

**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 11-10-023
--	----------------------

**RESPONSE OF BRIGHTSOURCE ENERGY
TO THE DECEMBER 27, 2011 PHASE I SCOPING MEMO AND
RULING OF THE ASSIGNED COMMISSIONER AND
ADMINISTRATIVE LAW JUDGE**

January 13, 2012

**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 11-10-023
--	----------------------

**RESPONSE OF BRIGHTSOURCE ENERGY
TO THE DECEMBER 27, 2011 PHASE I SCOPING MEMO AND
RULING OF THE ASSIGNED COMMISSIONER AND
ADMINISTRATIVE LAW JUDGE**

I. INTRODUCTION

On December 27, 2011, the Phase I Scoping Memo and Ruling of the Assigned Commissioner and Administrative Law Judge (“Scoping Ruling”) was issued in this proceeding. In accordance with the Scoping Ruling, BrightSource Energy, Inc. (“BrightSource”) appreciates this opportunity to provide its comments. BrightSource also supports the comments submitted by the Large-scale Solar Association (“LSA”).

BrightSource is a leading designer, developer, owner and operator of utility-scale solar thermal power plants, as well as enhanced-oil recovery (“EOR”) solar-to-steam facilities. Its Luz Power Tower (“LPT”) technology has demonstrated consistent production of the world’s highest temperature and pressure solar thermal steam, enabling use of high-efficiency turbines to generate electrical energy. BrightSource, with its SolarPLUS™ generating stations, will be advancing the performance of solar thermal energy production by combining LPT with proven, two-tank molten salt storage, extending the production of electricity into later parts of the day and after the sun sets; reducing the cost of renewable power by increasing capacity factor and offering higher efficiencies; providing greater operational flexibility to shape production to meet changing demand; and offering added operational and market

value, by providing balancing and shaping capabilities, as well as ancillary services to support a reliable grid. These capabilities can also contribute to reducing overall system costs and system emissions, by lessening the need for conventional resources, as well as lessening the degree to which conventional resources are operated inefficiently to compensate for intermittent renewables.

Our comments address three emerging issues that are important to the development of the Resource Adequacy (“RA”) program as the nature of the energy supply changes:

- (1) Measurement of the RA capacity value of partially dispatchable renewable resources, such as concentrating solar power (“CSP”) plants with thermal storage.
- (2) Measurement of the RA capacity value of different renewable resources to reflect how changes in the “net” load over time affect their incremental capacity value.
- (3) Incorporation of the operational characteristics needed for reliability in RA procurement, as appropriate.

We also support enhanced coordination between the RA, Renewables Portfolio Standard (“RPS”) and Long-Term Procurement Plan (“LTPP”) proceedings, as well as between market and planning rules in California generally, including transmission matters. This will help promote development of renewable energy generation that provides not only renewable energy credits, but enhanced operational capabilities and greater reliability.

II. COMMENTS ON PHASE I REFINEMENTS TO THE RESOURCE ADEQUACY PROGRAM

BrightSource’s comments on the refinements that the Scoping Order identifies for Phase I of this proceeding focus on topics (f) (regarding the Flexible Capacity Procurement Requirement proposed by the California Independent System Operator Corporation (“CAISO”)) and (g) (regarding updates to the RA program as California approaches attainment of the 33% RPS).

Topic (f): CAISO Flexible Capacity Procurement Requirement

BrightSource supports CAISO's ability to procure the flexible capacity needed to support grid reliability. Consistent with the long-standing relationship between the RA program and CAISO capacity procurement, however, this procurement capability should be reserved as a backstop mechanism, and load-serving entities ("LSEs") should be given the opportunity to procure the resources that are needed for reliability in the first instance.

BrightSource therefore agrees that the CAISO should provide recommendations to the Commission that focus on the types and quantities of operational characteristics needed to reliably and cost-effectively manage the grid under different renewable energy scenarios, as a precursor to both LSE and CAISO procurement. The CAISO's studies of the operational characteristics and needs of the system, after appropriate review, should be conveyed to the LSEs, so that they may procure resources possessing those operational characteristics and needs. BrightSource's proposal for an approach to this procurement approach is discussed further below in its comments on topic (g).

As part of the CAISO studies on operational characteristics and needs, it is also important for CAISO to conduct dispatch simulations to benchmark these needs, as is being currently done in the CAISO studies. These simulations are essential to better capture the costs of and benefits of differing portfolios and guide both procurement and facility design. For example, the value of Concentrating Solar Power ("CSP") plants with thermal storage will vary under differing 33% RPS portfolio scenarios and different design configurations, as these plants, depending on the number of hours of storage, will have attributes ranging between a fully dispatchable conventional fossil unit and an "as available" intermittent resource.

