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August 17, 2012

Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Comments of BrightSource Energy, Inc. on Draft Resolution Number E-4522

Dear Energy Division Tariff Unit:

I. Introduction

BrightSource Energy, Inc. (“BrightSource”) provides the following comments on draft Resolution Number E-4522 (“Draft Resolution”), issued in response to Southern California Edison Company (“SCE”) Advice Letter No. 2339-E, as amended by AL 2339-E-A, AL 2339-E-B, AL 2339-E-C and AL 233-E-D (the “SCE Advice Letter”). The SCE Advice Letter requests California Public Utilities Commission (“Commission”) approval of five executed power purchase agreements (“PPA”) between SCE and affiliates of BrightSource: Solar Partners XVI and Solar Partners XVII (collectively, the “Rio Mesa PPAs”); Solar Partners XVIII and Solar Partners XIX (collectively the “Siberia PPAs”); and Solar Partners XX (“Sonoran West PPA”).

BrightSource has reviewed the Draft Resolution and disagrees with its analysis of the BrightSource PPAs and its proposal to reject the Rio Mesa PPAs. Specifically, the Draft Resolution errs by (a) inappropriately comparing the valuation of BrightSource’s fully binding executed PPAs against non-binding bids received in SCE’s 2011 Renewable Portfolio Standard (“RPS”) solicitation, (b) failing to consider that the five BrightSource PPAs were negotiated as a group, providing a balanced package that provides substantial value to SCE’s ratepayers and enables California to benefit from steadily advancing technology, and (c) failing to recognize the full value of the contracts to California’s power system. As a result, BrightSource urges the Commission to modify the Draft Resolution consistent with these comments.

II. Discussion

A. The Draft Resolution Inappropriately Compares the Valuation of BrightSource’s Executed PPAs Against the Valuation of Non-Binding Bids

The Draft Resolution proposes to reject the Rio Mesa PPAs based on the price and value of these PPAs relative to bids for solar thermal projects in SCE’s 2011 RPS solicitation.¹ Comparing 2011 RPS solicitation bids to these contracts is inappropriate; moreover, the analysis

¹ Draft Resolution at p. 2.

neglects to fully consider the substantial reductions in price relative to the initially-executed contracts.

Bids in an RPS solicitation do not provide a reasonable basis for comparison to executed PPAs, as Commissioner Ferron noted in his concurrence on Resolution E-4433, where he stated his belief that “it is inappropriate to compare the costs of a negotiated and executed contract, which may have gone through years and millions of dollars of development, with the current prices being bid into a solicitation.”² RPS solicitation bids do not reflect the full value that is expressed in the final price of a negotiated contract. Indeed, these bids are often non-binding. In its 2011 RPS solicitation Procurement Protocol, SCE stated that “SCE will consider Proposals with indicative pricing in this RFP” and that a “binding agreement will arise only upon the execution of a Final Agreement by authorized representatives of SCE and Seller.”³

In contrast, the final pricing of an executed contract reflects many factors negotiated by the parties, including the value of the products provided by the facility, the predictability and reliability of those products, and transmission costs and timing. These factors vary from project to project, even with same category of renewable resources, such as solar thermal, and are highly dependent on the design, engineering, and developer of the project. An executed contract backed by significant security is a far more reliable and well-founded indicator of both price and value than bid prices.

Moreover, evaluation of bid prices in isolation fails to recognize the significance of viability. BrightSource is one of the very few developers in the solar-thermal energy field that has demonstrated an ability to successfully transform a bid into a fully developed and financed project for energy delivery to a California Investor-Owned Utility (“IOU”). BrightSource has executed PPAs with SCE and Pacific Gas and Electric Company for the three units in its 392 megawatt (nominal) Ivanpah solar-thermal project; executed an Engineering Procurement and Construction (“EPC”) contract with one of the most creditable project contractors; obtained project permitting from both federal and state agencies; and completed one of the largest project financings for a renewable energy project in the world. The project now employs 2,100 people at the site and is successfully maintaining its construction schedule and its forecast commercial operation dates. The BrightSource PPAs would compare favorably in this regard against other PPAs, many of which have failed to deploy due to various factors, including obstacles associated with permitting, corporate or project financing, or inability to successfully construct.

