BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans	Rulemaking R-12-03-014

TECHNICAL COMMENTS OF THE GREEN POWER INSTITUTE ON THE SCENARIOS SRAW PROPOSAL

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Introduction

Pursuant to the *Assigned Commissioner's Ruling on Standardized Planning Assumptions*, dated June 27, 2012, the Green Power Institute (GPI) respectfully submits this *Technical Comments of the Green Power Institute on the Scenarios Straw Proposal*, in R.12-03-014, the **Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans**. Per the instructions in the August 29, 2012, email to the service list from N. Ketabi of the Energy Division, these *Technical Comments* are being circulated to the service list, but are not being filed in the docket. Our *Technical Comments* are focused on the renewables-supply assumptions in the Straw Proposal.

Q.1. Technical Issues with the RPS Discounted Core

During the April 11 – 12, 2012, workshop on LTPP scenario planning, GPI representative Gregg Morris discussed the concept of applying probability-of-success factors to the various projects in the RPS development pipeline in order to determine the expected amount of generating capacity that would result from the current portfolio of contracts. This approach appeared to engender interest on the part of both staff and a number of the parties at the workshop.

Unfortunately, the Straw Proposal retreats to the 2010 LTPP approach of picking winners and losers from among the projects in the utilities' portfolios, based on the use of confidential information, rather than determining an expected outcome based on probabilistic analysis and publicly-available information. We again urge the Commission to use the statistically-based approach to the determination of an expected renewables supply, rather than picking individual winners and losers. Not only can it be done in a

fully transparent process, it also produces an outcome that is consistent with real-world experience.

The RPS discounted core is drawn from the IOU portfolio of projects-in-development with PPAs. There are approximately 30,250 GWh/yr of projects in these portfolios at the present time. The Commission is basing its scenario generation assumptions on a discounted core of 26,253 GWh/yr (from excel file *RPS Calculator Results 2012-08-22*, Tab: Commercial Interest, cells B63 & C63). However, this is not consistent with real-world experience. There was widespread agreement at the April 11 – 12, 2012, workshops, including among utility representatives, that the success rate for RPS projects with PPAs over the past decade appears to be no higher than 60 percent. This being the case, the discounted core should not be greater than 18,150 GWh/yr, and probably less. Thus, all of the RPS scenarios and sensitivities are being constructed on the basis of a discounted core that is at least 45 percent too large.

Q.4. Capacity Degradation and Retirements of Renewables

The scenario-creation tool appears to make an implicit assumption that the entire fleet of currently operating renewable-generating facilities will continue to operate in 2020, at the same production rate as today. This is not a robust assumption. In recognition of this fact, the *Key technical Questions* ask whether it is appropriate to treat renewable resources such as geothermal and biomass like conventional generating resources for purposes of estimating retirements. Unfortunately this question largely misses the most important points with respect to estimating the future output of the existing operating fleet of renewable generators. The Commission needs to pay attention to two things with respect to estimating the future output of the existing renewables fleet, the natural degradation that is a characteristic of certain renewable resources, and the retirement of existing renewable generators based on economic factors, rather than assuming a fixed facility lifetime based on experience with conventional generators.

Some renewable resources and technologies have natural degradation curves that are not reversible by performing maintenance on major system components. For example, PV generators degrade slowly over time in an irreversible manner. Today's fleet of existing PV generators should be expected to produce, in 2020, no more than 90 – 95 percent of the amount of energy that they currently generate. Similarly, landfill gas generators typically see a fairly steep decline in the annual output of biogas from closed landfill cells, as the material in the landfill decays away. The rate of decay for a particular landfill generator is highly dependent on site-specific factors, but for the fleet of existing generators a decay rate of 2 – 4 percent annually is probably appropriate. Finally solid-fuel biomass generators have operated at high capacity factors over the past decade due to incentives to operate at high output levels during low-revenue hours. These incentives have now expired, and it is likely that some of the facilities will choose to reduce output during low-revenue hours of the year, allowing them to reduce their purchases of their most expensive fuel. Thus, while this is not an irreversible phenomenon, total output from the existing fleet of biomass generators could shrink by as much as 40 percent due to voluntary curtailment.

The recent shuttering of several long-operating biomass generators, including one (Mt. Lassen Power) that had just negotiated a contract amendment with their purchasing utility, demonstrates that economic shutdowns of existing facilities is a real risk that needs to be factored in when determining the RNS. Retirement decisions are usually made based on economic factors, and on an owner's assessment of the physical condition of a particular facility. This is information that is simply not available to a public process like the LTPP. As in the case of determining the discounted core, the statistical approach is the most reasonable methodology to use in pursuing the kind of transparent analysis that is desired for the LTPPs.

Q.6. RPS Scenarios, In Particular the Environmental Scenario

Guiding Principle E in the *Straw Proposal on Standardized Planning Assumptions* states that infrastructure portfolios should be substantially unique from each other in order to provide a broader perspective on the kinds of futures that are possible, consistent with California's overall policy objectives. In our opinion, the environmental-sensitivity portfolio fails to provide sufficient contrast with the base RPS portfolio to justify its inclusion in the analysis. In fact, on a practical level the environmental scenario is even more unbalanced than the base scenario with respect to its dependence on solar power generators over all of the other renewable resource alternatives.

Although solar power in 2011 provided less than four percent of the total RPS-qualifying renewable energy supply of the three large IOUs, and it is still in the commercialization phase in terms of the technology used in large-scale solar generating facilities, it accounts for more than two-thirds of the utilities' portfolios of new renewables projects-in-development. In the opinion of the GPI, this represents a substantial risk for the achievement of the state's new 33-percent RPS standard by 2020. A useful RPS sensitivity should involve a scenario that is **less** dependent on solar than the base case, not more dependent. We suggest a sensitivity scenario that emphasizes baseload renewables (biomass, biogas, geothermal), although a high-wind sensitivity would also be reasonable.

On a more philosophical level, we have strong concerns with the application of environmental criteria to LTPP scenario creation only in relation to comparing renewable portfolios, rather than in comparing renewables to conventional technologies. This has a tendency to leave the gentle reader with the impression that environmental concerns only pertain to renewables, completely ignoring the fact that one of the principle rationales for adopting a renewables policy is to improve environmental quality by substituting renewables for conventional generating resources. Thus, for example, an appropriate "environmental" scenario might be one that goes to 40-percent renewables, rather than the mandated 33-percent renewables.

Dated September 7, 2012, at Berkeley, California.

Respectfully Submitted,

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