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September 10, 2010

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California Energy Commission
Dockets Office, MS-4
RE: Docket No. 03-RPS-1078 and Docket No. 02-REN-1038
RPS Proceeding
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments of BrightSource Energy on Docket No. 03-RPS-1078 and Docket No. 02-REN-1038; RPS Proceeding; Proposed Changes to RPS Eligibility Guidebook

Docket Office:

Pursuant to the California Energy Commission's August 16, 2010 Notice of Staff Workshop on Proposed Changes to the *Renewables Portfolio Standard Eligibility Guidebook* and the *Overall Program Guidebook for the Renewable Energy Program,* please find enclosed one paper copy of "Comments on Proposed Changes to RPS Eligibility Guidebook Submitted on Behalf of BrightSource Energy." These comments were also submitted electronically on Friday September 10, 2010 as per the above referenced Notice. Thank you for your time and consideration in this matter.

Very truly yours,

Michael Sharpless
Environmental Analyst

Enclosure
cc: Arthur Haubenstock, BrightSource Energy
Peter Weiner, Esq.
Elizabeth Deane, Esq

Comments on Proposed Changes to RPS Eligibility Guidebook

Submitted on behalf of BrightSource Energy

September 10, 2010

The Energy Commission's Renewables Committee has proposed consideration of certain revisions to the RPS eligibility requirements for multiple fuel facilities and also has asked interested parties to comment on questions related to de minimis use of fossil fuel and other nonrenewable energy resources. BrightSource Energy, Inc. (BrightSource) wishes to thank the Committee and its staff for their thoughtful work on these proposed revisions, and generally supports the recommended changes, with some relatively minor modifications to better achieve the purposes of the underlying statute and reflect the realities of large-scale solar design, implementation and operation, as well as to the reliable integration of those facilities. We appreciate the opportunity to provide the following comments and responses to questions.

Proposed Clarification Regarding Use of Non-Renewable Energy Resources

The Renewables Committee has proposed revisions to clarify that only non-renewable energy resources "used simultaneously to generate electricity at the facility" should count towards the de minimis calculation. BrightSource agrees with this proposed revision, which is consistent with the requirements of Public Utilities Code § 399.12(f)(3), and the underlying intent of the statute. We further support this approach because it will ensure consistent, non-discriminatory application of the treatment of fossil fuel use across different technologies. This approach would avoid absurd results that would be to the detriment of the environment and the overall purpose of California's Renewables Portfolio Standard.

Proposed Clarification regarding method for measuring solar energy

The Renewables Committee has proposed that the method for measuring solar energy be "on an annual total energy input basis". BrightSource agrees with this proposed revision, because it takes into account the contribution of each input to energy generation and is calculated over a reasonably-implementable and administratively manageable time period, rather than using a calculation based solely on the amount of fuel used. BrightSource understands the intent of default specific measurement methods that the Renewables Committee has proposed for both combustion technologies and non-combustion technologies, such as solar thermal and geothermal technologies. However, for most technologies, due to the tremendous variance even within technology classes, the most accurate and appropriate measurement methods would be individual methodologies certified by an independent engineer. BrightSource strongly recommends that the Commission require independent methodologies verified by an independent engineer *unless* the applicant can demonstrate that the default methodology is reasonably accurate when applied to its facility.

Further, the equation provided in the default methodology contains an inappropriate proxy technology, the use of which would neither reflect the actual efficiency of fossil fuel use by the

proposed renewable energy facility nor the efficiency of fossil fuel use by the conventional unit which would be displaced, if the renewable unit makes use of fossil fuel to reduce variability. When the output of a renewable energy unit is intermittent, it is not physically possible to ramp up or down a combined-cycle unit to fill the gap, while maintaining the peak efficiency of that conventional unit. Moreover, it would be economically and environmentally detrimental to have such a unit dispatched in such a way, as the best use of such a unit to produce at maximum output over longer blocks of time. The conventional unit that would be dispatched would be a peaker plant, and one that is not operating at its highest level of efficiency, but rather one that is ramping up or down in response to renewable output variability. To create the right incentive through this formula for reducing variability and thus reducing overall costs and environmental impact,[1] the value in the formula should be based on the efficiency of a peaker plant operating on an intermittent basis, not on a combined cycle plant operating at maximum efficiency.

Questions Posed by the Renewables Committee:

a. What fossil fuel or nonrenewable energy resource uses should be counted as contributing to the nonrenewable fuel use in the energy input measurement methodology for generation from multi-fuel facilities?

> BrightSource Response: Only fossil fuel or nonrenewable energy resources used to generate electricity should be counted as contributing to nonrenewable fuel use. Otherwise, it is difficult, if not impossible, to apply the rule consistently to different technologies (e.g. should fossil fuel used to process biomass, or in vehicles to bring biomass materials to a biomass facility or maintaining wide-spread wind farms, or in cleaning photovoltaics in large-scale farms, be counted differently or the same as fossil fuel used to avoid freezing and damage to turbines at a solar thermal plant overnight?). By clarifying that only fuel used for generating electricity should be counted, the difficult questions raised by life cycle fuel use comparisons between technologies, which could otherwise lead to surprising and perverse results, are avoided. Moreover, such an approach is consistent with applicable statutory requirements.

b. What level of fossil fuels or other nonrenewable energy resources constitutes a "de minimis amount" of fossil fuel or other nonrenewable energy resources that should count as "renewable" for RPS obligations?

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[1] It is important to note that the use of a high-efficiency combined cycle as a proxy would not act as a "technology-forcing" policy, as the intermittent use of fossil fuel by any unit, let alone a renewable energy unit designed primarily to convert renewable fuel to electricity, could never be expected to approach the efficiency of a modern combined cycle plant operating at full capacity. The far more likely result is to worsen the existing "tragedy of the commons" problem, in which costs and emissions from peakers increase as renewable energy is increasingly integrated into the grid, due to the perverse incentives for peaker profitability and the lack of incentives for renewable energy units, or those that purchase from them, to decrease variability of output or "leaning" on the grid.

BrightSource Response: The level of fossil fuel or other nonrenewable energy resources that count as "renewable" for RPS obligations should be determined "project by project", based upon criteria such as the project's ability to enhance overall renewable energy production, improve system reliability, offset other emissions and/or achieve cost effectiveness goals. There is already precedent for variability in de minimis thresholds. For example, FERC uses 25% as a threshold; historically CEC used a 25% threshold; other countries use a 12-15% threshold; and the Energy Commission's Existing Renewable Facilities Program uses a 5% threshold. It is arbitrary to rely upon a fixed percentage without relation to the underlying purpose of the overall renewables program, and such a percentage could- and we believe would- reduce the overall success of the program in meeting its numerical targets, let alone its intent to reduce global warming, clean the air, and minimize the energy system's reliance on conventional fuels and their highly variable pricing.

c. Should the de minimis level be different for specific facilities based on energy resource, technology, operations, or benefits to the grid? If so, please suggest criteria that are reasonable and describe any parameters?

BrightSource Response: Yes, please see the above response.

d. Should a measurement methodology be based on plant operations or efficiencies rather than just actual energy input?

BrightSource Response: Yes, individual plant operations or efficiencies should be factored into the measurement of de minimis fossil fuel and nonrenewable energy resource use, because such considerations will result in more accurate, project-specific calculations. Please see the response above with respect to our proposal that facilities be required to provide an independent engineer-verified methodology absent a showing that the default methodology is reasonably representative, to avoid perverse results that would be to the detriment of the state's renewables program and its goals.