The Draft Resolution’s proposal to reject the Rio Mesa PPAs based on this inappropriate comparison of the contracts to non-binding, potentially less viable bids submitted in SCE’s 2011 RPS solicitation is unreasonable and should be revised in accordance with these comments.

² Resolution E-4433 at p. 28. SCE’s Commission-required Independent Evaluator also acknowledged the limited value of comparing RPS solicitation bids to evaluate executed contracts, noting in its report that “comparing executed contracts with a solicitation’s potential projects/contracts (either shortlisted or not) can be problematic – given that some projects on a short list may not make it to the finish line of fully negotiated and executed contracts.” IE Report at p. 3.

³ SCE 2011 RPS solicitation Procurement Protocol (version 4) at Appendix B, p. 7.

B. The Draft Resolution Fails to Consider that the BrightSource PPAs Were Negotiated Concurrently as a Group

The Draft Resolution fails to acknowledge that the BrightSource PPAs were negotiated concurrently as a group, providing overall value to SCE's ratepayers as the BrightSource technology ascends significant incremental steps. The Draft Resolution would approve only the Siberia and Sonoran West PPAs, which represent the last step in the technological progression of the contracts, and reject the Rio Mesa PPAs, disregarding the fact the necessity of the incremental step that is an essential prerequisite to the Siberia and Sonoran West PPAs. Instead of preserving value for SCE ratepayers, the Draft Resolution would inadvertently prevent attaining that value, as the technology, economics, and financing of the Siberia and Sonoran West contracts are predicated on the Rio Mesa projects.

The single negotiation that produced the contracts at issue was intended to provide SCE's customers with the opportunity to benefit from the evolving power tower technology by committing to projects at each stage of development. The economics of the five projects were therefore considered in the aggregate; in other words, the PPAs were priced under the assumption of a package deal. The overall structure of multiple projects with staggered timing meant that BrightSource could achieve increasing efficiencies as the technology developed, economies of scale by spreading project costs and obtaining volume discounts across multiple projects, and reasonable commercial financing, by minimizing the technological risk at each stage of development.

The Rio Mesa projects deploy several very significant improvements over the technology being employed at the Ivanpah project. The Rio Mesa projects would provide significantly increased efficiency and energy at reduced cost relative to Ivanpah, by deploying significantly larger power blocks; significantly increased steam temperature and pressure; significantly decreased solar field size per unit of energy (by increasing tower height by 60% as well as the density of heliostats); and significant advances in BrightSource's heliostat design.

The substantial costs of developing each technological stage must be recouped at that stage; if it is deferred to later stages, the research and design costs of the cumulative innovations could overwhelm project economics, making the later-stage projects economically infeasible. The economies of scale also are important to achieving cost reductions through volume discounts throughout the supply chain. Volume commitments to and from BrightSource's major partners reduce the cost of future equipment fabrication and supply, as well as supply of materials and services. The expected value of these volume discounts benefits California ratepayers as these lower costs are incorporated in lower contract pricing. In addition, carefully stepping the evolution of technology allows pricing to incorporate cost reductions gained through experience. For example, it is standard practice in the aerospace industry that product pricing assumes the total assembly costs associated with producing one model will be significantly reduced for future models. The experience of the Luz Solar Energy Generating System plants, built in Southern California in the 1980s by the engineering team that now work for BrightSource, is instructive; the total costs of these plants were reduced by 50% on a dollar per watt basis between SEGS I and SEGS IX. The value of such cost reductions can only be realized for ratepayers through an incremental portfolio approach that assures the necessary support to advance the technology.

These factors also contribute to ensuring that project costs are reasonable relative to project revenues, which is essential for project financing.