As the CAISO moves to a long-term (multi-year) assessment of operational needs as a basis for Flexible Capacity Procurement, BrightSource respectfully requests that the Commission require sensitivity studies in the analysis that consider how thermal storage capacity affects operational needs, as well as other types of storage or demand response. Such additional sensitivity studies do not have to examine large numbers of

permutations, but do need to be illustrative of the type of analytical support that the Commission will expect from LSEs in their procurement decisions.

Topic (g): Update Resource Adequacy rules to account for differences in procurement due to the 33% Renewable Portfolio Standard requirement, the electrical system's operational needs, and related issues

BrightSource applauds the Commission for addressing the complex interface between RPS procurement, LTPP and the RA program rules. We propose that the Commission address the following issues, in order of priority, for this proceeding:

- Updating the RA rules to include CAISO rules for partial deliverability.

Joining again with LSA, we support updating the RA rules to include RA capacity under partial deliverability as a means of reducing costs while ensuring reliability.

- Modifying RA procurement obligations to address CAISO-identified reliability needs as California progresses towards the 33% RPS.

The history of the RA program demonstrates its successful evolution to address the changing needs of the grid, and BrightSource recommends that the Commission look to that history to develop the modifications to the RA program that are needed to meet the challenges of a renewables-based grid. Once the CAISO has identified the operational characteristics and needs for the grid, as discussed above—and as it has done for both local and zonal reliability needs—the Commission should incorporate those characteristics and needs within the RA procurement obligation. This will ensure that those needs are met by the energy supply and that reliability is maintained.

As was the case with zonal needs, BrightSource believes that it may not be necessary to develop additional, separate RA products to reflect these operational needs and characteristics. Instead, CAISO could provide its projection of the operational needs and characteristics to the Commission for its review, and after that review, the Commission can inform the LSEs that the combination of resources they procure to meet RA obligations must also supply their proportional share of the operational characteristics and needs that have been identified. The LSEs can then make their best

efforts to acquire resources that supply those operational characteristics and needs as part of their RA procurement (and, of course, in bundled conventional procurement as well as RPS procurement). In the event that LSE procurement falls short of meeting those needs (possibly, as with local RA, after an opportunity for “true up”), the CAISO backstop mechanism could then be used to procure remaining needs, thus ensuring that sufficient capacity with the requisite characteristics is made available when and where needed while primarily relying on efficient market procurement under the Commission’s oversight.

- Coordination between resource and transmission planning decisions to better support least-cost decisionmaking.

To improve incentives for least-cost procurement and technology innovation, the Commission should begin to identify how lack of coordination within the resource and transmission planning processes undertaken at the Commission and the CAISO could result in suboptimal resource procurement decisions. As the Commission notes, improving coordination across the RA, RPS and LTPP proceedings will require issues to be raised and resolved in different proceedings; consideration of these cross-over issues in transmission proceedings will be equally important. BrightSource supports the use of this Resource Adequacy proceeding to evaluate and enhance the coordination and development of these and the transmission programs.

- Rules for adjusting RA value based on changes in the net load peak hours.

BrightSource recommends reconsideration of whether to reach resolution of this issue in Phase I, but does believe that longer-term resolution would be best served if the consideration of them begins in the current proceeding. There is now robust research literature on this topic. In particular, many studies have pointed out that non-dispatchable solar resources, whether PV or CSP, have declining incremental capacity value as solar penetration increases. This presents a complex problem for the RA program, which should create incentives for increasing dispatchability, while rewarding sufficiency of capacity at peak as it changes through time. At the very least,

there should be a review of the existing literature and identification of further issues for examination before the Commission proposes new rule revisions.

III. CONCLUSION

BrightSource appreciates the opportunity to comment on the Commission's efforts to update the RA program. We look forward to supporting the Commission, particularly as it moves forward in addressing the issues associated with the increasing role of renewable generation in California's energy supply.

Respectfully submitted,

/s/ Arthur L. Haubenstock

Arthur L. Haubenstock
Vice President, Regulatory Affairs
BrightSource Energy, Inc.
Telephone: (510) 250-8150
Facsimile: (415) 591-1400
Email: ahaubenstock@brightsourceenergy.com

January 13, 2012