechanism of smart charging. We would like to see at least a place-holder in the storage proposal for future inclusion of mobile storage in the category of flexible RA.

Dated February 18, 2014, at Berkeley, California.

Respectfully Submitted,



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