Successful project financing also demands that the incremental increased value of innovation is carefully balanced with the incremental risk it presents. As the Department of Energy's ("DOE") loan guarantee program is no longer available, the Rio Mesa projects will be the first BrightSource projects to be fully commercially financed. The DOE loan guarantee program was intended to enable financing of innovative projects that had not yet been commercially deployed. In the absence of the DOE loan guarantee, the degree of innovation must be limited at each stage of development to ensure project financing can be secured commercially, and at reasonable cost. Investors and lenders are keenly focused on risk; as risk increases, costs of capital increase, and too much risk can deter financing entirely in the current conservative fiscal environment. Each generation needs to prove a certain level of maturity through evidence of successful development and engineering, including the performance assurances of a credible EPC contractor, to provide financiers with the confidence needed to fund the project at reasonable cost. The experience gained at BrightSource's Solar Energy Development Center was essential to achieving project financing for the Ivanpah project. The experience to date with Ivanpah, including its detailed engineering, construction experience, backing by a very experienced and credible EPC contractor, and successful completion of Ivanpah's project financing will be essential to the commercial project financing of the Rio Mesa projects. The project financing of the next generation of the technology, which will introduce the significantly increased efficiency of a supercritical power block as well as solar thermal storage, will in turn rest on the backing of a credible EPC contractor as well as the successful project financing of the interim innovations incorporated in the Rio Mesa projects. The experience of the wind and steam turbine industries have mirrored very similar advancements of technology and project financing over generations of those technologies.

As development of the Rio Mesa projects is necessary to provide the platform to develop the Siberia and Sonoran West projects, and the pricing of later projects is dependent upon approval of the prior projects, the Draft Resolution's proposal to approve only the Siberia and Sonoran West projects simply is not feasible. The Siberia and Sonoran West contracts are part of a package and were never intended, and simply cannot, stand alone without the precursors that will make their improved performance, and their commercial financing, possible.

C. The Draft Resolution Fails to Acknowledge the Full Benefits of the BrightSource PPAs

As discussed above, the value to SCE's ratepayers resulting from the Rio Mesa, Siberia, and Sonoran West PPAs was considered in the negotiations as a package, reflecting the value and price of the Rio Mesa projects as well as those of the later, more efficient Siberia and Sonoran West projects with thermal storage benefits. However, the Draft Resolution does not adequately reflect the significant value that the projects offer to California's power system on an individual basis, nor of the package as a whole.

The Rio Mesa projects are a platform for both the innovative technology advances they will incorporate, as well as the later projects with increased efficiency as well as thermal energy storage. The Least Cost, Best Fit ("LCBF") valuation of these projects cannot properly be

applied simply by comparison of these projects to competing bids from other solar thermal projects; it must also consider their contribution to the value of the package of projects. In addition, the storage and non-storage BrightSource plants utilize synchronous generators, providing similar short-term reliability and operational benefits to the system as conventional power plants, and at no additional cost. These benefits, which apparently were not factored into the analysis, include reactive power support, dynamic voltage support, voltage control, inertia response, primary frequency control, frequency and voltage ride-through, small signal stability damping, and the ability to mitigate Sub-Synchronous Resonance (SSR). In short, all of the contracts provide attributes that bring system benefits that will be of increasing importance to California's power system as conventional generation is displaced over time.

III. Conclusion

The contracts addressed by the SCE Advice Letter were negotiated as a package, to provide value for SCE's ratepayers by providing a platform for increasing efficiency and benefits through technological innovation while substantially reducing the pricing from the original contracts. By proposing to approve only the contracts at the end of this progression, and not their necessary precursors, the Draft Resolution unfortunately ignores the practical realities of economies of scale and project financing that support those contracts. The Draft Resolution therefore inadvertently jeopardizes the significant benefits of an evolving technology that this suite of contracts would otherwise offer to California's power system. For the foregoing reasons, BrightSource respectfully requests that the Commission modify the Draft Resolution in accordance with these comments, and approve a package of contracts that will provide SCE's ratepayers and California's power system with the benefits of BrightSource's evolving technology.

Respectfully submitted,



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Certificate of Service

I hereby certify that I have this day served a copy of the

**COMMENTS OF BRIGHTSOURCE ENERGY, INC. ON
DRAFT RESOLUTION NUMBER E-4522**

on all known parties to R.11-05-005, along with the additional parties pursuant to instructions on the cover letter to Draft Resolution E-4522, by sending a copy via electronic mail and by mailing a properly addressed copy by first-class mail with postage prepaid to each party named in the official service list without an electronic mail address.

Executed on August 17, 2012, at San Francisco, California.

/s/ Marcus Hidalgo

Marcus Hidalgo